Exploring vulnerability among children and young people who experience online sexual victimisation

by

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ABSTRACT

Online grooming and sexual exploitation of children and young people is an increasing concern for parents, internet providers as well as professionals involved in safeguarding children and detecting offenders. The existing literature has reported online grooming processes as well as risk factors that are associated with victimisation and perpetration (O'Connell, 2003; Webster et al., 2012). However, there is little theoretical understanding of risk factors associated with children and young people being vulnerable to online sexual exploitation. The first part of the PhD programme included synthesising and critically appraising literature on: 1) factors that relate to adolescents engaging in risky internet use, 2) victim risk, resilience and protective factors, 3) online groomer characteristics, and 4) the process involved in an adult grooming an adolescent. These systematic reviews identified methodological and theoretical gaps in the literature and influenced the design of the subsequent empirical studies. The first empirical study explored the influence psychological, interpersonal, developmental and behavioural factors had on online sexual solicitation and exploitation. This study used a quantitative approach and collected data from university students using an online survey. The second empirical study adopted a qualitative approach and interviewed law enforcement personnel and professionals who had encountered at least one victim of online sexual exploitation. In addition, 2 victims of online grooming and sexual exploitation were also interviewed. The results highlighted that behavioural (i.e., online and offline risky behaviours), social, interpersonal and psychological factors increased the likelihood of online sexual solicitation and exploitation. This PhD also developed a typology of victims of online sexual exploitation and this includes 'naïve / curious', 'chaotic' and 'situational vulnerability' victims. This is discussed further in chapter 7. Practical and theoretical implications are discussed throughout the thesis.

TABLE OF CONTENTS

	Page number
Title page	1
Declaration	2
Abstract	3
Table of contents	4
List of tables and figures	6
Acknowledgements	10
Chapter 1 A literature review of online sexual solicitation, grooming and exploitation victimisation of children and young people	11
Abstract	12
Introduction	13
Conclusion	28
Chapter 2 PhD research aims	29
Abstract	30
Chapter 3 Methodological approaches to investigating online sexual perpetration and victimisation of children and young people	34
Abstract	35
Introduction	36
Chapter 4 Four systematic reviews exploring online sexual victimisation, perpetration and grooming methods	60
Abstract	61
Introduction	62
Method	95
Results and discussion	106
Overall conclusion	229
Chapter 5 Predicting online risky behaviours, attachment patterns, emotional regulation and adverse experiences with online sexual solicitation and exploitation	232
Abstract	233
Introduction	234
Method	248

Discussion 278
Conclusion 291
Chapter 6 Exploring risk and resilience factors associated with online grooming and sexual exploitation from the perspectives of victims and professionals 292
Abstract 293
Introduction 294
Method 304
Results and discussion 308
Overall discussion 346
Conclusion 353
Chapter 7 Discussion and conclusion 354
Abstract 355
Discussion 356
Conclusion 378
References 379
Appendix 419
Appendix 1. Inclusion criteria 419
Appendix 2. Systematic review search strategy 422
Appendix 3. Data extraction forms 424
Appendix 4. Questionnaire 462
Appendix 5. Adverts for quantitative study 477
Appendix 6. Missing data relating to the quantitative study 478
Appendix 7. Outliers relating to the quantitative study 483
Appendix 8. Follow up contact details 539
Appendix 9. Email sent to participants who provided their details after completing online questionnaire 545
Appendix 10. Adverts for qualitative study 547
Appendix 11. Participant information sheet 549
Appendix 12. Email sent to managers/senior members of an Organisation 554
Appendix 13. A summary of victim characteristics 555

LIST OF TABLES AND FIGURES

Tables		Page number
Table 1.	Number of papers excluded after full text screening and reasons for exclusion	100
Table 2.	Information relating to the sample, sampling methods and research design used in studies that investigated risk, resilience and protective factors associated with online sexual victimisation	107
Table 3.	Data collection methods used in studies that investigated risk, resilience and protective factors associated with online sexual victimisation	107
Table 4.	Proportion of participants who experienced online sexual victimisation in each study sample	108
Table 5.	Studies investigating risk, resilience and protective factors associated with children and young people being sexually victimised online	109
Table 6.	A critical evaluation of the studies included in the systematic review that explored risk, resilience and protective factors associated with online sexual victimisation	124
Table 7.	Quality appraisal of qualitative studies investigating risk, resilience and protective factors associated with online sexual victimisation using the using the NICE Checklist for qualitative studies	127
Table 8.	Quality appraisal of quantitative studies investigating risk, resilience and protective factors associated with online sexual victimisation using the Quality Assessment Tool for Quantitative Studies	128
Table 9.	Frequency of online risky behaviours among the identified systematic review studies	130
Table 10.	Sample, sampling and research design of studies that investigated factors associated with adolescents' risky online behaviour	131
Table 11.	Data collection methods used in studies that investigated factors associated with adolescents' risky online behaviour	131
Table 12.	Studies investigating factors associated with adolescents' engaging in risky online behaviours	132
Table 13.	A critical evaluation of the studies included in the systematic review that explored adolescent's engagement in risky online behaviours	151
Table 14.	Quality appraisal of quantitative studies factors associated with adolescents' engagement in online risky behaviours using the Quality Assessment Tool for Quantitative Studies	155

Table 15.	Quality appraisal of qualitative studies investigating factors associated with adolescents' engagement in online risky behaviours using the using the NICE Checklist for qualitative studies	157
Table 16.	Information relating to the samples and sampling methods used in studies that investigated methods and techniques offenders use to groom and sexually exploit victims	181
Table 17.	Data collection methods used in studies that investigated factors methods and techniques offenders use to groom and sexually exploit victims	182
Table 18.	Studies investigating the methods online groomers use to groom and sexually exploit victims	183
Table 19.	A critical evaluation of the studies included in the systematic review that explored online grooming methods	196
Table 20.	Quality appraisal of qualitative studies investigating the methods offenders use to groom victims using the NICE Checklist for qualitative studies	199
Table 21.	Quality appraisal of quantitative studies investigating the methods offenders use to groom victims using the Quality Assessment Tool for Quantitative Studies	200
Table 22.	Samples and sampling methods of studies investigating online groomer risk factors	216
Table 23.	Data collection methods of studies investigating online groomer risk factors	216
Table 24.	Studies investigating online groomer risk factors	217
Table 25.	A critical evaluation of the studies included in the systematic review that explored online groomer risk factors	220
Table 26.	Quality appraisal of qualitative studies investigating online groomer risk factors using the NICE Checklist for qualitative studies	221
Table 27.	Quality appraisal of quantitative studies investigating online groomer risk factors using the Quality Assessment Tool for Quantitative Studies	222
Table 28.	Frequency relating to participants' demographic information	249
Table 29.	Skewness and kurtosis values for all predictor variables and the criterion variable online sexual solicitation	260
Table 30.	Skewness and kurtosis values for all predictor variables and the criterion variable online sexual exploitation	262
Table 31.	Frequency of participants' general internet usage	263
Table 32.	Frequency of participants' daily internet usage	263
Table 33.	Frequency of participants engaging in risky online behaviours when they were aged under 16	264

Table 34.	Frequency of participants being sexually solicited or befriended by someone they perceived to be over the age of 18 when they were aged under 16	266
Table 35.	Frequency relating to the relationship between the victim and offender	266
Table 36.	Frequency relating to who participants told about their online sexually exploitative experience	267
Table 37.	Correlations between the predicator variables and online sexual solicitation and exploitation	269
Table 38.	Multiple regression analysis investigating behavioural, psychological and interpersonal factors as predictors of the frequency engagement in risky online behaviours	273
Table 39.	Multiple regression analysis investigating behavioural, psychological and interpersonal factors as predictors of online sexual solicitation frequency	275
Table 40.	Multiple regression analysis investigating behavioural, psychological and interpersonal factors as predicators of a child being sexually exploited online by someone, they perceived to be an adult	277
Table 41.	Extracts relating to the ‘length of grooming’ theme	310
Table 42.	Extracts relating to the ‘victim-offender interaction’ theme	313
Table 43.	Extracts relating to the ‘age’ and ‘gender’ subthemes within the ‘demographic factors’ theme	318
Table 44.	Extracts relating to the ‘background’ subtheme within the ‘demographic factors’ theme	320
Table 45.	Extracts relating to the online and offline behaviour subthemes within the ‘behavioural factors’ theme	323
Table 46.	Extracts relating to the ‘family dynamics’ subtheme within the ‘social structure’ theme	326
Table 47.	Extracts relating to the ‘relationship with peers’ subtheme within the ‘social structure’ theme	333
Table 48.	Extracts relating to the ‘poor psychological functioning’ subtheme within the ‘psychological factors’ theme	335
Table 49.	Extracts relating to the ‘alcohol and substance use’ subtheme within the ‘psychological factors’ theme	337
Table 50.	Extracts relating to the ‘aggression’ subtheme within the ‘psychological factors’ theme	338
Table 51.	Extracts relating to the ‘poly victimisation’ subtheme within the ‘psychological factors’ theme	339
Table 52.	Extracts relating to the ‘inconsistent schooling’, ‘relationships with teachers’ and ‘academic ability’ subthemes within the ‘school’ theme	343
Table 53.	Extracts relating to the ‘resilience’ theme	345

Table 54. A summary of online sexual exploitation victim typologies 373

Table 55. 'Curious / naïve', 'chaotic' and 'situational' victims in relation to previous typologies 374

Figures

Figure 1. Flow of information through the different phases of the systematic reviews 99

Figure 2: Themes and subthemes relating to the subordinate theme 'victim characteristics' 314

Figure 3. Theoretical framework including online groomer characteristics, the grooming process, victim vulnerability, resilience and protective factors 368

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CHAPTER 1

A LITERATURE REVIEW OF ONLINE SEXUAL SOLICITATION, GROOMING AND EXPLOITATION VICTIMISATION OF CHILDREN AND YOUNG PEOPLE

ABSTRACT

Although the internet has created many benefits for individuals (i.e., learning, socialising, shopping), it has also enabled individuals to sexually offend and become victims of sexual exploitation (Quayle et al., 2000). The online environment has allowed sexual offenders to identify, interact and sexually victimise children and young people (Malesky, 2007; Mitchell, Wolak & Finkelhor, 2008; O'Connell, 2003). This is an important issue and a concern for various stakeholders (i.e., law enforcement, child protection personnel and parents) (Webster et al., 2012). Therefore, this chapter focuses on reviewing the definitions, legislation and statistics associated with children and young people being sexually solicited, groomed and exploited online. In addition, this chapter discusses characteristics of the internet that can facilitate the grooming process and sexual exploitation of children and young people.

INTRODUCTION

The internet has dramatically revolutionised many aspects of human behaviour. It has changed the way individuals communicate with each other, carry out daily tasks (i.e., banking, shopping), learn and experience entertainment (Rigden, 2010). Research has shown that the amount of time spent online, as well as frequency of online usage, has increased over the years among children, adolescents and adults (Lenhart et al., 2010; Ofcom, 2016). The National Office for Statistics reported that 91% of adults in the United Kingdom used the internet between January and March 2019. This is an increase from 2016 when 88% of individuals used the internet. Furthermore, Ofcom (2016) conducted a survey of 1375 parents and children aged between 5 and 15, and 684 parents of children aged 3 to 4. The results indicated that weekly internet usage increased between 2007 and 2016 among all ages. For example, internet use among 3 and 4, and 5 to 15-year olds increased approximately 2 and 5 hours respectively. This indicates that the internet is increasingly popular among children, adolescents and adults, and has become an integral part of individuals' lives.

Accessing the internet has become easier over time due to the emergence of portable electronic devices. For example, individuals have shifted from accessing the internet via desktop computers to portable devices such as smartphone, tablets and laptops (Ofcom, 2016). This allows people to access and use the internet while they travel and are away from home. They generally use the internet for social (interacting with existing and new friends, dating, blogging), entertainment (playing games, watching TV), practical (i.e., shopping, banking) and educational purposes (Rigden, 2010). Although the internet has allowed people to engage in positive activities, it has also provided many individuals the opportunity to perpetrate criminal activity and become vulnerable to criminal activity (Palmer, 2015; Quayle & Taylor, 2003). For example, it has enabled sex offenders to select, target, groom and sexually exploit children and young people (Quayle et al., 2000; Webster et al., 2012). Thus, it is important to theoretically investigate the online grooming and sexual exploitation process, victim vulnerability and perpetrator characteristics. Ultimately, this can lead to better detection of victims and perpetrators, prevention of online grooming and sexual exploitation, and treatment for offenders and victims.

Definition

The literature on online grooming and sexual exploitation uses terms such as 'sexual solicitation', 'aggressive sexual solicitation', 'grooming' and 'sexual exploitation'. Although there are no universally accepted definitions of these terms, the literature has used 'sexual solicitation' to describe adults making unwanted requests to talk sexually, engage in sexual activities or to give personal/sexual information (Baumgartner, Valkenburg & Peter, 2010; Mitchell, Finkelhor, & Wolak, 2007, 2001; Mitchell, Wolak, & Finkelhor, 2008; Mitchell, Ybarra & Finkelhor, 2007; Wells & Mitchell, 2014). Moreover, 'aggressive sexual solicitation' refers to perpetrators attempting or making offline contact with the child or young person through mail, telephone or in person (Mitchell, Finkelhor, & Wolak, 2001; Mitchell, Wolak, & Finkelhor, 2008; Wells & Mitchell, 2008; Wolak, Finkelhor & Mitchell, 2008).

'Grooming' refers to an offender interacting with a child or young person to build trust and prepare them for sexual abuse (Davidson & Martellozzo, 2008). Craven, Brown and Gilchrist (2006) reviewed the literature and proposed the following definition for grooming: "*A process by which a person prepares a child, significant adults and the environment for the abuse of this child. Specific goals include gaining access to the child, gaining the child's compliance and maintaining the child's secrecy to avoid disclosure. This process serves to strengthen the offender's abusive pattern, as it may be used as a means of justifying or denying their actions*" (Craven et al., 2006, p.297). This definition can be applied to the online and offline environment although some techniques differ across the two environments (i.e., offenders displaying false identities online) (Whittle et al., 2013). Moreover, McCarthy and Gaunt (2005) suggested that online grooming is a behaviour that is used by offenders to 'seduce' or lure children into sexual activity with or without their knowledge.

In terms of sexual exploitation, the Home Office (2017, p.5) defined child sexual exploitation as "*a form of child sexual abuse. It occurs where an individual or group takes advantage of an imbalance of power to coerce, manipulate or deceive a child or young person under the age of 18 into sexual activity in exchange for (a) something the victim needs or wants, and/or (b) the financial advantage or increased status of the perpetrator or facilitator. The victim may have been sexually exploited even if the sexual activity appears consensual. Child sexual exploitation does not always involve physical contact; it can also occur through the use of technology".* These definitions recognise the processes involved in an offender preparing a

child for sexual abuse. This includes building trust, coercing and/or manipulating a victim and maintaining secrecy. Additionally, these definitions acknowledge that grooming and sexual exploitation can take place offline or via technology or the internet. However, the role of technology and the online environment in the grooming and sexual exploitation of children and young people is not clearly defined. For example, the Home Office definition may be problematic to apply to online sexual exploitation as there may not be a financial advantage, or the victim may not receive something that he/she wants or needs. The internet allows offenders to groom and sexually exploit victims without providing incentives (i.e., gifts and money) which is usually a common method in offline grooming (Olson et al., 2007). Despite this, legalisation in the United Kingdom exists that covers the above offences in the United Kingdom.

Legislation

Legislation in the United Kingdom has been developed to prosecute adult perpetrators, and protect children and young people from internet related grooming and sexual exploitation (Sorell, 2017). The term 'grooming' was first included in legislation as part of Section 15 of the Sexual Offences Act (SOA) (2003), which was applied throughout England, Northern Ireland and Wales in May 2004 (McAlinden, 2006). This act allows prosecution of a person aged 18 or over who communicates with a child under the age of 16 on at least two occasions and intentionally meets or travels to meet the child for sexual purposes. An offender can establish contact with a child through meetings, telephone or the internet. Additionally, the Protection of Children and Prevention of Sexual Offences Act (2005) in Scotland includes the offence of 'meeting a child following certain preliminary contact'. 'Preliminary contact' refers to occasions where a person arranges to meet a child who is under 16, having communicated with them on at least one previous occasion (in person, via the internet or other technologies), with the intention of performing sexual activity on the child. Moreover, an adult who causes a child to watch sexual activity for sexual gratification can also be prosecuted under the SOA (2003).

Some of these laws, however, are problematic because an adult must communicate with a child and arrange an offline meeting for sexual purposes for an illegal offence to take place. This does not consider non-contact offences that take place purely online (i.e., sending a sexual message online to a child) without the intention of meeting offline (Baines, 2008). Thus, in 2014, the 'flaw in the law' campaign enabled a law to be passed that allows for the prosecution

of adults who send sexual messages to children under the Serious Crime Act (2015) (NSPCC, 2014). Therefore, the United Kingdom has introduced and implemented laws that protect children and prosecute offenders who interact sexually, groom and attempt or successfully sexually exploit children and adolescents. Therefore, it is important to examine the extent of online sexual victimisation against children and young people to understand the prevalence of the problem and address it accordingly.

Prevalence of online sexual perpetration and victimisation

A number of sources have reported statistics relating to online sexual offending and children and young people receiving online sexual solicitations, being groomed and, consequently, sexually exploited either online or offline. These statistics derive from criminal justice and police data, child protection services, national surveys, law enforcement, clinical, high school and university samples (Davidson et al., 2016; Finkelhor et al., 2000; Fleming et al., 2006; Ireland, Alderson & Ireland, 2015; Livingstone et al., 2011; Palmer, 2015; Wolak et al., 2006). Madigan et al. (2018) conducted a meta-analysis that synthesised studies that explored the prevalence of unwanted online sexual solicitation. Nine studies were identified that collected data from participants aged between 12 and 16 year olds. The results highlighted that among 18,272 participants, 11.5% experienced unwanted online sexual solicitation. In addition, national surveys conducted in the United Kingdom reported that 12% of 11 to 16 year old children received sexual messages online in the past 12 months (Livingstone et al., 2010). However, it is not clear whether these messages were sent by an adult. Thus, it is unknown whether these sexual advances towards children would constitute an offence. Furthermore, Livingstone et al.'s (2014) survey of 15,619 European children, aged 11 to 16, revealed that 15% of participants had seen or received online sexual messages in the past year. Data from American surveys suggest that between 13% (Wolak et al., 2006) and 19% (Finkelhor et al., 2000) of young people between 10 and 17 years had experienced a sexual solicitation online. Mitchell, Finkelhor and Wolak (2007) used a national sample of 1500 children and young people aged between 10 and 17, and reported that 8 participants had experienced an online sexual relationship with an adult. Thus, national surveys indicate that online sexual solicitation victimisation is relatively low amongst youth, with cases that constitute an offence (i.e., involving adult perpetrators) even lower.

Studies that have used samples of adults from the general public, university and high school students have also provided prevalence rates associated with online sexual victimisation

(Fleming et al., 2006; Ireland, Alderson & Ireland, 2015). Davidson et al. (2016) conducted online surveys using a sample of 1,166 young adults aged between 18 and 25. They used a retrospective research design and asked participants about their online experiences when they were aged between 12 and 16. The results showed that 44%, 53% and 39% of participants in Ireland, United Kingdom and Italy experienced online sexual solicitation respectively. In addition, Fleming et al. (2006) administered a questionnaire to 692 Australian high school students (13 to 16 years) and found that 75.8% of the sample had experienced online sexual solicitation. Moreover, Ireland, Alderson & Ireland (2015) surveyed 198 university students in the United Kingdom using a retrospective design. They reported that 28.8% of participants had been requested to engage in sexual discussions via the internet or mobile phones when they were under the age of 16. These findings show that prevalence of online sexual victimisation is higher in these studies compared to surveys that use nationally representative samples. However, these differences are likely to be the result of the sampling method used to conduct the research between different studies.

Firstly, the national surveys conducted in America collected data from children and adolescents via telephone interviews in a household setting (Finkelhor, Mitchell & Wolak, 2005; Jones, Mitchell & Finkelhor, 2012; Mitchell, Finkelhor & Wolak, 2001). National surveys conducted in the United Kingdom consisted of data being collected via home interviews (Livingstone & Helsper, 2007). For instance, Livingstone and Helsper (2007) collected data though an in-home, face-to-face, computer assisted interview with children and young people aged 9 to 19. However, data from high school students was collected in a school setting using surveys (Fleming et al., 2000). This can potentially influence the findings as participants may be more reluctant to report their online sexual experiences in the presence of family members and in a domestic setting. Participants may be more likely to disclose their online sexual experiences in a school setting where teachers administer surveys during class time, as they feel more comfortable answering questions without the fear of consequences from parents. Conversely, studies that used national surveys used larger sample sizes and recruit participants via stratified random sampling (Livingstone et al., 2011; Finkelhor et al., 2000; Wolak et al., 2006;). This can provide more accurate and representative figures, as opposed to studies that use convenience sampling and smaller samples.

Secondly, the national surveys asked participants to report their online sexual solicitation experiences that occurred in the previous year. However, the high school survey did not have a time limit in relation to participants' online sexual experiences (Fleming et al., 2006). Thus, the national surveys are limited to the previous year, so this does not include experiences that occurred over a year ago. This can potentially result in an underrepresentation of victimisation experiences because experiences that occurred prior to the previous year are not included.

Thirdly, cultural and societal factors could potentially influence the prevalence rates. For example, the studies that used national, high school and university samples collected data from different countries (i.e., America, Australia and United Kingdom). Cultural and societal variances can be attributed to children and adolescents' experience of using the internet and having access to the internet, devices and computers (Kirkup & Hodgson, 2001; Li & Kirkup, 2007). Li and Kirkup (2007) collected data via surveys from 220 Chinese students and 245 British students, and the results showed differences among these groups of individuals. The findings indicated that British children were more advanced and reported more confidence in using computers and the internet. This can be due to the countries having different stages of technology adoption and education delivered to students regarding internet use. Thus, this could potentially place confident and advanced internet users in environments that enables adult offenders to initiate contact.

Moreover, prevalence rates for online sexual victimisation have been obtained from clinical samples and child protection services (Mitchell, 2007; Palmer, 2015). Mitchell (2007) gathered data from 512 mental health professionals who worked with young people who experienced internet related problems via questionnaires. Results highlighted that 25.7% of victims had experienced online sexual solicitations. In addition, Barnardo's (2004) reported that among 350 services in the United Kingdom, 83 children were identified as victims of online abuse. However, since then Barnardo's has reported an increase in referrals relating to online sexual abuse (Palmer, 2015). For example, Palmer (2015) collected qualitative data from 34 practitioners and service managers working for Barnardo's services. They reported that 20% to 70% of a practitioners' workload involves online sexual abuse. Moreover, Bentley et al. (2017) reported that a child support service (Childline) conducted 2,132 counselling sessions with young people who had experienced online sexual exploitation (i.e., online grooming, online sexual harassment and engaging in sexually explicit activity online) between 2016 and 2017. However, this data may be an underrepresentation as cases of online sexual abuse or

exploitation are not always logged as sexual abuse that involved technology. Also, NSPCC research shows that child protection personnel lack confidence in identifying online sexual exploitation and do not realise the seriousness of internet abuse and exploitation (Brady, Brown, & Matouskiva, 2014). This can be due to a lack of or insufficient training or the 'normalisation' of young people's online use of sexualised language and sending or exchanging of sexually explicit images. This can consequently lead to many cases not being identified and reported as online grooming and sexual exploitation (Brady, Brown, & Matouskiva, 2014).

In addition, data collected from offenders who are unknown to authorities also indicate a low level of sexual solicitation. For example, Schulz et al. (2016) recruited a sample of 2,828 adults (18 to 80 years) from Germany, Finland and Sweden via online forums. The results outlined that 4.5% and 1% of the sample had interacted sexually with adolescents (14 to 17 year old) and children (13 or younger). Furthermore, criminal justice/home office cases show an increase in sexual grooming offences. For example, statistics show that there was an increase of sexual offences between 2012/13 to 2013/14 across the United Kingdom. Specifically, there was a 29% increase in England, 13% in Wales and 26% in Northern Ireland of sexual offences against under 18s and 12% of sexual offences against under 16s in Scotland (Smith et al., 2013). The largest increases were seen in sexual assault on a female aged 13 and over (20% increase to 27,852), sexual activity involving a child under 16 (31% increase to 11,337) and sexual grooming (51% increase to 1,021). More recent figures show that sexual grooming offences have increased in England and Wales from 2004/5 to 2016/17. A total of 1191 sexual grooming offences (both online and offline) were reported by the police in 2016/17, which is an increase from 186 offences recorded in 2004/05. These figures, however, are problematic as they do not state how many cases involved the internet to initiate or facilitate the offence. However, the Child Exploitation and Online Protection Centre (CEOP) reported that out of 3,652 cases reported during 2009/10, 10% were related to online grooming.

The criminal justice/home office figures report lower prevalence rates than the clinical, university and high school samples. This can be due to the methodologies used to collect the data and can be biased. They are likely to reflect an under representation of online sexual victimisation experienced by children and young people. This can be due to a number of reasons. Firstly, relating to criminal justice cases, some online grooming cases are logged as rape of a child under the age of 16 as opposed to 'online grooming' because the crime recording rules set out that only the most serious offence is recorded by the police under Home Office

Counting Rules (HOCR) (Home Office Counting Rules For Recorded Crime, 2017). Furthermore, for grooming to be recorded as an offence under the HOCR, there must also be an offline meeting. In a case where there was only an online meeting, this is likely to be recorded under another sexual offence category (Home Office Counting Rules For Recorded Crime, 2017). Secondly, these statistics may only include those offenders who are less equipped at avoiding detection. Thus, offenders who are better able to carry out the offence without detection, perhaps due to psychological and personality traits and better technological awareness, will not be included in these statistics (Seto et al., 2015). Thirdly, criminal justice statistics usually relate to cases that were reported, detected and convicted offenders. Many cases remain undetected and unreported as some victims do not recognise the offence as a crime, do not have adequate resources or feel ashamed and embarrassed to report the crime (Bryce, 2010). This is supported by data from Childline (2012) who facilitated over 400 counselling sessions for situations where grooming had occurred, 60% of which related to online child sexual exploitation (OCSE). Of these, 82% of the victims did not consider themselves as having been a victim of sexual exploitation.

In summary, due to the limitations associated with each data source, this only provides a partial understanding of prevalence of online sexual solicitation or grooming that leads to physical or non-contact abuse. Although the extent of the problem is unknown, it is important to consider theoretical perspectives relating to online grooming and sexual exploitation. Understanding the role the internet plays in the offence, the online grooming processes, offender characteristics and victim vulnerability is important in order to develop a more comprehensive understanding of the dynamics of this form of criminal activity.

The role of the internet in sexual offending against children and young people

The internet has provided a platform for internet sexual offenders to instantly and simultaneously access, build relationships and sexually exploit children and young people worldwide while concealing their true identity (i.e., posing as a child/adolescent or using a different identity) (Marcum, 2007; Webster et al., 2012). The online environment allows offenders to gain immediate sexual gratification without physically abusing their victims by sexually exploiting them via webcams or smartphones or arranging an offline meeting to initiate or continue the abuse (Hamilton-Giachritsis et al., 2017; Webster et al., 2012). Perpetrators can also create virtual communities to communicate with other sex offenders to

discuss their sexual desires and share techniques on how to identify and groom victims (Quayle et al., 2000; Webster et al., 2012). Furthermore, the online environment allows children and young people to communicate with others, maintain existing friendships and relationships, and form new ones (Livingstone et al., 2017; Ofcom, 2016). This can be problematic as children and young people interact with strangers, share personal information and engage in sexual conversations that place them at risk of receiving sexual solicitations, being groomed and sexually exploited (Whittle et al., 2014; Wolak, Finkelhor & Mitchell, 2008).

The online environment has many characteristics that facilitate the grooming and sexual exploitation process of a child or young person (Cooper, 1998; Davidson & Gottschalk, 2011; Hertlein & Stevenson, 2010; Suler, 2004). Cooper (1998) introduced the "Triple-A Engine" paradigm which suggests that individuals can communicate online in an affordable, accessible and anonymous manner. This means that online sex offenders can easily gain access to victims by strategically placing themselves in online environments where children and young people congregate (i.e., social networking sites, dating sites, gaming sites, chatrooms) (Webster et al., 2012). They can also target multiple victims simultaneously from anywhere in the world (Quayle et al., 2012). Additionally, the anonymous nature of the internet allows offenders to deceive their victims by concealing their true identity and motivations, as well as believing that their anonymity diminishes the chance of detection or identification (Webster et al., 2012).

Research has shown that online communication differs from offline communication, and that can potentially contribute to the initiation, escalation and maintenance of the grooming process (Suler, 2004). Researchers have proposed theories that explain relationship development and interpersonal communication between individuals (Altman & Taylor, 1973; Green, Derlega & Mathews, 2006; Suler, 2004). These theories / studies have highlighted factors that increase the likelihood of individuals forming intimate relationships (i.e., self-disclosing personal information, disinhibited behaviour, and online social norms). Social Penetration Theory (Altman & Taylor, 1973) proposes a number of layers that people progress through to initiate, escalate and dissolve relationships. This theory emphasises that individuals are compromised of many layers of information (i.e., surface, peripheral, intermediate and central), ranging from outer layers to deeper levels. The outer layers (i.e., surface) consist of general and superficial information concerning the individual and this can be accessed relatively easily by others without significant probing. The deeper layers (i.e., peripheral, intermediate and central) contain information regarding the individuals' needs, feelings, attitudes and intimate issues.

The deeper the characteristics, the more they reflect the total personality of the individual. Thus, the first layer often involves exchanging non-intimate information (i.e., name, occupation, and location) and then this progresses to more intimate content (i.e., romantic relationships, personal stories) (Altman & Taylor, 1973; Mongeau & Henningsen, 2008).

Research shows that self-disclosing personal information, thoughts and feelings are a key component in building interpersonal relationships, intimacy and bonds with individuals (Altman & Taylor, 1973; Lucas et al., 2014; Sternberg, 1988;). For instance, self-disclosing often elicits responses from others, increases liking and understanding between two people (Greene, Derlega & Mathews, 2006). Empirical studies that have explored self-disclosure and relationship forming in the online environment generally support Social Penetration Theory (Altman & Taylor, 1973). For example, individuals tend to disclose greater to individuals who they like and like individuals who disclosure greater personal information to them (Jourand, 1971). Thus, theoretical perspectives suggest that factors such as self-disclosure contributes to the formation of intimate relationships.

Further research shows that the online environment can facilitate the development of intimate relationships, intimacy and self-disclosures more quickly than in the offline environment (Walther, 1996). Also, research shows that disinhibited behaviour as well as self-disclosing personal information can contribute to trusting individuals and building intimate relationships (Dietz-Uhler et al., 2005; Joinson, 2001; Postmes, Spears & Lea, 1998; Suler, 2004). Elements such as perceived anonymity and disinhibition can exacerbate the relationship forming process as individual's self-disclosure more and experience greater levels of intimacy and liking (Walther, 1996, 2006). This is apparent in some cases of online grooming and sexual exploitation as offenders establish relationships and sexually abuse their victims within minutes or hours of initial contact (Quayle et al., 2006; Quayle et al., 2012; Webster et al., 2012).

Studies exploring this phenomenon in the online environment has provided mixed findings. Some evidence has suggested that offline self-disclosure was greater in comparison to the online environment. For example, Tang and Wang (2012) used an online survey to collect data from 1,027 Taiwanese bloggers. The sample consisted of females (60.9%) and males (37.7%) who were aged between 13 and 42. They used the Bloggers Self-Disclosure Scale (BSDS) that consisted of 108 items, categorised into nine subtopics: attitude, body, career, feelings,

personal, hobbies, money, experiences, and unclassified. They found that bloggers, in relation to depth of self-disclosures, disclosed more about their feelings and interests in the offline environment to their best friends, followed by parents and then their online audience. In regard to the width of self-disclosures, participants disclosed more about their work, feelings, personal information, interests, experiences, attitudes and their bodies to their best friends in the offline environment followed by their parents and then online. However, participants disclosed slightly more information about their personal life on the internet than to their parents offline. Thus, these findings show that bloggers self-disclose wider and deeper to their best friends offline rather than to their parents and online audiences. Tang and Wang (2012) outlined that bloggers potentially disclose less personal information online because they are aware of the risks of disclosing personal information (i.e., financial matters).

On the other hand, some studies have reported that the online environment stimulates self-disclosures (Bonetti et al., 2010; Valkenburg & Peter, 2009). Bonetti et al. (2010) collected data from 626 students aged 10 to 16 using a survey to investigate online communication, motivations for internet use, loneliness and social anxiety. Results showed that participants who reported being lonely disclosed information about personal and intimate topics than their non-lonely counterparts. They also used the internet to compensate for their poor social skills and wanted to socialise and meet new people. Altman and Taylor (1973) suggested that interpersonal interaction/relationship development is driven by rewards, costs, satisfaction and dissatisfaction. For instance, people seek relationships that provide maximum rewards and satisfaction with minimum costs in both present interactions and interactions projected into the future. The rewards can relate to receiving reciprocal disclosures, being liked by others and costs can relate to being rejected (Omarzu, 2000). For example, individuals who experience social anxiety perceive self-disclosing online as rewarding and beneficial as it enables them to engage with others and relieve anxiety due to a lack of social, visual and auditory cues (Bonetti et al., 2010; Valkenburg & Peter., 2009). Valkenburg & Peter (2009) indicated that individuals who experience social anxiety are generally inhibited in offline situations therefore the online environment offers a less socially stimulating environment. Therefore, these individuals may feel more protected and comfortable disclosing online and they can prepare their interactions in advance due to asynchronous communication (Schouten et al. 2007). Therefore, socially anxious individuals may perceive disclosing in the online environment more rewarding than discomforting due to the perceived benefits (i.e., expanding social networks, compensating for

a lack of social skills). Whereas the risk of disclosing personal information online for participants in Tang and Wang's (2012) study may have outweighed the benefit.

The online disinhibition effect (Suler, 2004) suggests that a combination of six factors can cause an individual to become disinhibited online and act in a way they usually would not in the offline environment. They can either display benign (i.e., share personal information, reveal secrets and emotions, display acts of kindness) or toxic disinhibition (i.e., be rude and aggressive towards others, engage in deviant and criminal activity such as viewing indecent images of children) (Joinson, 2001; Lapidot-Lefler & Barak, 2015; Suler, 2005). The six factors are dissociative anonymity, invisibility, asynchronicity, solipsistic introjection, dissociative imagination, and minimisation of authority. Dissociative anonymity allows individuals to separate their online identity from their offline identity. This can allow perpetrators to reveal parts of their identity or alter their identity so they are perceived positively and can successfully lure victims (Webster et al., 2012; Whittle et al., 2013). Additionally, individuals can generally visit webpages, forums and other online environments without other people knowing that they are visiting those websites. This invisibility gives individuals' the confidence to visit webpages and view content that they usually would not. A lack of verbal and social cues (i.e., body language, facial expressions, close proximity) can also heighten perceived anonymity and invisibility (Suler, 2004).

Furthermore, during face to face interactions the conversation is generally a continuous feedback loop as one person talks and the other responds immediately (Etzioni, 1999). However, online communication is asynchronous so people can think, formulate and edit their responses before sending to the recipient (Barak et al., 2008). They can take minutes, hours, days or even months to reply. This means that individuals can think and provide a response that can potentially portray themselves as more favourable to the recipient. They also have the freedom to leave the conversation, think about their response and interact at a later time. This is generally not possible during face-to-face synchronous communication. Additionally, this can allow perpetrators to contemplate and adapt their responses according to the victim (Williams et al., 2013).

Moreover, solipsistic introjection relates to individuals creating imaginary personas of individuals that they communicate with over text (Suler, 2004). Individuals form a character of the recipient based on the recipients' online communication, personal attributes,

expectations and needs. Thus, this enables them to fantasise about the person (Barak et al., 2008). In addition, according to the disinhibition effect (Suler, 2004), during online communication a person's status and authority is minimised due to a lack of social cues that normally indicate authority and status in the offline environment (i.e., body language, clothing) (Suler, 2004). Therefore, when authority is minimised online individuals are more likely to behave in a manner that they usually would not offline (Williams et al., 2013).

The online disinhibition effect suggests that dissociative anonymity, invisibility, asynchronicity, solipsistic introjection, dissociative imagination and minimisation of authority play a role in positive and negative behaviour (Suler, 2004). However, individual characteristics also contribute significantly and determine the extent of disinhibition (Lapidot-Lefler & Barak, 2015). For example, individuals who experience loneliness or lack confidence may find it easier to express themselves online in comparison to offline situations (Barak et al., 2008). Barak et al. (2008) reported that individuals who experienced mental health difficulties may self-disclose their thoughts, feelings and emotions in online support groups and this can contribute towards the therapeutic process.

Furthermore, research shows that social groups can influence individuals' behaviour online (Dietz-Uhler et al., 2005; Postmes, Spears & Lea, 1998). According to the Social Identity Model of Deindividuation Effects theory (SIDE), the self is made up of two identities; personal and social (Postmes, Spears, & Lea, 1998). The former relates to an individual's unique characteristics whereas the latter is defined by group memberships (Postmes et al., 1998). Postmes et al. (1998) suggested that during CMC a person integrates within a group, causing the personal identity to shift to social identity. This is because the available cues to a shared social identity gain greater weight due to the absence of individuating information online. This consequently leads individuals to identify themselves with the group and strongly conform to the situational norms associated with that particular social identity. The situational norm is established according to the environment, which indicates what is appropriate and desirable behaviour related to that particular context (Cozby, 1973). This creates the potential for individuals to self-disclosure about their personal lives more and develop intimate relationships. Dietz-Uhler et al., (2005) investigated self-disclosure amongst visually anonymous participants and found that if the norms of a group are to self-disclose, then people within that group are significantly more likely to disclose information about themselves to others. Moreover, Barak and Gluck-Ofri (2007) compared self-disclosure in online support

forums in comparison to discussion forums. The support forum generally elicited more disclosure about personal matters (e.g. thoughts and feelings), however, relatively little personal information was shared in a discussion forum. This suggests that individuals disclose according to the situational norms, hence in support forums it was appropriate to disclose personal information, whereas it was not desirable to discuss personal matters in discussion forums. This indicates that human behaviour alters and adapts according to the social environment that they are in. Thus, in relation to online grooming and sexual exploitation, children and young people may engage in online risky behaviours (i.e., send selfies, post or disclose personal information, pictures of themselves) if the online norm permits them to. Moreover, online sexual offenders may interact with other groups of sexual offenders online and share information about successfully grooming children (Webster et al., 2012).

Similar to the SIDE, the Disclosure Decision Model (DDM) (Omarzu, 2000) holds mutual assumptions. These models both highlight the importance of situational norms in accordance with the decision to self-disclose. The DDM specifically focuses on the decision process to form a decision, based on the situational norm on how and to what extent to self-disclose. Essentially, the situational norm determines how intimately and broadly an individual discloses. The DDM further elaborates by stating that the situational norm is assessed according to the evaluation of two factors: subjective utility and subjective risk. Subjective utility refers to the potential rewards associated with self-disclosing such as being socially approved by others, relieving distress, gaining social control and identity clarification (Derlega & Grzelek, 1979). These factors are compared with subjective risks which can be potential rejection from others, reduction of one's autonomy and causing discomfort to the recipient (Baxter & Montgomery, 1996). These factors are evaluated in a particular situation and consequently influence the level, breadth and depth of self-disclosure. The evaluation of subjective utility and subjective risk constitutes what is acceptable within a particular situation (Omarzu, 2000). Once an individual realises what is acceptable and desirable within a social context, the level of self-disclosure in terms of intimacy and breadth is accordingly determined (Omarzu, 2000; Walther et al., 2015). The DDM hypothesises that as subjective utility of the disclosure reward increases, the breadth of disclosure will decrease to focus on the topics and as subjective utility increases, the duration and amount of disclosure will increase.

Therefore, children and young people may share their personal information, accept friend requests, send pictures and communicate with strangers online because it is the situational norm

amongst their online friends and offline peers (Kim et al., 2016; Walrave et al., 2015). Furthermore, offenders may potentially find it easier to interact with other sexual offenders in forums where they congregate to discuss their sexual interest and techniques to groom victims. They may feel that they will not be rejected by peers in these environments as other individuals have a shared interest. Seto et al. (2010) used retrospective secondary data to investigate indecent images of children (IIOC) offenders' motivations for sexual offending. They used a sample of offenders who were interviewed by police as part of a criminal investigation and a sample who were assessed by a clinician following their IIOC conviction. The results indicated that offenders were part of online communities with other offenders where they exchanged IIOC images. In addition, the results showed that the police sample were more likely to participate in online communities than the clinical sample. However, this difference may reflect that the police addressed engagement in online communities because it was part of the investigation, whereas this was not of interest to the clinicians. Furthermore, offenders engage with other offenders to advise them about potential vulnerable victims and provide tips to select and groom victims (Webster et al., 2012). This suggests that offenders use online communities to communicate about victims and exchange IIOC. Thus, offenders may feel less likely to be rejected by their offending peers and feel comfortable disclosing information about their offending. This can be due to offenders using these environments to seek validation and support from like-minded people who share similar interests. Their engagement with other offenders enables them to rationalise, justify and minimise their deviant sexual beliefs and behaviours (Durkin & Bryant, 1999). This can also reinforce their belief that sexual relationships between adults and children are acceptable (Malesky & Ennis, 2004). In these spaces, this can contribute to their engagement in grooming and sexual exploitation.

CONCLUSION

In summary, the online environment has unique features such as perceived anonymity, invisibility, affordability and accessibility (Suler, 2004). These features can potentially influence individuals to adhere to social group behaviour and disinhibit individuals' behaviour, which can in turn, increase the chance of sexual offending and victim vulnerability (Postmes, Spears & Lea, 1998; Suler, 2004). Also, communication and interpersonal relationship building between individuals can be enhanced online and has the potential to exceed face to face communication (Lucas et al., 2014; Walther, 1996). These features can make it easier for a sex offender to identify, groom and sexually exploit children and young people. However, despite characteristics of online communication assisting online sexual offending behaviour, offender and victim individual characteristics also play a considerable role. These characteristics are discussed in chapter 4.

CHAPTER 2

PHD RESEARCH AIMS

ABSTRACT

Chapter 1 provides an overview of definitions, prevalence, legislation and internet characteristics that relate to online sexual solicitation, grooming and exploitation. Additionally, chapter 4 includes a detailed summary of the literature associated with online grooming methods/processes, offender motivations and characteristics, and victim characteristics. This information emphasises that online sexual victimisation of children and young people is a significant concern for various stakeholders and requires a theoretical understanding of the grooming processes, sexual offending and victim vulnerability. Therefore, this chapter provides an overview of the aims of the thesis, how the research questions were developed and what each phase of the PhD (i.e., systematic review, quantiative and qualitative empirical studies) aimed to achieve.

Literature investigating online grooming and sexual exploitation, the victim-offender interaction process, and offender and victim characteristics is relatively scant. These areas have considerable theoretical and practical relevance for researchers and professionals. For example, law enforcement and child protection organisations implement interventions that aim to detect offenders and vulnerable victims and prevent sexual abuse from occurring. In addition, practitioners are involved in treating victims of online sexual exploitation and rehabilitating offenders. However, to effectively implement evidence-based interventions there is a need for theoretical understanding of online grooming and sexual exploitation victimisation and perpetration. Therefore, the overall aim of the programme of research is to develop a theoretical framework that incorporates adolescents' general and risky internet behaviour, victim vulnerability, online groomer characteristics and the grooming process. The research programme aimed to do this by:

1) Synthesising empirical data on factors associated with adolescents' risky internet use, online sexual victim and perpetrator characteristics, and the grooming process.

2) Investigating the social, environmental, behavioural, psychological, developmental and interpersonal factors that increase the likelihood of a child or young person being sexually solicited, groomed and exploited online.

First phase of the PhD

The initial aim of the PhD research was to develop a theoretical and methodological understanding of adolescents' general and risky internet behaviour, victim vulnerability, online groomer characteristics and the grooming process. This was done by conducting systematic reviews that synthesised and critically appraised existing literature on the above topics. This provided a foundation for the PhD programme as it enabled a comprehensive understanding of the literature and identified key theoretical and methodological gaps. For example, the systematic review highlighted that there was a lack of understanding of online groomer psychological, behavioural, developmental and interpersonal characteristics that relate to their offending behaviour. In addition, research determining online sexual victimisation is generally limited to risk factors that occur during the time of the offence and samples of victims that are known or detected by law enforcement or child protection services (Noll et al., 2009; Whittle et al., 2014; Ybarra, Alexander & Mitchell, 2005). Moreover, studies exploring psychological and interpersonal risk factors mainly focused on online sexual solicitation as opposed to online

sexual exploitation. More detailed information regarding the theoretical and methodological gaps in the literature are included in chapter 4. These limitations led to the development of detailed research questions as well as the design of subsequent empirical studies.

Exploring all the identified gaps in the literature was not plausible for this PhD programme. Therefore, this PhD programme focused on risk factors associated with sexual solicitation and exploitation victim vulnerability. The PhD research aimed to investigate social, environmental, behavioural, psychological and developmental factors that increase the likelihood of a child or young person being sexually solicited, groomed and exploited online. This PhD aimed to explore these factors in samples of victims whose experiences had been reported or detected as well as victims where offences were not known to authorities. To address the research question, two empirical studies, one quantitative and one qualitative, were designed. Chapter 3 provides more detail about the methodologies used to address the PhD research aims.

Second phase of the PhD

Phase 1 of the PhD identified that within the literature there was a lack of understanding regarding the role childhood, psychological and interpersonal experiences had on online sexual solicitation and exploitation vulnerability. Theoretical perspectives have highlighted the importance of attachment and emotional regulation on victimisation experiences, psychological and interpersonal functioning (Ainsworth, 1989; Contreras et al., 2000; Feeny & Karantzas, 2017; Feeney & Noller, 1990; Lewis-Morrarty et al., 2015; Morris et al., 2007). Therefore, this study used a quantitative approach to investigate the role attachment styles, emotional regulation, and adverse/abusive childhood experiences had on online sexual victimisation. This study provided an insight into the role psychological, interpersonal and developmental processes play in online sexual victimisation vulnerability. More detail regarding the use of this methodology and the study are included in chapter 3 and 5 respectively.

Third phase of the PhD

The systematic review highlighted that existing studies mainly focused on risk factors associated with online sexual solicitation (Livingstone & Görzig, 2014; Wolak, Finkelhor & Mitchell., 2008;). In addition, those that investigated risk factors associated with online sexual exploitation explored experiences and characteristics that generally occurred during the time of the offence and used samples that were known to clinical or law enforcement services (Noll

et al., 2009; Whittle et al., 2014). Therefore, this study used a qualitative approach to explore environmental, behavioural, social, interpersonal and psychological characteristics that victims experienced during childhood as well as adolescence (i.e., during the time of the offence). Additionally, this study explored risk factors among victims who did not report their experiences to the police or were not detected, as well as those who were known to professionals. This enabled an understanding of risk factors associated with different types of victims. More detail relating to this study and the methodology is included in chapter 6 and 3 respectively.

CHAPTER 3

METHODOLOGICAL APPROACHES TO INVESTIGATING ONLINE SEXUAL PERPETRATION AND VICTIMISATION OF CHILDREN AND YOUNG PEOPLE

ABSTRACT

Previous research investigating online grooming, sexual solicitation and exploitation of children and young people have used quantitative and qualitative approaches to collect and analyse data. Studies have collected data via online, telephone and face-to-face surveys, observations of online profiles, transcripts, interviews and focus groups. These studies used samples of children and young people, professionals (i.e., child protection and law enforcement officers) as well as online grooming and sexual exploitation victims and perpetrators (Davidson et al., 2016; Palmer, 2015; Webster et al., 2012; Whittle et al., 2013). It is important to use the right methodological approach and tools to investigate the phenomenon under investigation to ensure that the research aims are addressed in the most accurate, reliable and unbiased manner (Boland, Cherry & Dickson, 2013; Clark-Carter, 1997). Therefore, this chapter will focus on: 1) data synthesis methods, 2) qualitative and quantitative methods used in psychological research, 3) data collection techniques (i.e., surveys, interviews, focus groups, and observational studies), 4) advantages and limitations of each method and 5) methods used in existing research on online grooming and sexual exploitation. Furthermore, this chapter will highlight the methodology that was used to address the PhD research aims (i.e., mixed method systematic review, a quantitative survey and qualitative interviews), as well as provide a rationale for using these methods.

INTRODUCTION

Research is imperative for exploring the unknown, evaluating existing literature, developing theoretical and methodological ideas, and addressing gaps in the literature. Furthermore, research has the potential to provide theoretical, methodological and practical implications that can be useful for various stakeholders (i.e., academics, industry) (Richardson, 1994). Thus, it is essential that researchers use appropriate methodologies to effectively address research questions, collate information, design and implement studies in an accurate, reliable and unbiased manner (Fink, 2013). This chapter will focus on qualitative and quantitative methodologies used to investigate online sexual grooming processes, victimisation and perpetration, as well as psychological research in general. These methodological perspectives will be evaluated, and the methods used for the PhD programme will also be described.

Data synthesis approaches and methods

Literature reviews. Literature reviews aim to summarise and provide an overview of literature in a particular area. Hart (1998; p. 13) stated that '*a literature review can be defined as the selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data and evidence written from a particular standpoint to fulfil specific aims or express views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents in relation to the research being proposed*'. Moreover, Fink (2005; p. 3) defined a literature review as a '*systematic, explicit and reproducible method for identifying, evaluating and synthesising the existing body of completed and recorded work produced by researchers, scholars, and practitioners*'. These definitions emphasise the importance of selecting literature from relevant sources to understand a research area and address research questions, critically evaluate the literature and establish methodological perspectives. Fink (2005) further highlighted that the literature searching process should be systematic and explicit which, in turn, allows literature reviews to be replicated. Booth, Sutton and Papaioannou (2016) highlighted different types of reviews that synthesise literature. These are critical reviews, integrative reviews, mapping reviews, meta-analysis, mixed method reviews, overviews, systematic reviews, rapid reviews, scoping reviews, state-of-the-art reviews, realist synthesis and umbrella reviews.

Literature reviews have practical and theoretical importance. For instance, health and social care professionals are obliged to be up to date with recent developments and research that informs their practice. However, it is impractical for professionals to read individual papers and decide how to implement the conclusions in their professional duties. A comprehensive literature review, however, can collate research and separate the poor studies from the good quality empirical papers on a particular area. This reduces the risk of professionals forming misleading and biased judgements (Aveyard, 2014). Furthermore, literature reviews are imperative in providing policy makers with information that can guide policies and procedures. The information can relate to treatment effectiveness, implications or recommendations for practice and directions for future research (Michie & Williams, 2003; Smith et al., 2011). Additionally, collating research allows researchers to understand methodological and theoretical perspectives, identify gaps in the literature so that future research can expand on areas of interest, and explore gaps and research assumption. Thus, synthesising literature on online sexual grooming, victimisation and perpetration will enable an understanding of key theories in relation to offending and victimisation, as well as methodological perspectives. This will allow an understanding of gaps in the literature and influence the design of future research. Furthermore, a comprehensive literature review can provide professionals with information about risk, resilience and protective factors associated with perpetration and victimisation that can influence their practice.

Meta-analysis. Meta-analysis is a statistical technique used to combine findings from independent studies (Davies & Crombie, 1998; Deeks, Higgins & Altman, 2008). The hierarchy of evidence suggests that meta-analysis provides the strongest evidence of empirical research, followed by systematic reviews, randomised controlled trials, cohort studies, case reports and expert opinion (Murad et al., 2016; Sackett et al., 2000). The meta-analysis process includes pooling the samples of individual studies to increase the overall sample size. In turn this increases the statistical power of the analysis as well as the precision of the estimates of effects (Akobeng, 2005; Field, 2003). This method is considered the most reliable and accurate data synthesis method for collating scientific data (Deeks et al., 2008). This is because an individual study measures the effect in a sample and provides an estimate of the effect in the population under investigation. However, a meta-analysis aims to collate the estimated size of the effect in individual studies and quantify the observed effect in a standardised manner which results in a more accurate idea of the true effect of the population (Field, 2003). Effects can be

quantified by expressing them as effect sizes. These can be Cohen's *d* (1988), Pearson's correlation coefficient *r*, odds ratios or risk rates.

Sensitivity analysis can also be undertaken to examine how consistent the results are across different groups (e.g., participant group, type of intervention) and determine the influence poor quality studies have on the overall conclusions (Field, 2003). Additionally, meta-analysis weighs individual studies according to their quality and sample sizes to provide overall conclusions that are precise and unbiased (Akobeng, 2005). For example, good quality studies as well as studies that use larger sample sizes gain greater weight in comparison to poor quality studies and studies that use small sample sizes (Field, 2003). Therefore, this can offer more reliable conclusions than literature reviews and can be applied to practical settings such as health care and treatment of patients, victims or offenders (Crossan & Apaydin, 2010; Read et al., 2005).

This method has been used to compare research on indecent images of children (IIOC) offenders with offline child sex offenders and mixed offenders (i.e., online and offline child sexual offenders) (Babchishin, Hanson & Hermann, 2011; Babchishin, Hanson & VanZuylen, 2015). These meta-analyses aimed to establish the extent to which different offenders (i.e., online, offline and mixed offenders) differed on demographic, behavioural and psychological variables (i.e., internet preoccupation, cognitive distortions, hostility, sexual self-regulation, intimacy deficits, and empathy). The studies included in both meta-analysis reviews used quantitative methods, collected data using psychometric assessments or questionnaires, and synthesised findings using a Cohen's *d* effect size. The findings provided law enforcement and practitioners with recommendations for the detection and treatment of sexual offenders.

Systematic reviews. A systematic review is a process of identifying and synthesising literature in a structured, reliable and objective manner without the use of statistics (Boland, Cherry & Dickson, 2013). There are many advantages of using a systematic review to synthesise data in comparison to a literature review. Firstly, Booth, Sutton and Papaioannou (2016) suggested that a systematic review offers clarity, validity and auditability. This is because explicit, transparent, objective, structured and standardised methods are used to search literature, screen suitable studies (i.e., inclusion / exclusion criteria), establish good quality papers, extract, and report data (Mallet et al., 2012). A non-systematic literature review, in comparison, is opaque, subjective and idiosyncratic as there are no clear methods to select

literature, extract data and critically appraise studies. Secondly, a systematic review reduces selection bias in comparison to a literature review. For instance, researchers can potentially include papers that support their view when conducting a literature review (Davies & Crombie, 1998). However, this is limited when conducting a systematic review as a search strategy is used to search various databases, and inclusion/exclusion criteria are used to establish whether a study is suitable (Jones & Evans, 2000). Studies are selected based on their suitability rather than whether the conclusions support the authors' hypotheses. Thus, the rigorous and structured methods used to undertake a systematic review (i.e., search and identify literature, critically appraise and extract data) limit bias, increase reliability and accuracy of conclusions (Mulrow, 1994).

Thirdly, a systematic review consists of integrating findings from a number of studies that measure the same construct, usually among similar samples. This, in comparison to an individual study, allows for findings and conclusions to be generalised (Boland, Cherry & Dickson, 2013). In addition, integrating multiple studies allows researchers to understand the context of findings and identify consistencies or inconsistencies in results. If consistencies are noted among the studies, researchers can potentially explain these findings according to the eligibility criteria for samples, study designs, data collection methods, measures and scales used to measure variables and conditions (Mulrow, 1994). Lastly, systematic reviews use robust, structured and systematic methods to search, identify, critically appraise and extract data. This, therefore, allows systematic reviews to be replicated and updated at a later date (Boland, Cherry & Dickson, 2013).

In relation to online grooming and sexual victimisation of children and young people, three academic published reviews exist. Firstly, Whittle et al. (2013) conducted a literature review that focused on online grooming characteristics and outlined numerous grooming techniques offenders use to groom children and young people. Although this review provided useful information, it cannot be replicated or updated at a later date as explicit and structured methods to identify, extract and appraise literature were not reported (Boland, Cherry & Dickson, 2013). Secondly, Ospina et al. (2010) conducted a rapid systematic literature review that synthesised data on: 1) the frequency of online sexual exploitation, and 2) demographic, psychosocial and behavioural factors associated with online sexual exploitation of children and young people. This systematic review identified 13 studies that were published between 2003 and 2009. Moreover, one systematic review synthesised 22 studies to establish whether fantasy driven

offenders differed from contact driven offenders (Broome, Izura & Lorenzo-Dus, 2018). More details regarding these reviews are included in Chapter 4.

Existing research on online groomer characteristics, sexual victimisation and grooming processes have generally used literature or systematic reviews to synthesis data as opposed to meta-analysis (Ospina et al., 2010; Whittle et al., 2013). This is because the research on these topics use a variety of methods (i.e., quantitative and qualitative) and data collection techniques (i.e., interviews, surveys, focus groups, observations of social media profiles and transcripts). These studies also measure various constructs (i.e., demographic, psychological, interpersonal, social and behavioural factors) using different samples, including parents, victims, professionals, children and young people in general (Baumgartner, Valkenburg & Peter, 2010; Black et al., 2015; Davidson et al., 2016; Livingstone & Helsper, 2007; Palmer 2015; Webster et al., 2012). Consequently, it is not possible to synthesise these studies using meta-analysis. Therefore, a better way to synthesise research on online grooming, perpetration and victimisation is by conducting a systematic literature review. This allows data to be synthesised in an objective manner while accounting for the heterogeneity of data collection methods, outcomes and samples used in studies (Boland, Cherry & Dickson, 2013).

Data synthesis for the PhD programme. In relation to the systematic literature review for the PhD programme, it was not plausible to conduct a meta-analysis. This is because the empirical studies included should measure the same construct and use the same data collection method, sample and control groups. However, the existing literature measures a range of variables (i.e., demographic, behavioural, psychological, interpersonal and social) using different measures, samples and designs. Therefore, a mixed-method systematic review was conducted to synthesise empirical studies on: 1) factors that relate to adolescents engaging in risky internet use, 2) victim risk, resilience and protective factors, 3) online groomer characteristics, and 4) the process involved in an adult grooming an adolescent. These topics were identified during a critical review of the literature prior to the systematic review. This approach offered more reliable, consistent, generalisable and objective conclusions in comparison to a simple literature review. This is because clear, robust and structured methods were used to identify, screen, appraise and extract data. Further details regarding the systematic reviews and methodology are included in Chapter 4.

Quantitative approaches and methods

Quantitative research refers to quantifying constructs, gathering numerical data using standardised measures and analysing data using statistical methods (Bryman, 2012). Data can be collected through observational, descriptive, correlational, quasi-experimental and experimental research designs (Clark-Carter, 1997).

Quantitative methods used in online sexual offending and victimisation research. Research investigating risk factors associated with online sexual solicitation victimisation have used quantitative methodology to collect data. Studies have determined predictors of online sexual solicitation and compared groups of sexually abused and non-abused victims (Mitchell, Finkelhor & Wolak, 2001; Muller-Johnson, Eisner & Obsuth, 2014; Noll et al., 2009). For instance, Chang et al. (2014) collected data using a questionnaire and measured variables associated with online usage, online and offline victimisation experiences and depression. They analysed the data using bivariate and logistical regressions and reported factors that increase the likelihood of adolescents experiencing online sexual solicitations. In addition, Noll et al. (2009) used t-test analysis to compare participants who experienced childhood sexual abuse, physical abuse and neglect. The results allowed an understanding of the difference, in terms of online and offline sexual behaviours, between individuals who had been abused and those who had not.

Studies exploring online sexual offender characteristics have used comparison studies to compare online groomers with offline sexual offenders, mixed offenders and non-sexual offenders (Elliot et al., 2009, 2013; Ray, Kimonis & Seto, 2013). For example, Seto et al. (2012) compared 70 online groomers with 38 contact child sexual offenders and 38 IIOC offenders. Similarly, Elliot et al., (2009) compared 505 internet sexual offenders with 529 contact sexual offenders to establish psychological and interpersonal differences. These findings provided an understanding of demographic, psychological, cognitive, social and interpersonal differences between online sexual offenders and other groups of offenders (i.e., non-sexual, adult pornography and contact sexual offenders). This evidence has contributed towards the development of theoretical frameworks that seek to explain online sexual offenders' aetiology and motivations (Middleton et al., 2009; Webster et al., 2012). It also highlighted gaps in the literature that future research should address. For example, Seto et al., (2012) reported that the literature lacked an in-depth understanding of online groomers, further

research used comparison research designs to understand the characteristics of this group of offenders. Additionally, these findings have practical relevance as clinicians, law enforcement and child protection personnel can use the information to influence the detection and treatment of sex offenders who specifically offend online (Babchishin, Hanson, & Hermann, 2011).

Quantitative data collection methods. Surveys are a common way of collecting quantitative data and this can take place online, via telephone or face-to-face (Szolnoki & Hoffmann, 2013; Vehovar & Manfreda, 2008). Surveys conducted via telephone involve researchers or marketing companies (on behalf of researchers) calling participants to gather information. Previous studies exploring children and young peoples' experiences of receiving online sexual solicitation have used this method to conduct large scale national studies (Mitchell, Finkelhor & Wolak, 2001; Walsh et al., 2013). For example, the Youth Internet Safety Study (YISS) recruited a national sample of 1,500 10 to 17-year olds who were active users of the internet via random digital dialling procedures (Mitchell & Jones, 2011). Strengths and limitations associated with this approach are discussed below.

Face-to-face interviews involve a researcher and participant being physically present at a specific time and location. Ofcom (2016) used face-to-face surveys to gather quantitative data every year between 2009 until present. These surveys were conducted with parents and children in their homes to obtain information regarding children's online usage, activities and devices used to access the internet. Similarly, Livingstone et al. (2011) conducted face-to-face surveys with 11 to 16-year olds in 25 European countries to establish children's general and risky internet usage. Using face-to-face surveys to collect data has many benefits. Firstly, Doyle (2005) suggested that face-to-face surveys, in comparison to surveys conducted via post or telephone, have the potential to gather more and complex data. This means that face-to-face surveys can be longer which creates the opportunity for researchers to ask more detailed and open-ended questions (particularly true for qualitative data). Also, unlike telephone or mail surveys, researchers can use visual aids to facilitate questions during face-to-face surveys. The researcher can also clarify any ambiguous or confusing questions, and the interviewer can clarify the participant's response which is not possible via mail or online surveys (Duffy et al., 2005; Doyle, 2005).

However, a limitation of using face-to-face surveys is the potential for interviewers to consciously or unconsciously bias the participant's response. Factors such as the environment,

the interviewer's appearance, voice and non-verbal gestures can influence their answers (Doyle, 2005). This is discussed further below. Moreover, conducting face-to-face surveys about negative and abusive online experiences with children and young people within their home environment can be problematic. For example, participants may be unwilling to share information or disclose their experiences due to a fear of being overheard by family members (McDonald & Rosier, 2011).

Online surveys generally involve a researcher disseminating a web-link to an online survey by email, face-to-face and/or advertising the study on webpages or social media (Groves et al., 2011). This method has been used in previous studies investigating online sexual victimisation. For example, Davidson et al. (2016) used this method to collect data from police officers from the United Kingdom, Netherlands and Italy. Using online surveys has many benefits. This method is cost-effective as paper copies are not required and survey building software or websites are relatively cheap or free. This method may also save time as the researcher is not required to be present to disseminate hard copy questionnaires. In addition, proximity is not an issue so a wide range of participants can be recruited from a large geographical area. Furthermore, Lee and Croft (2015) suggested that the anonymous nature of the online environment may lead young people to feel more comfortable providing data about sensitive issues. Sensitive issues can include topics that are private, intrusive, fearful, stressful, emotive or sacred (McCosker, Barnard & Gerber, 2001; Tourangeau & Yan, 2007). These can focus on financial issues, sexual preferences, health status, adverse experiences and illegal activity (i.e., substance misuse, criminal behaviours, fraud). Lee & Renzetti (1993) suggested that research on sensitive topics seem to be linked with risks and costs (e.g., negative feelings of shame and embarrassment) or negative consequences (e.g., possibility of sanctions). Therefore, participants may be reluctant to disclose information about such topics via paper questionnaires. For example, participants may fear that their responses could result in negative consequences such as third persons or parties external to the research process being informed of their illegal or personal activities. Therefore, an anonymous online questionnaire may be beneficial in collecting this type of data (Krumpal, 2013).

However, this approach is restricted to those individuals who have access to the internet and are computer literate. Therefore, the findings will not include the perspectives of those individuals who do not have access to the internet, are unable to or unwilling to use a computer. This can potentially limit and bias findings in general psychological research. However, this is

not applicable to research on online sexual exploitation as victims and offenders have access to and use the internet to be victimised or sexually offend respectively.

Quantitative methods strengths and limitations. There are advantages and limitations of using quantitative methods to collect and analyse data. Firstly, quantitative research generally uses standardised measures that collect the same data from participants. This allows researchers to collect large amounts of data and cover a range of topics in a precise, reliable and objective way. In turn, studies can be replicated due to the measures used to collect data and statistical methods used to analyse data (Brysbaert & Rastle, 2009; Rahman, 2016). Quantitative research methods can also undergo the process of falsification as objective methods are used to collect and analyse data. Popper (2005) emphasised that for a scientific theory to be credible and candid it must be falsifiable rather than merely confirmed. This should prevent weak theories from progressing within the scientific realm and allows theories to be re-tested for credibility (Brysbaert & Rastle, 2009).

Quantitative methods, specifically experimental designs allow researchers to make comparisons as treatment or condition groups can be compared with control or other groups. This enables a better understanding of the effectiveness of treatments and conditions, and may allow causality to be inferred (particularly through controlled experiments and longitudinal studies) (Clark-Carter, 1997). In addition, studies that use large samples can generalise their findings to the general population under investigation more effectively than studies that use small samples as they are more likely to generate a mean which represents the population mean (Field, 2013).

Quantitative approaches, however, also have limitations. Firstly, quantitative data that is obtained from self-reported surveys may not provide adequate or detailed information on the context/situation in which the behaviour occurs or the motivations for engaging in behaviour. Quantitative data usually also elicits restricted responses (particularly binary responses) (Clark-Carter, 1997; Robbins, 2008). Moreover, quantitative research generally involves asking participants pre-determined questions about phenomenon that is already known to the researcher (Hoepfl, 1997). Thus, it can potentially limit a comprehensive and holistic understanding of human behaviour (Patton, 2005). For example, Bergen et al. (2014) explored online sexual interactions between adults and adults, and adults and children/adolescents. They determined online sexual interactions by asking participants if they had "received a revealing

or sexual picture portraying the other person" (i.e., the adult or child/adolescent) and "did they engage in cybersex with this person". Participants answered either yes or no to these questions. These questions allowed the researchers to establish whether illegal activity with a minor had occurred, however, it limited the response as it was not clear what kind of pictures were exchanged, to what extent the participants engaged in cybersex and motivations for engaging in the behaviour. These are potential aspects/data that could be enhanced via qualitative research.

Qualitative approaches and methods

Qualitative research is generally defined as that which gathers findings about individuals' feelings, behaviours, motivations, interactions, experiences, cultural and social phenomena without the use of statistical procedures or other methods of quantification (Strauss & Corbin, 1990). Thus, qualitative data usually comprises of text and images that are analysed using qualitative data analysis methods (i.e., Thematic Analysis, Interpretative Phenomenological Analysis and Discourse Analysis) as opposed to quantitative research that uses numbers and tests data using statistical methods (Braun & Clarke, 2006; Gee, 2014; Larkin & Thompson, 2012).

Schwandt (2000) highlighted three perspectives on qualitative research, each with different approaches to understanding human behaviour: Interpretivist, hermeneutics and social constructionism. The interpretivist perspective highlights that knowledge in socially constructed and human action within the social context is meaningful. Thus, to understand a behaviour or action, the individual's intention and the context in which the behaviour or action occurs must be considered. For example, putting a hand up in the air can have different meanings in different situations. This action in a classroom may signify that a person wants to answer a question or the same action in the street may indicate someone waving for a taxi. This indicates that the same action has different meanings in different social contexts.

Furthermore, interpretivism highlights that understanding the meaning of human action requires empathic identification. This means that knowledge about motivations, beliefs and thoughts should derive from the participants' mind (Schwandt, 2003). The interpretivist perspective stresses that individuals have consciousness and are not solely governed by external social forces. They are, rather, complex beings who can understand the same

experience in different ways. Thus, qualitative research methods are used to gain more in-depth insight into the lives of participants and gain an empathetic understanding of why they believe they act the way they do. Similarly, the hermeneutic circle suggests that to understand part of an experience (i.e., a specific sentence or action), the researcher should consider the whole experience (i.e., the intentions, beliefs, motivations, language, context and practice) (Schwandt, 2003).

Social constructionism emphasises that knowledge is acquired via social processes (i.e., interactions between people) and is specific to the historical and cultural context (Schwandt, 2003). This perspective highlights micro and macro structures in language use during interactions (Berger & Luckmann, 1991; Burr, 2003; Craib, 1997). The former relates to daily interactions that take place between individuals. Whereas, macro social constructionism focuses on language that is influenced by the social environment (Burr, 2015). Importantly, the above perspectives emphasise that human behaviour is understood by determining the individual's perspective, interactions between individuals, the social structure and context in which the behaviour occurs (Young & Collin, 2004). This information can be obtained via qualitative research methods such as observations, dairies and interviews with participants. This allows researchers to gain rich, detailed and in-depth information about individual's intentions, motivations and explore a specific topic in depth (Denzin, 1989). Thus, using qualitative research methods can offer information about the context of a situation, motivations for engaging in behaviour, as well as feelings and opinions about a particular topic (Brysbaert & Rastle, 2009).

Qualitative methods used in online sexual offending and victimisation research. Research investigating online sexual offender characteristics, motivation and behaviours as well as victim risk and protective factors have used qualitative methods to collect data. Studies have used interviews and focus groups to collect data from victims of online grooming and sexual exploitation, online groomer offenders and professionals (i.e., law enforcement or practitioners) (Davidson et al., 2016; Webster et al., 2012; Whittle et al., 2014). In addition, studies have observed data via online profiles and analysed transcripts containing the interaction between a victim and offender (Kloess et al., 2015; O'Connell, 2003; Vanderhoven et al., 2014). This data provided exploratory results in relation to online sexual exploitation victimisation risk factors and online groomer typologies and grooming patterns. These results allowed a better understanding of victims' characteristics and experiences that made them

vulnerable to online sexual exploitation. Also, the findings provided an understanding of offenders' motivations to groom and sexually exploit victims. This can ultimately influence interventions that aim to detect offenders and vulnerable victims as well as address the treatment needs of offenders.

Qualitative data collection methods. Qualitative data can be collected using various methods such as interviews, focus groups, observations and transcripts of conversations. These are discussed below.

Interviews. A common qualitative data collection method is interviewing participants on a one-to-one basis and this can be conducted via telephone, online or face-to-face (Richardson, 1996). These methods have many limitations and benefits, and some of these are discussed above. Conducting interviews online and via telephone does not require the researcher and participant to be physically present. This means that participants can be interviewed from anywhere around the world providing that they have access to the internet or telephone (Cachia & Millward, 2011; Carr & Worth, 2001). This potentially broadens the ability to access a sample that is not restricted to a particular geographic location (Opdenakker, 2006). Furthermore, this approach is cost and time effective as accessing a telephone or the internet is relatively cheap and does not involve the researcher travelling to locations to meet with potential participants (Musselwhite et al., 2007).

Using telephone and online interviews has been criticised for lacking social and visual cues that can assist in building rapport and loss of contextual factors (i.e., observe the environment in which the interview is taking place) (Holt, 2010; Groves, 1979; Novick, 2008). However, studies have reported that telephone interviews are sufficient in eliciting rich data about sensitive and personal topics such as sexual identity, traumatic experiences and alcohol and substance use (Drabble et al., 2016). For example, Drabble et al. (2016) reviewed qualitative telephone interviews that were conducted with women participants, including marginalised women identifying as bisexual or lesbian. They reported that participants engaged in lengthy interviews that enabled rich data to be collected. Moreover, Drabble et al. (2016) reported that the interviewers' strategies such as building rapport, being friendly and personable through informal conversation and occasionally reciprocating information with the participants contributed to participants eliciting sensitive data. In addition, studies emphasise that perceived anonymity, increased privacy for respondents, and reduced distraction (i.e., interviewees self-

consciousness and interviewers note taking) is favourable during telephone interviews (Cachia & Millward, 2011; Lechuga, 2012).

Additionally, the presence of an interviewer face-to-face can cause the participant to respond in socially desirable ways than reporting their true feelings or opinions about a particular topic (Grimm, 2010). Research indicates that studies that investigate sensitive topics such as unsocial attitudes (i.e., racism), illegal or sexual behaviour can be influenced by social desirability (Holbrook, Green & Krosnick, 2003). For example, participants underreport socially undesirable activities and over report socially desirable ones (Krumpal, 2013). Krumpal (2013) describes how participants conform to social norms and respond in a way that portrays them in positive manner regardless of their actual attitudes and opinions. For example, participants tend to underreport socially undesirable behaviour and overreport socially desirable behaviour in an attempt to portray a more socially favourable self (Rauhut & Krumpal, 2008). Thus, it is possible that participants' accounts may not be accurate and findings may be biased. For example, offenders may downplay their sexual offending behaviour, attitudes and motivations as they may want to appear favourable.

Studies exploring online grooming and sexual exploitation victimisation and perpetration have used face-to-face interviews to collect data from professionals and victims (Webster et al., 2012; Whittle et al., 2014; Davidson et al., 2016). For example, Whittle et al. (2014) interviewed eight participants who had experienced online grooming that led to either online or offline sexual exploitation. There are many advantages associated with conducting face-to-face interviews. For example, Groves (1979) compared telephone surveys with face-to-face surveys and found that participants reported feeling more discomfort discussing sensitive topics over the telephone in comparison to face-to-face interviews. This method is rich in social cues and is synchronous, therefore, there is greater potential to build rapport, elicit more and good quality information (Opdenakker, 2006). Thus, collecting data face-to-face can result in biased findings due to social desirability (Holbrook, Green & Krosnick, 2003). However, there is also potential to make the participant feel at ease, build rapport that can, in turn, produce good quality data (Opdenakker, 2006). Thus, these findings highlight that the quality and accuracy of information collected face-to-face can be dependent on whether the discussion involves topics that are socially desirable. For example, participants may be more comfortable discussing nonacceptable behaviours via telephone to avoid face-to-face interaction.

Gathering information from participants about their sexually abusive and exploitative experiences is a highly sensitive topic and has the potential to distress participants and intrude on their privacy. Therefore, conducting one-to-one face-to-face interviews can be beneficial in obtaining sensitive, personal and intimate information from the participants as the researcher can build rapport with the victim or vulnerable young person on a one-to-one basis. Also, their anonymity and confidentiality can be maintained in a manner that may not be applicable with other data collection methods (i.e., focus groups). Additionally, conducting face-to-face interviews enables researchers to monitor participants' distress and implement strategies to ease such experiences and make them feel comfortable. For example, Warrington et al. (2016) interviewed children and young people who were survivors of child abuse about seeking appropriate help and support after their experiences. Collecting data face-to-face allowed the researchers to establish a therapeutic relationship with the participants and their families, and assess the level of distress or discomfort they experienced (and intervene when appropriate). Additionally, researchers used visual aids to assist the collection of data (i.e., play area) and participants used visual aids to indicate how they felt, and if they wanted to stop the interview or take a break. The authors emphasised that this allowed participants to feel in control of the interview process.

In contrast, conducting face-to-face interviews has limitations. In circumstances where resources and budget are limited, participants will usually include people who live close to the researcher. For example, without sufficient resources researchers may not be able to travel to various locations to conduct interviews with participants (Opdenakker, 2006). Thus, this only includes cases where the researcher and participant can meet physically at a specific time and location. However, this can be problematic as participants who are unable to meet physically, perhaps due to geographic or time constraints, will not be included in the sample (Richardson, 1996). This can restrict the sample to those who are close to the researcher and are able to meet with the researcher. Furthermore, it is common for researchers to take notes during face-to-face interviews about possible topics to discuss or elaborate on or observations made during the interview to supplement the audio recording of the interview. This may be obtrusive and distracting for the participant in a face-to-face interview, however, this would not be apparent during a telephone interview (Hennink et al., 2010; Olthann, 2016). Additionally, the interviewer's safety may be compromised when conducting a face-to-face interview, although this is dependent on the participant (i.e., prisoner) and location of interview (Olthann, 2016).

Moreover, a challenge associated with this approach is that is can be time consuming and lengthy due to the collection and analysis of data (Hennink et al., 2010).

Unstructured, semi-structured and structured interviews. Interviews can be unstructured, semi-structured or structured. An unstructured interview involves the researcher not having a fixed schedule or set of predetermined questions (Rubin & Rubin, 2011). This approach is completely flexible and is often used to explore an area that can later influence the design of empirical studies (Brannen, 2017; Clark-Carter, 1997). Although this approach is flexible, there are limitations. For instance, the conversation can deviate considerably from the original topic and there is little control over the structure of the interview (Hennink, Hutter & Bailey, 2010).

In contrast, a structured interview involves the researcher asking participants a set of predetermined questions. This approach is standardised, however, it does not allow the researcher to further explore topics that may arise during the interview. A semi-structured interview is often used to address the issue of flexibility and structure (Brannen, 2017). This method includes a set of predetermined questions, however, it allows the researcher to expand on topics of interest while maintaining some structure and guidance (Gill et al., 2008).

Studies exploring online grooming and sexual exploitation have generally used semi-structured interviews. For instance, Davidson et al. (2016) conducted semi-structured interviews with professionals involved in child protection and safeguarding to collect information about law enforcement practices, online child sexual abuse policy and procedures. They conducted follow-up interviews with nine young adults. The interviews explored their social media usage, devices used to access the internet, activities engaged in online and, online sexual and non-sexual negative experiences when they were adolescents. Similarly, Quayle et al. (2012) conducted 12 semi-structured interviews with online grooming offenders from Italy and the United Kingdom that were identified via the criminal justice system. The interviews elicited information about the offenders' behaviours, motivations and grooming processes.

Focus groups. Focus groups consist of participants selected and assembled by researchers to discuss and comment on their attitudes, beliefs, feelings and experiences on a particular topic (Powell et al., 1996). The advantage of using focus groups is that in-depth and detailed information can be gathered from a number of individuals in a short amount of time in comparison to interviews (Hennink, Hutter & Bailey, 2010). Additionally, the group

dynamic can be beneficial in eliciting data from participants. For instance, if a group is compatible and trust develops then this may result in participants feeling comfortable and sharing information (Kitzinger, 1995).

Conversely, the group dynamic may not allow some participants to express their opinions, views or thoughts because they feel shy, are unconfident, lack social, cognitive and communication skills (Gill et al., 2008; Kitzinger, 1995). The latter may be particularly true for particular groups of individuals who experience mental health difficulties, learning difficulties, are elderly and lack hearing or perceptual abilities (Barrett & Kirk, 2000; Segrin, 2000). Lastly, participants may not be willing to talk about sensitive, intimate and personal information because they do not feel comfortable, or because their information is not fully confidential or anonymous as information is shared with the group (Flick et al., 2004).

In comparison to an interview, a focus group is harder for the researcher to control as they must ensure that the conversation remains on the topic of interest, participants engage with each other, and all members have an opportunity to express their opinions, thoughts and experiences (Morgan, 1988). Additionally, it is particularly important for the researcher to identify and assemble a focus group that is reflective of the population of interest. This should involve consideration of participant characteristics such as demographic factors (i.e., gender, age, ethnicity, religion, socio-economic status), employment, level of education, views and opinions. For example, if a group is significantly heterogeneous, the difference in demographics or other characteristics may result in hugely diverse data. In contrast, if a group is too homogenous, this may result in a lack of variations in opinions or experiences. However, participants are more likely to disclose information and feel more comfortable with others when group members have similar traits and characteristics as themselves (Morgan, 1988).

Generally, collecting data using focus groups and interviews are effective in collecting data about general victimology, perpetration, grooming processes and prevention interventions (Davidson et al., 2016; Palmer, 2015; Webster et al., 2012; Whittle et al., 2014). For instance, Webster et al. (2012) conducted 12 focus groups with young people in the United Kingdom, Belgium and Italy. They were asked about online behaviour in relation to online grooming, their perceptions of risks and internet safety interventions. Studies that have used these methods have provided theoretical understanding of victim risk factors, offender behaviours and influenced prevention and intervention policies. However, gathering information via

interviews and focus groups lacks ecological validity because they comprise of an artificial setting that does not reflect a natural environment and the data produced is self-reported (Flick et al., 2004).

Observational methods. Observational methods include collecting data via observation of behaviour and interactions. This may include observing humans in their natural environment and determining if particular behaviours occur (Dyer, 1995). In the context of online behaviour, online grooming and sexual exploitation, this can include observing participant's social media profiles. For example, Vanderhoven et al. (2014) observed 1050 Facebook profiles that were publicly available to determine the type and amount of risky information adolescents were posting online, and the extent to which they protected their information using privacy settings. This approach may yield ecologically valid and valuable insight into participants' online activities and offline lives that they may not self-report via surveys, interviews and focus groups.

However, identifying or accessing online profiles of a representative sample of individuals may be problematic. This may be because some individuals will not share their profile publicly, will not post about all aspects of their lives on social media platforms, or post information that does not reflect their offline lives (Pujazon-Zazik, Manasse, & Orrell-Valente, 2012). Additionally, there are ethical issues related to obtaining information from online profiles. For example, participants do not offer informed consent to their data being used for research purposes and this may invade their privacy. However, Vanderhoven et al. (2014) reported that written informed consent from participants was waived because this would have jeopardised the reliability of the study (i.e., if participants were aware then they may have altered their online profiles). Following ethical processes where the dataset was anonymous and no personal information was recorded may be an acceptable compromise.

Transcripts. Another qualitative method used to investigate online grooming and sexual exploitation processes, victim vulnerability and offender characteristics is analysing transcripts (Black et al., 2015; Gijn-Grosvenor & Lamb., 2016; Kloess et al., 2015; Marcum, 2007; O'Connell, 2003). These document the interaction between an offender and an actual victim or an adult pretending to be a victim (i.e., decoy). Studies that analyse interactions between offenders and decoys generally obtain transcripts that are available to the public from websites such as the Perverted Justice website (www.perverted-justice.com). The Perverted

Justice website is an American non-profit group of adults who pretend to be children online. Their aim is to identify and expose offenders who groom children in chat rooms and subsequently arrange an offline meeting to sexually exploit their victim. Adult volunteers working for Perverted Justice are trained by law enforcement to create credible online profiles of children, collect incriminating evidence that can lead to a successful conviction and provide police statements. They are also trained not to approach adults or introduce sexual conversation, but rather wait until the adult approaches the decoy and allow the offender to initiate sexual conversation or an offline meeting (Garrett, 2007). This is to prove in court that the offender initiated the offence as opposed to being incited into the conversation. Therefore, these transcripts can be problematic in determining the true interaction between victims and offenders and are not truly representative of interactions between offenders and real victims.

Few studies have used transcripts that include interactions between offenders and real victims (Kloess et al., 2015). Kloess et al.'s (2015) study used 29 transcripts that consisted of an adult offender who was convicted for interacting and sexually exploiting a victim under the age of 16. They obtained transcripts from three police forces in the United Kingdom based on the inclusion criteria that the offender had committed a sexual offence under the Sexual Offences Act (2003). The aim of the study was to investigate offender characteristics and the methods offenders used to groom victims. Transcripts that include offenders and real victims have greater ecological validity as these cases reflect the true nature of conversation between an offender and victim in comparison to offender and decoy conversations (Kloess et al., 2015). For instance, decoys will continue interacting with the offender and respond positively to arranging an offline meeting to obtain evidence that can lead to a successful conviction. However, a real victim may not respond in the same way due to feeling uncomfortable or unwillingness to interact with the perpetrator. Also, in comparison to self-report measures, these transcripts may reduce bias as the offenders' account may be influenced by cognitive distortions and the victims account may be influenced by their feelings towards the perpetrator (i.e., being in love and in an intimate relationship with the offender) (Webster et al., 2015; Whittle et al., 2015).

In general, there are limitations associated using transcripts in general. For example, transcripts obtained through the police or the Perverted Justice website will include those cases that were identified, detected and/or reported and, consequently, led to convictions. Thus, cases that remain undetected, unreported or unidentified by decoys or law enforcement are not included.

Moreover, the transcripts generally only include the conversation between the offender and victim / decoy. Therefore, analysing these transcripts does not offer a holistic understanding of the victim and offender's behaviour. For example, little is known about their offline lives, social, developmental, psychological characteristics and motivations for engaging in conversation.

Qualitative methods strengths and limitations. There are many advantages of using qualitative research as well as a number of limitations. Qualitative methods allow researchers to explore phenomenon in a broad sense by considering the context, situations, individual's perspectives, feelings and thoughts. Qualitative methods generally adopt an inductive reasoning approach as opposed to a deductive reasoning approach, particularly useful when there are no previous studies exploring the phenomenon under investigation (Elo & Kyngäs, 2008). An inductive approach relates to theory and conclusions being driven by the data as opposed to pre-determined hypotheses (Feeney & Heit, 2007). Thus, this approach is considered ideal for exploratory research, forming theory and developing items for questionnaires (Hoppe et al., 1995).

In contrast, the deductive reasoning approach is based on the premise that quantitative research methods explore predetermined variables, and research hypotheses are verified and tested via the falsification process (Popper, 2005). This process can, however, limit findings and exclude important variables that may contribute to the findings as well as essential elements of the setting and context. This can be due to researchers generally reporting findings that have a p-value that is less than 0.01 or 0.05. This indicates that a particular variable is statistically significantly associated, different or a predictor of the dependant variable. Thus, variables that have a p-value of over 0.01 or 0.05 can be dismissed as an unimportant contributor to the dependant variable. Also, researchers will explore variables are that generally known to the researcher, whereas, a deductive reasoning approach can identify new variables and areas of interest (Primer, 1992).

Assessing reliability and validity is an issue because the context, situation, events, conditions and interaction between the researcher and participants cannot be controlled or replicated (Denzil & Lincoln, 2008). Secondly, this approach is time consuming as data collection, analysis and interpretation of findings can be a lengthy process (Anderson, 2010). Thirdly, qualitative research is considered more subjective in comparison to quantitative research which

is perceived objective. The analysis process can be more subjective as data collection and analysis are influenced by their experiences, thoughts, attitudes and own interpretation of the phenomenon (Clark-Carter, 1997; Richardson, 1996). Additionally, in comparison to quantitative data, qualitative data is generally not collected in a standardised, robust and objective way which minimises the likelihood of replicating the study (Denzil & Lincoln, 2008; Kvale, 1994).

Triangulation approach

Ideally using a combination of qualitative and quantitative methods, a method referred to as triangulation, to collect and analyse data should be employed where possible (Creswell, 2013). Using a triangulation of methods to explore the same phenomenon is considered a powerful method to strengthen findings and offer a more holistic and comprehensive perspective in comparison to a single methodology (Denzin, 1978). Additionally, a combination of methods allows researchers to determine the consistency of results from different sources and viewpoints. If inconsistencies or contradictions appear in the data, theoretical and methodological explanations can be provided. Conversely, if data is consistent regardless of the methodology then this may suggest that the findings can be attributed to the phenomenon rather than methodologies. Therefore, the triangulation method can provide more confidence in results and validate findings (Jick, 1979).

Using the triangulation method approach among the same set of participants allows for a more comprehensive finding as data regarding motivations, psychological, developmental and behavioural traits can be obtained. This method can provide a stronger understanding as this process allows for individual differences. Thus, combining qualitative data (i.e., accounts from interviews) with quantitative data (i.e., scores from psychometric measures) can provide information about the participants psychological traits as well as motivations for engaging in behaviour and the context surrounding the situation.

Ideally, collecting data from different perspectives using the same participants would offer a holistic understanding of their experiences, motivations, psychological, social and interpersonal traits. However, in relation to the current programme of research, this was not plausible because the second and third study used retrospective research designs. Therefore, it was not possible or difficult to obtain information about the participants internet use from their online profiles, conversations between the victims and offenders or accounts from others (i.e.,

parents, teachers, peers) about their behaviour and experiences in question (i.e., risky online behaviours, online sexual victimisation) when they were an adolescent.

In summary, using different methods to examining online grooming and sexual exploitation can provide an in-depth, comprehensive and detailed understanding of online grooming processes and victim vulnerability. For example, using both qualitative and quantitative methods can provide information about whether certain characteristics predict online sexual solicitation and exploitation, as well as obtaining information about the online grooming processes and motivations to interact with offenders and engagement in online risky behaviours.

Primary and secondary research

Studies have mainly used primary data to explore online grooming processes, sexual victimisation and perpetration, and adolescents' engagement in risky behaviours (Whittle et al., 2013; Webster et al., 2012; Finkelhor & Wolak., 2007;; Malesky, 2007; Seto et al., 2012, Wells & Mitchell., 2008). Primary data, as opposed to secondary data, collects data from original sources (e.g., interviews, surveys). Primary studies shape, develop and design a research project that addresses the research question and gains data that will answer the research question specifically. This approach can offer greater control for the researcher such as what aspects are to be explored, what sample will be used, how the data will be collected as well as the type of data. This process is time consuming, mainly due to the collection of data and can potentially be costly (i.e., preparing the data collection tools/materials) (Cheng & Phillips, 2014).

Secondary data is data that has already been collected by other sources (e.g., meta-analysis, literature and systematic reviews, articles, databases) (Bryman & Bell, 2015). Using this approach can be beneficial as secondary data is generally time and cost effective as the data is readily available and resources are not required to collect data. Also, secondary data can offer new theoretical perspectives and interpretations of data. This can be done by emerging existing data sets or reanalysing data in a way that may not have been considered during initial data analysis (Bryman, 2015). However, the issue with using secondary data is that it may not effectively answer the research question. This may be because the secondary data has been collected for a different purpose and may not address all the research aims of a study. Additionally, secondary data may have incomplete information, or it could be outdated

depending on when the data was collected (Cheng & Phillips, 2014). However, in some instances, primary data needs to be collected because secondary data is not available due to practical or ethical reasons (i.e., confidentiality).

In summary, both secondary and primary data are useful and can offer meaningful results. In relation to the PhD programme, the first part (systematic reviews) used secondary data to collate information to establish key theoretical findings as well as find theoretical and methodological gaps in this literature. The second and third part of the PhD used primary data to explore online grooming and sexual victimisation. The research programme was driven and designed according to the synthesis of secondary data.

PhD methodology

This programme of research consisted of three research stages that used different methodological approaches to investigate online grooming, sexual solicitation and exploitation, victimisation and perpetration. These are highlighted below.

Stage 1. The first stage used a mixed-method systematic review approach to synthesise data on four areas of the online sexual exploitation of children and young people. These topics were online grooming process, online groomer characteristics, adolescents' engagement in risky internet use and victim risk, resilience and protective factors. The data was searched and synthesised using systematic, robust and structured methods to reduce the chance of selection bias, and provide more reliable and valid results (Booth, Sutton & Papaioannou, 2016). Additionally, this method allows the systematic review to be replicated, if required, and updated at a later date.

The systematic review included qualitative and quantitative studies as the literature on these topics used different samples, sampling methods, qualitative and quantitative data collection tools (i.e., transcripts, interviews, focus groups and surveys) and analysis techniques. It was important to include both qualitative and quantitative studies in order to achieve a holistic and comprehensive understanding of online grooming, sexual solicitation and exploitation. For example, this approach highlighted risk factors associated with online sexual victimisation (e.g., being disabled, experiencing mental health difficulties), as well as motivations to engage with strangers online (i.e., to meet intimacy needs). Further details regarding the systematic review are provided in chapter 3.

Stage 2. The second phase of the PhD involved using a quantitative approach. This approach was deemed appropriate because the systematic review identified key variables (i.e., difficulties in regulating emotions, attachment styles and adverse childhood experiences) that required further investigation. Therefore, this study aimed to understand how the identified variables predicted online sexual solicitation and exploitation, using valid and reliable measures. This study used online surveys to collect data. Web-links were disseminated face-to-face and via student messages to University of Central Lancashire students and a website that advertised Psychology related studies. The approach was used because it was practical, cost-effective and allowed individuals from around the world to participate. Furthermore, an online survey allowed participants to complete the questionnaire without the presence of a researcher. This potentially reduced social desirability and allowed participants to answer sensitive questions about risky internet usage and online and offline sexual experiences under the age of 16 comfortably and honestly (Duffy et al., 2005; Groves, 1979). Further details about this study are included in chapter 4.

Stage 3. The third stage of the PhD consisted of a qualitative study. This approach was used as it was important to explore risk factors that contributed towards online sexual victimisation vulnerability that had not been highlighted in the existing literature. Also, this study aimed to investigate grooming processes, victims' motivations for using the internet and their engagement with the offenders. Therefore, a qualitative approach was better suited to answer these research questions. Data collection consisted of one-to-one face-to-face interviews with: 1) professionals who had encountered an online grooming and sexual exploitation case of a child (aged 16 or under) and an adult (aged 18 or over) and 2) victims of online grooming and sexual exploitation who were under the age of 16 at the time of the offence.

A one-to-one face-to-face interview approach was used to gather data for a number of reasons. Firstly, in comparison to focus groups, interviews were easier to arrange and organise. Organising a focus group would have been impractical as the participants' experiences and job roles were heterogeneous (i.e., police officers, foster carers, children home managers, psychologists and victims), and organising a specific time and location for all participants would have been problematic. Secondly, as the interviews consisted of personal and sensitive questions about adolescents' online sexual experiences with adults, it was considered appropriate to use one-to-one interviews. This allowed participants to feel more comfortable to

discuss their experiences, as well as related psychological, interpersonal, developmental and social influences. Additionally, due to the sensitive nature of the research, it was important to conduct face-to-face as the research was able to build rapport with the participants (i.e., professionals and victims), monitor potential distress (particularly victim participants) and intervene when appropriate. Further details about this study are provided in chapter 5.

CHAPTER 4

FOUR SYSTEMATIC REVIEWS EXPLORING ONLINE SEXUAL VICTIMISATION, PERPETRATION AND GROOMING METHODS

ABSTRACT

It is estimated that the prevalence of children and young people being sexually solicited, groomed and sexually exploited online is increasing nationally and globally (McManus & Almond, 2014). The available literature has proposed separate theoretical frameworks explaining the process of sexual grooming, internet sex offender aetiologies and victim characteristics. Despite this, there is a need for a holistic theoretical framework that incorporates young peoples' internet use and vulnerabilities, online groomer characteristics, and the process of online grooming in order to address the complexity of the dynamics of this form of victimisation. Thus, four mixed method systematic reviews of published empirical studies were conducted. The topic areas were: 1) factors that relate to adolescents engaging in risky internet use, 2) victim risk and protective factors, 3) online groomer characteristics, and 4) the process involved in an adult grooming an adolescent. Thirteen databases were searched using a comprehensive search strategy and 19 studies met the inclusion criteria for factors associated with risky internet use, 16 for victim risk and protective factors, 3 for online groomers and 10 for the grooming process. A narrative synthesis was used to report the findings. The Quality Assessment Tool for Quantitative Studies (Long et al., 2002) and the NICE checklist for qualitative studies (2012) was used to quality appraise quantitative and qualitative studies respectively. The results identified numerous methods offenders employ to select, groom and sexually exploit their victims (i.e., scanning the online environment for victims, aggression, using deceptive identities and validating their illegal and inappropriate behaviour). Furthermore, many factors (e.g., experiencing poly-victimisation, engaging in online and offline risky behaviours, mental health and interpersonal difficulties) increase the chance of adolescents engaging in risky online behaviours as well as being sexually victimised online. In addition, online groomers experience psychological and interpersonal difficulties (i.e., preoccupation with sex, problems with relationship stability) as well as a varying degree of cognitive distortions. The systematic review formed the basis of the PhD and the results shaped the design of the subsequent studies in the PhD programme. This is discussed below.

INTRODUCTION

There are many components that contribute to online grooming and the sexual exploitation of children and young people. This includes online grooming processes as well as online groomer and victim characteristics (Webster et al., 2012; Quayle et al., 2000). Empirical studies have investigated the psychological, interpersonal, environmental and social factors that increase the chance of: 1) online groomers sexually exploiting victims online and 2) children and adolescence being sexually solicited or exploited online (Ospina et al., 2010; Tener et al., 2016; Webster et al., 2012; Whittle et al., 2014; Wolak, Finkelhor & Mitchell, 2008). Furthermore, studies have focused on the methods and techniques offenders use to identify, groom and sexually exploit victims (O'Connell, 2003; Black et al., 2015; Quayle et al., 2012). However, little research has aimed to systematically synthesise these areas to understand offending, victim vulnerability and grooming processes holistically. Therefore, it is important to examine online grooming, sexual offending theories and consider psychological, interpersonal, social and cognitive development perspectives that relate to victim vulnerability. These findings can provide a theoretical explanation for victim vulnerability and grooming processes, inform detection and prevention interventions as well as provide recommendations for further research.

Online grooming processes and theories

Routine Activity Theory. Empirical studies and theoretical models have highlighted the preparatory, initiation, maintenance and escalation processes involved in an offender grooming and sexually exploiting a victim (Black et al., 2015; Cohen & Felson., 1979; O'Connell, 2003; Olson et al., 2007; Quayle et al., 2012; Webster et al., 2012; William et al., 2013). Routine Activity Theory (Cohen & Felson., 1979) highlighted three principles that increase the likelihood of a crime, such as online sexual offending, occurring. This theory suggested that a crime occurs when a motivated offender and a suitable victim or target converge at a specific time and space without the presence of a guardian. A lack of any of these elements can prevent a crime from taking place. A suitable victim/target is determined by four characteristics (value, inertia, visibility and access). The first characteristic, value, refers to the value of the target or object from the offender's perspective. The second characteristic, inertia, relates to the physical appearance (i.e., weight, size, shape) of a person or object that can potentially deter or impede an offenders' perception of victim/target suitability. The third characteristic is visibility which refers to the exposure of the target or victim to the offender.

The last characteristic, access, refers to the placement of the target/victim that increases the chance of the crime taking place. These factors combined determine the level of risk of a crime taking place (Cohen & Felson, 1979; Miro, 2014). Cohen and Felson (1979) provided empirical support for this theory from data that indicated changes in crime rates and trends over time. They suggested that between 1960 and 1975 reported rates of robbery, aggravated assault, forcible rape and homicide increased despite levels of education and income increasing while poverty decreased. They explained these findings in terms of changes in the structure of individuals' daily routine activities. For example, individuals who were away from home for lifestyle purposes (i.e., leisure) significantly increased the chance of personal and property crime.

Studies have utilised the Routine Activity Theory (Cohen & Felson., 1979) principles to explain the occurrence of online victimisation experiences such as fraud, online harassment, bullying and sexual solicitation (Leukfeldt & Yar, 2016; Marcum, Ricketts & Higgin, 2010; Näsi et al., 2017; Navarro & Jasinski, 2012; Wick et al., 2017). Marcum, Ricketts and Higgin (2010) collected data from 744 undergraduate university students in the United States via a survey. Participants were asked about their online victimisation experiences such as receiving unwanted sexually explicit material, unwanted nonsexual harassment and unwanted sexual solicitation (requests for online or offline sexual interaction) when they were in high school senior and college freshman year (average age of the students was 19.3 years). This study measured monitoring/guardianship by asking participants about the presence of someone else in the room during internet use and online restriction. In addition, exposure to motivated offenders was measured by asking participants about their general internet use and type of activities they engaged in (i.e., email, instant messaging, chat rooms and social networking sites) and for how long per week. Moreover, factors such as having social networking sites private, posting information online about gender or personal issues, or communicating with people met online determined the likelihood of an individual being a suitable victim. The results found that the likelihood of victimisation was greater for participants who used e-mail, chat rooms and instant messaging, and provided personal information. Additionally, monitoring presence (i.e., someone else in the room during internet use) and online restrictions reduced online victimisation. This combined, with motivated offenders who deliberately place themselves in those online environments, increased victim suitability and exposure.

The online environment itself lacks guardianship because it is relatively unmonitored and unregulated as parents and guardians do not always monitor their children's online activities and who they communicate with (Livingstone & Helsper, 2008; Mesch, 2009). Lwin, Stanaland and Miyazaki (2008) reported that 10 to 17 year old individuals' online risky behaviours and exposure to inappropriate material decreased when parents monitored their internet behaviour. Webster et al. (2012) suggested that offenders strategically place themselves in online environments where they know that children and young people congregate. They suggested that there are two types of strategic placements (i.e., short-term and long-term). Short-term placement refers to an offender gaining immediate gratification, whereas long-term placement involves the offender gaining delayed gratification.

Research has explored the type of online platforms offenders use to initiate a conversation and build a relationship with a victim that can escalate into online or offline sexual exploitation (Webster et al., 2012). Empirical studies highlighted that social networking sites, chatrooms, blogs, instant messaging, bulletin boards, gaming, dating and image exchange websites are used to sexually solicit and exploit children and young people (Berson, 2003; Malesky, 2007; Marcum, 2007; Mitchell, Wolak & Finkelhor, 2008; Quayle et al., 2014; Webster et al., 2012; Whittle et al., 2015). Moreover, child protection reports outline that newer social networking and dating apps (i.e., Grindr, Instagram and Snapchat) are also used to initiate and facilitate online grooming and sexual exploitation (Palmer, 2015). This is potentially because offenders are aware that children and young people are increasingly using these apps to communicate with others, thus, they strategically place themselves in those environments. This consequently increases their chance of encountering and initiating conversation with potential victims (Palmer, 2015; Webster et al., 2012).

Routine Activity Theory (Cohen & Felson, 1979) provides a theoretical explanation for how crime occurs, however, it has also been criticised. Firstly, this theory focuses on criminal activity at a macro-level (i.e., crime as a whole) as opposed to the individual characteristics of offenders and victims. Thus, it does not consider the extent to which the victim and offenders' motivations and individual characteristics contribute to the criminal activity (Osgood et al., 1996). Research exploring online sexual offending has determined that offenders' motivations vary as some aim to gain immediate sexual gratification while others aim to sexually offend offline (Webster et al., 2012). Additionally, perpetrators offend for different reasons such as fulfilling their intimacy deficiency or overcoming stressful situations (Clarke & Cornish, 1985;

Elliot et al., 2009; Ward & Siegert, 2002). Furthermore, some researchers argue that the Routine Activity Theory (Cohen & Felson, 1979) does not adequately address the context in which an opportunity to offend may arise (Eck, 1995).

Theory of luring communication. Olson et al. (2007) proposed a theory of luring communication after systematically reviewing multi-disciplinary literature and analysed data using a grounded theory approach (Strauss & Corbin, 1998). This theory is specific to offline grooming and explains the communicative processes of entrapment used by child sexual perpetrators to lure their victims into sexual relationships. This theory consists of four components: Gaining access, the cycle of entrapment, communicative responses to sexual acts and sexual abuse. The first phase, gaining access, is the casual factor that predicts action. This phase focuses on offenders' characteristics, victim characteristics and strategic placement (i.e., offenders place themselves in a position where they can gain access to potential victims and families). For example, offenders' psychological characteristics can relate to their motivation to engage in the criminal activity such as cognitive distortions, as well as social, cognitive, interpersonal and psychological deficits (Elliot et al., 2013; Henry et al., 2010). Victim characteristics also reflect psychological, social, interpersonal and behavioural characteristics (i.e., mental health difficulties, learning disability, conflict with parents, risky behaviours) that increase their vulnerability.

The second phase, the cycle of entrapment, referred to as the action factor and occurs once the perpetrator has gained access to the victim (Olson et al., 2007). The core concept of the cycle of entrapment phase is deceptive trust development and this is surrounded by three processes: grooming, isolation, and approach. Deceptive trust development relates to the offender giving the child attention, building trust with the child and perhaps the family. A study by Baryshevtsev, Maxim and McGlone (2018) supported this. They analysed transcripts to compare pronoun usage in instant messaging interactions among online groomers, decoys and adult romantic couples who had been in a relationship for at least 6 months. The results indicated that online groomer interactions consisted of signifantly less first person and more second person singular pronouns than decoys and adult romantic partners. They suggested that this may be due to offenders attempting to divert attention away from themselves and focus primarily on the child in order to compliment them, build trust and make them feel special. As deceptive trust develops between the perpetrator and the victim, it sets in motion the grooming, isolation, and approach phases.

The grooming process includes the offender verbally and physically desensitising the child to sexual contact. This includes showing the child IIOC, "accidentally'' touching the child inappropriately, and offering to show them how to act sexually, claiming that the process is normal and natural (Elliott et al., 1995; Lang & Frenzel, 1988). Furthermore, offenders isolate the child (by instilling fear into the child, being aggressive towards them and asking them to be secretive) and initiate the approach phase. With the groundwork for trust established, grooming takes place, and isolation becomes more prominent. Sexual approach is the final aspect of the cycle of entrapment as it is a physical manifestation of how successful the perpetrator has been in the cycle's enactment. The victim's response contributes significantly to whether a sexual act will follow. For example, if the victim expresses curiosity or anger, dissociates from reality, acts normally or sexually then the perpetrator may believe that the victim 'liked' the abuse. Whereas, if victims used force to resist then this may indicate to the offender that the victim rejected the abuse (Elliot et al., 1995). This theory suggests that as the grooming process intensifies, the more isolated from loved ones the child will become, and the more likely the perpetrator will approach the child victim. These processes all interact, weaving a web of sexual entrapment with deceptive trust by the adult at its core. The last phase is the ongoing sexual abuse of the victim which is the outcome of the process.

This theory highlights key components that can be applied to online grooming and sexual exploitation cases. Studies that have interviewed victims, offenders and analysed transcripts have supported the access and deceptive trust development stage. For example, offenders ask victims about their interests and hobbies, make them feel special and that their relationship is exclusive (Black et al., 2015; Kloess, Hamilton-Giachritsis & Beech, 2019; O'Connell, 2003; Webster et al., 2012; Whittle et al., 2014). In addition, Lorenzo-Dus, Izura & Pérez-Tattam's (2016) analysed 24 transcripts obtained from the Perverted Justice website using a Computer-Mediated Discourse Analysis approach. The transcripts involved a groomer interacting with a decoy who communicated via instant messaging. The results highlighted that offenders gained access, approached potential victims and used verbal lead-ins as requests to meet with the child offline for sexual purposes. They also entrapped victims, tested compliance, gained sexual gratification and made the child feel isolated.

Although this study provided data about the online grooming process, it has limitations. For example, the data originates from the Perverted Justice website where the victims are decoys.

Therefore, this does not reflect the interaction process between a real child victim and offender. Also, the offenders are all known to authorities which means that these findings cannot be generalised to offenders whose crimes are unreported or undetected. Despite these limitations, evidence suggests that some online sexual offenders employ strategies to gain access, create trust, test compliance to the sexual abuse similar to offline sexual exploitation.

Some components highlighted in the theory of luring communication (Olson et al., 2007) may not be applicable to the online environment in the same way they are in the offline environment. The online environment has unique features that allows offenders to be deceptive about their identity, provides perceived anonymity and direct access to the victim that can minimise detection (Hamilton-Giachritsis et al. 2017; Webster et al., 2012). In relation to the causal factor, offenders may find it easier to gain access to the victim online in comparison to the offline environment. Although some research suggests that offenders groom the victim's family and friends as well as the victim (Whittle et al., 2013), this is not the case in all online grooming cases as the online environment allows the offender to access and interact with the child directly. Offenders can also target and sexually solicit numerous victims simultaneously and pursue a conversation or sexually exploit those that respond (Webster et al., 2012).

The deceptive trust building phase may not be a key aspect in all grooming and sexual exploitation cases as sometimes the abuse takes place within seconds or minutes and offenders are clear about their sexual intentions (Webster et al., 2012). According to the theory of luring communication (Olson et al., 2007), offenders' methods to desensitise victims include inappropriately touching the victims. However, due to the lack of physical contact via online communication this does not occur online. Thus, offenders may adopt other strategies to achieve the same goal such as sending victims sexual images and introducing sexual conversations (Webster et al., 2012).

Although this theory provides a useful framework for understanding the occurrence of sexual abuse it does, however, have limitations. The theory of luring communication (Olson et al., 2007) is specific to male perpetrators who target all children (birth to 15 years). Also, this theory relates to sexual abuse that occurs in acquaintance relationships as opposed to familial relationships. Thus, this model cannot be generalised to female perpetrators or sexual abuse cases that involve a perpetrator who is part of the family. Also, this theory is specific to offline sexual abuse, however, other theories have proposed stages involved in online grooming and sexual exploitation (O'Connell, 2003; Webster et al., 2012).

Model of cybersexploitation. The model of cybersexploitation (O'Connell, 2003) highlighted the interaction process that occurs between an offender and victim online once initial contact has been made. O'Connell (2003) analysed transcripts that involved an offender and a decoy and highlighted five stages involving an offender grooming a minor for sexual purposes. The first stage refers to the 'friendship-forming stage' and this is where the offender gets to know the child by conversing with them and exchanging pictures. The second stage, the 'relationship-forming stage', is defined by the offender discussing hobbies, the child's life in general and school life with the aim to present as the child's best friend. The following stage, 'the risk assessment stage', relates to the offender assessing the location of the computer as well as other's usage of that computer for likelihood of detection. The fourth stage is the 'exclusivity stage' and this is where the offender makes the child feel special by creating trust. Lastly, sexual conversation emerges during the final stage, the 'sexual stage'.

Although O'Connell's framework offers information about the online grooming stages, it also has limitations. This framework does not account for the different online platforms and the role they play in grooming and sexual exploitation. For example, different online platforms have different features that can facilitate the identification of victims, grooming and sexually exploiting them. Social networking sites allow users to search for people and post information about themselves that can be used to groom, whereas other sites such as chatrooms or blogs may not have the same features. It is important to understand these aspects in relation to online groomers' selecting, initiating the grooming process and sexually exploiting victims. This can provide a better understanding of the strategies they use which are facilitated by the characteristics of the online environment. For example, the role of video calls may allow offenders to gain sexual gratification quicker than other methods where video chat is not available. This can provide useful information to social networking providers and internet safety campaigners that results in better detection and prevention of online grooming and sexual exploitation. However, investigating online features in relation to grooming empirically is a challenge as technology and websites are constantly evolving.

Self-regulation model of sexual grooming. Elliot (2017) proposed a self-regulation model of sexual grooming that incorporates the principles of theory of luring communications (Olson et al., 2007), the model of cybersexploitation (O'Connell, 2003) and Webster et al.'s (2012) framework of grooming (this theory is reported in greater detail in the discussion section). This theory is more universal as it can be applied to a greater range of individuals and

grooming experiences. It emphasises that the grooming process is a series of implicit and explicit goal-directed behaviours, together with the intention of preparing a target for sexual exploitation. This model has four assumptions: 1) grooming as an example of goal-directed behaviour, 2) goals can be varied, multiple and hierarchal, 3) progressing towards the goal is self-regulated and, 4) the principles of self-regulation are rooted in the control theory in the form of feedback systems. The grooming process begins with the perpetrator initiating contact with the victim and this leads to the potentiality phase which comprises of four components: Rapport-building, incentivisation, disinhibition and security management. The literature highlights that these are key components involved in an offender grooming a child or young person online for sexual purposes. For example, offenders build rapport, make victims feel special, give them gifts, disinhibit them by using sexual content to 'normalise' the sexual abuse and risk assess/security management (Malesky, 2007; Marcum, 2007; O'Connell, 2003; Webster et al., 2012). However, at present no empirical studies have been conducted to empirically validate the model.

The above empirical studies and theoretical models provide information on the preparatory, initiation, maintenance and escalation processes involved in adults grooming children and young people for sexual purposes. They demonstrate that scanning the online environment for potential victims, contacting the victim, creating deceptive trust with the victim and potential others, isolating and desensitising the victim are key components of an offender grooming and sexually abusing their victims (Black et al., 2015; Malesky, 2007; Olson et al., 2007; O'Connell., 2003; Webster et al., 2012). However, the empirical studies mainly analyse data that includes offender and decoy interactions (O'Connell, 2003; Lorenzo-Dus, Izura & Pérez-Tattam, 2016). This can limit findings, however, a small number of studies investigated the interaction process between offenders and real victims have reported similar findings.

Kloess et al. (2015) obtained 29 transcripts and police reports from 3 police forces in the United Kingdom that consisted of the interaction between an offender and real victim who was aged under 16. They reported that all offenders were males who groomed male and female victims aged between 11 and 15. The findings showed that the conversations between victims and offenders were highly sexual (i.e., offenders talked sexually, engaged in sexual behaviours and 'fantasy rehearsal') and that offenders manipulated victims to achieve compliance. Kloess et al. (2019) further reported that offenders adopted either a direct approach (i.e., highly sexualised, declared their sexual motive immediately) or indirect approach (i.e., building trust,

complimenting the vicim) to sexually exploit real victims. Studies based on decoys also highlight that these approaches, particularly sexualised conversations, flattery and manipulation, are key in the grooming process (Black et al., 2015). However, these findings are more ecologically valid and representative of actual victim and offender interactions, as opposed to offender and decoy conversations.

Very few studies distinguish between different types of offenders (contact driven or fantasy driven) or victim characteristics (i.e., age, gender) (Broome, Izura & Lorenzo-Dus, 2018; Gijn-Grosvenor & Lamb, 2016). Contact driven offenders refer to those who groom victims with the aim of engaging in contact sexual offences, whereas fantasy driven offenders groom and sexually exploit their victims solely online (Briggs, Simons & Simonsen, 2011). Gijn-Grosvenor & Lamb (2016) highlighted victim gender differences regarding grooming techniques and perpetrator characteristics. They gathered transcripts from the Perverted Justice website that consisted of 101 offenders, whose age ranged from 19 to 69, convicted of grooming children online for sexual purposes in the United States. The victims were adult Perverted Justice volunteers pretending to be a child (52 females and 49 males) aged between 12 and 15. Offenders who groomed females were significantly younger than offenders who groomed boys, and deducted less years from their actual age. The interaction time between the offender and female victims was longer than contact between offenders and male victims. This may be because offenders spent more time asking non-sexual questions and building a rapport with female victims. However, offenders' interaction with male victims generally involved gaining immediate sexual gratification, therefore, less time was spent interacting and building rapport with male victims. Offenders were as likely to send pornographic material in which they were depicted, pornographic images depicting others, and IIOC to boys as opposed to girls. However, the researchers suggested that further research is warranted to explore why these differences occur.

Offenders were also more likely to ask girls about their ages, appearance, hobbies, school, friends and friends' sexual experiences than boys. Alternatively, offenders asked boys to describe their body parts first rather than their physical appearance. Additionally, offenders told females that they loved them, liked them or thought about them more than they did to boys. Moreover, females were asked if they had a webcam, to expose themselves via webcam, talk about their first sexual experience more than boys. Similarly, offenders assessed their risk of being detected by enquiring about parents' schedules, where the computer was located and

instructed females not to tell anyone about the contact more than boys. Although this study highlights differences in grooming patterns for male and female victims, it is based on data from adults who portrayed themselves to be male or female. Transcripts that included interactions between real offenders and victims could offer more ecologically valid findings. Despite these limitations, this study emphasises that offenders' techniques and patterns differ in relation to the victim. This potentially suggests that these differences may be due to offenders' sexual preferences and motivations to sexually offend (i.e., build an intimate relationship or gain immediate sexual gratification). These findings have important implications for detecting grooming of male and female victims. For example, professionals involved in safeguarding children and young people (i.e., practitioners, teachers) should consider that female grooming experiences, in comparison to males, are more likely to include a 'romantic' element and an intimate relationship with the offender. Whereas, males are more likely to experience less intimacy and more sexualised content as part of their grooming experience.

In addition, Broome, Izura and Lorenzo-Dus (2018) conducted a systematic review that included 22 studies that examined the difference between contact and fantasy driven offenders. The findings showed that some contact and fantasy driven offenders spent time building a relationship with victims, whereas other offenders introduced sex immediately and did not pursue a relationship with non-compliant victims. This suggests that they wanted immediate sexual gratification. The findings also reported that both fantasy and contact driven offenders engaged in identity and motivation deception, risk assessment techniques, introduced sexual content, and used coercive / aggressive behaviour. Importantly, the researchers concluded that there were no clear distinctive patterns that differentiated between contact and fantasy driven offenders' grooming patterns. This can possibly suggest that grooming processes are similar regardless of the offenders' sexual aims (i.e., solely online or contact driven). Therefore, it may be difficult to establish the offenders aim based on their grooming methods.

In summary, theories have explained the processes and methods used by offenders to groom and sexually exploit a child or young person. Additionally, empirical studies have reported that offenders aim to build trust, isolate victims, offer incentives, make the child feel exclusive and loved to facilitate the grooming process (Webster et al., 2012; Whittle et al., 2013). These theories/findings have provided useful frameworks that highlight the processes involved in offenders approaching, building trust and rapport with the victim as well as maintaining sexual

exploitation. However, these theories describe processes where the offender aims to build a relationship and groom victims to fulfil their sexual desires. However, some offenders do not undergo the relationship building, deceptive trust building, isolation and compliance testing stage as they send sexual requests immediately. Therefore, these theories and frameworks are better suited towards those cases where the offender spends time grooming the victim, builds a relationship and isolates the victim in order to sexually exploit them.

These findings have provided some insight into the differences and similarities in relation to grooming victims depending on the victim's gender and offender motivation. For instance, male and female victims are groomed differently as results suggest that offenders aim to build more intimate relationships and spent more time grooming females as opposed to males. However, fewer differences were noted in regards to offender motivations to sexually exploit victims online or physically. Therefore, the components of sexual offending theories may vary depending on victim and offender characteristics. Although, in general, this body of research has focused on the interaction process between an offender and victim/decoy, it is also important to consider the influence of offender and victim characteristics on the process of sexual offending.

Online sexual offender modus operandi

The literature on online sexual offenders has highlighted three types of online sexual offenders. These are: 1) online groomers who identify children or young people, groom and sexually exploit them, those who 2) produce, distribute, possess and download indecent images of children (IIOC), and those who 3) engage in both (mixed or dual offenders) (McGuire, 2013). In the literature, the former group of perpetrators are generally referred to as "chat room offenders", "groomers" and "solicitation offenders", and the latter group are known as 'child pornography' and 'IIOC offenders' (Babchishin, Hanson, & Hermann, 2011; Briggs, Simon, & Simonsen, 2011; Seto et al., 2012; Webster et al., 2012). Many theoretical models have been developed to explain sexual offending against children and studies have identified demographic, psychological, interpersonal, social and behavioural characteristics that increase the likelihood of a perpetrator sexually offending online (Briggs et al., 2010; Elliot et al., 2013; Ray et al., 2013; Nijman et al., 2009; Ward & Siegert, 2002; Schulz et al., 2017).

Research that has focused on online sexual offender demographics has revealed that offenders are generally male and their age ranges from 18 to over 60 years old (Alsan & Edelmann, 2014; Briggs et al., 2010; Burgess, Carretta & Burgess, 2011; DeMarco et al., 2018; Kloess et al., 2015; Nijman et al., 2009; Webster et al., 2012). Lorenzo-Dus, Izura and Pérez-Tattam (2016) obtained transcripts that consisted of offender and decoy interactions and reported that all offenders were males. Moreover, data obtained from the London Offender Management Unit reported that contact only offenders were older than internet sexual offenders (i.e., offenders who assessed or possessed IIOC or used the internet to communicate and groom victims) (Aslan & Edelmann, 2014). In addition, Burgess, Carretta and Burgess (2011) collected data from cases of 101 convicted internet sexual offenders who possessed and/or distributed IIOC, and reported that offenders were all males and aged between 19 and 64.

Burgess, Carretta and Burgess (2011) reported that IIOC offending was significantly associated with contact sexual assault and solicitation of a minor online. Also, the higher the education level, the more likely the offender was to not have prior non-sexual convictions. Offenders who had a high school education or less were more likely than those with completed college to have a prior sex crime offence. Aslan and Edelmann (2014) examined 235 case files that included convicted offenders who were managed by the London Offender Management Unit. The offenders were classified into four groups and these were: 1) internet only (i.e., accessing or possessing IIOC) (n=74), contact sexual offending only (n=118), internet-contact offences (i.e., possession and distribution of IIOC, grooming and offline sexual abuse) (n=38), and online grooming only (n=5). The internet-contact offences group generally used the internet to select and communicate with identified victims, groom or instruct them in sexual activities. The results suggested that contact only offenders were more likely to be retired in comparison to internet and internet-contact sexual offenders. In addition, internet offenders were more likely to have graduated from university and to have a postgraduate degree (38%) compared to contact (4%) and internet-contact sex offenders (23%). These findings may indicate that individuals who have higher educational abilities may be better skilled at avoiding previous detection, whereas those who are less academically equipped may not acquire those skills. Also, retired offenders were more likely to engage in contact sexual offending in comparison to internet sexual offending. This potentially indicates that older people may not be as technologically aware as younger offenders, therefore, they do not use the online environment to commit sexual offences. The above studies highlight demographic characteristics that

increase the likelihood of online sexual offending. In addition to this, there are many psychological theories that explain online sexual offending (these are outlined below).

In comparison to male sexual offenders, there are a small amount of convicted female sexual offenders in the United Kingdom (Bunting, 2006; Elliot & Ashfield, 2011). However, ChildLine (a helpline for children) has reported that out of 12,268 phone calls, 17% of children reported that they had been sexually victimised by a female perpetrator. Despite a small number of female offenders being reported, they still pose a risk to potential victims (Elliot & Ashfield, 2011; Gannon & Alleyne, 2013). Therefore, it is important to understand their offending behaviours, motivations and characteristics.

Research exploring offline sexual offending has identified different types of female offenders (Elliot & Ashfield, 2011; Mathews, 1989; Nathan & Ward, 2002; Sandler & Freeman, 2007; Vandiver & Kercher, 2004; Wijkman et al., 2010). This literature has suggested that some female offenders who abuse adolescent or pre-pubescent children are sole perpetrators and in positions of power and trust (Elliot & Ashfield, 2011). Some offenders are mentally disordered and, consequently, sexually abuse a variety of different victims. Other offenders may sexually offend for commercial or financial gain. For example, these offenders may identify and gain access to victims and provide them to sexual offenders. In addition, some offenders accompany a male offender by playing an active or passive role (Bickart et al., 2019). This highlights that female offenders sexually offend for different purposes and gains (i.e., fulfil their sexual desires, financial reasons, to assist a male offender).

The literature examining female sexual offenders mainly focuses on offline sexual offending. In comparison, little research has considered female online sexual offender characteristics and motivations for offending (Elliot & Ashfield, 2011; Martellozzo, Nehring & Taylor, 2010). Even among these studies, the main focus is on IIOC perpetration as opposed to online grooming offending. There is evidence that suggests that both of these offending behaviours exist among female offenders (Elliot & Ashfield, 2011). For example, females sexually abuse victims offline and share the indecent images with their male partners online (Martellozzo, Nehring & Taylor, 2010). Also, females have used social networking sites to groom and sexually exploit victims (Elliot & Ashfield, 2011).

Martellozzo, Nehring and Taylor (2010) used 15 transcripts of post-arrest interviews with convicted female IIOC offenders, 6 experts (police and judiciary personnel) and police reports on female online sexual abuse. The results highlighted that females were the instigators and facilitators of online sexual abuse. For example, most female offenders were coerced into producing indecent images of their own children or a family member. These findings suggest that, consistent with the literature on offline sexual offending, female offenders can play a co-offending position with their male offenders and be used to gain access to child victims (Elliot & Ashfield, 2011; Vandiver & Kercher, 2004; Wijkman et al., 2010). In addition, female offenders have reported that they comply with male sexual offenders' requests as they want to please them and fear losing them. It may also be that male offenders deliberately engage with females who lack affection and have access to children (e.g., a single mother who has children and has experienced poor a childhood) (Elliot & Ashfield, 2011). This study only examined IIOC offenders, therefore, relatively little is known about female offenders who engage in online sexual abuse who are not influenced by others (i.e., male partners). Also, this study included female perpetrators who abused their own children or a family member, therefore, aspects of grooming were not included in these cases (i.e., gaining accessing and building trust).

Beech et al. (2009) interviewed 15 female sexual offenders who sexually abused children offline and they reported four implicit theories (uncontrollability, dangerous world, children as sexual objects and nature of harm). This suggests that females' cognitive distortions and motivations to sexually offend were similar to male offenders. However, female offenders differed in relation to the entitlement implicit theories. Research exploring male offenders have reported that perpetrators experience a sense of entitlement over their child victims, however, females did not report this implicit theory (Beech et al., 2009; Ward & Keenan, 1999). This suggests that most female sex offenders believe that their ability to control critical aspects of their lives is compromised. It is important to note that Beech et al. (2009) used a retrospective approach and interviewed offenders once they has been convicted and were serving their sentences. Therefore, it is not clear whether these deficits occurred during the time of the offence, thus, contributing towards to offending behaviour.

The literature has suggested that there are fewer female internet sexual offenders in comparison to male perpetrators. However, it is important to note some issues that can impact on figures. For example, females are stereotypically considered as caregivers/mothers as opposed to sexual

aggressors and victims rather than the perpetrator. This can potentially impact on detecting their sexually abusive behaviours. This makes it difficult to establish the true extent of female perpetrated online sexual abuse (Martellozzo, Nehring & Taylor, 2010). Due to a low rate of detected female sexual offenders, little research has focused on online female sexual offending. However, it is clear that (although to a lesser extent than male offenders), females do commit online sexual abuse. Therefore, it is important to incorporate female sexual offending motivations and characteristics into sexual offending theories as this can provide a better understanding of their motivations and aetiology, which can influence their treatment needs.

The Four-Preconditions Model of Sexual Abuse. The Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984) highlights that four conditions are present prior to a child being sexually abused in the offline environment. The first pre-condition emphasises that an offender is motivated to offend because they are sexually aroused by children, being emotionally satisfied by having sex with a child, normal sexual outlets are blocked and/or they become disinhibited. The second pre-condition relates to internal inhibitors such as acting on impulse, abusing substances and developing cognitive distortions (justification for their offending behaviour). Cognitive distortions can develop as a result of offenders' previous adverse childhood experiences (Howitt & Sheldon, 2007). Ward and Keenan (1999) emphasised that child sex offenders acquire implicit theories that relate to themselves, the victim and the world. Problems arise because offenders' implicit theories are maladaptive and supportive of sex with children. These implicit theories subsequently affect encoding and interpretation of future behaviours and events (Ward, 2000).

Ward and Keenan (1999) highlighted five implicit theories that account for cognitive distortions held by offenders who commit offline child sexual offences. These are that offenders view children as sexual objects, have an entitlement, perceive the world as dangerous, are unable to control their behaviour, and believe that the nature of harm inflicted on the victim is minimal. Firstly, viewing children as sexual objects refers to offenders believing that children have sexual desires and feelings, and that children can make informed decisions about sexual activity with an adult. Offenders may also believe that they can satisfy children's sexual needs. Secondly, entitlement relates to offenders believing that they are superior, more important and powerful than children, and that they can exert their control over them as well as have their sexual needs met. Thirdly, perceiving the world as a dangerous place relates to offenders thinking that other people are likely to behave in an abusive and rejecting

manner to promote their own interests. In addition, uncontrollability relates to the implicit theory that the world is uncontrollable and inexorable in its actions and, lastly, nature of harm relates to offenders believing that sexual activity is beneficial and unlikely to harm a person. This theory has not been empirically tested among online groomers. However, understanding these implicit theories in relation to their behaviour can offer explanations for their offending behaviour. For example, it may be that offenders believe that they cause less harm to a child when sexual abuse occurs online due to a lack of physical contact (Howitt & Sheldon, 2007).

The third pre-condition requires an offender to overcome external inhibitors to effectively groom and sexually abuse a child. External inhibitors relate to societal factors (i.e., neighbours) and parental supervision (i.e., lack of mother's support and family network) that can provide an opportunity for the abuser to be with the child. The model of grooming (Craven et al., 2006) outlines that an offender grooms themselves, the surroundings, significant others and the young person. The last pre-condition highlights that an offender overcomes the resistance of a victim by using threats of violence, providing gifts, giving or withholding privileges and desensitisation (Webster et al., 2012).

The Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984) provides a multi-faceted explanation for why sexual abuse occurs. It incorporates motivational, psychological (i.e., intimacy needs), situational and contextual (i.e., breakdown of a relationship, losing a job) factors to explain sexual offending. However, this framework has been criticised for being vague (Ward & Hudson, 2001). For example, the theory suggests that offenders experience psychological deficits (i.e., lack of intimacy, sexual congruence, low self-esteem) and this can lead to sexual offending against children. However, it is not clear why these factors manifest in sexual offending against children specifically as opposed to other deviant behaviours. In addition, the model lacks an understanding of the role developmental factors play in sexual offending. This is in contrast to Marshall and Barbaree's (1990) integrated theory, where developmental adversity is claimed to interact with socio-cultural factors, the onset of puberty, and opportunistic events to result in the initiation of sexual offending.

The pathways model. Ward and Siegert (2000) combined the Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984), the Quadripartite Model (Hall & Hirschman, 1992) and Integrated Theory (Marshall & Barbaree, 1990) to develop the Pathways Model (Ward & Siegert, 2002). This suggests that there are five independent etiological pathways, each with different psychological mechanisms that lead a perpetrator to sexually offend. These pathways

are intimacy deficits (perpetrators offend when they feel socially isolated and rejected), deviant sexual scripts (individuals who have cognitive distortions), anti-social cognitions (individuals who think anti-socially and have pro-criminal attitudes), emotional dysregulation (individuals who have difficulties in the self-regulation of emotions and behaviour) and multiple dysfunctional mechanisms. The latter pathway describes those individuals who have dysfunctions in all of the primary psychological mechanisms. This model is specific to offline sexual offending, however, Middleton et al. (2006) empirically tested the pathways model (Ward & Siegert, 2002) on a sample of 72 male offenders who possessed and distributed IIOC. Results showed that IIOC perpetrators were significantly more likely to experience intimacy deficits (i.e., low self-esteem and high emotional loneliness) and emotional dysregulation (i.e., impulsive, high personal distress, low empathetic concern) as opposed to the other pathways. Furthermore, Henry et al. (2010) investigated 422 perpetrators who downloaded paedophilic content from the internet and identified three groups: inadequate (low self-esteem, under-assertiveness, greater locus of control, high emotional loneliness and personal distress), deviant (high cognitive distortions, lack of victim empathy, low self-esteem, high emotional loneliness and pro-offending attitudes) and normal (no deficits except self-esteem which was slightly low). This model has not been empirically been tested to establish the pathways that lead to offenders grooming and sexually exploiting children and young people online. Research has indicated that online groomers experience deficits included in the pathways model (e.g., intimacy deficits) (Ward & Siegert, 2002; Webster et al., 2012). It may be useful to apply this model to online groomers as the findings can be used to compare their characteristics with IIOC offenders. This can ultimately develop treatment interventions for online groomers and IIOC offenders in accordance with their psychological deficits.

IIOC offender characteristics. Empirical studies have further investigated IIOC offenders' demographic, behavioural and psychological characteristics by comparing them with offline sexual offenders, mixed offenders, normative groups and adult pornography offenders (Ray, Kimonis & Seto, 2013; Elliot et al., 2009, 2013). Ray, Kimonis and Seto (2013) used a community sample of 175 participants and compared 138 adult pornography users with 37 individuals who viewed, downloaded and/or distributed IIOC. The participants were recruited via an online advert that was posted on paedophilia and sexual addiction forums. The results showed that IIOC offenders did not differ in regards to age, ethnicity, educational status and antisocial characteristics in comparison to adult pornography users. However, there were differences in relation to intimate relationships as IIOC users were less likely to have an

intimate relationship in comparison to adult pornography users. These offenders are potentially more representative of those offenders who are not detected or reported to law enforcement. Despite this, this is not a true representation of all IIOC offenders as the sample was recruited via paedophilia and sexual addiction forums. Thus, individuals who use sexual addiction and paedophilia forums are more likely to have insight into their problematic behaviour and potentially are more willing to seek help regarding their IIOC usage.

Elliot et al. (2009) compared 505 offenders who accessed, downloaded, distributed and/or produced IIOC with 526 contact sexual offenders who had sexually assaulted, raped or conducted gross indecency against children. Results showed that internet sexual offenders were significantly younger and less likely to have previous convictions relating to a sexual offence than contact sexual offenders. Furthermore, internet offenders had less victim empathy distortions, general cognitive distortions, reported less emotional congruence with children, had less externalised locus of control, were prone to overassertive reactions and are less likely to make quick cognitive decisions than contact offenders. Internet offenders reported a greater ability to identify with fictional characters compared to contact offenders.

Moreover, Middleton et al. (2006) used offenders whose index offence involved possessing and/or distributing IIOC and Henry et al. (2010) classified offenders who had more than one offence according to their most serious offence. Therefore, it is not clear that these were solely IIOC offenders due to the criteria to classify IIOC offenders. Additionally, both studies used offenders who were males, therefore, these findings cannot be generalised to female offenders who produce, distribute, possess or download IIOC. Therefore, it is unknown whether females engage in this type of sexual offending for similar or different reasons and experience similar pathways to offending. Moreover, both studies used psychometric measures to collect data from offenders. This can be problematic and bias findings as offenders may not be truthful in relation to their responses because they may want to provide socially desirable responses (Henry et al., 2010; Middleton et al., 2006). This can lead them to provide information that is not truly representative of their motivations and traits. Therefore, this can impact on the effectiveness of treatment interventions as the true mechanisms that lead to offending may not be appropriately addressed.

Although these studies have provided information about IIOC offenders' demographic, psychological and behavioural characteristics, they also have limitations. For instance, studies

have generally collected data from convicted offenders (Elliot et al., 2009; Middleton et al., 2006; Henry et al., 2010). This means that these offenders were either reported or detected by law enforcement and were successfully convicted for their sexual offending. However, the findings from these studies cannot be generalised to IIOC offenders who remain undetected or do not receive successful convictions. Furthermore, other studies have used samples of offenders who are engaging in the Sex Offender Treatment Programme (Malesky, 2007; Henry et al. 2010). This sample is problematic because these offenders are generally known to law enforcement, recognise that their behaviour is inappropriate, and are motivated to address and change it. Thus, offenders who are undetected may have different psychological, behavioural and interpersonal characteristics that contribute to them not being detected (Seto et al., 2015). Therefore, convicted and SOTP samples do not represent other groups of online sexual offenders.

Moreover, Babchishin et al. (2011, 2015) conducted two meta-analyses to synthesise the characteristics of IIOC offenders, and compare them to contact only offenders and mixed offenders. They found that, in regards to demographics, online offenders were more likely to be Caucasian and slightly younger than contact only offenders. Additionally, IIOC offenders showed greater sexual deviancy, greater victim empathy deficits and less cognitive distortions than contact only offenders. However, these findings are limited to IIOC offenders and do not include those offenders who groom and sexually abuse victims online. However, Seto et al. (2012) conducted a study that compared solicitation offenders with sexual contact and IIOC offenders. The results showed that solicitation offenders had higher academic achievement, more problems on capacity for relationship stability, higher sex drive/preoccupation and more likely to use IIOC than contact offenders. Additionally, solicitation offenders were younger at the time of conviction, less likely to acknowledge paraphilic sexual interests, had lower deviant sexual preferences and sex drive/preoccupation than IIOC offenders. Seto et al.'s (2012) results highlight differences between solicitation and IIOC offenders, however, comparison studies that include solicitation offenders are limited. Therefore, there is a need to understand this group better as the investigation of understanding internet groomer characteristics can lead to effective detection of offenders and also influence their treatment needs.

Qualitative studies have also collected data from IIOC offenders in relation to their characteristics and motivations for engaging in the criminal behaviour (Winder & Gough., 2010; Winder, Gough & Seymour-Smith, 2015). Winder, Gough and Seymour-Smith (2015)

conducted semi-structured interviews with 7 offenders whose index offence consisted of the possession and/or distribution of IIOC in the United Kingdom. The study aimed to investigate the use of language in minimising their responsibility for sexual offending. The findings indicated that offenders were motivated to use the internet for various reasons. For example, interpersonal difficulties with their partners (i.e., partner's mental health difficulties, lack of sexual relationship or affection), financial difficulties, an inability to cope with stressful situations and negative affect contributed towards their sexual offending. These findings originate from offenders who self-reported their experiences. Therefore, it is worth noting that sexual offenders may want to portray themselves in a more positive and socially acceptable manner and, thus, not report or minimise their interest sexual in children (Tan & Grace, 2008). Thus, their accounts can be biased and may not reflect their true motivations to engage in online child sexual offending. Studies have reported that some offenders' motivations for grooming and sexually exploiting children relates to compensating for loneliness and seeking intimacy (Webster et al., 2012; Schulz et al., 2017). However, few studies have explored the context and situational factors that were occurring in the perpetrator's life during their offending behaviour. Understanding this can provide a comprehensive understanding of their motivations to sexually offend. This can provide practitioners with information that can address the perpetrators' treatment needs.

Online groomer characteristics. In comparison to IIOC offenders, a small amount of literature has focused on online groomers' motivations, behavioural and psychological characteristics (Malesky, 2007; Briggs, Simon & Simon, 2010; DeLong, Durkin & Hundersmarck., 2010; Seto et al., 2012; Webster et al., 2012). Studies exploring online groomers' behaviour and characteristics have used qualitative and quantitative methodologies and used information from police reports, transcripts, interviews with offenders and victims (Briggs, Simon & Simon, 2010; Malesky, 2007; Webster et al., 2012; Whittle et al., 2014). However, the literature has generally not empirically tested or applied offline sexual offending theories such as the Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984) and the Pathways Model (Ward & Siegert, 2002) to online grooming and sexual exploitation offenders. It is important to understand these factors amongst online groomers as it can provide a theoretical understanding of their motivations and underlying mechanisms that causes them to sexually offend. This can in turn lead to the development of effective treatment specifically for online groomers.

Although the pathways model (Ward & Siegert, 2002) has only been empirically applied to IIOC offenders, there is potential evidence to support the pathways model among online groomer offenders (Ward & Siegert, 2002). Schulz et al. (2017) recruited a non-convicted sample of offenders who interacted with children and young people (aged 14 to 17) sexually online via convenience sampling using social networking sites and online communities. The sample included participants from Germany, Sweden and Finland. This study examined social anxiety, loneliness and problematic internet use among three groups of participants (those who did not interact with anyone sexually, those who interacted sexually with an adult and those who interacted sexually with a child or young person online). The results showed that participants who had sexually solicited children and young people reported higher levels of problematic internet use, social anxiety and loneliness in comparison to participants who had not engaged with others sexually online and those who engaged sexually with adults online. These results indicated that participants who sexually solicited children online may experience intimacy deficits. This study measured three variables (i.e., problematic internet use, loneliness and social anxiety) and did not include other measures like emotional regulation, anti-social and sexual beliefs and attitudes that could test the other pathways identified in the model. Thus, these findings provide support for the intimacy deficit pathway, however, it is not clear how prominent the other pathways are in relation to online solicitation and grooming offenders.

Correspondingly, Briggs, Simon & Simon (2010) used quantitative methodology and a sample of 51 male offenders who had been convicted of enticing a child into a sexual relationship by using internet communication platforms. The study adopted a retrospective design and used archival data. The sample was separated into two groups: contact-driven offenders (motivated to arrange a physical meeting for sexual activity with a child) and fantasy-driven offenders (motivated to engage in cybersex with no intention of meeting offline). The average age of offenders was 31 years old and the majority were white. The mental health evaluations showed that common mental health issues among the sample were depressive disorder (33.3%), adjustment disorder (25.5%) and substance use disorder (25.5%). Additionally, the findings showed that the most common personality disorder was avoidant personality disorder (15.5%), followed by narcissistic personality disorder (13.7%). These findings are consistent with Schulz et al.'s (2017) findings that social anxiety and loneliness were common among solicitation offenders recruited from the community. Avoidant personality disorder is characterised as disruption and difficulties in interpersonal function, feeling inadequate and social inhibition, and is strongly correlated with experiencing social anxiety (Herbert, 2007).

Thus, these findings suggest that psychological and interpersonal difficulties can provide an explanation for offender behaviours and their underlying motivations to sexually offend against children.

The findings from Schulz et al. (2017) and Briggs, Simon and Simon's (2010) provide support for the pathways model (Ward & Siegert, 2002), the implicit theories (Ward & Keenan, 1999) and the Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984). The results highlight that online solicitation and grooming offenders experience loneliness, interpersonal difficulties and avoidant personality disorder (Schulz et al. 2017; Briggs, Simon & Simon, 2010). These findings indicate that offenders experience intimacy deficits which can influence their sexual offending, consistent with the pathways model (Ward & Siegert, 2002). Furthermore, Briggs, Simon & Simon (2010) reported that narcissistic personality disorder was prevalent among online groomer and sexual exploitation offenders. Thus, this supports a component of the implicit theories (Ward & Keenan, 1999) that suggests that offenders can feel a sense of entitlement over their child victims and believe that they are superior than others. In addition, Briggs, Simon and Simon (2010) reported that substance use disorder was common among the sample of offenders. Therefore, this finding reinforces the Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984) that suggests that internal inhibitors such as substance use can lead to sexual offending. These findings potentially suggest that feeling entitlement, experiencing intimacy deficits and engaging in substance use can lead to sexual offending, specifically sexually soliciting and grooming children or young people, in the online environment.

Although Briggs, Simon and Simon's (2010) study highlighted demographic, behavioural and psychological factors that contribute to online grooming, it also has limitations. It is not clear to what extent their mental health difficulties contributed to their sexual offending. For example, it is not clear whether these mental health disorders were prevalent while offenders were engaging in their sexual offending or whether they developed these mental health issues (such as depression and anxiety) after they were caught. Also, 90% of the cases used in this sample involved a decoy as a victim, so this is not representative of cases that include actual child victims.

Online sexual offender/groomer typologies. Further research exploring online grooming and sexual exploitation offenders have classified them into groups depending on their psychological, interpersonal and behavioural characteristics. Tener et al. (2015) identified

law enforcement agencies in the United States using random stratified sampling and obtained 75 reports made by law enforcement officers. These reports related to cases that involved offenders who had been arrested in 2009 for offences relating to the internet. For example, if the offence took place over the internet regardless of whether the offender had met the victim online or offline. This data source provided details about the victim and offender dynamic that decoy-offender transcripts cannot. For example, some victims were in a 'reciprocal relationship' where they 'willingly cooperated with offenders', whereas other victims were forced or manipulated into sexual activity. They analysed the data qualitatively using grounded theory and identified four typologies: the expert, the cynical, the affection-focused, and the sex-focused. The expert group included sophisticated offenders who had more than one victim, selected their victims systematically and provided victims with incentives (i.e., money, gifts). They generally spent large amounts of time contacting victims and used more than one technique to attract victims. They acted to satisfy their own needs and did not get emotionally attached to their victims.

The cynical offenders were similar to the experts, however, they appeared less sophisticated. This group of offenders usually perpetrated alone, had one or a small number of victims, used deceptive identities, and spent less time and effort to groom their victims. Similar to the expert offenders, cynical offenders did not get emotionally attached to their victims however they exerted affection towards the victim to achieve their sexual goals. Moreover, the affection-focused group resemble the intimacy seeking offenders in the Webster et al. (2012) taxonomy. For example, this group of offenders used their true identities and appeared to have genuine feelings of love, care and affection for their victims. The sex focused offenders were characterised as those who were seeking immediate sexual gratification. This group generally presented their true identities and in most cases the victim initiated relationships, often fabricating online identities as adults interested in sexual encounters with other adults. In some of these cases, sex-focused offenders were aware that they were connecting with youth. They did not specifically look for underage victims, but rather sex partners. As opposed to the expert or the cynical, these relationships were reciprocal in that both offenders and victims were interested in sexual encounters. As opposed to affection-focused offenders, the sex focused offenders were not interested in forming intimate relationships. These typologies link offender behaviour and their motivations to sexually offend (i.e., wanting intimacy or immediate sexual gratification).

Using the same data set, Wolak & Finkelhor (2013) investigated differences between offenders who knew their victims online or offline. The results indicated that both groups had similar characteristics but differed in some aspects. Firstly, online-meeting offenders were less likely to have criminal backgrounds, including problems with drugs or alcohol, histories of violent behaviour, and prior arrests for non-sexual offences. Secondly, online-meeting offenders were more likely to be deceptive in their online communications. Thirdly, both online-meeting offenders and their victims were more likely to belong to minority racial and ethnic groups. These differences do not support the idea that crimes by online-meeting offenders are more high risk. In fact, such offenders were less dangerous in terms of their criminal backgrounds, compared with known-in-person/online offenders.

DeHart et al. (2017) examined case files that included chat logs, email threads, and social networking posts. These case files consisted of 200 offenders from 7 law enforcement task forces in America. They developed four typologies of offenders and these included cybersex offenders, cybersex/schedulers, schedulers and buyers. Cybersex offenders tended to expose themselves sexually to the victim and nearly half sought sexually explicit photos of the victim. These offenders typically mentioned meeting offline, however, did not specifically schedule a place or time. Cybersex/schedulers offenders were similar to cybersex offenders, except these offenders made specific plans to meet the victim offline. This group were also more likely to express child-specific or incest interests. Additionally, schedulers rarely exposed themselves sexually and did not commonly seek sexually explicit photos of victims. These offenders were referred to as seeking a 'hook up' which insinuates that these offenders required immediate offline sexual gratification. Buyer offenders less frequently exposed themselves sexually and the interactions typically included a financial gain for the victim.

These typologies demonstrate that online groomers have different behavioural patterns, motivations and aims for offending (DeHart et al., 2017; Tener et al., 2015). For example, some offenders will want to groom children online with the purpose of arranging an offline meeting so the abuse can continue in the offline environment. Alternatively, some offenders will fulfil their sexual needs by grooming and engaging in sexual activity with a child or young person exclusively unknown. Little existing literature focuses on the differences between these two groups (Briggs, Simon & Simon, 2010). It is possible that these groups differ regarding psychological and interpersonal traits (i.e., empathy, loneliness, cognitive distortions, preoccupation with sex). For example, offenders who abuse children online may believe that

their sexual offending is not causing harm to the child because it does not involve physical sexual contact (Howitt & Sheldon, 2007). Therefore, understanding different groups of online groomers (i.e., female offenders, contact driven or fantasy driven offenders) allows a better theoretical understanding of this type of offending and can potentially led to better identification and effective treatment of online groomers.

This section has provided an understanding of offender characteristics that contribute to the online grooming and sexual exploitation of children and young people. However, it is also important to consider the influence of children and young people's development and characteristics on their vulnerability to being sexually solicited, groomed and sexually exploited online.

Online sexual victimisation

'Victim vulnerability' refers to the "*susceptibility of certain groups of people to victimisation, through no fault of their own, but based on certain demographic or other characteristics (e.g., children, elders, women), as these people are more vulnerable to becoming victims*" (Chockalingam, 2010, p. 100). Ospina et al. (2010) conducted a systematic review of 13 studies that synthesised data from national, clinical, high school and national samples on the frequency and risk factors associated with online sexual victimisation. The results reported that demographic, behavioural (i.e., problematic offline behaviours), psychosocial, interpersonal (i.e., hostility with parents) and psychological characteristics (i.e., poor mental health) contribute to victims' vulnerability to online sexual victimisation. These factors have also been investigated using different samples and data collection methods. For example, studies have collected data via interviews, surveys and transcripts using clinical, general, student and national samples of victims as well practitioners and online grooming offenders (Davidson et al, 2016; Livingston & Helsper, 2007; Noll et al., 2009). These studies have reported that poor mental health, interpersonal difficulties and problematic offline behaviours increase the likelihood of a child or young person being sexually solicited, groomed and sexually exploited (Ospina et al., 2010).

Research has suggested that an array of psychological, physical, interpersonal and behavioural factors contribute towards victims being more vulnerable to online sexual solicitation (Ospina et al., 2012). However, there is no single risk factor that is a primary contributor to victims being sexually victimised online. Victims are a heterogeneous group, though multiple risk factors increase the likelihood of online sexual victimisation along with the reduction of

protective factors (Masten & Coatsworth, 1998; Webster et al., 2012). Some research has focused on developing typologies of vulnerable victims of online sexual solicitation (Davidson et al., 2016; Webster et al., 2012). Webster et al. (2012) collected data from 33 online groomers via interviews and 12 focus groups with young people, aged 11 to 16, in the United Kingdom, Belgium and Italy and formulated typologies of vulnerable and risk-taking victims. They reported that vulnerable victims require attention and affection, experience difficult relationships with parents and seek love online, whereas risk-taking victims become disinhibited and seek adventure. This suggests that there are different pathways to being vulnerable to online sexual solicitation, perhaps depending on potential victims and offenders psychological traits and motivations.

Davidson et al. (2016) undertook a retrospective study by conducting surveys with adults from three countries and asked them about their experiences as a child. They identified four typologies relating to online sexual victimisation: adapted, inquisitive non-sexual, inquisitive sexual and risk-taking aggressive. The adapted group represented most of the adolescents. These were the least vulnerable and least likely to receive sexual solicitations from adults online. The inquisitive non-sexual group displayed lower risk taking offline but higher online risk-taking, and had a lower chance of receiving sexual solicitations or sending sexts. The inquisitive sexual group demonstrated the highest rate of receiving sexual solicitations from adults and were more likely to meet individuals offline to engage in sexual activity. The risk-taking aggressive group, the smallest group, were more likely to be aggressive towards others online and offline, experience other forms of online and offline victimisation, and be harassed as well as perpetrate harassment. They also exhibited the highest online and offline risk taking behaviours and anti-social behaviour (i.e., issues with authority, truancy, school exclusion, drug and alcohol use). These findings provide an insight into which type of children and young people are most at risk of being sexually solicited online. Thus, this can be beneficial in determining which children and young people may require more safeguarding (i.e., education to deal with online sexual requests, professional training to identify victims) to prevent online sexual solicitation. However, this study focused on typologies based on victims receiving sexual solicitation. Therefore, it is unclear whether these typologies are applicable to victims who have been successfully groomed and sexually exploited. It is important to distinguish between victims who are sexually solicited and exploited as resources should be catered towards victims who are sexually solicited, respond and comply with the sexual requests.

Therefore, the literature would benefit from developing typologies that include victims who are sexually exploited as opposed to sexually solicited.

Research has consistently reported that adolescents who engage in internet risk taking behaviours are more likely to receive unwanted sexual solicitation, be groomed and sexually exploited (Mitchell, Finkelhor & Wolak, 2005; Whittle et al, 2014; Santisteban & Gámez-Guadix, 2017; Ospina et al., 2010). Internet risk-taking behaviours are generally interacting with strangers online, pretending to be someone different, posting personal information and photographs of self and friends, having strangers on social networking sites, visiting chatrooms and responding to stranger contact (Livingstone & Helsper, 2007; Stamoulis & Farley, 2010; Ybarra & Finkelhor, 2007; Ybarra, Finkelhor & Wolak, 2007). Wolak, Finkelhor & Mitchell (2008) used a national sample of adolescents and found that adolescents who engaged in four or more of these risk taking behaviours are 11.3 times more likely to be victimised online.

National surveys that consisted of 1,500 participants have reported that 16% of participants sent personal information, 55% posted personal information, 35% spoke to someone met online and 5% talked about sex with someone met online (Ybarra et al., 2007). Additionally, a survey consisting of European children between 9 and 16 reported that 30% of the sample communicated with someone online that they had not met offline. In addition, a smaller number (9%) had met an online contact in the offline environment (Livingstone et al., 2011). Moreover, data collected from 463 children aged 12 and 15 revealed that 11% of participants added people to their friend lists, 5% sent a photo or video and 4% sent personal information (i.e., full name, address or phone number) to someone they knew only online (Ofcom, 2016). Moreover, studies that have interviewed victims of online grooming and sexual exploitation have revealed that victims engagement in risky online behaviours was a key factor associated with victims' vulnerability. For example, Whittle, Hamiliton-Giachritsis & Beech (2014) interviewed 8 participants who were groomed online and experienced online or offline sexual abuse and found that 100% of the sample had spoken to strangers online, 75% spent long periods of time online, 38% sometimes shared personal information online and 25% had an open profile. Research has highlighted that engagement in these risky online behaviours makes children and young people vulnerable to sexual solicitation and exploitation, potentially because these behaviours increase their exposure to offenders (Livingstone & Görzig, 2014; Webster et al., 2012; Whittle et al., 2014).

Research has outlined demographics, motivations, psycho-social and psychological characteristics that relate to adolescents' engaging in these risky internet behaviours. For instance, Liau, Khoo and Hwaang (2005) investigated 1124 youths, aged 12 to 17, in Singapore. They found that older adolescents, those who used the internet more frequently (i.e., at least once a day), gave out personal information (i.e., phone number, description of hobbies, photograph), received inappropriate messages and visited inappropriate websites were more likely to meet a person face to face who they initially encountered online. Additionally, adolescents who were told by parents not to meet strangers face to face, those who told parents about receiving pornographic material and those who received internet safety advice were less likely to arrange a meeting face to face with someone they met online. Furthermore, Wolak, Finkelhor and Mitchell (2008) investigated a sample of 1,500 American adolescents aged 10 to 17 years old. They classified participants into three categories: cautious interactors (those who only communicate with friends and family), friend mediated interactors (those who also communicate with friends of friends but do not know them personally), and unrestricted interactors (those who communicate with strangers). The latter category was split into a high-risk and low-risk group depending on the number of risky online behaviours the adolescent had engaged in during the past year. Results revealed that high-risk unrestricted interactors, in comparison to cautious interactors, used the internet more frequently and reported greater offline interpersonal victimisation (i.e., bullying). Livingstone and Helsper (2007) examined offline social-psychological factors that predict adolescent online risk taking. A sample of 1,511 youths aged 9 to 19 years old were recruited from the United Kingdom. Results indicated that seeking personal advice and disclosing personal information was significantly more common among older adolescents, those who were dissatisfied with their offline lives, were skilled online and those who valued the anonymity of internet communication.

Research has highlighted adolescents' motivations for engaging in risky internet behaviours (e.g., communicating with strangers). Peter, Valkenburg and Schouten's (2005) study found that young people communicated with strangers online because they wanted to meet people and compensate for a lack of social skills. This is consistent with the social compensation hypothesis (Williams & Karau, 1991). This theory suggests that introverted individuals benefit from the internet due to anonymity and a lack of social cues which, in turn, reduces fear of rejection and increases online self-disclosure (Derlega et al., 1993). Conversely, Sheldon (2008) surveyed 172 Facebook users and found that students who viewed offline interpersonal communication as rewarding, in comparison to those who found it uncomfortable, had more

Facebook friends and initiated more online friendships. These findings are consistent with the rich-get-richer hypothesis (Sheldon, 2008). This hypothesis suggests that individuals who are not lonely and extroverted are more likely to communicate with others on the internet (Sheldon, 2008). Furthermore, Stamoulis and Farley (2010) applied the social compensation hypothesis (Williams & Karau, 1991) and the rich-get-richer hypothesis (Kraut et al., 2002) to adolescent internet risk-taking behaviours. They investigated 886 participants aged 12 to 17 years old from America, and found that a lack of engagement with extracurricular activities (particularly for boys) and spending time with friends (particularly for females) increased the likelihood of youth interacting with strangers and posting personal contact information online. Thus, these findings support the social compensation hypothesis (Williams & Karau, 1991) rather than the rich-get-richer hypothesis (Kraut et al., 2002). These findings highlight the importance of children and young peoples' motivations to engage in risky online behaviours, which can potentially be part of the reason they are targeted and sexually exploited by offenders. For example, individuals who experience social difficulties in the offline environment may resort to the online environment to form friendships and relationships (Williams & Karau, 1991). This can increase their vulnerability as some offenders deliberately target victims who appear to experience social isolation and difficulties (Tener et al., 2015).

Moreover, research shows that adolescents who experience mental health difficulties are significantly more likely to engage in risky internet behaviours. Morahan-Martin & Schumacher (2003) reported that individuals who experience mental health difficulties and loneliness use the internet more to socialise, seek emotional support, interact with others who share similar interests and share intimate secrets. Additionally, they appear friendlier online as well as pretend to be someone else. Lonely people reported that most of their online friends were known exclusively online, felt that their online friends understood them better, they opened up more to people online and that they had more fun with people they met online. This group of individuals prefer online communication rather than face to face communication and benefited from the perceived anonymity. For example, research shows that lonely internet users form friendships easier online, find online anonymity liberating and like the speed of online communication. Furthermore, individuals who experience loneliness or mental health difficulties use the internet to modulate their mood and are negatively impacted by their internet use. For example, studies show that lonely individuals go online when they were down, anxious, isolated and felt totally absorbed when online (Morahan-Martin & Schumacher, 2003).

Research also demonstrates that some victims show no vulnerability in the offline environment, whereas other victims demonstrate vulnerability in the offline environment that transitions into the online environment (Palmer, 2015). This indicates that in some cases the internet plays a significant part in children and young peoples' susceptibility to receiving sexual advances, being groomed and sexually exploited. For example, youth become disinhibited online due to a lack of visual and social cues, perceived anonymity, invisibility and identifiability. This allows adolescents to engage in risky online behaviours, interact with strangers and talk sexually in a manner that they usually would not offline (Suler, 2004). This is supported by Palmer's (2015) report that suggests that some victims of online sexual exploitation appeared shy offline yet initiated sexually explicit conversations with their abuser online.

Victim impacts

Studies have focused on the risk factors that create online sexual victimisation vulnerability. However, a limited number have investigated the impact of online sexual victimisation on individuals after this has taken place (Whittle et al., 2013, 2014; Wolak et al., 2001). Those studies that have explored this phenomenon have reported that victims experience a variety of adverse consequences. For instance, a national survey collected data from 1501 children and young people, aged between 10 and 17, reported that 72 participants reported receiving a sexual solicitation that extremely upset them and made them feel afraid (Wolak et al., 2001). A study conducted by Livingstone et al. (2011) found that children who were younger, lower in self-efficacy and sensation seeking, who did fewer online activities, had fewer skills, and who had psychological problems found online risks more harmful and upsetting.

Whittle et al. (2013) conducted a qualitative study using a sample of 6 participants who had experienced online grooming and sexual exploitation. The results showed that participants suffered psychological difficulties such as self-harm, loss of confidence, aggression and feeling of embarrassment. Furthermore, they encountered negative interpersonal relationships with their parents (i.e., lack of trust) and peers (i.e., being bullied). Additionally, participants altered their online usage after victimisation by engaging in less risky behaviours such as posting personal information and speaking to strangers online. Although this study used a small sample size, it indicates that online grooming and sexual exploitation can impact on victims' behavioural and psychological functioning negatively. These studies emphasise that negative

psychological and behavioural consequences occur as a result of on online sexual victimisation. This highlights the importance of better understanding risk factors associated with online sexual offending and victim vulnerability that can potentially lead to effective detection of victims and offenders, as well as protection of vulnerable victims.

Research has also suggested that the impact of online sexual victimisation is similar to the impact victims experience as a consequence of offline sexual abuse (Hamilton-Giachritsis et al. 2017; Palmer, 2015). Hamilton-Giachritsis et al. (2017) conducted interviews with 16 young people (aged between 15 and 19) who experienced online only or offline only sexual abuse. They aimed to explore the impact their experiences had on their psychological well-being and lives. The results suggested that victims experienced psychological difficulties (i.e., low self-esteem, self-harm, felt worthless, panic attacks, social withdrawal), difficulties sleeping and problems at school. The findings indicated that the impact of abuse did not differ between victims who were abused online or offline. However, the online sexual abuse presented with additional complexities that affected the victims and caused them to self-blame, feel angry and distressed. For example, due to the sexual exploitation involving the production of images and footage, victims felt that the materials were permanent and could be seen by a wider audience. This ultimately increased the likelihood of experiencing revictimisation and they felt that people could recognise them from the sexual pictures. The above studies highlight that online sexual victimisation, just like offline sexual victimisation, causes significant psychological, behavioural and interpersonal difficulties. Therefore, it is imperative to understand factors that create victim vulnerability so prevention can be more effective and limit the chance of children and young people experiencing online sexual abuse and the related consequences.

Rationale and aims for the systematic reviews

The existing literature has used meta-analysis, literature and systematic reviews to synthesise data on online grooming processes, IIOC offender characteristics, the difference between contact driven and fantasy driven offenders, and victim vulnerability (Broome, Izura and Lorenzo-Dus, 2018; Babchishin et al., 2011, 2015; Ospina et al., 2010; Whittle et al., 2013). Despite this, these reviews have limitations. Data synthesis relating to online sexual offenders has focused specifically on IIOC offenders as opposed to online groomers (Babchishin et al., 2011, 2015). The meta-analysis findings provided researchers with a theoretical understanding of offenders' aetiology which has provided various stakeholders with information that can lead

to the detection and effective treatment of offenders. In comparison, there is a lack of research which has synthesised data on the psychological characteristics. It is important to consider this as their needs, characteristics and motivations of online groomers may differ from IIOC offenders (Seto et al., 2012).

There has also been little research synthesising data on the methods offenders use to groom and sexually exploit children and young people. Whittle et al. (2013) conducted a literature review and identified key components that are involved in offenders grooming children and young people. These include manipulation, accessibility, rapport building, sexual context, risk-assessment and deception. However, this literature review did not use systematic methods to identify, synthesise and critically appraise literature. This can, therefore, result in biased findings as the selection, critical appraisal and extraction of the literature was not robust or structured. One literature review used systematic methods to establish differences in grooming pattern among contact driven and fantasy driven offenders (Broome, Izura and Lorenzo-Dus, 2018). Thus, the existing body of research lacks literature reviews in some areas of online grooming and sexual exploitation (e.g., online groomer characteristics) or has conducted reviews without the use of structured and systematic processes to identify, screen and critically appraise studies.

Previous literature has, however, used systematic methods to synthesise data on risk factors that increase the likelihood of children and young people being sexually solicited and exploited online (Ospina et al., 2010). This needs updating as many studies exploring this phenomenon have been published since. Moreover, this systematic review did not include protective (i.e., factors that reduce the psychological impact of the abuse) or resilience factors (i.e., factors that decrease the chance of online sexual victimisation). It is important to consider these factors in addition to risk factors in order to provide a holistic understanding of the factors which create vulnerability and those which protect children and/or buffer against the negative consequences of abuse.

In addition, the literature has reported that engagement in risky online behaviours significantly increases the likelihood of children and young people being sexually victimised online (Ospina et al., 2010). At present, no systematic reviews have been conducted on the behavioural, psychological, interpersonal, developmental and social factors that increase the likelihood of adolescents engaging in risk online usage. Therefore, it is important to synthesise data on this

topic to provide a better understanding of adolescents' characteristics and motivations for behaving in a risky manner online.

Therefore, the first phase of the PhD aimed to synthesise empirical data on: 1) the grooming process, 2) online groomer characteristics, 3) online sexual victimisation risk, resilience and protective factors and, 4) factors associated with adolescents engaging in risky internet behaviours.

The systematic review questions were developed using the PEO framework and these are included below.

> 1) What stages are involved in an adult sex offender grooming a minor on the internet that leads to physical or online sexual exploitation?
>
> 2) What are the risk, resilience and protective factors of minors who are sexually solicited, groomed or sexually exploited either physically or online?
>
> 3) What factors influence adolescents' engagement in risky internet behaviours?
>
> 4) What risk factors are associated with adult internet sexual offenders grooming and sexually exploiting minors online?

Conducting systematic reviews in these areas provided a comprehensive theoretical and methodological understanding of the available literature as well as highlighting key gaps. The results of these systematic reviews formed the foundation of the PhD phase of the research and influenced the development of subsequent empirical studies.

METHOD

Initial search

An initial search was conducted in May, 2015 to identify any existing literature or systematic reviews relevant to adolescents' engagement in risky online behaviours, the online grooming processes, online sexual victimisation of children and young people and perpetration. This search comprised of the following databases: Cochrane database of systematic reviews, National institute for health and clinical excellence (NICE), National Institute for Health Research Health technology assessment, Campbell collaboration website including the Campbell Library of Systematic reviews, PsychInfo, Google Scholar, PubMed, Academic Complete Search and Ethos. The following key terms were applied: Internet OR cyber OR social networking site* OR online AND child abuse OR sex* abuse OR sex* solicit OR sex exploit* OR groom* AND victim OR offender* AND systematic review* OR review*.

In total, the search identified four literature reviews. Two were meta-analysis reviews that focused on internet sexual offender characteristics (Babchishin et al., 2010, 2015). One review focused on the online grooming process and victim vulnerability (Whittle et al., 2013) and another synthesised data on risk factors associated with online sexual victimisation (Ospina et al., 2010). However, there are limitations with these reviews. Firstly, Babchishin et al. (2010; 2015) meta-analysis reviews focused on IIOC offenders, and did not focus on online groomers specifically. Secondly, Whittle et al. (2013) did not use transparent and rigorous methods to identify, synthesise and report findings. Lastly, Ospina et al. (2010) synthesised data on risk factors associated with online sexual victimisation, however, this review did not consider resilience and protective factors. All the above reviews would benefit from updating as new literature had been published. Thus, the systematic reviews offered an updated review of the literature that was available at the time of searching (July to September, 2015) for literature, as well as improve the rigour and transparency in the search and synthesis process.

Sexual abuse involving the internet includes online initiated or online facilitated offences. The former includes offenders using the internet to select, approach and groom victims that leads to online or physical sexual exploitation. The latter involves offenders using the internet to facilitate offline grooming and sexual abuse that has been initiated in offline contexts (i.e., street grooming, institutional, familial). These offenders use the online environment to facilitate, escalate or maintain the offence. This review focused specifically on online initiated

grooming and sexual exploitation of children and young people as opposed to online facilitated grooming. Including online facilitated instances in the systematic review would have been too broad and reduced the rigour of the systematic review as the aim was to synthesise data on a specific area to ensure the most reliable and accurate results are obtained in relation to a phenomenon (Boland, Cherry & Dickson., 2013). In addition, online sexual offenders were limited to offenders who groomed and sexually exploited victims as opposed to IIOC offenders. This is because previous reviews have focused on IIOC offending and little research has synthesised findings on online groomers specifically.

Inclusion criteria

Types of Studies. This systematic review included accessible full text papers, papers written in the English language, qualitative, quantitative, national and international studies. The research designs that were included were: randomised control trials, controlled clinical trials, non-randomised clinical trials, longitudinal studies, prospective and retrospective cohort studies, cross sectional studies, case series, case control and observational studies. Data could be collected through questionnaires, self-reports, clinical diagnoses, interviews, focus groups and transcripts of the offence.

Types of participants. The following section includes characteristics of participants and samples that were included for each systematic review.

Adolescent risky internet behaviours

This systematic review included participants who were aged 10 to 18 years and engaged in risky internet behaviours. These behaviours were: posting or sending personal information online (i.e., real name, telephone number, school name, address, age or year born or pictures of oneself); talking with someone met online; visiting chatrooms; having people in buddy list known only online; and meeting strangers offline that they first met online (Whittle at al., 2014; Ybarra et al., 2007; Ybarra & Finkelhor, 2007).

Victim risk, resilience and protective factors

Studies exploring victim vulnerability, resilience and protective factors that used samples of children or adolescents (aged under 18) who experienced online sexual solicitation and/or grooming that resulted in either physical or online sexual exploitation were included.

Online groomers

This review included participants who were adults and used the internet to identify and groom a person under the age of 18 that resulted in physical or online sexual exploitation.

Grooming process

Studies exploring the online grooming process included adult participants who groomed a person or a decoy under the age of 18 on the internet that led to actual or attempted physical or online sexual exploitation. Additionally, victims (under the age of 18 at the time of the offence) that experienced online grooming and sexual exploitation (either online or offline) and law enforcement personnel who encountered online grooming and sexual abuse cases were included. Also, transcripts that examined an adult offender grooming a person under the age of 18 for sexual purposes were included.

Types of outcome measures

The following outcome measures were considered for the risky internet use and victim risk, resilience and protective factor systematic reviews: 1) demographics, 2) internet use 3) internet safety awareness, 4) online and offline risky behaviours, 5) childhood experiences, 6) relationship with others (i.e., family, peers, partners and teachers), 7) environmental, 8) social and 9) psychological factors.

The systematic review exploring online groomer characteristics included the above outcome variables except internet safety awareness. In addition, the following outcomes measures were also considered: cognitive distortions, sexual deviancy, substance/alcohol use and prior criminal history.

Outcome variables for the grooming process were: 1) internet context (i.e., chat rooms, social networking sites), 2) factors that attracted offenders to victims, techniques and stages to groom an adolescent, and 3) the outcome of the offence (i.e., offline or online sexual exploitation).

Exclusion criteria

Studies that involved an offender forming a relationship with a victim offline that was later facilitated using the internet were excluded. Additionally, studies that included victims being groomed or sexually exploited through mobile phones (i.e., text messages) were excluded.

Thus, only studies where sexual solicitation and grooming took place online and then led to physical or online sexual exploitation were included. The inclusion and exclusion criteria can be found in Appendix 1.

Search methods for identification of studies

Thirteen databases (PsycINFO, PsycARTICLES, PubMed, MEDLINE, Academic Complete Search, Ingenta Connect, Cinahl Complete, Web of Science, SCOPUS, Embase, Science Direct, Zetoc and Ethos) were searched from July to September 2015. These databases were selected to cover a range of psychological, nursing, social work and computing literature. The search terms listed in Appendix 2 were used to search titles, abstracts and keywords of databases. Where titles, abstracts and keywords were unable to be search simultaneously, title and abstracts were searched or abstracts only.

All references were imported to and managed in RefWorks. Once the search was completed, all duplicate references were removed. To avoid risk of error, duplications were manually deleted in RefWorks. In total the search yielded a total of 46,238 records and 25,723 remained once duplicates were removed. Among these, 446 full text papers were assessed for eligibility and 398 were excluded. A breakdown of the number of papers and reasons for exclusion is included in table 1. In total, 10 studies met the inclusion criteria for the grooming process, 3 for online groomer characteristics, 19 for adolescents' engagement in risky internet behaviours and 16 for victim risk, resilience and protective factors. This is summarised in the flow diagram below.

Figure 1. *Flow of information through the different phases of the systematic reviews*

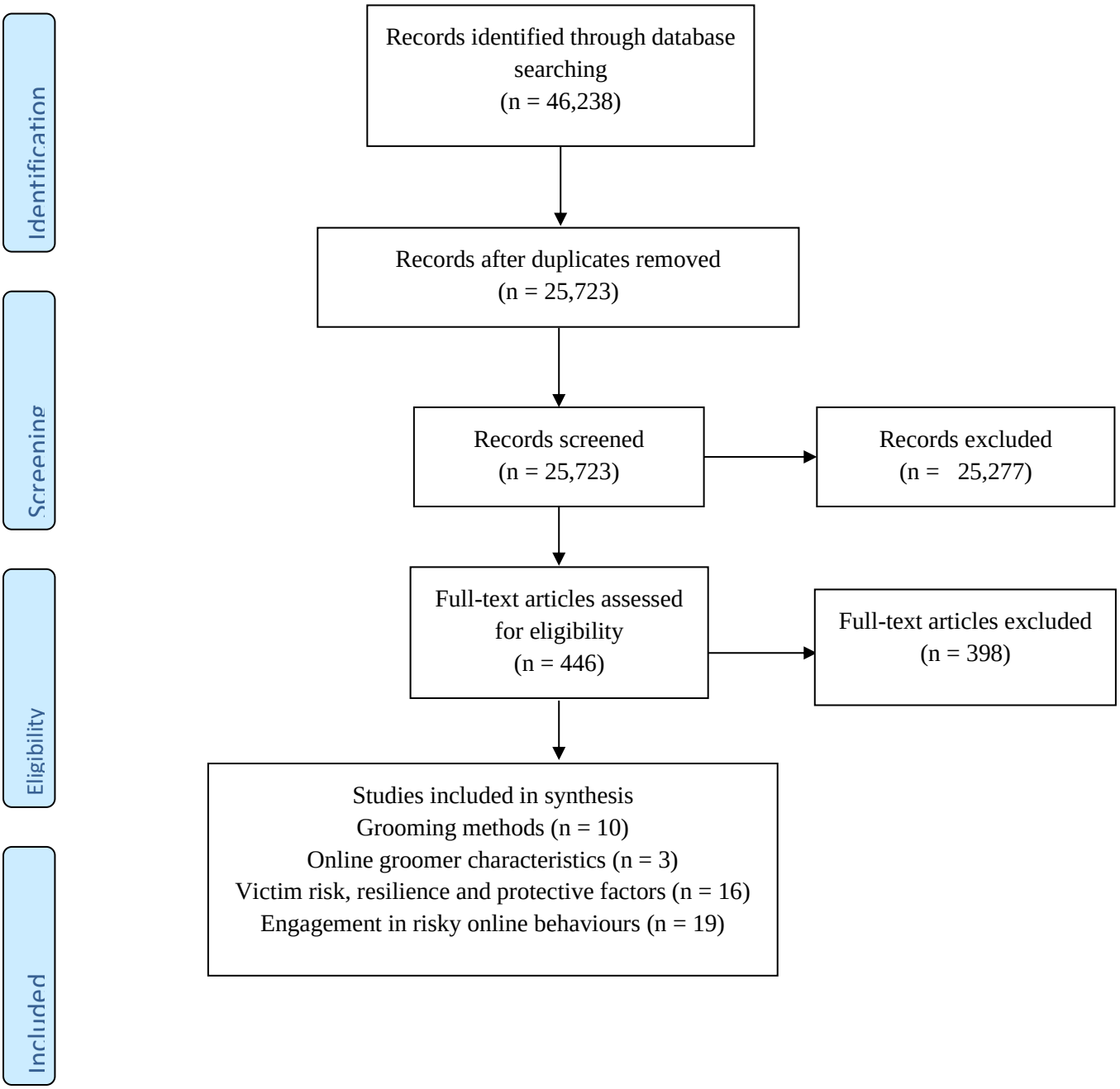


Table 1. Number of papers excluded after full text screening and reasons for exclusion

Reasons for exclusion	N of papers
Type of study	
Literature review	5
Phenomenon	
Studies investigating other forms of victimisation (e.g., online stalking, online bullying, offline sexual abuse (i.e., institutional sexual abuse, intra and extra familial)	136
Grooming was initiated via telephone	4
Studies investigated online or offline risky behaviours not included in the inclusion criteria. For example, sexual interactions offline, teenage pregnancy, sexual relationships and viewing sexually explicit material	89
Study explored fictious experiences of online sexual exploitation rather than actual sexual exploitation experiences	1
Studies did not include information on outcomes measured	23
Sample	
Sample included adults who engaged in online risky behaviours	44
Sample included adults who engaged in risky offline behaviours	6
Sample included parents of children who engaging in risky online behaviours	8
Sample consisted of contact sexual offenders	46
Sample consisted of IIOC offenders	32
Studies collected data from participants other than offenders (e.g., law enforcement)	4

Analysis

According to Noblit and Hare (1988), there are two types of syntheses: Integrative synthesis and interpretative synthesis. Although interpretative synthesis has an element of integration and vice versa, they are used for different reasons. Integrative synthesis methods (i.e., meta-analysis, content analysis, case survey, and qualitative comparative analysis) are associated with summarising data and require comparability between phenomenon (Dixon-Woods et al., 2005; Dixon-Woods et al., 2004). Alternatively, interpretative synthesis consists of narrative summary, thematic analysis, grounded theory, meta-ethnography, meta-study and realist synthesis. These methods are focused on characterising data as a whole and contribute to the development of theory and concepts (Dixon-Woods et al., 2005; Dyba, Dingsoyr & Hanssen, 2007; Mays, Pope & Popay, 2005; Whittemore & Knafl, 2005).

This systematic review aimed to synthesise findings relating to factors associated with adolescents' risky internet behaviours, online sexual victimisation and perpetration and the grooming process. To achieve these aims, an interpretative approach, specifically narrative synthesis, was used. Results are presented in 'evidence tables' that include summaries of findings from individual studies. A narrative summary analysis is appropriate as it allows synthesis of quantitative and qualitative from a diverse body of literature that uses different methodologies and measures a variety of outcomes. Additionally, this method is structured, coherent, is used to develop theory and provides theoretical explanations for findings (Dixon-Woods et al., 2006; Mays et al., 2005). In comparison to another interpretative synthesis such as meta-ethnography, narrative synthesis provides a more detailed account (Dixon-Woods et al., 2006).

Although narrative summary synthesis lacks transparency and is subjective, the more objective and transparent methods (integrative methods) of data analysis are not suitable for this systematic review (Dixon-Woods et al., 2004, 2005). For instance, to undertake a meta-analysis, the systematic review must address the same specific research question, using the same population, administer data collection in a similar way and measure the same outcomes using the same measures (Field, 2003). This systematic review collected data on different phenomenon (i.e., predictors of risk-taking, victim risk, resilience and protective factors, internet sex offenders and the grooming offence process) using different methods (i.e., cross sectional, qualitative data) that measure a variety of different outcomes (i.e., social, psychological, interpersonal and developmental outcomes). Therefore, meta-analysis was not suitable. Also, content analysis was not appropriate as this method typically categorises data and determines frequencies of categories. This does not provide an understanding of underlying theoretical phenomenon (Dixon-Woods et al., 2006). Thus, due to the heterogeneity of study methodologies and outcome measures, narrative synthesis was used to synthesise data rather than integrative synthesis methods (i.e., meta-analysis).

Data extraction

Data was extracted using pre-designed extraction forms for each systematic review. These forms were piloted using 2 papers in each systematic review and amended accordingly. The information that was extracted for the adolescents' risky internet use, victim vulnerability and online groomer systematic review included the study and sample characteristics, outcome

measures (i.e., behavioural, interpersonal and psychological factors, the authors' main conclusions, recommendations and limitations. Furthermore, the online grooming processes systematic review extracted outcomes that related to the online environment where the abuse was conducted or initiated, identification of potential victims and grooming stages. These extraction forms are listed in Appendix 3.

Quality assessment

Quality assessment tools are used to critically appraise empirical studies that have been identified for a systematic review (Boland, Cherry & Dickson, 2014). Researchers have devised many standardised quality assessment tools and checklists that assess the quality of both qualitative and quantitative research. The following section will outline and evaluate some of these assessment tools, and highlight the quality assessment tools / checklists that were used for the systematic reviews.

Quantitative critical appraisal tools. There are many quantitative critical appraisal tools that evaluate quantitative research. These are generally research design specific. For example, the Critical Appraisal Skills Programme (2017) developed separate quality checklists for different study designs/methodologies. These are randomised control trials (RCTs), cohort studies, case control studies, economic evaluations, diagnostic studies, qualitative studies and clinical prediction rule. These assessment tools broadly assess the appropriateness of the methodologies used. For example, the RCT quality assessment tool contains questions specific to RCT methodology such as how valid the trial was, were participants randomly allocated to treatment conditions, dropout rates and if researchers and participants were blind to the conditions. Also, the assessment tools assess the validity and precision of the findings and generalisability. Similarly, the Cochrane Collaboration designed a tool for assessing risk of bias that was designed to evaluate RCTs. This quality assessment includes sections on sequence generation, allocation concealment, blinding of participants, personnel and outcome assessors, incomplete outcome data, and selective outcome reporting components.

The Critical Appraisal Skills Programme (2017) assessment tools and Cochrane Collaboration risk of bias tool cannot be applied to the studies identified in the systematic reviews. This is because the identified quantitative studies used a variety of different research designs (i.e., cross-sectional, observational, longitudinal, case control and comparative). Thus, it is important to use an all-inclusive quality assessment tool that considers different types of quantitative research designs. Deeks et al. (2003) evaluated 182 quantiative assessment tools

and identified 6 tools that are suitable for use in systematic reviews that include non-randomised studies. The first tool, designed by Cowley (1995), covers studies that use RCTs, comparative studies and uncontrolled case series. Deeks et al. (2003) suggested that this tool included items relating to reporting and methodological quality, however, validity and reliability of the tool was not reported nor guidance for completion. The second tool, the Newcastle-Ottawa Scale (Wells et al., 2012) is used to critically appraise cohort and case control studies. This tool contains three sections: 1) selection of study groups, 2) comparability of groups, and 3) ascertainment of exposure/outcome. Deeks et al. (2003) suggested that this tool is appropriate for a systematic review and easy to use.

The third tool developed by Downs and Black (1998) assesses the methodological quality of randomised and nonrandomised studies. It consists of 27 questions that measure study quality using four sections. These sections are reporting, external validity, internal validity (bias and internal validity) and confounding factors. Deeks et al. (2003) suggested that the tool was fairly comprehensive, easy to use and provides clear descriptions of how to score items. The tool authors found that the validity and reliability of the tool is reasonably high and is relatively quick to complete (10 to 20 minutes). However, a large number of questions relate to reporting as opposed to validity.

The other tools (e.g., Reisch et al.,1989; Thomas et al., 2004; Zaza et al., 2000), evaluate studies that use any designs. Reisch et al. (1989) lists a total of 57 items grouped into 12 categories including study design, sample size, randomisation and comparison groups. The response options include ‘yes’, ‘no’, ‘unclear or unknown’, and ‘not applicable’. Deek et al. (2003) suggested that some of the criteria are too specific to pharmaceutical studies and would require modification for more general use. Additionally, they suggested that using the tool is lengthy, however, deemed it appropriate to use in a systematic review.

Moreover, Zaza et al.’s (2000) quality assessment tool consists of 22 items that are grouped into six categories: descriptions, sampling, measurement, data analysis, interpretation of results and other. This tool provides detailed instructions for completion and cross-referencing to other parts of the data extraction form. However, Deek et al. (2003) suggested that some of the items may be too generic and difficult to interpret, and that the tool is generally time-consuming. Furthermore, the ‘quality assessment tool for quantitative studies’ (Thomas et al., 2004) was developed to assess the methodological quality of studies. It aims to cover any study design and includes 21 items separated into eight components: selection bias, study design,

confounders, blinding, data collection methods, withdrawals and dropouts, intervention integrity and analysis. Each component is rated as strong, moderate or weak except for the latter two. Those with no weak rating and at least four strong ratings were considered strong. Those with less than four strong ratings and one weak rating were considered moderate. Finally, those with two or more weak ratings were considered weak. Deeks et al. (2003) found it easy to use, taking 10 to 15 minutes to complete, with a comprehensive guide for completion provided. Furthermore, Thomas et al. (2004) reviewed 25 systematic reviews relating to public health that used the quality assessment tool for quantitative studies to evaluate inter-rater reliability and content and construct validity. The tool showed that construct and content validity was acceptable and test-retest reliability indicated agreement for two reviews was 0.74 and 0.61 respectively (Thomas, et al., 2004).

According to Deeks et al. (2003), all the assessment tools have flaws, however, they are reliable and valid. The 'quality assessment tool for quantitative studies' (Thomas et al., 2004) incorporates different study designs, is easily accessible, can be used straight away, comes with a guide on scoring and is a valid and reliable tool (Thomas et al., 2004). Therefore, the quantitative studies identified in this systematic review were quality assessed using this framework. The intervention integrity is not particularly relevant to the literature on OCSE as the studies do not test interventions. Thus, this part of the quality assessment was not used.

Qualitative critical appraisal tool. There are a number of quality assessment tools that were developed to critically appraise qualitative research for systematic reviews such as the Joanna Briggs Institute (JBI) Tool, the Critical Appraisal Skills Program (CASP) tool, and the Evaluation Tool for Qualitative Studies (ETQS) (Long et al., 2002) and the NICE Checklist for Qualitative Studies (2012). The JBI is a 10 item checklist that includes questions on the research methodology and objectives, data congruity between the research methodology, collection methods, analysis and interpretation of results, theoretical and cultural perspectives, researchers influence, participant representations and ethical considerations. Each item is rated either 'yes', 'no', 'unclear' or 'not applicable' and given an overall rating of 'include', 'exclude' or 'seek further information'. Furthermore, the CASP tool is also a 10 item checklist. The first two questions are screening questions that relate to the aims of the research and the appropriateness of using qualitative methodology. The remaining questions relate to research design, recruitment strategy, data collection, relationship between the participant and researcher, data analysis and ethical considerations. Each item is rated either 'yes', 'no' or 'can't tell'. This checklist does not provide a scoring system as the authors suggested that it is

designed for educational pedagogic tools as part of a workshop setting. Moreover, the ETQS (Long et al., 2002) includes sections on phenomenon studied and context, data collection, analysis and potential researcher bias and policy and practice implications.

Hannes et al (2010) compared the JBI tool, the CASP tool, and the ETQS tool using the following criteria: theoretical frameworks; appropriateness of the research design; the procedures for data collection, data analysis, and the reporting of the findings; the context of research; the impact of the investigator; believability; ethics; adequacy of the conclusions; and value/implications of the research. Hannes et al. (2010) suggested that these tools are broadly applicable to different qualitative research designs, are available online, ready to use, free of charge and are developed by organisations outside of academia (Hannes et al., 2010). However, results revealed that CASP is not good at evaluating the quality of qualitative studies as it lacks interpretative, theoretical and evaluative validity. Furthermore, the JBI checklist is coherent in comparison to the other three quality assessment tools, however, lacks assessing generalisability. In addition, Hannes et al. (2010) suggest that the ETQS is an appropriate qualitative quality assessment tool as it addresses data collection and analysis, generalisability, reporting of findings, theoretical, context, methodological, evaluative and descriptive validity.

Another tool used to quality assess qualitative research is the NICE checklist for qualitative studies (2012). This tool includes sections relating to theoretical approach, design, data collection, trustworthiness, analysis and ethics. The sections are graded using the following criteria: ++ (all or most of the checklist criteria has been fulfilled, + (some of the checklist criteria has been fulfilled) and – (few or no checklist criteria has been fulfilled. This assessment tool has been used to quality assess medical research (Morton et al., 2017). For example, Morton et al. (2017) synthesised 30 qualitative papers that examined the experiences of patients and healthcare professional using digital interventions for chronic physical health conditions (i.e., hypertension, asthma and heart disease). This tool includes important elements for assessing qualitative research therefore this systematic review used the NICE checklist for qualitative studies to critically appraise qualitative studies.

RESULTS AND DISCUSSION

Victim risk, resilience and protective factors results

A total number of 16 studies met the inclusion criteria for risk, resilience and/or protective factors associated with children and young people being sexually victimised online. Among the identified studies, 13 studies investigated online sexual solicitation and 4 studies included aggressive sexual solicitations. Moreover, 1 study involved online and offline sexual exploitation. In addition, 1 study investigated resilience factors and 1 included protective factors.

The studies identified in the systematic review were published between 2001 and 2014. Fourteen studies used quantitative research methods and 2 used qualitative methods. The majority of studies were conducted in the United States (n = 10). One study was conducted in Croatia, 1 in Estonia, 1 in Europe, 1 in Switzerland, 1 in Taiwan and 1 in the United Kingdom. The studies included national (n = 11), high school (n = 1), child protection (n=1) and social services / police (n = 1) samples. Additionally, 1 study gathered data from European children and another from Estonian children.

Among the identified studies, 9 used random sampling, 2 used random stratified sampling and 1 used stratified sampling. A further 4 did not report the sampling methods, however, it appears that convenience sampling was used. Moreover, 1 study used a longitudinal research design, 11 were cross-sectional and 4 did not report the research design. In relation to the studies that did not report the research design, it appears that a cross-sectional research design was used. Information relating to the samples, sampling and research design are included in table 2.

A range of data collection methods were used to collect data from participants. The studies collected data via qualitative essays, paper and pen and telephone questionnaires/surveys. This information is reported in Table 3.

Table 2. Information relating to the sample, sampling methods and research design used in studies that investigated risk, resilience and protective factors associated with online sexual victimisation

Samples	N of studies	Sampling	N of studies	Research design	N of studies
High school	1	Random	9	Cross sectional	11
National	11	Stratified random	2	Longitudinal	1
Child protection	1	Stratified	1	Did not report**	4
Social services / police	1	Did not report	4		
Estonian children	1				
European children	1				

*These studies did not explicitly report their sampling strategy, however, it appears that convenience sampling was used

** These studies did not explicitly report the research design, however, it appears that cross-sectional research design was used

Table 3. Data collection methods used in studies that investigated risk, resilience and protective factors associated with online sexual victimisation

Data collection methods	N of studies
Paper and pen questionnaire	2
Interviews and questionnaire	2
Interviews	3
Questionnaire / survey	2
Telephone interview survey	7

The number of participants included in the identified studies ranged from 8 participants to 15,619. The proportion of participants who experienced online sexual solicitation, aggressive sexual solicitations and sexual exploitation is reported in Table 4. In some studies, it is not clear who they were sexually solicited by (i.e., adults, peers, acquaintances, offline friends, family or relatives), whereas some studies reported that adults were the solicitors. Furthermore, the studies reported that online sexual victimisation occurred in the following online environments: blogs, gaming sites, chat-rooms, dating sites, chat sessions/instant messaging, social networking sites. Six studies did not report where the online victimisation took place.

Table 5 includes details of the identified studies. These are the aims of the study, country where the data was obtained, sample characteristics, study characteristics, author(s) key findings, main conclusions, limitations, and recommendations for practice and future research.

Table 4. Proportion of participants who experienced online sexual victimisation in each study sample

Study	Online sexual solicitation*	Online aggressive sexual solicitation*	Online sexual exploitation
Chang et al. (2014)	31% (n=240) (total n = 2315)		
Flander, Cosic & Profaca (2009)			28% (n=620) (total n=2199)
Livingstone & Görzig (2014)	15% (2214) (total n=15,619)		
Mitchell, Finkelhor & Wolak (2001)	19% (total n=1501)		
Mitchell, Finkelhor & Wolak (2007)	9% (n =137) (total n=1500)		
Mitchell, Wolak & Finkelhor (2008)		2% (n=23) (total n=1484)	
Mitchell, Ybarra & Finkelhor (2007)	19 % (n= 284) (total n=1501)		
Mueller-Johnson, Eisner & Obsuth (2014)			Disabled 23.51%, able bodied 17.88% (total n=674)
Noll et al. (2009)	40% (total n=173)		
Soo, Ainsaar & Kalmus (2012)	13% approached without being disturbed, 6% were disturbed (total n=780)		
Wells & Mitchell (2008)		13.3% (total n=1500)	
Wells & Mitchell (2014)	No special education 0.5% (n=8), special education0.9% (n=14) (total n=1560)		
Wolak, Finkelhor & Mitchell (2008)		13.3% (total n=1500)	
Ybarra, Leaf & Diener-West (2004)	Males 12% (n= 94), females 27% (n =189) (total n=1501)		

* Online sexual solicitation refers to a perpetrator requesting a victim to engage in sexual activities, talk sexually or give personal sexual information. Online aggressive sexual solicitation refers to sexual solicitations involving perpetrators eliciting offline contact through regular mail, telephone or in person or requests for offline contact. These definitions were extracted from studies that used the YISS.

Table 5. Studies investigating risk, resilience and protective factors associated with children and young people being sexually victimised online

Study	Country (where data was obtained)	Objective	Sample characteristics	Study characteristics	Key findings and main conclusions	Author(s) limitations and recommendations
Chang et al. (2014)	Taiwan	To examine factors associated with the unwanted exposure to online pornography and unwanted online sexual solicitation victimisation and perpetration in youth in Taiwan	**Sample:** High school students **All participants:** 2315 Age: NR 10th-11th grade Gender: NR Ethnicity: NR Sexuality: NR **Type of abuse:** Online sexual solicitation 11th grade: 31% n = 240 **Abused by:** NR	**Design:** Longitudinal **Sampling:** Random **Data collection:** Paper and pen questionnaire **Dates:** 2010 (wave 1) 2011 (wave 2) **Comparators:** Sexual solicitation vs no online sexual solicitation **Analysis:** Bivariate and multiple logistic regressions **Measures:** Online sexual solicitation perpetration (2 items), online game use (1 item), chat room use (1 item), pornography media exposure (7 items), cyberbullying victimization (4 items), cyberbullying perpetration (4 items), offline sexual harassment perpetration (1 item), smoking (1-item), depression (20-item scale - Centre for Epidemiologic Studies Depression Scale) **Internet environments:** Games, chat room	**Key findings:** 1) Being male, higher levels of online game use, pornography media exposure, internet risk behaviours, depression and cyberbullying victimisation and perpetration were related to online sexual solicitation. **Main conclusions:** 1) Males had higher internet risk behaviours and spent more time playing online games and in chat rooms, which probably provided more opportunities for involvement in online pornography exposure and sexual solicitation.	**Limitations:** 1) Social desirability bias may influence the accuracy of participants' reports. 2) Approximately one-fifth of the parents and students refused to participate in this study, which could mean these students may be at higher risk of victimisation. 3) One-fifth of the students dropped out of the follow-up survey. **Recommendations:** 1) The results suggested that youth should be protected from online sexual predators through technological (i.e., filtering, blocking or monitoring software), psychoeducational and legal strategies.

Flander, Cosic, & Profaca (2009)	Croatia	To determine the prevalence of children and youth exposure to sexual content and inappropriate sexual questions on the internet, and to identify emotional and behavioural reactions of children after such exposures.	**Sample:** National **All participants:** 2,880 Age: 10 – 16 (m = 12) years Gender: Male = 78%, female = 67% Ethnicity: NR **Type of abuse:** Sexual advances n = 620 28% males n = 227, female n = 279 **Abused by:** NR	**Design:** NR **Sampling:** NR **Data collection:** Paper-pencil questionnaire **Dates:** April - June 2004 **Comparator:** None **Analysis:** Chi-square tests **Measures:** Demographics, unwanted exposure to sexual material, behavioural and emotional reactions **Internet environment:** Chat sessions	**Key findings:** 1) Females (35%) were more frequently asked about intimate details than boys (23%). 2) Females more commonly received questions related to masturbation and clothes, for example "what is the size of their bra, what they sleep in, if they wear thongs". 3) Medium-aged (aged 13–15) participants reported being more frequently asked private questions. **Main conclusions:** Findings are consistent with previous literature that shows girls are more often the target of chat sessions.	**Limitations:** 1) Since participants completed the questionnaire themselves, the possibility of not responding to some questions or vagueness of responses was high. 2) Little information has been collected on the content which participants viewed, the frequency of exposure and course of activities which had led to that exposure. **Recommendations:** Future research should develop measures relating to emotional reactions and the survey methodology should be synchronised with standard methods of measuring stress intensity, including cognitive estimate of the source of stress.

Livingstone & Görzig (2014)	Europe	Report new findings on the incidence of risk and the associated experience of harm reported by children and adolescents aged 11–16, regarding receipt of sexual messages on the internet.	**Sample:** European children **All participants:** 15,619 Age: 11–16 year olds Gender: Male = 50%, Female = 50% **Type of abuse:** Receiving sexual messages online n = 2214 15% **Abused by:** NR	**Design:** NR **Sampling:** Random stratified **Data collection:** Interviews and questionnaires **Dates:** Spring and summer 2010 **Comparator:** None **Analysis:** Multi-level hierarchical logistical regression analysis **Measures:** Demographics (age, gender), sensation seeking (2 item version of the Sensation Scale Form V), psychological difficulties (16-items SDQ), online activities (17 options), risky online activities, risky offline activities (5 options) **Internet environment:** NR	**Key findings:** 1) Age (older), psychological difficulties, higher sensation seeking and risky online and offline behaviour were associated with children receiving sexual messages online. **Main conclusions:** 1) The findings on the relations among risk behaviours and their association with demographic and personality factors support the assumption that a common factor underlying diverse adolescent risk behaviours might affect the occurrence of any particular risk (i.e., sexual messages). 2) Adolescents who are older as well as those with psychological difficulties and higher sensation seeking tendencies are more likely to take risks offline and online. This can consequently increase their likelihood of receiving sexual messages online. 3) The incidence of sexual victimisation risk across the population is fairly small.	**Limitations:** 1) The results of this study should be triangulated with results that do not rely on self-reported effects of sexual messaging. **Recommendations:** 1) Further factors need to be examined such as adolescents' level of sexual maturity, their parental values and norms, and practices of communication within specific peer groups or subcultures. 2) The focus of future policy initiatives aimed at reducing harm should target those individuals who are likely to experience harm resulting from receiving sexual messages online (i.e., girls, younger children and those who face psychological difficulties). This should include recognising voluntary and coercive practices. 3) Interventions should be embedded in sexual and health education and be gender segregated as opposed to being part of a computing or technology class. 2) The connections across the array of risks that affect adolescents should be explored in more depth. The findings suggest that different risks within a general model in order to explain any adverse consequences of internet use on adolescent should be explored.

Mitchell, Finkelhor, & Wolak (2001)	United States	To assess the risk factors surrounding online sexual solicitations of youth and distress due to solicitation.	**Sample:** National **Participants:** 1501 Age: 10-17 m = 14 years Gender: Males = 53%, females = 47% Ethnicity: Non-Hispanic, Whites = 73% **Type of abuse:** Online sexual solicitation n = 286 19% and aggressive solicitations 3% **Abused by:** Adult	**Design:** Cross sectional **Sampling:** Random **Data collection:** Telephone interviews (YISS) **Dates:** August 1999 - February 2000 **Internet environment:** Chat rooms (30.8%) **Comparator:** None **Analysis:** Logistic regression **Measures:** Not reported	**Key findings:** 1) Being female, older youth (14-17 years), frequent internet users, troubled youth, risky online behaviour (i.e. posting personal information, making rude or nasty comments, playing a joke on or annoying someone, harassing or embarrassing someone, talking about sex with someone never met in person and/or going on x-rated sites on purpose), chat room participants, those who communicated online with strangers, used the internet in households other than their own experienced more sexual solicitation. **Main conclusion:** 1) Young people who stay away from chat rooms and are cautious about corresponding with strangers on the internet appear to be solicited at lower rates. 2) The finding that troubled youth have a higher risk of solicitations suggests that youth who are alienated or depressed may be more vulnerable to online exploitation by strangers.	**Limitations:** None reported **Recommendations:** 1) Parents and practitioners may wish to establish rules and counsel teenagers. However, one of the attractions of the internet is the potential to widen circles of friends. There are moderated chat rooms and other online meeting places that may be relatively safe and civil but the present survey did not gather enough details to differentiate them.

Mitchell, Finkelhor & Wolak (2007)	United States	Explore changes in the prevalence of youth internet users reporting unwanted sexual solicitations between 2000 and 2005, as well as the risk factors related to reports of the most serious solicitations, aggressive solicitations, in which solicitors attempted or made offline contact with youth.	**Sample:** National **All participants:** n = 1500 Age: 10 - 17 Gender: NR Ethnicity: White non-Hispanic (73% and 71% in first and second time frames, respectively) **Type of abuse:** Online sexual solicitation n=137 and aggressive solicitation n = 63 **Abused by:** Aggressive solicitations - males aged ≥18 years	**Design:** Cross sectional **Sampling:** Random **Data collection:** Interviews (YISS-1 and YISS-2) **Dates:** YISS-1 August 1999 - February 2000 YISS-2 March 2005 - June 2005 **Comparator:** Sexual solicitation vs no sexual solicitation **Measures:** Demographics (age, gender, highest level of household education, annual household income, and parental marital status, race and ethnicity), internet use (4 items), online sexual behaviour, child behavioural and emotional problems (Youth Self-Report of the Child Behaviour Check List), parent-child conflict (3 items), physical or sexual abuse (2 items) **Analysis:** Chi-square test **Internet environment:** Chat rooms	**Key findings:** 1) Being female, using chat rooms, talking with people met online, talking about sex with someone met online, and offline physical or sexual abuse were associated with children and young people receiving sexual and aggressive solicitations. **Main conclusions:** 1) Youth who felt isolated, misunderstood, depressed or lacked tradition support and guidance within the family may be more vulnerable to online sexual solicitation. 2) Some of the characteristics of victimised youth may influence their online safety by comprising their capacity to resist or deter victimisation and thus make them more vulnerable targets for online offenders.	**Limitations:** 1) The data are cross-sectional so it is not possible to determine whether participant characteristics are the cause or result of sexual solicitations. 2) Some youth may not have disclosed their experiences during interviews. 3) There is a small chance that the association between online sexual solicitation and offline physical or sexual abuse is artificially inflated due to one youth whose only report of offline physical or sexual abuse was an incident committed by the online solicitor. 4) The response rate was lower for YISS-2 than for YISS-1, which reflects a general decline in response rates for national telephone surveys. **Recommendations:** 1) Boys as well as girls should be included in internet safety messages about the dangers of online sexual advances.

Mitchell, Finkelhor, & Wolak (2007)	United States	To explore the prevalence and characteristics of youth who receive requests to make and send sexual pictures of themselves over the internet.	**Sample:** National **All participants:** 1,500 youth Age: 10 – 17 years Gender: Males = 49%, females 51% Ethnicity: White 76%, Black 13%, Hispanic/Latino 9%, American Indian/ Alaskan native 3%, Asian 3%, Other 1%, Missing 3% **Type of abuse:** Unwanted sexual solicitations (requests for sexual pictures n=65 45%) (received requests for sexual pictures n=65 48%) Age: m = 15 Gender: Male: 49% Female: 83% Ethnicity: White 68%, Black 26%, Hispanic 14% **Abused by:** Adult (n=8)	**Design:** Cross sectional **Sampling:** Random **Data collection:** Telephone survey (YISS-2) **Dates:** March - June 2005 **Comparators:** Those who received requests for sexual pictures vs those who did not **Measures:** Demographics (age, sex, highest level of household education, annual household income, marital status, race, ethnicity), internet use characteristics (i.e., time spent online, interaction with others), online behaviour (sexual behaviour 2 items), viewing pornography (2 items), posting and sending a picture of oneself, and aggressive behaviour (2 items), forming a close online relationship, Psychosocial characteristics – Juvenile Victimisation Questionnaire (sexual or physical abuse), offline interpersonal victimization, child behavioural and emotional problems – Youth Self-Report of the Child Behaviour Check List (2 subscales social problems and withdrawal/depression) **Analysis:** Logistic regression **Internet environments:** NR	**Key findings:** 1) Being female, black, have a close online relationship (i.e., with a peer or non-sexual relationship with an adult), engage in sexual behaviour online (such as talking about sex with someone they did not know in person), more offline physical or sexual abuse, using the Internet in the physical presence of peers when the incident happened is associated with children and young people receiving online sexual solicitation. **Main conclusions:** 1) Solicitors corresponding with youth do not know that the youth is Black and may be asking for pictures to ascertain this. Another possibility is that Black youth are not as self-protective when it comes to their Internet use. Some exploratory findings suggest that Black youth differ from non-Black youth on a variety of Internet use characteristics including being more likely to go to chat rooms and talk with people they meet online; both risk factors for online sexual solicitation.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made between internet use, psychosocial characteristics and requests for sexual pictures. 2) This study used self-reported measures, therefore, some participants may not have disclosed their victimisation experiences. 3) Information on requests for sexual pictures was gathered only in the context of interpersonal online victimisation. There are probably instances where youth received such requests in other online contexts, such as wanted relationships. This can result in an under representation of experiences. 4) The overall response rate for YISS-2 was somewhat low (45%). This response rate is reflective of a general decline in response rates for national telephone surveys. 5) Limiting participants to those that speak English is not reflective of international internet users. 6) The questions relating to offline victimisation were focused on experiences encountered in the previous year. This can underrepresent the relationship between requests for sexual pictures online and offline victimisation. **Recommendations:** 1) Prevention should focus on educating youth about the criminal vulnerability involved in the solicitation, production, and distribution of IIOC. 2) Parents and healthcare professionals should be aware of potential risk and harm and be prepared to talk with teenagers about such behaviour and its possible consequences. 3) Certain groups of vulnerable youth were at increased risk for sexual picture requests (i.e., physically and sexually abused). Thus, prevention should be targeted towards this group.

Mitchell, Wolak, & Finkelhor (2008)	United States	To explore differences in risk for unwanted sexual solicitation and harassment based on whether youth blog and whether they interact online with people they do not know in person.	**Sample:** National **All participants:** 1500 Age: 10 - 17 years Gender: Males (n = 734), females (n = 752) Ethnicity: White (n = 1137), Black (n = 190), Hispanic (n = 131) Sexuality: NR **Type of abuse:** Unwanted sexual solicitations Aggressive solicitations **Abused by:** Adult	**Design:** Cross sectional **Sampling:** Random **Data collection:** telephone survey (YISS-2) **Dates:** March - June 2005 **Comparators:** Bloggers (n=243) vs non-bloggers **Analysis:** Bivariate person chi-square test, a logistic regression **Measures:** Blogging and interacting, online sexual solicitation and harassment (3 items), online harassment (2 items), demographics (age, sex, highest level of household education, annual household income and marital status), psychosocial characteristics (Child behavioural and emotional problems - Youth Self-Report of the Child Behaviour Check List (past 6) 2 subscales used for externalising problems - rule breaking subscale (15 items) and aggressive behaviour subscale (17 items). 2 subscales for internalising problems -social problems (11 items) withdrawn/depressed subscale (8 items). High conflict with parent (3 item). Offline victimisation (past year) Physical and sexual abuse (2 items) simple assault, gang assault, peer assault, or bullying. **Internet environments:** Blogs	**Key findings:** 1) Youth who were interactors and bloggers were the most likely to report any sexual solicitation (33%), followed by interactors who did not blog (25%), bloggers who did not interact (11%), and youth who did neither (6%). 2) Interactors, regardless of whether they were bloggers, were the most likely to report an aggressive sexual solicitation (10%), whereas only 2% of bloggers who did not interact reported an aggressive solicitation and 1% of youth who did neither. **Main conclusion:** 1) Blogging itself does not increase risk for online sexual solicitations or for the more serious aggressive solicitations in which solicitors make or attempt to make offline contact with youth. Rather it is interacting with people the youth meet online that poses the greatest risk for sexual solicitation. There is an indication that blogs are more likely to lead to solicitations than other forms of online communication (i.e., chatrooms, instant messenger).	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made between participant characteristics (e.g., parental conflict) and sexual solicitation risk. 2) Some participants may not have disclosed their experiences during the interview. Also, some declined or were barred from participating so it is unclear whether their inclusion could have changed the results. 3) There was a low overall response rate (45%). However, this response rate is reflective of a general decline in response rates for national telephone surveys. 4) Given the necessity of talking with a parent or guardian before the participant, there could be a bias by eliminating youth with less stable homes or without adults around. 5) A lot of follow-up detail was not gathered about posting personal information, including where information was posted. This information will be important for a better understanding of this behaviour and the risks associated with it. **Recommendations:** 1) Future research should consider what youth are doing with their blogs as bloggers with provocative pictures or comments may attract solicitations. 2) There should be a focus for etiquette on the internet. One avenue may be asking youth to have clear statements on their blogs that they will not tolerate negative and rude comments. 3) There should be a focus on the bystander role in blogging sites and other group electronic venues because bystanders play a role in fuelling bullying situations.

Mitchell, Ybarra & Finkelhor (2007)	United States	Explore the relationship between online and offline forms of interpersonal victimisation, with depressive symptomatology, delinquency and substance use.	**Sample:** National **All participants:** n = 1,501 Age: 10-17 (m = 14.1) years Gender: Males = 53%, females = 47% Ethnicity: Non Hispanic White (73%) Black (10%), non-Hispanic; (8%) from other races, non-Hispanic; and of 7% Hispanic **Type of abuse:** Online sexual solicitation n = 284 **Abused by:** Adults (39%), juveniles (43%)	**Design:** Cross-sectional **Sampling:** NR **Data collection:** Telephone survey (Second National Incidence Study of Missing, Abducted, Runaway and Thrownaway Children) **Dates:** February - December 1999 **Comparators:** None **Measures:** Online sexual victimisation – sexual solicitation (3 items), online harassment (2 items), offline interpersonal victimization (8 items of the Juvenile Victimisation Questionnaire - Theft, simple assault, gang and/or group assault, physical abuse, peer and/or sibling assault, sexual assault, bullying and witness assault), life adversity (4 items), negative symptomology (delinquent behaviours – 4 items, substance use, depression – 9 symptoms) **Analysis:** Chi-square cross-tabulations, logistic regression **Internet environments:** NR	**Key finding:** 1) Depressive symptomatology, high delinquency and high substance use was associated with online sexual solicitation. **Main conclusions:** 1) Online sexual solicitation appears to be related to the concurrent report of depressive symptomatology as well as substance use even after taking into account offline victimisation. This suggests that online sexual solicitation may be related to a child's mental and behavioural health over and above offline victimisation. 2) One fourth of participants who reported a sexual solicitation also reported experiencing three or more types of offline victimisation experiences in the past year. Alternatively, one fourth of participants who reported an online victimisation reported no offline victimisation. This indicates that online victimisation can occur singly and is not limited to those who display signs of distress, feel isolated or depressed.	**Limitations:** 1) The online and offline victimisation reports do not take into account the severity or frequency of an individual's victimisation experience. 2) The data were collected in 1999 to 2000. Thus, this does not represent the trends and patterns of internet usage today. 3) The extent of victimisation in the lives of the participants may be underestimated as the study measures different forms of offline victimisation singly and only in the past year. 4) In 25% of households there were two or more youth in the target age range. In such instances, adult respondents were asked to choose the youth with the most frequent internet use to maximise the chance of identifying outcomes of interest (i.e., online victimisation). As a result, the sample may be slightly skewed to higher internet users. 5) Information about the offline parallels of solicitation and harassment was not collected. **Recommendations:** 1) Professionals should be alerted to the problem of online sexual solicitation and be prepared to address such experiences with young clients when necessary. Mental health professionals, school professionals, social workers and others concerned about the well-being of this population should be knowledgeable about the internet and how youth are behaving and what they experience online. 2) More research should be conducted to warrant the relationship between depression, substance use and receiving sexual solicitations online.

Noll et al. (2009)	United States	To identify risk factors associated with increased rates of internet-initiated victimisation for female adolescents	**Sample:** Child protective services **All participants:** 173 Age: 14 - 17 (m=15.5) years old Gender: Female = 100% Ethnicity: 54% White, 46% minorities consisting of 82% Black and 18% mixed-race girls **Type of abuse**: Online sexual advances 40% **Abused by:** Adult	**Design:** Cross sectional **Sampling:** NR **Data collection:** Created avatars, questionnaire **Dates:** NR **Comparator:** Abused (n = 104) vs non-abused (n = 69) girls **Measures:** Internet use (2 items) Avatar creation, substance use (items from the Monitoring the Future national survey, caregiver presence (12 items from the AddHealth survey), high-risk peers (items from Monitoring the Future and the Sexual Activities and Attitudes Questionnaire), sexual preoccupation (15-item measure computerized Sexual Attitudes and Activities Questionnaire**)** **Analysis:** T-tests, path analysis **Internet environments:** Social networking sites	**Risk factors:** 1) Having a provocative avatar (provocative in terms of body and clothing), being an abused female (sexual abuse, physical abuse, physical neglect), being preoccupied with sex and sexual thoughts, engaging in substance use increased the chance of receiving online sexual advances. **Resilience factor:** 1) Caregiver presence reduced the likelihood of receiving online sexual advances. **Main conclusion:** 1) Self-presentations can change the way internet users interact in a manner that increases the risk for online sexual advances. 2) Abused adolescent girls reported higher incidences of both online sexual advances and offline, in-person encounters. The path model suggests that abuse may not be directly associated with offline encounters but, via an indirect pathway, which places abused girls at risk through the avenue of online sexual advances. 3) An adolescent girl who tends to present herself as provocative in terms of body and clothing choices is more likely to have had online sexual advances. The Proteus Effect or the notion that an individual's presentation can affect the behaviour of the presenter and recipient has important implications. For example, in this era, users are able to portrait themselves in any manner they wish online.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) The path model merely suggests plausible pathways from childhood abuse to offline encounters. 3) Although this study measured provocative self-presentation, the extent of construct validity has not been fully realised. 4) Results should be generalised accordingly. **Recommendations:** 1) There is an importance for caregiver monitoring of adolescents' internet use. Parental awareness should be raised as to adolescent behaviours, attitudes and peer affiliations that are associated with online sexual solicitations and offline meetings. 2) Paediatricians who are aware of previous abuse and neglect should consider asking about adolescent online activity and provide education and resources to families regarding the risk factors associated with online sexual solicitation and offline meetings.

Soo, Kalmus & Ainsaar (2012)	Estonia	Examine the association between receiving sexual messages and behavioural, psychological and demographic characteristics and the social mediation of children's internet use.	**Sample:** Estonian children **Participants**: n = 780 Age: 11-16 (m = 13.7) year Gender: Males = 49.8%, females = 50.2% **Type of abuse:** Receiving sexual messages online **Abused participants:** 13% received or seen sexual messages online without being disturbed, 6% had received sexual messages and had been disturbed **Abused by:** NR	**Design:** NR **Sampling:** Random stratified **Data collection:** Questionnaire and face-to-face interviews **Dates:** Spring – summer 2010 **Comparator:** Girls vs boys, Russian speaking vs Estonian speaking children and older vs younger children **Measures:** Time spent online, Excessive Internet use (5 items), risky online behaviours (5 items), risky offline behaviour (5 items), psychological difficulties (Strength and Difficulties Questionnaire - adapted), sensation seeking (2 items), self-efficacy (brief adapted version of the General Self-efficacy scale), parental active mediation of the child's internet (5 questions), parental active mediation of the child's internet safety (6 questions), parental monitoring (4 questions), parental restrictive mediation (6 items), teacher mediation (8 items), peer mediation (5 items) **Analysis:** Logistic regression analysis	**Key findings:** 1) Being female, Russian-speaking, older children (14-16 years), risky offline behaviours were related to receiving sexual messages online. **Main conclusions:** 1) Children's online risky behaviour in the offline environment is associated with receiving sexual messages online without being disturbed. This can be explained by the 'risk migration' hypothesis, which suggests that a person who takes risks offline is more prone to do the same in the online environment and is therefore more likely to experience sexual messages online.	**Limitations:** None reported **Recommendations:** 1) Further studies should explore the ethnic minorities in regard to online risks and safety awareness. 2) Ethno-cultural background of children and their families need to be considered as a significant individual-level factor influencing the path from internet use to online risks and harms.

Wells & Mitchell (2008)	United States	Explore differences in internet use characteristics between high risk youth and other Internet users.	**Sample:** National **All participants:** n = 1500 Age: 10 – 17 (m = 14.2) year Gender: Female = 51% Ethnicity: White = 76%, Hispanic = 9% **Type of abuse:** Aggressive sexual solicitation (13.3%) **Abused by:** Adult (n=8)	**Design:** Cross sectional **Sampling:** Random **Data collection:** Interviews (YISS-2)7 Dates: 2005 **Comparators:** High risk youth (15.5 % n =233) vs other youth (84.5% n = 1267) **Measures:** Demographics, Sexual abuse (1 item), physical abuse (1 item), parent conflict (3 items), internet use characteristics, sexual solicitation (3 items) **Analysis:** Chi-square analysis, logistic regression **Internet environment:** Chat rooms, blogs	**Key findings:** 1) High-risk youth (those who experienced physical abuse, sexual abuse and high parent conflict) related to aggressive sexual solicitation. **Main conclusions:** 1) Vulnerable youth tend to be at risk for victimisation and life adversity offline and the current findings suggest this risk may vary over to the internet as well. Such high-risk youth are almost 2.5 times more likely to report an aggressive online sexual solicitation after adjusting for other confounding factors. Thus, youth who may feel isolated, misunderstood, depressed or lack traditional support and guidance within the family may be more vulnerable to online solicitors.	**Limitations** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) Analysis relies on youth self-report of physical abuse, sexual abuse and online risks. Some participants may have been hesitant to disclose such experiences in a telephone interview. 3) This study does not represent those participants who did not perceive sexualised messages or solicitations as “unwanted”, perhaps as a result of adult offenders grooming or desensitising participants. 4) The response rate for the study likely reflects a more general decline in respondents’ willingness to participate in telephone surveys. **Recommendations:** 1) Professionals should be aware of this potential and probe for other victimisations and personal problems that youth may be experiencing. 2) High-risk youth may difficult to reach through current prevention programming. Thus, there should be a focus on training staff that are involved with high-risk groups.

Wells & Mitchell (2014)	United States	Consider whether youth with specific types of disability differ from other youth in terms of internet use, online behaviour, and online interpersonal victimization and to assess whether disability status and these domains are related to risk for online sexual solicitation specifically.	**Sample:** National **Participants:** 1560 Age: 10 - 17 years Gender: male = 50% female = 50% Ethnicity: white = 73% **Type of abuse:** Online sexual solicitation (no special education n=8 special education n=14) **Abused by:** Adult (n=1)	**Design:** Cross sectional **Sampling:** Random **Data collection:** Telephone survey (YISS-3) Dates: August 2010 – January 2011 **Comparators:** With disability (n=98) vs without disabilities (n=1462) **Analysis:** Bivariate cross-tabulations, logistic regression **Measures:** Internet usage, online victimisation (sexual solicitation 3 items, online harassment 2 items) **Internet environment:** Social networking sites, chat rooms	**Key findings:** 1) Among youth receiving special services at school, being an older female, intense Internet users (2 plus hours per day), using the Internet from a friend's home, using social networking sites, video, and non video chat rooms, talking with people met online, posting a picture of themselves online, sending a picture to someone met online, being sexual online, harassing others online, intentionally downloading pornography, having a close online relationship, being a victim of statutory rape, delinquency, substance use, currently dating and ever having sexual intercourse was related to online sexual solicitation. **Main conclusions:** 1) The finding that receiving special education services at school was related to increased risk of online sexual solicitation indicates that the specific features of disability types may provide a context for online risk. 2) Youth receiving special services appear to be at less risk than those without such services. They use the internet less frequently (Mitchell et al., 2001), and are less likely to access the internet from someone else's home or use social networking sites.	**Limitations:** 1) Data are cross-sectional so causal inferences cannot be made. 2) The analysis relied on parental report of disability and some parents may be hesitant to disclose this information in a telephone interview. 3) Some of the constructs examined rely on interpret of behaviours, such what might "embarrass you". For some participants, it is possible that impairments related to specific disabilities may affect capacity to accurately answer the questions. 4) Some measures used in this analysis could be considered outdated or in need of revision. **Recommendations:** 1) These results have implications for special education professionals who work with students on independent living skills, interpersonal communication, as well as online safety and literacy. These professionals are uniquely positioned to work directly with students in school settings, as they can provide instruction and guidance regarding the likely overlap in online and offline behaviour. 2) Programs should be targeting skills that can help youth negotiate peer conflict and anger issues that may lead to relational and verbal harassment behaviours online and offline. Such online behaviours have been found to present heightened risk for online sexual solicitation. Role-playing and discussion exercises could be introduced that reflect conflict patterns and scenarios typical among social networks to allow students to identify and practice prosocial skills relevant to their peer culture.

Whittle, Hamiliton-Giachritsis & Beech (2014)	United Kingdom	To identify factors contributing to a young person's vulnerability towards online grooming	**Sample:** Victims of online grooming and sexual exploitation identified via police and social services **All participants:** n = 8 Age at the time of the study: m=15.88 years Age at the of offence: m=12.88 years Gender: females n=6 males n=2 **Type of abuse:** Online grooming resulting in sexual abuse online and/or offline (n=8) **Abused by:** Adult	**Design:** NR **Sampling:** NR **Data collection:** Interviews **Comparator:** None **Analysis:** Thematic Analysis **Internet environment:** NR	**Key findings:** 1) Risk factors: Spoke to strangers online (100%), spent long time online (75%), shared personal information online (38%), had an open profile (25%), close online relationship with another (not offender) (25%), unhappy childhood (38%), low self-esteem (75%), loneliness (63%), hit a low point in life (50%), dislikes school (38%), naughty at school (25%), stressed by school work (25%), history of crime in the family (25%), victim being bullied (38%), fights with friends (25%), little or no internet safety education (88%), bored in living environment (75%), dislike and problems with local area (63%) 2) Protective factors: Parents steps towards online protection (63%), close to wider family (50%), parent (38%), sibling (38%), happy family (25%), parents together (25%), tell parents about online concerns (25%), good close friend(s) (100%), hobbies and extracurricular activities (100%), school is good (38%), supportive school (38%), no experience of bullying (63%), happy in living environment (50%), good neighbours (50%), rarely shared photos or webcam with strangers (88%), speaking with strangers was rare (75%), steps to protecting personal information online (63%). **Main conclusions:** 1) Impulsive and risky actions are consistent with literature	**Limitations:** 1) Length of time between the end of the abuse and when the young person was interviewed varied between 1 and 6 years. 2) Information given by two male participants was limited. 3) Sample size is small. **Recommendations:** 1) Teachers and practitioners and other professionals should view young people who are experiencing family difficulties (whether temporarily, or over time) as particularly vulnerable to online grooming. 2) Parental involvement and discussion of internet safety should be promoted among parents and carers and victims.

					surrounding adolescent developmental trends. 2) The accumulation of risk factors over time is likely to influence young peoples' risky internet use. Also, young people can use the internet for comfort and an escape from their negative affect. 3) Offenders can exploit victims need for attention and affection.	
Wolak, Finkelhor & Mitchell (2008)	United States	To provide a basis for identifying which youth may be most at risk from interacting online with unknown people.	**Sample:** National **Participants:** n = 1,500 Age: 10 - 17 year olds Gender: Males: 49%, females: 51% Ethnicity: Non-Hispanic White 71%, non-Hispanic Black 11%, Hispanic or Latino 9%, American Indian or Alaskan Native 1%, Asian 2%, Other 3%, Unknown 3% **Type of abuse:** Aggressive sexual solicitations (high-risk unrestricted interactors 15%, low-risk 6%, friend-mediated 4%, cautious groups 1%) **Abused by:** NR	**Design:** Cross sectional **Sampling:** Random **Data collection:** telephone survey **Dates:** March - June 2005 **Internet environment:** Online dating/romance site, instant messaging **Comparators:** High-risk unrestricted interactors, low-risk unrestricted interactors, friend-medicated interactors, cautious interactors **Analysis:** Bivariate comparisons, multinomial logistic regression **Measures:** Online communication (9 items)	**Key findings:** 1) High-risk unrestricted (interacting with strangers) was associated with receiving aggressive sexual solicitation. **Main conclusions:** 1) The findings suggest that many youth interact online with unknown people with little risk. The youth most at risk included those with a diverse range of problems, including rule-breaking behaviour, depression and social problems that may manifest in different respects in interactions with unknown people.	**Limitations:** None reported **Recommendations:** 1) Rather than issuing blanket warnings to youth not to converse online with unknown people, more nuanced messages should be developed and targeted at the youth most at risk.

Ybarra, Leaf & Diener-West (2004)	United States	To investigate the association between youth-reported depressive symptomatology and unwanted Internet sexual solicitation	**Sample:** National All participants: n = 1501 Age: 10 - 17 (m = 14.15) years Gender: Males = 52% Ethnicity: White = 75%? Black = 10% Hispanic = 7% **Type of abuse:** Unwanted sexual solicitation (males n=94 12%, females, n=189 27%) **Abused by:** NR	**Design:** Cross sectional **Sampling:** Random **Data collection:** Telephone survey (YISS) Dates: Fall 1999 - spring 2000 **Comparator:** Mild or major depressive symptomatology versus no symptomatology **Analysis:** Logistic regression **Measures:** Depressive symptomatology (9 questions/items Diagnostic and Statistical Manual of Mental Disorders Fourth Edition), Internet Usage characteristics, substance use (previous year), life challenges (previous year). **Internet environments:** NR	**Key findings:** 1) Among males, major depression, using the internet for interactive activity, chat room use, harassing others online, life challenges, interpersonal victimization was associated with online sexual solicitation. 2) Among females, major and minor depression, harassing others, using the internet for interactive activities, chat room use, substance use, interpersonal victimization was associated with online sexual solicitation. **Main conclusions:** 1) Drawing on theories of depression, the profile of multiple and varied victimisation experiences may reflect a type of 'learned helplessness' for those who are manifesting depressive symptomatology. They may be less likely to be assertive and self-protective, thereby increasing the chances of exploitation.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) A validated scale for major depressive disorder was not used to measure symptoms. 3) It is possible that the report of sexual solicitation was underreported, or that the severity of the experience was downplayed by the adolescent because he or she was concerned that others might be listening to the conversation. 4) The exclusion of non-English speaking youths does not allow the results to be generalised to other cultures. **Recommendations:** 1) It is imperative that health professionals, policy makers, and parents are well versed on the activities youths are engaging in online. This seems to be especially true for mental health practitioners given the multitude of personal challenges reported.

Table 6. A critical evaluation of the studies included in the systematic review that explored risk, resilience and protective factors associated with online sexual victimisation.

Study	Researchers' review
Quantitative studies	
Chang et al. (2014)	1) This study identified participants using random sampling and includes a sample that is more representative of adolescents as opposed to convenience sampling. However, this study included adolescents who were enrolled and attending high school. Thus, this does not include a whole sample of adolescents and excludes those who do not attend school (e.g., adolescents who truant or come from poor parenting backgrounds). 2) The participants were asked about their chat room and online gaming usage in the previous week. This means that those participants who did not use a chat room or engaged in online gaming in the past week would not be classed as engaging in these behaviours. This can bias findings as participants prior to this timeframe will not be included as engaging in risky internet behaviours. 3) Other items that measured, for example pornography exposure, asked participants about their pornography usage in the previous year. Those who may have been exposed to pornography over a year ago will be classified as having viewed pornography. This can bias findings as participants who viewed pornography over a year ago would not be included in the group.
Flander, Cosic & Profaca (2009)	1) Participants were asked "did anyone in the chat inquire into your privacy? (e.g., related to sexual activity, private parts of your body, masturbation, clothes etc.)". The question is problematic because it is not clear who the solicitor is (i.e., adult, peer) so it is unknown if this constitutes an offence. Also, it is not clear how the participant responded to the request (i.e., ignored or responded to the solicitor). 2) This study asked participants about their exposure to sexual material in the previous year. This may bias findings as participants may have viewed sexual material prior to a year, however, they would be classified as not viewing sexual material. Also, the authors suggested that participants were not asked if exposure to sexual material was voluntary or involuntary. 3) This study did not use a comparison group of participants who did not experience online sexual victimisation, therefore, it is difficult to distinguish characteristics between those who are sexually victimised and those who are not.

Livingstone & Görzig (2014)	1) This study used random stratified sampling to identify participants and included 15,619 participants (approximately 1,000 per participating country). This sample and sampling approach reduces selection bias, therefore, the study includes a representative sample of internet using adolescent. Thus, findings are more likely to be generalised as the large sample increases statistical power and reduces confidence intervals. 2) This study asked participants about general and risky online activities that they engaged in in the previous month. This does not capture the true extent of adolescent general and risky internet use as those participants who engaged in risky online behaviours more than a month ago would not be classified as having engaged in risky behaviours. In contrast, this can be beneficial as participants are more likely to accurately remember their experiences in the previous month as opposed to a longer period.
Mueller-Johnson, Eisner & Obsuth (2014)	1) A national sample of disabled and non-disabled participants who were attending state school were used for this study. Participants were not selected using random sampling which can lead to selection bias. 2) This study compared two groups (disabled vs able-bodied) of participants. This allowed researchers to determine the difference between the groups in relation to online sexual victimisation. 3) The survey included the following question to determine physical disability: "do you have a physical disability that in some way limits the functioning of your body?". This question is vague as it does not capture the degree of individual physical disability. Also, this study is limited to physical disability, therefore, findings cannot be generalised to other forms of disability (i.e., learning disability). 4) The data was collected via self-reported measures which can lead to bias as participants can over or under report their experiences. 5) A cross-sectional research was used so causality cannot be inferred.
Noll et al. (2009)	1) This study recruited participants via child protection services using convenience sampling. This study gives an insight into online sexual victimisation among adolescents who had been abused and engaged in treatment and child protection services. However, the sample does not represent a range of adolescents who have been sexually victimised (i.e., those who are not known to clinical services), therefore, generalising the findings is problematic. 2) This study used a comparison group that had not been abused. Both groups (abused and non-abused participants) were matched to account for confounding factors. This accounted for individual differences which provided more reliable results.

	3) This study was conducted in a laboratory. Participants were asked to create avatars and they were required to choose bodily and clothing choices. However, this method does not necessarily accurately represent a person's online presentation or online behaviour. Also, this approach lacks ecological validity therefore it is difficult to generalise the findings to participants who do display themselves provocatively online. 4) The sample consisted of all female participants, therefore, the findings cannot be generalised to male adolescents.
Soo, Kalmus & Ainsaar (2012)	1) This study used random stratified sampling which reduced selection bias and increased the likelihood of the sample being representative of adolescents and generalisable to the population.
The following 8 studies used data from the YISS1- YISS-2 and YISS-3.	
Mitchell, Finkelhor & Wolak, (2007) Mitchell, Finkelhor, & Wolak (2001) Mitchell, Finkelhor, & Wolak (2007) Mitchell, Wolak, & Finkelhor (2008) Mitchell, Ybarra & Finkelhor (2007) Wells & Mitchell (2008) Wells & Mitchell (2014) Wolak, Finkelhor & Mitchell (2008) Ybarra, Leaf, & Diener-West (2004)	1) These surveys used random sampling and used a national sample of adolescents. This indicates that the sample is more likely to be representative of the population of adolescents in comparison to studies that used convenience sampling. The YISS-1 had a high rate of inclusion (82%) whereas the YISS-2 and YISS-3 had lower rates (45% and 65% respectively). This suggests that the studies that used the YISS-1 have the least selection bias as the sampling was random and the percentage of participants who agreed to participate was high. 2) There are issues surround the measures used to collect data about adolescents sexual experiences, behavioural, psychosocial and psychological characteristics. Firstly, the items that were used to measure sexual behaviour, sexual abuse and physical abuse were problematic because they elicited binary responses (yes/no). This does not allow for an understanding of the extent or frequency of experiences encountered. For example, Mitchell, Ybarra and Finkelhor (2007) asked participants about their offline victimisation experiences such as "In the last year, did a grown-up taking care of you hit, beat, kick or physically abuse you in some other ways?" and the response option was either a yes or no. Participants who have been hit once or those who are hit regularly would be classed into the "yes" category. This shows that some participants experience greater victimisation than others however the yes/no response does not capture the degree of the abuse. Moreover, Wells & Mitchell (2014) distinguished participants who had a disability by using a yes/no response. This study did not establish the different forms of physical and learning disabilities. 3) The surveys did not collect data using valid and reliable tools to measure online and offline experiences, psychological, interpersonal and behavioural factors. For example, some variables (i.e., sexual abuse, physical abuse, substance use) were measured using single item measures. This does not allow for a comprehensive understanding of children and adolescents psychological, interpersonal and behavioural functioning as well as victimisation experiences. Also, as multiple items were not used to measure variables, reliability of measures cannot be established.

	4) These studies used cross sectional research designs. This means that causality cannot be established between the variables and online sexual victimisation.
Qualitative study	
Whittle, Hamiliton-Giachritsis & Beech (2014)	1) This study recruited a sample of victims who had experienced online grooming and sexual solicitation from child protection agencies. Therefore, the victims used in this sample had either reported their experiences to parents or law enforcement or the offenders had been detected. Thus, the findings cannot be generalised to victims who do not report their experiences or their abusive experiences have not been detected. It may be that these individuals experience situations that can prevent them from disclosing about their abusive (e.g., lack of parental or social support). Also, the participants included in the sample were reaching the end of their recovery process, so results cannot be generalised victims who are in still engaging in therapy. Thus, it may be that these individuals have a greater insight into their vulnerability and their abusive experiences (thus report this) than someone who is undergoing therapy. 2) The data collected from participants was not verified by other sources. This can therefore be biased as victims may not have accurately reported their experiences due to shame, embarrassment or their feelings towards the abuser.

Moreover, all studies included in the systematic review were reviewed and quality appraised. The researcher review of the studies are highlighted in table 6 and the ratings for studies using qualitative and quantiative research design are included in table 7 and 8 respectively.

Table 7. Quality appraisal of qualitative studies investigating risk, resilience and protective factors associated with online sexual victimisation using the using the NICE Checklist for qualitative studies

Study	Theoretical approach	Study design	Data collection	Trustworthiness	Analysis	Overall assessment
Whittle, Hamilton-Giachritsis& Beech (2014)	++	-	++	+	++	+

++ (all or most of the checklist criteria has been fulfilled, + (some of the checklist criteria has been fulfilled) and – (few or no checklist criteria has been fulfilled.

Table 8. Quality appraisal of quantitative studies investigating risk, resilience and protective factors associated with online sexual victimisation using the Quality Assessment Tool for Quantitative Studies

Study	Selection bias	Study design	Confounders	Blinding	Data collection method	Withdrawals and dropouts	Global rating
Chang et al. (2014)	Strong	Weak	Weak	Moderate	Weak	Moderate	Weak
Flander, Cosic & Profaca (2009)	Moderate	Weak	Weak	Moderate	Weak	Not applicable	Weak
Livingstone & Görzig (2014)	Strong	Weak	Not applicable	Moderate	Weak	Not applicable	Weak
Mitchell, Finkelhor & Wolak (2001)	Strong	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Mitchell, Finkelhor & Wolak (2007)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Mitchell, Finkelhor & Wolak (2007)	Moderate	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Mitchell, Wolak & Finkelhor (2008)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Mitchell, Ybarra & Finkelhor (2007)	Strong	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Mueller-Johnson, Eisner & Obsuth (2014)	Strong	Moderate	Weak	Moderate	Strong	Not applicable	Moderate
Noll et al. (2009)	Weak	Moderate	Strong	Moderate	Strong	Not applicable	Moderate

Study	Selection bias	Study design	Confounders	Blinding	Data collection method	Withdrawals and dropouts	Global rating
Soo, Ainsaar & Kalmus (2012)	Moderate	Weak	Weak	Moderate	Weak	Not applicable	Weak
Wells & Mitchell (2008)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Wells & Mitchell (2014)	Moderate	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Wolak, Finkelhor & Mitchell (2008)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Ybarra, Leaf & Diener-West (2004)	Strong	Moderate	Weak	Moderate	Weak	Not applicable	Weak

Factors associated with adolescents' engagement in risky online behaviours results

A total of 19 studies investigating psychological, social, environmental, developmental, behavioural and interpersonal factors that are associated with adolescents' engagement in risky internet behaviours were identified for final inclusion. These studies were published between 2004 and 2014. Of these, 2 studies used a qualitative approach and 17 studies used a quantitative approach. Furthermore, 14 studies were conducted in the United States, 1 in Singapore, 1 in Malaysia, 2 in Belgium and 1 in Spain.

The identified studies examined a number of different risky online behaviours. These included chat room use, 1 sending / posting personal information online and interacting with people known only online. Furthermore, studies investigated adolescents who met people offline who they first met online and adding people the participants had never met face to face to their friends list. Some studies explored more than one risky behaviours. This information is included in table 9.

Table 9. Frequency of online risky behaviours among the identified systematic review studies

Risky online behaviours	N of studies
Chat room use	4
Sending / posting personal information	12
Interacting with people known online	10
Meeting people offline first encountered online	3
Adding people known only online on friends list	2

Among these studies, 10 were cross sectional and 1 adopted an observational design. Eight studies did not report the design of the study, however, it appears that 2 were observational and the remaining were cross sectional. In regards to samples, 5 studies used high school students, 9 studies used national samples, 1 used members of the general public, 1 recruited participants from child protective agencies and 3 did not report sample characteristics. These characteristics are included in table 10.

Furthermore, data was collected using various methods. The majority of studies collected data via telephone surveys, followed by paper and pencil questionnaires, online profiles, online surveys and online focus groups. This information is included in table 11. Moreover, details about the aims of the included studies, sample and study characteristics, key findings, author(s) main conclusions and recommendations are included in table 12. The researcher's review of

the included studies is included in table 13 and the critical appraisal ratings are in table 14 and 15.

Table 10. Sample, sampling and research design of studies that investigated factors associated with adolescents' risky online behaviour

Samples	N of studies	Sampling	N of studies	Research design	N of studies
High school	5	Random	8	Cross sectional	10
National	9	Stratified random	1	Observational	1
General public	1	Snowballing	1	Did not report*	8
Child protection agency	1	Did not report	9		
Did not report	3				

*These studies did not explicitly report their sampling strategy, however, it appears that 2 were observational studies and 6 were cross sectional.

Table 11. Data collection methods used in studies that investigated factors associated with adolescents' risky online behaviour

Data collection methods	N of studies
Paper and pencil questionnaire	5
Online survey	2
Online focus group	1
Telephone survey	8
Online profiles	3

Table 12. Studies investigating factors associated with adolescents' engaging in risky online behaviours

Study	Country (where data was obtained)	Objective	Sample characteristics	Study characteristics	Key findings and main conclusions	Author(s) limitations and recommendations
Beebe et al. (2004)	United States	To profile adolescent internet chat room users in terms of demographic psychological, environmental, and behavioural risk factors.	**Sample:** 9th grade public school students Participants: n = 19887 Age: 13-17 (m =14.7) years old Gender: Female = 50.9% Ethnicity: White = 82%, Asian = 4.8%, Black = 3.2%, Hispanics = 2.0%, American Indians = 1.1%, Multiracial = 4.4%, Unknown = 2.6% **Risky internet behaviour:** Chat room use n = 10315 39%	**Design:** Cross sectional **Sampling:** NR **Data collection:** Paper-and-pencil questionnaire (The Minnesota student survey 2001) **Dates:** 2001 **Comparators:** Chat-room users (n=10315) vs non users (n = 9572) **Measures:** Demographics, self-esteem (1 item), sadness (1 item), attitude towards school (1 item), feeling safe at school, interest in dangerous activities, relationships with others (3 items), family substance abuse (2 items), physical and sexual abuse (3 items), tobacco, alcohol and / or drug use (1 item), sexual behaviour (1 item), suicidal risk (1 item), antisocial behaviour (2 items) and chat room use and internet activities **Analysis:** Breslow-Day statistic **Internet environment:** Chat rooms	**Key findings:** 1) Higher psychological/emotional distress (suicidal attempts), more difficult/troubled living environment, sexual and physical abuse, higher risky behaviours (running away from home, having had sexual intercourse, tobacco use, alcohol and/or drug use) were associated with greater chat room use. **Main conclusions:** 1) For some adolescents, chat rooms represent a novel experience, with the element of the unknown being part of the attraction. 2) Emotional distress may lead to individuals seeking anonymous connections online. 3) Adolescents who display the above risk factors may not be equipped to recognise and be resilient to sexual exploitation attempts. This may be particularly true for younger.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. **Recommendations:** 1) Parents, teachers and other adults who are responsible for youth need to be better educated about the potential risk of sexual offenders attempting to contact youth through online chat rooms.

Beyens & Eggermont (2014)	Belgium	Investigate different types of cybersex behaviours among adolescents and examine whether the compensation and recreational hypothesis remain valid explanatory models in a context of more explicit types of cybersex.	**Sample:** Adolescents - recruited from secondary school and social networking site **Participants:** n = 594 Age: 15-18 (m= 16.92) years Gender: Female = 60.1% **Risky internet behaviour:** 1) Online chatting for the purpose of sexually arousing an online friend (22.4%) and online stranger (12.6%) 2) Sending sexy pictures by e-mail or in chat sessions to an offline friend (7%) and online strangers (males = 7.9%, females = 1.5%)	**Design:** NR **Sampling:** NR **Data collection:** Online survey **Dates:** NR **Comparators:** None **Measures:** Demographics (gender, age, level of education), Online communication, social anxiety (18 item Social Anxiety Scale for Adolescents), sexual orientation, sensation seeking (8 item the Brief Sensation Seeking Scale, Impulsivity (11 item Non-Planning Impulsiveness Subscale, sexual attitudes (the permissiveness(10 item) and instrumentality subscale (5 items) of the Brief Sexual Attitudes Scale, Internet attitudes (social confidence subscale 7 items and the socially liberating subscale 8 items of the Internet Behaviour and Attitude Scale **Analysis:** Hierarchical multiple regression **Internet environment:** NR	**Key findings:** 1) Boys (7.9%) were more likely to send sexy pictures to online strangers (people who respondents have never met in real life, but exclusively online) more than girls (1.5%). 2) Engaging in visual sexual communication was associated with social anxiety but only those who self-identified as gay/lesbian and bisexual, positive sexual attitude and high level of education. 3) Positive sexual attitude and high level of education is associated with having online friends (friends who respondents have never met in real life, but exclusively online). **Main conclusions:** 1) The findings confirm that 'online disinhibition' is especially relevant to adolescents who feel restrained because of their sexual orientation.	**Limitations:** 1) Data were collected in a liberal country (Belgium) so it is not possible to generalise the findings to other, less sexually liberal cultural contexts. 2) There is an over representation of females which impact on the generalisability of the findings. **Recommendations:** 1) Future research should investigate whether dating anxiety could explain the lower engagement in cybersex dating partner, among socially anxious adolescents and whether other factors might explain cybersex with other communication partners.

Dowell, Burgess & Cavanaugh (2009)	United States	Identify the online general use, safety knowledge, and risk behaviours of middle school students.	**Sample:** Middle school students **Participants:** n = 404 Age: 12-16 years Gender: Male = 47.2% Female = 52.4% Ethnicity: Caucasian = 87.6% African-American = 3.4% Hispanic = 0.4% Other = 8.1% **Risky internet behaviour:** Posting personal information and their picture **Participants:** Boys (31.1%), Girls (27.0%) posting personal information online 20% (n = 81) posted their picture on the internet	**Design:** NR **Sampling:** NR **Data collection:** Pen-and-pencil questionnaire **Dates:** NR **Comparators:** Those who engaged in risky behaviours vs those who did not **Measures:** Internet usage, characteristics of youth and their parents, internet victimisation or solicitation of youth, pornographic seeking or delinquent behaviours and relationships between caregiver and youth **Analysis:** Correlational statistical analysis **Internet environment:** NR	**Key findings:** 1) Playing online jokes or annoying internet activities on friends and family members, seeking the topic of sex or visiting sex sites while on the internet, talking about sex, and asking for sex information while online is related to posting pictures online. **Main conclusions:** 1) Posting a single piece of personal information online does not, by itself, appear to be particularly risky behaviour. However, the clustering of several risky behaviours may place vulnerable youth at risk when a picture is posted online.	**Limitations:** 1) A small sample from one geographical area (students living in the Northeast) was used so findings cannot be generalised. 2) The use of the YISS survey that is developed for use in telephone surveying but in this study was used as a paper-and-pencil survey. Some of the students highlighted uncertainty about some of the language being used in the survey, indicating that it was not the same language they used when online. **Recommendations:** 1) Prevention efforts need to focus on adolescents, including early adolescents and need to be developmentally appropriate. Researchers have suggested programs for young adolescents that describe risky only situations and include practice exercised for refusal and resisting techniques.

García et al. (2014)	Spain	To diagnose the risks faced by Spanish adolescents on the internet, and to determine the influence of such variables as age, sex, and ownership of the school attended by minors.	**Sample:** Student **All participants:** n = 2077 Age: 12 to 17 Gender: NR Ethnicity: NR **Risky internet behaviour:** 1) Contact with strangers online 2) Disclosure of personal information **Participants:** 7.6% talking to strangers of the same age and 3.8% with strangers of different ages. Reveal personal data to strangers: full name (19.4%), email address, Messenger or phone (9%), school (8.1%), personal photos or videos (7.3%) and home address (2.6%)	**Design:** NR **Sampling:** First stage cluster sampling stratified random, second stage random stratified **Data collection:** Self-administered questionnaire **Dates:** September and November year NR **Comparators:** None **Measures:** Demographics (age, gender), self-perception of the risk situations faced on the internet, access to inappropriate content **Analysis:** NR **Internet environment:** Social networking profile	**Key findings:** 1) Older teenagers (15-17 year olds) Disclosed more personal information. 2) Older teenagers and being male increased face-to face contact with strangers. **Main conclusions:** 1) Younger adolescents are more cautious about talking to strangers or disclosing personal information online, although they trust more on the internet and are less interested in avoiding parental controls. 2) The motives to seek contact with strangers varied: boys wanted to flirt/hook-up and have different experiences while teen girls wanted to expand their network of contacts.	**Limitations:** 1) It would be necessary to analyse in more detail and depth the possible internet uses that are problematic for adolescents. This can produce a protocol for action according to minors' problematic uses. **Recommendations:** 1) Adolescents should be careful regarding what they post (i.e., be aware that their pictures can be copied and edited). 2) There is a need to include longitudinal studies that document the evolution of the risks faced by minors on the internet, perception and influence of these risk situations, as well as the strategies and practices used by adolescents to cope with these risks.

Hillier, Mitchell & Ybarra (2012)	United States	Explore the differences in how LGB youth, compared to non-LGB youth, derive benefit from the internet, particularly in regard to social support, trusting friendships, romantic relationships, and the opportunity to be out with others.	**Sample:** LGB and non LGB **All participants:** LGB youth (n = 33) non-LGB youth (n = 26) Age: 13-18 Gender: LGB Female n= 16, male - n =17 Non- LGB Female n = 14 male n = 12 Ethnicity: Most were White/Caucasian and a small number of Black/African American, Hispanic, and Asian participants **Risk internet behaviour:** Talking to friends only known online **Participants**: NR	**Design:** NR **Sampling:** Snowballing **Data collection:** 3 online focus groups (2 LGB and 1 Non-LGB) Dates: May 2009 **Comparators:** LGB and non-LGB youth **Measures:** Internet use, places and circumstances, own and friend's favourite website and activities, feeling uncomfortable or unsafe online, talking with friends about it, feeling safe online and offline **Analysis:** NR **Internet environment:** NR	**Key findings:** 1) 4 in 5 LGB young people, and 1 in 5 of the non-LGB young people had exclusively online friends. 2) LGB participants experienced regular communication with exclusively online friends and meeting new online friends was a normal part of their lives. **Main conclusions:** 1) The main difference between the non-LGB and LGB groups and the main reason for LGB youth having online friends, was that it was possible to find like-minded individuals and get support online that was not available from offline friends. LGB individuals had reduced concerns about impact of stigma and judgement online. This was partly because of the anonymous nature of the internet. This was not present in the non-LGB group.	**Limitations:** 1) It could be argued that this research is limited by differing recruitment techniques for LGB (e.g., snowball recruitment through GLSEN contacts) and non-LGB participants (recruitment among HPOL members). 2) The LGB groups included many youth living in more conservative states and the non-LGB group contained youth from less conservative states. Therefore, there is an issue with generalisability. **Recommendations:** 1) School based sexual health education classes are the most common source of sexual health information for adolescents. 2) Provide caregivers suggestions to use monitoring software unwittingly place LGB youth in potential danger in their own homes, particularly if they have not come out and have concerns about their safety if they do.

Liau, Khoo & Hwaang (2005)	Singapore	Investigate factors that influence adolescents' engagement in risky internet behaviour, in particular, meeting face to face someone they encountered online.	**Sample:** National **All participants:** n = 1124 Age: 12-17 (m=14.32) year old Gender: Female = 49.6% Ethnicity: NR Sexuality: NR **Risky internet behaviour:** Face-to-face meeting with someone first encountered online (n = 169)	**Design:** Cross sectional **Sampling:** NR **Data collection:** Online survey **Dates:** NR **Comparators:** None **Measures:** Risky internet behaviour (1 item), frequency of use (3 items), parental supervision (6 items), communication with parents (2 items), receiving inappropriate messages (1 item), visiting inappropriate websites (1 item), internet advice **Analysis:** Multiple logistic regression **Internet environment:** NR	**Key findings:** 1) Age (older), high internet use, frequency of chatting and gaming behaviour, parental supervision (not allowed to meet in person someone encountered online, not allowed to talk to strangers in chatrooms, not allowed to give out personal information, people usually at home when arrive from school), communication with parents (tell parents about receiving pornographic junk mail), give out personal information (phone number, photograph, favourite band, music), amount of inappropriate messages received, internet advice heard, visiting pornographic websites, sites with violent images, and hate sites predicted meeting someone first met online face-to-face. **Main conclusions:** 1) Parental supervision techniques do not seem to be effective in lowering the risk involved with adolescent internet use. 2) Parents should encourage open communication with their children regarding their internet use and use participative decision making to set specific rules about the limits of their internet behaviour.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) The survey consists of many single-item constructs that may not be reliable. **Recommendations:** 1) More research needs to be done regarding the aetiology and consequences of frequent internet use.

Mitchell, Wolak & Finkelhor (2008)	United States	To explore differences in risk for unwanted sexual solicitation and harassment based on whether youth blog and whether they interact online with people they do not know in person.	**Sample:** National **All participants:** 1500 Age: 10 - 17 years old Gender: Girls (n = 752) Boys (n = 734) Ethnicity: White race n = 1137, Black race n = 190, Hispanic ethnicity n = 131 Sexuality: NR **Risky internet behaviour:** Posted any personal information, sent any personal information to someone met online, Interacts with people met online 8% (n = 119) were bloggers who did interact with people they met online (blogger/interactor), and 26% (n = 387) did not blog but did interact with people they met online (non-blogger/interactor)	**Design:** Cross sectional **Sampling:** Random **Data collection:** Telephone survey - YISS-2 **Dates:** March - June 2005 **Comparators:** Bloggers (n=243) vs non-bloggers **Measures:** Blogging and interacting, online sexual solicitation and harassment (3 items), online harassment (2 items), demographics (age, sex, highest level of household education, annual household income and marital status), psychosocial characteristics (Child behavioural and emotional problems - Youth Self-Report of the Child Behaviour Check List (past 6) 2 subscales used for externalizing problems - rule breaking subscale (15 items) and aggressive behaviour subscale (17 items). 2 subscales for internalizing problems -social problems (11 items) withdrawn/depressed subscale (8 items). High conflict with parent (3 item). Offline victimization (past year) Physical and sexual abuse (2 items) simple assault, gang assault, peer assault, or bullying. **Analysis:** Bivariate Pearson chi-square, logistic regression **Internet environments:** Blogs	1) Bloggers post personal information about themselves on the internet. 2) Regardless of whether they were bloggers, interactors were more likely to use chat rooms, send personal information to someone online, engage in online sexual behaviour, download pornography on purpose, engage in aggressive behaviour online. They also had higher scores on the YSR in the borderline or clinical range on the following subscales: rule-breaking behaviour, aggressive behaviour, withdrawn/depressed, and social problems. 3) Bloggers and interactors experienced high conflict with parents. **Main conclusions:** 1) We found that interacting with people youth meet online but do not know in person is what puts youth at risk for online sexual solicitation, rather than posting personal information online. 2) Bloggers are not more likely to interact with people they meet online than non-bloggers. 3) Posting personal information online is becoming a normative behaviour given that more youth internet users post information online than not.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) Some participants may not have disclosed their experiences during the interview. Also, some youth declined or were barred from participating so perhaps their inclusion could have changed the results. 3) Overall response rate was low. 4) Given the necessity of talking with a parent or guardian before the youth respondent, there could be a small bias by eliminating youth with less stable homes or without adults around. 5) Follow-up details were not gathered about posting personal information, including where information was posted. This information would be important to gather for a better understanding of this behaviour and the risks associated with it. **Recommendations:** 1) Educating youth about the potential dangers of interacting with people they meet online, the fact that displaying their feelings and activities online may open them up to nasty and threating actions from others needs to be highlighted in the discussion of blog safety.

Mitchell & Ybarra (2007)	United States	To explore the internet use and interpersonal interactions of youth reporting deliberate self-harm as defined by any non-fatal act, regardless of intention.	**Sample:** National **All participants:** 1500 Age: 10-17 years old **Risky behaviour:** 1) Posting personal information (real last name, telephone number, school name, home address, age or year of birth, or a picture) - no self-harm group (56% n=814) self-harm (76% n=28) 2) Sending personal information to someone met online - no self-harm group (25% n=369) self-harm (57% n=21) 3) Using chat rooms - no self-harm group (29% n=431) self-harm (57% n=21)	**Design:** Cross sectional **Sampling:** National **Data collection:** Structured telephone interview Data from the Second Youth Internet Safety Survey (YISS-2) **Dates:** March and June of 2005 **Comparator:** Youth with no deliberate self-harm (97%, n= 1463) vs deliberate self-harm (3%, n= 37) **Measures:** Deliberate self-harm (youth self-report version of the Child Behaviour Check List) (1 item), internet behaviour (sexual behaviour, viewing pornography, posting personal information, sending personal information, aggressive behaviour), online interactions, psychosocial characteristics (child emotional problems – Youth Self Report of the Child Behaviour Check List (2 subscales social problems and withdrawal/depression), High parent-child conflict (3 items), physical and sexual abuse (2 items), other interpersonal victimization , demographics **Analysis:** Bivariate Chi-square cross tabulations and independent sample t-tests, logistic regression **Internet environment:** NR	**Key findings:** 1) Youth who reported deliberate self-harm were more likely to use chat rooms, interact with someone met online in "some other way" (e.g., in a chat room) and send personal information about themselves online. **Main conclusions:** 1) Youth reporting deliberate self-harm may be using the internet to connect with others. Is it possible that these youth are able to form bonded relationships with someone online who is having a positive influence on their behaviour.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made between online behaviours and self-harm. 2) It is likely that the sample is biased toward higher functioning youth in general. For example, those who are extremely suicidal or depressed may be less likely to be completing a 30-min survey. 3) The measure of self-harm was limited to only one question. It refers to any non-fatal act, regardless of their intention. 4) The measure of self-harm only refers to the past 6 months. There could be other participants who engaged in self-harm behaviour in the past year that are not captured. **Recommendations:** 1) Future research should focus on youth experiencing depressive symptomatology and their need to establish intimacy and reaching out to others.

Noll et al. (2009)	United States	To identify risk factors associated with increased rates of Internet-initiated victimization for female adolescents	**Sample:** Child protective agencies **Participants:** 173 **All participants:** c	**Design:** Cross sectional **Sampling:** NR **Data collection:** Created avatars, questionnaire **Dates:** NR **Comparators:** Abused (n=104) vs non-abused (n= 69) girls **Measures:** Avatar creation, substance use, caregiver presence (12 items from the AddHealth survey), high-risk peers (variables from the Monitoring the Future questionnaire and Sexual Activities and Attitudes Questionnaire) (relationships with 'closest friends', being a regular smoker, using alcohol, marijuana and illegal drugs use) High-risk sexual activities - best friends engaged in risky sexual behaviours, including oral sex, multiple sex partners, 1-night stands or intercourse without contraception or while drunk or high **Analysis:** Paired t-tests and path analysis **Internet environments:** Social networking sites	**Key findings:** 1) Abused girls and associating with high-risk peers was associated with meeting someone offline who they first met online. **Main conclusions** 1) Abused girls reported a higher incidences of both online sexual advances and offline, in-person encounters. 2) High-risk peers was a strong predictor of offline-in-person encounters.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) Although intent was to measure provocative self-presentation, the extent of construct validity has not been fully realised. 3) Provocative features will vary across culture and even regions, therefore, results should be generalised accordingly. 4) Difficult to know how this laboratory experiment might be generalised in a more naturalistic environment. **Recommendations:** 1) More research is required regarding parental monitoring of adolescent internet use. 2) Paediatricians who are aware of previous abuse and neglect should consider asking about adolescent online activity and provide education and resources to families regarding the risk factors associated with online sexual solicitation and offline meetings.

Pujazon-Zazik, Manasse, & Orrell-Valente (2012)	United States	To analyse adolescents' profiles on MyLol.net, a teen dating Web site, for risk content.	**Sample:** NR **All participants:** 752 Age: 14 – 18 year old Gender: Male n = 376 50%, female n = 376 50% Ethnicity: Caucasian n = 143 55%, African American n = 32 12.7%, Hispanic n = 31 12%, Mixed n = 24 9.3%, Other n = 28 10.8% Sexuality: (n = 356) of profiles with information on sexual orientation, heterosexual 78%, bisexual 16% **Risky internet behaviour:** Posting personal identifiers (e.g., name and street address) **Participants:** n = 83 (11%)	**Design:** Observational **Sampling:** Random **Data collection:** Publicly viewable profiles **Dates:** From July to September 2009 **Comparators:** None **Measures:** Adolescents' self-presentation (personality and / or physical characteristics), risky behaviours (sex, alcohol, drugs, cigarettes and violence) **Analysis:** Logistic analysis **Internet environment:** MyLol.net (teen dating Web site)	**Key findings:** 1) Cigarette smoking was related to posting personal identifiers. 2) Males more than females posted personal identifiers. **Main conclusions:** 1) Online mention of interest/involvement in risky behaviour may have negative consequences, including attracting the attention of cyberbullies or sexual predators.	**Limitations:** 1) There is a possibility that profiles were created by non-adolescents. 2) Stated interest/involvement in risky behaviours may not indicate participation in those behaviours. 3) Study provides no information on differences between adolescents who chose to make their profiles public and those who did not. **Recommendations:** 1) Clinics and schools should consider offering educational materials to adolescents and parents. 2) Future research should examine how web site designs influences adolescents' self-disclosure.

Shin & Ismail (2014)	Malaysia	Investigated the role of parental and peer mediation in young adolescents' engagement in risk-taking in social networking sites.	**Sample:** Students from public secondary school **All participants:** n = 469 Age: 13-14 (m=13.5) years Gender: Male = 45.4% Female = 54.6% Ethnicity: NR **Risky internet behaviour:** Added people never met face to face to friend lists on SNS (contact risk), posting personally identifiable information (privacy risk) **Participants:** 469 Age: 13-14 (m=13.5) Gender: Male = 45.4% Female = 54.6%	**Design:** Cross sectional **Sampling:** NR **Data collection:** Paper and pencil survey **Dates:** NR **Comparators:** None **Measures:** Demographics (age, gender), parental mediation (6-items), peer mediation (6-items), risky SNS behaviours (contact risk and privacy risk), perceived internet skills and social activities in social networking sites **Analysis:** Hierarchical regression **Internet environment:** Social networking sites	**Key findings:** 1) Parental restrictive mediation (controlling children's usage of and exposure to media) was positively and significantly associated with both types of risk-taking behaviours. 2) Parental active mediation (talking to children about media and helping children properly consume media content) positively and significantly associated with privacy risk. 3) Peer active mediation (peers talking to children about media) positive and significantly associated with privacy risk. **Main conclusions:** 1) Adolescents who received higher levels of parental restrictive mediation were more inclined to engage in risk-taking behaviours in SNSs. 2) Parental active mediation can be effective in reducing, not totally eliminating, contact risks but not privacy risks.	**Limitations:** 1) This study focused on a narrow age range. 2) This cross-sectional study was conducted in a single country. Caution needs to be exercised when applying findings from this study to other research contexts. 3) The data reflected adolescent's point of view only. **Recommendations:** 1) Parents should understand unique characteristics of different. developmental stages of children and implement proper mediation strategies for different age groups. 2) It is necessary for parents to keep themselves updated with new media knowledge and to engage continuously in dialogues with their children. 3) Future research should examine peer influence on adolescents' risk taking in various communication contexts.

Stamoulis & Farley (2010)	United States	Determine which of these conceptual approaches (social compensation/rich-get-richer) are most fitting by using multiple regression analysis to examine the predictors of online risk-taking.	**Sample:** National **Participants:** N = 886 Age: 12 – 17 years Gender: NR Ethnicity: NR Sexuality: NR **Risky internet behaviour:** 1) Posting personal identifiers 2) Strangers as friends on social networking sites, responding to stranger contact and visiting chat rooms 3) Posting contact information **Participants:** NR	**Design:** NR **Sampling:** Random **Data collection:** Interviews - Parents and Teens survey 2006 data Dates: October 23 - November 19, 2006 **Comparator:** None **Measures:** Demographics, (age, gender, employment), frequency of internet use, time spent with friends in person, time spent taking on a landline telephone and time spent talking on a cell phone, afterschool activities **Analysis:** Multiple regression analysis **Internet environment:** Social networking sites	**Key findings:** 1) Among male participants, older teenagers posted personal identifiers. Whereas, among female participants, no factors predictors personal identifiers being posted. 2) Among male participants, older teenagers lack of participation in extracurricular activities, more time spent with friends in person, more time spent talking with friends on the landline were associated with having strangers as friends on social networking sites, responding to stranger contact and visiting chat rooms. 3) Among female participants, spending less time socialising with friends in person was associated with having strangers as friends on social networking sites, responding to stranger contact and visiting chat rooms. 4) Among male participants, no factors were associated with posting contact information. 5) Among female participants, spent less time socialising with friends in person was associated with associated with posting contact information. **Main conclusions:** 1) Supports the social compensation approach, which postulates the internet primarily benefits introverted people and was adapted to examine adolescent online risk-taking. 2) Adolescents appear to engage in risky online behaviours to compensate for minimal social	**Limitations:** 1) Results are based on survey data which yields general information. 2) Data is obtained through self-reported measures, thus, there could have been bias. **Recommendations:** 1) Future research should utilise other research methods. 2) More detailed information could be of value, especially pertaining to the protective value of spending time socialising with friends outside of school and engaging in extracurricular activities.

					interactions in their offline lives however girls fall under the rich get richer approach when posting photographs online.	
Vanderhoven et al. (2014)	Belgium	To investigate (1) what kind of information teenagers post on their profile, (2) to what extent they protect this information using privacy-settings and (3) how much risky information they have on their profile.	**Sample:** General public **All participants:** n = 1050 Age: 13-18 years Gender: Males = 49% boys, Females = 51% **Risky internet behaviour:** Posting personal information First name (82%) and pictures of themselves (79%) 29% post their last name, 66% include pictures of friends, 61% include their city or town and 29% include video	**Design:** Observational **Sampling:** NR **Data collection:** Facebook profiles **Dates:** NR **Comparators:** None **Analysis:** Chi-square **Measures**: Profile picture, name, count of friends, interests, textual wall posts, pictures, videos or notes, risky information (alcohol abuse, hate messages) **Internet environment:** Facebook	**Key findings:** 1) Being male was related to sharing their mobile number more regularly. **Main conclusions:** 1) Generally teenagers did not post a large amount of contact information on their profile page. This might be the result of the ongoing safety messages that society, peers, parents and teachers give to teenagers.	**Limitations:** 1) No direct statistical comparisons could be made between variables. 2) Only observed Facebook profile pages of Flemish teenagers were included. 4) A limitation of this observational research is that it does not lead to explanations for the observed facts. **Recommendations:** 1) Educational programmes should be aimed towards teenagers and should be different for different age groups.

Walsh, Wolak & Mitchell (2013)	United States	To explore characteristics of youth who reported close relationships with people they met online.	**Sample:** National **All participants:** n =1,560 Age: 10 - 17 years Gender: Female = 50%, male = NR Ethnicity: White race= 73% Black race = 15% American Indian/Alaskan native = 3% Asian = 3% Hispanic = 10% Other or missing = 4% **Risky internet behaviour:** Forming close relationships with people met online **Participants:** NR	**Design:** Cross sectional **Sampling:** Random **Data collection:** Interviews (YISS-3) Dates: August 2010 -January 2011 **Comparator:** Having a close online relationship with a person met online vs not having a close relationship **Measures:** Demographics (age, gender, living arrangements, household education / income), frequency of internet use, psychosocial characteristics - (receiving counselling for emotional, behavioural, or developmental problems), parental conflict (3 items), depressive symptoms (9 item depression subscale of the Trauma Symptom Checklist for Children), offline risky behaviours, delinquent behaviour (6 questions), physical or sexual abuse **Analysis:** Logistic regression **Internet environment:** NR	**Key findings:** 1) High internet use (more than 3 hours a day), higher levels of depressive symptoms, sought out pornography, delinquent behaviour, experienced unwanted online harassment and sexual solicitation were related to forming close relationships with people met online. **Main conclusions:** 1) The findings support the social compensation hypothesis.	**Limitations:** 1) The survey relied on self-report measures and some participants may not have disclosed undesirable responses in a telephone interview. 2) The cross-sectional nature of the study does not allow inferences to be made. 3) The response rate for the study reflects a general decline in respondents' willingness to participate in telephone surveys. **Recommendations:** 1) Future research should consider the motives for online communication and friendship development during adolescence. 2) Programs should educate youth that all relationships, both online and offline, are complicated and involve judgements as to what is safe and what is dangerous. Programs should educate youth how to make good choices and ways to understand what healthy relationships consist of.

Wells & Mitchell (2008)	United States	Explores differences in Internet use characteristics between high risk youth and other Internet users.	**Sample:** National **Participants:** n = 1500 Sample: National Age: 10 - 17 year olds m = 14.2 SD = 21 Gender: Female = 51% Ethnicity: White = 76% Hispanic = 9% **Risky behaviours:** 1) Chat room use 2) Talk with people met online 3) Posted personal information online 4) Sent personal information online **Participants:** NR	**Design:** Cross sectional **Sampling:** Random **Data collection:** Telephone survey - Data from the second Youth Internet Safety Survey (YISS-2) **Dates:** March 4, 2005 and June 12, 2005 **Comparators:** High risk youth (those experiencing sexual abuse, physical abuse, or high parent conflict) (15.5 % n =233) vs other youth (84.5% n = 1267) **Measures:** Demographics (age, gender, highest level of household education, household income, living arrangement, race and ethnicity), internet use, physical abuse (1 item), sexual abuse (1 item), high parental conflict (3 items), sexual solicitation victimisation (3 items) **Analysis:** Chi-square analysis and logistic regression **Internet environment:** NR	**Key findings:** 1) 37% of high-risk youth reported use of chat rooms compared to 29% of other youth. 2) 49% high-risk youth talked with people they had met online as compared to 31% of other youth. 3) 65% of high-risk youth posted personal information compared to 54% of other youth. **Main conclusions:** 1) Some of the characteristics of victimised participants may influence their online safety by compromising their capacity to resist or deter victimisation. This can make them more vulnerable to online sexual offenders. 2) Use of the internet to talk with people met online and a decreased likelihood to communicate with friends online, may be symptoms of concurrent mental health issues or related factors. 3) Sexually abused children may exhibit more negative symptomology, including sexualised behaviours and poor self-esteem than non-abused children which may impact vulnerability to internet risks.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) The analysis relies on participants self-report of physical abuse, sexual abuse, and online risks and some may have been hesitant to disclose such experiences in a telephone interview. 3) This study did not represent those youth who did not perceive sexualised messages or solicitations as “unwanted,” perhaps as a result of adult offenders grooming or desensitising youth to such experiences. 4) The response rate for the study likely reflects a more general decline in respondents’ willingness to participate in telephone surveys. **Recommendations:** 1) Health professionals should provide guidelines to help youth establish safe online relationships. 2) Professionals could talk with all youth about the potential dangers associated with talking online about sex.

Williams & Merten (2008)	United States	Explored content posted and interaction taking place on adolescent online social networking sites.	**Sample:** Adolescents **Participants:** n = 100 Age: 16 – 18 years Gender: Male = 50% Female = 50% Ethnicity: NR Sexuality: Heterosexual = 75% Homosexual = 3% Bisexual 3% unsure about sexual orientation 2% **Risky internet behaviour:** Sharing personal information, sharing pictures **Participants:** Posted pictures 100% Included full name = 43% Phone number = 10% Provided online contact info = 2%	**Design:** NR **Sampling:** Random multistage cluster sampling **Data collection:** Selected profiles **Dates:** NR **Comparators:** None **Measures:** Demographic (gender, school affiliation, relationship status, religious affiliation and sexual orientation), social content (image, family issues, school issues, discussion of special interests such a reading, movies, music and sports and social gathering information), image appropriateness, risk behaviours (substance use, criminal activity, sexual content, profanity and physical violence, sexual content (explicit/graphic language and comments referencing sexual activity), identity vulnerability (personally identifiable information), peer interaction **Analysis:** NR **Internet environment:** Blogs	**Key findings:** 1) The following factors were associated with sharing personal information and/or pictures online: Positive parental comment (37%), negative parental comment (16%), positive sibling comment (22%), negative sibling comment (2%), skipping school (4%), aspires to attend college (27%), athletics (58%), positive peer comment (97%), negative peer comment (36%), special interests (71%), discussion of "parties" (40%), risky behaviours (84%), substance use (83%), alcohol discussion comment (81%), author smokes (81%), author doesn't smoke (18%), illegal drugs discussion/comments (27%), criminal activity (15%), stealing/shoplifting (9%), sexual content (49%), explicit/graphic language (44%), sexual activity comment (16%), physical harm (27%). **Main conclusions:** 1) Adolescents post content online that ranges from families and friends, hobbies and athletics, drug use, profanity and promiscuity.	**Limitations:** 1) This study does not allow for the data to be verified or understood from the participant's perspective. 2) A small sample size was used **Recommendations:** 1) More research is required to explore adolescent online usage on blogs. 2) Future research should focus on specific aspects of adolescence (i.e., alcohol use, parent-child relationships, gender differences in body image, adolescent sexual expression). 3) Parents and educators could take an appreciation of online social networking, and its role in adolescent life, a step further by incorporating it into routine discussion and curriculum.

Wolak, Finkelhor & Mitchell (2008)	United States	To provide a basis for identifying which youth may be most at risk from interacting online with unknown people.	**Sample:** National **Participants:** n = 1,500 Age: 10 - 17 year olds **Risky behaviour:** Communicating online with a stranger **Participants:** NR	**Design:** NR **Sampling:** Random **Data collection:** Telephone survey **Dates:** March - June 2005. **Comparators:** High-risk unrestricted interactors vs cautious ones **Measures:** Internet use, interacting with people known in person (5 items), unknown people (3 items), other measures NR **Analysis:** Multinomial logistic regression **Internet environment:** NR	**Key findings:** 1) Teenagers (13 to 17 year olds), engagement in high levels of internet use, most types of interactive internet use, more likely to report offline interpersonal victimisation such as physical assaults by siblings or being bullied. **Main conclusions:** 1) Youth most at risk included those with diverse range of problems, including rule-breaking behaviour, depression and social problems that may manifest in different respects in interactions with unknown people.	**Limitations:** Not reported **Recommendations:** 1) Rather than issuing blanket warnings to youth not to converse online with unknown people, more messages could be developed and targeted at the youth most at risk.

Wolak, Mitchell & Finkelhor (2003)	United States	To explore the characteristics of youth who had formed close relationships with people they met on the internet.	**Sample:** National **All participants:** N = 1501 Age: 10–17 m = 14.14 Gender: Males = 53%, females = 47% Ethnicity: Non-Hispanic white 73%, African American 10% American Indian or Alaskan native 3%, Asian 3%, Hispanic white 2%, Other 7%, Do not know/refused 2% **Risky internet behaviour:** Formed close relationships with people met on the Internet 14% of youth (n = 205) reported close online friendships and 2% (n = 30) reported online romances. **Participants:** n= 210 Age: 10-17 m = 14.78 Gender: male 46% female = 53%, Ethnicity: Non-Hispanic white 81%, African American 7%, American Indian or Alaskan native 1%, Asian 1%, Hispanic white 3%, Other 6%, Do not know/refused 1%	**Design:** Cross sectional **Sampling:** NR **Data collection:** Telephone interviews Youth Internet Safety Survey Dates: August 1999 - February 2000 **Comparator:** Youth Internet users with close online relationships vs those who do not have close online relationships , Boys who formed close online relationships vs boys who did not form close online relationships, girls who formed close online relationships vs girls who did not form close online relationships **Measures:** Online relationships (2 items), demographics, troubled youth, parent-child conflict, communication with parents, delinquent behaviour. **Analysis:** Pearson chi-square tests, logistic regression **Internet environment:** NR	**Key findings:** 1) Being aged 14-17 rather than younger (10-13), home internet access, high levels of internet use is associated with forming close online relationships. 2) Girls more likely than boys to have close online relationships. 3) Girls vs other girls who form relationships online experience high levels of conflict with parents and were highly troubled. 4) Boys vs other boys who form relationships online experience low levels of communication with parents and were highly troubled. **Main conclusions:** 1) Adolescents may form relationships to meet compelling needs for intimacy, self-validation and companionship. It may be that adolescents who are troubled or alienated from their parents have more difficulties satisfying friendship needs through face-to-face relationships and that the internet provides an alternative.	**Limitations:** 1) The cross-sectional nature of the study does not allow inferences to be made. 2) Although the composite measures captured young people who displayed high levels of difficulties, it is not clear whether these were long-term or transient problems. 3) The YISS was not primarily designed to collect data about close online relationships. So measures of constructs like social support and data about offline friendships and romantic relationships were not available. 4) Some measures were shortened to keep the telephone interview from becoming unacceptably long. This may have weakened the analysis in some respects. 5) Procedures for inquiring about this realm have not been standardised or validated, and this study did not use measures of online relationships or internet use that had been evaluated or validated in other research. 6) The dependent variables were based solely on the self-reports of youth respondents, the amount of variance explained by them may be inflated due to shared source variance. 7) Some youth declined or were barred by their parents from participating, therefore, it is unclear whether their inclusion would have changed the results. **Recommendations:** 1) People who work with troubled youth should be conscious of the role the internet plays in their lives and should ask the youth about their internet use and prompt them to talk about their online relationships they may be involved in.

Ybarra, Alexander & Mitchell (2005)	United States	To investigate the online communications and self-disclosure practices of youth reporting depressive symptomatology.	**Sample:** National **Participants:** n = 1501 Age: 10-17 (m=14.1) year Gender: male = 52% Ethnicity: non-Hispanic white (75%), non-Hispanic black (10%), Hispanic 7% **Risky internet behaviour:** 1) Talked with someone met only online (56%, n = 839) 2) Posting personally identifiable information (e.g., name, address, school) somewhere online 3) Posting a picture of oneself somewhere online	**Design:** Cross sectional **Sampling:** Random **Data collection:** Telephone survey Youth Internet Safety Survey (YISS) **Dates:** Fall of 1999 and Spring of 2000 **Comparators:** Mild or no vs minor vs major depressive symptoms **Measures:** Depressive symptomatology - Diagnostic Statistical Manual IV (DSM-IV), General internet use (4 items), internet access and activity, online interactions, self-disclosure, demographics (age, race/ethnicity, gender, household income) **Analysis:** Chi-square, multinomial logistic regression **Internet environment:** NR	**Key findings:** 1) Chat room use was more common among participants who experienced major depressive-like symptoms (17%) compared with mild or no symptoms. 2) 80% of youth indicating major depressive symptoms as did 62% of youth indicating minor depressive symptoms; in comparison, 53% of youth with mild or no depressive symptoms reported talking with a stranger ever online. 3) Among participants who met a stranger online, 35% of youth indicating major depressive-like symptoms compared with 24% of youth with minor depressive-like symptoms, and 19% of youth indicating mild or no symptoms. 4) Disclosing personal information was associated with depressive symptomatology. **Main conclusions:** 1) It is possible that face to face interactions are becoming limited and spending time on the computer is becoming more common. 2) Results suggest that youth with depressive symptomatology are likely using the internet as a safe method for to maintain in-person relationships. 3) Youth indicating symptoms of depression perceive interaction online as less effort or perhaps they find it easier to disclose to a stranger.	**Limitations:** 1) It is a cross-sectional study, disallowing temporal inferences. 2) The measure of depressive symptomatology is not based upon a clinical examination; the measure is not therefore a diagnosis of major depression. 3) Although the types of online interaction are assessed, the data do not measure the quality of these relationships. No conclusions can be made about which relationships, either with people known in person or only online, are positive and which are negative. 4) Non English speaking youth were excluded. It is possible, based upon the findings that the distribution of ethnicity/race differed significantly by the report of depressive symptomatology, which online interactions may also vary by racial and ethnic background. 5) Youth who use the internet exclusively at non home environments, such as at school, the library, or other locations, may have been undercounted because persons without a home phone were excluded from the sampling frame. **Recommendations:** 1) Future studies should focus on understanding the nature of online interactions (e.g., are they supportive and positive, or negative and coercive) and the underlying temporality (e.g., are youth with depressive symptomatology seeking out online relationships or do these relationships in some way contribute to depressive symptomatology).

Table 13. A critical evaluation of the studies included in the systematic review that explored adolescents' engagement in risky online behaviours

Study	Researchers' review
Quantitative studies	
Beebe et al. (2004)	1) Many factors (i.e., psychological, behavioural factors) were measured using binary responses. This is problematic because it is not clear to what extent psychological and behavioural factors relate to engagement in risky behaviours. 2) Some questions (e.g., "have you ever had sexual intercourse?" and "have you ever tried to kill yourself?") are problematic. This is because they do not uncover the extent of the sexual activity or suicidal behaviours (i.e., was it thoughts to self-harm or actual suicide attempt?). 3) This study is limited to students who had chat room access at home, therefore, it does not include individuals who accessed chat rooms in other places.
Beyens & Eggermont (2014)	1) The questions used to measure variables were not presented. Therefore, it is not clear how variables were measured. Also, it does not allow replicability of the study. 2) It is unclear whether the dating partner was known online or offline.
Dowell, Burgess & Cavanaugh (2009)	1) The questions used to measure personal information were not presented. Therefore, it is not clear how this was measured and to what extent participants shared personal information. This, also, does not allow the study to be replicated. 2) The data was analysed using correlational analysis. This means that causality between the variables cannot be inferred. 3) Data was collected from 2 schools (1 public and 1 parochial), both located in a socio-economic middle to upper-middle class suburban area located in the United States. Therefore, the findings cannot be generalised to all youth from different regions and lower socio-economic backgrounds.
García et al. (2014)	1) The questions used to measure variables were not presented. Therefore, it is not clear how variables were measured. Also, it does not allow replicability of the study. 2) The findings related to adolescents were enrolled in schools. Therefore, adolescence who do not attend were not included in this study. This, therefore, provides a partial understanding of adolescents' engaging in risky online behaviours. 3) This study focused on social networking profiles, therefore, the findings cannot be generalised to other online platforms.

Liau, Khoo & Hwaang (2005)	1) Some questions used to collect data are problematic. For example, questions measuring communication with parents relate to parents talking to participants about the internet and whether participants would tell their parents about their online interactions. This does not necessary measure the quality of communication with parents. 2) It is unclear whether visiting pornographic websites and inappropriate websites was intentional or unintentional.
Noll et al. (2009)	1) This study does not state who participants met offline (i.e., peers or adults). 2) Participants were required to create an avatar, however, this does not accurately represent or measure online self-presentation. For example, it does not suggest that participants actually display themselves in that way online. 3) Avatar creation was based on bodily and clothing choices. This does not necessarily and holistically portray provocative behaviour. 4) This study was conducted in a laboratory, therefore, it may lack ecological validity.
Pujazon-Zazik, Manasse & Orrell-Valente (2012)	1) Data can be biased as some participants may engage in behaviours but not post them on social media or vice versa. 2) These results originate from profiles that were publicly accessible. These participants have displayed risky online usage by having their profiles set to public. Therefore, they may have propensity to engage in other risky behaviours. Therefore, the findings do not include the characteristics and behaviour of those individuals whose profiles are set to private. 3) Findings cannot be generalised to another virtual environment as only MyLol.net was examined.
Shin & Ismail (2014)	1) The results are limited as participants were asked about the parent/caregiver that the participant spent most time with at home. This may be the better choice of parent as they may be the one who mediates their internet use at home, however, the other parent (in family dynamics where there are two parents) may also influence or restrict risky internet use.
Stamoulis & Farley (2010)	1) The questions used to measure online and offline behaviours were not presented. Therefore, it is not clear how variables were measured and to what extent participants engaged in these behaviours. Also, it does not allow replicability of the study. 2) Findings cannot be generalised to other virtual environments as only social networking sites were examined.

	3) Participants were required to answer yes or no to the questions. This is problematic as it does not capture the extent of behaviours.
Vanderhoven et al. (2014)	1) The findings cannot be generalised to other virtual environments as only Facebook was examined.
The following 7 studies used data from the YISS1- YISS-2 and YISS-3.	
Mitchell, Wolak & Finkelhor (2008) Mitchell & Ybarra (2007) Walsh, Wolak & Mitchell (2013) Wells & Mitchell (2008) Wolak, Mitchell & Finkelhor (2003) Wolak, Finkelhor & Mitchell (2008) Ybarra, Alexander & Mitchell (2005)	1) The data used in these studies originated from the YISS-1, YISS-2 and YISS-3 national surveys. These national surveys aimed to gather data about adolescents' internet usage and characteristics broadly. This can be problematic as the study did not explore the phenomenon in depth. For example, Wells and Mitchell (2008) measured physical and sexual abuse using 1 item. This does not give an in depth understanding of these factors and the relationship with risky online behaviour. Also, the reliability of the measures cannot be established. 2) The survey did not use valid or reliable measures to explore adolescents' behaviour and attributes. 3) The questions used in the survey question participants about their online and offline behaviour that occurred in the previous year. For example, Walsh, Wolak & Mitchell's (2013) study asked participants about their adverse experiences (i.e., physical or sexual abuse) and psychosocial characteristics that occurred in the past year. Similarly, Mitchell & Ybarra (2007) asked participants about their online interactions that occurred in the previous year. This can potentially bias findings as participants who experienced certain traits over a year prior to completing the survey would not be included. Thus, this can lead to an underrepresentation of participants engaging in particular behaviour. 4) The surveys used self-reported measures to collect data. This can bias findings as participants can over or under report their experiences. 5) In relation to Mitchell, Wolak & Finkelhor (2008), the findings cannot be generalised to other virtual environments because only blogs were investigated. 6) Ybarra, Alexander & Mitchell (2005) did not include the questions used to measure risky online behaviours were not included. This does not allow the study to be replicated.

Qualitative studies	
Hillier, Mitchell & Ybarra (2012)	1) The focus groups were conducted online via a bulletin board style format. This can potentially influence disclosure. 2) The majority of participants attended public school, therefore, findings cannot be generalised to adolescents who attended private school. The latter group may have different characteristics (i.e., higher socio-economic status) that can play a role in the findings.
Williams & Merten (2008)	1) Data may be biased as some participants may engage in behaviours but not post them on social media or vice versa. 2) Data was limited as comments posted by the researcher in the preceding 60 days were reviewed. 3) These findings cannot be generalised to other virtual environments as only blogs were examined.

Table 14. Quality appraisal of quantitative studies factors associated with adolescents' engagement in online risky behaviours using the Quality Assessment Tool for Quantitative Studies

Study	Selection bias	Study design	Confounders	Blinding	Data collection method	Withdrawals and dropouts	Global rating
Beebe et al. (2004)	Moderate	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Beyens & Eggermont (2014)	Moderate	Weak	Weak	Moderate	Strong	Not applicable	Weak
Dowell, Burgess & Cavanaugh (2009)	Strong	Moderate	Weak	Moderate	Weak	Not applicable	Weak
García et al. (2014)	Strong	Weak	Weak	Moderate	Weak	Not applicable	Weak
Liau, Khoo & Hwaang (2005)	Moderate	Weak	Not applicable	Moderate	Weak	Not applicable	Weak
Mitchell, Wolak & Finkelhor (2008)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Mitchell & Ybarra (2007)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Noll et al. (2009)	Weak	Moderate	Strong	Moderate	Strong	Not applicable	Moderate
Pujazon-Zazik, Manasse & Orrell-Valente (2012)	Moderate	Weak	Not applicable	Moderate	Not applicable	Not applicable	Unable to provide rating
Shin & Ismail (2014)	Moderate	Weak	Not applicable	Moderate	Weak	Not applicable	Weak

Study	Selection bias	Study design	Confounders	Blinding	Data collection method	Withdrawals and dropouts	Global rating
Stamoulis & Farley (2010)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Vanerhoven et al. (2014)	Strong	Weak	Strong	Weak	Not applicable	Not applicable	Weak
Walsh, Wolak & Mitchell (2013)	Moderate	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Wells & Mitchell (2008)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Wolak, Finkelhor & Mitchell (2008)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Wolak, Mitchell & Finkelhor (2003)	Strong	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Ybarra, Alexandra & Mitchell (2005)	Strong	Moderate	Weak	Moderate	Weak	Not applicable	Weak

Table 15. Quality appraisal of qualitative studies investigating factors associated with adolescents' engagement in online risky behaviours using the using the NICE Checklist for qualitative studies

Study	Theoretical approach	Study design	Data collection	Trustworthiness	Analysis	Overall assessment
Hillier, Mitchell & Ybarra (2012)	+	-	+	+	++	+
Williams & Merten (2008)	++	-	++	+	+	+

++ (all or most of the checklist criteria has been fulfilled, + (some of the checklist criteria has been fulfilled) and – (few or no checklist criteria has been fulfilled.

Engagement in risky online behaviours and online sexual victimisation risk, resilience and protective factor discussion

These systematic reviews aimed to synthesise demographic, psychological, social, environmental, developmental, interpersonal and behavioural factors that are associated with adolescents' engagement in risky internet behaviours and online sexual victimisation of children and young people. The following section discusses the findings from both systematic reviews.

Online behaviours

The identified studies explored the influence frequency of internet use and engagement in risky online behaviours had on engagement in other risky online behaviours and online sexual victimisation. Studies that explored internet frequency reported that intense and frequent internet usage significantly increased the likelihood of participants posting personal information online, forming close online relationships and increased the risk of being sexually solicited online (Dowell et al., 2009; Mitchell, Finkelhor & Wolak, 2001; Walsh, Wolak & Mitchell, 2013). The results also highlighted that the frequency of adolescents' risky online behaviours differed depending on the type of behaviours participants engaged in. The frequency of participants using chatrooms (9%), meeting someone online who they first encountered online (26%), adding online strangers to their social networking site friend lists (25%), and forming close online relationship (11%) was relatively low (Noll et al., 2009; Walsh, Wolak & Mitchell, 2013; Ybarra, Alexander & Mitchell, 2005). Studies that used large national samples and recruited participants via random and stratified sampling generally reported lower engagement in risky behaviour in comparison to clinical and high school sample. The latter samples used smaller samples and generally recruited via convenience sampling. Thus, the national surveys appear to provide more accurate figures due to the sample size and sampling method used.

Two studies reported frequencies in relation to posting personal information online. One study collected data from 404 10 to 15 year olds using self-reported questionnaires. The findings suggested that 27% and 31.1% of females and males posted personal information online respectively (Dowell et al., 2009). Another study analysed 752 profiles of 14 to 18 year olds and reported that 11% of profiles contained personal identifiers (Pujazon-Zazik et al., 2011). The latter study reported a lower rate of individuals posting personal information, however, the differences can be attributed to the methodologies used to gather data. For example, Pujazon-

Zazik et al. (2011) used a larger sample size and was an observational study. Therefore, this method was not biased through participants self-reporting their online behaviours.

The identified studies suggested that adolescents who engaged in risky online behaviours were also more likely to engage in other sexual and non-sexual risky online behaviours. For instance, individuals who posted personal information about themselves, formed close relationships with people met online and met people offline who they first encountered online were more likely to disclose personal information. They were also more likely to engage in aggressive online behaviours, play online jokes or annoy friends or family members, view websites with violent images and hate sites (Dowell, Burgess & Cavanaugh, 2009; Liau, Khoo & Hwaang, 2005; Walsh, Wolak & Mitchell, 2013). This suggests that children and young people generally do not engage in one isolated risky behaviour online but rather a combination of risky online behaviours. Research has suggested that the more risky online behaviours an individual engages, the more likely they are to experience online sexual solicitations (Wolak et al., 2008). This may be due to their increased exposure to potential offenders.

Dowell et al. (2009) reported that exhibiting sexualised behaviours online (i.e., talking about sex, seeking the topic of sex, visiting sex websites and pornographic websites) were associated with posting personal information online. These findings suggest that engagement in sexual risky behaviours may be a result of an individuals' natural curiosity to explore their sexuality, explore and learn about sexual relationships (Steinberg, 2008). Also, it may be that adolescents are experiencing underlying issues such as experiencing traumatic experiences, lack of guardianship, physical abuse or neglect and sexual abuse that cause them to display more sexualised behaviour online. This is explored further in chapters 5, 6 and 7.

The identified studies suggested that adolescents who engage in risky online behaviours are significantly more likely to encounter online sexual solicitation and exploitation. This finding was consistent among qualitative and quantitative research that used national, high school and child protective service samples (Chang et al., 2014; Livingstone & Gorzig, 2014; Mitchell, Finkelhor & Wolak, 2007; Whittle, Hamiliton-Giachritsis & Beech., 2014). The review highlighted that sexual and non-sexual risky online behaviours increased the likelihood of children and young people receiving sexual solicitations, aggressive solicitations, being groomed and sexually exploited (either online or offline). Non-sexual online risky behaviours included high levels of online gaming, using chat rooms, interacting with people met online, posting pictures of themselves, sending pictures to someone met online and pretending to be

someone else. Moreover, sexual online risky behaviours included talking about sex with someone met online, displaying provocative display pictures, exposure to online pornography and acting sexually online.

In general, these findings indicate that the more time a child or young person spends online, the more likely they are to be a victim because they are exposed to potential offenders for a more extended period (Cohen & Felson, 1979; Marcum, Ricketts & Higgin, 2010). This combined with the types of risky online activities children and young people engage in increases their vulnerability to online sexual victimisation. For example, victims who post information about themselves online gives offenders the opportunity to select a victim based on their preference and gain an understanding of their interests and lives that they can use to groom them. This can make the child or young person more attractive and 'suitable' to the offender (Cohen & Felson, 1979).

Previous studies have suggested that offenders strategically place themselves in environments where they can access victims (Olson et al., 2007; Webster et al., 2012). Engaging in the above risky online behaviours can increase victims' exposure to motivated offenders and enhances their suitability. For example, online sexual offenders specifically scan online environments and seek vulnerable victims who seem like they are willing to talk to anyone and appear 'needy' (Malesky, 2007). Therefore, this combined with adolescents' tendency to form close online relationships online, may increase the chances of offenders and victims interacting online. Thus, the review supports the Routine Activity Theory (Cohen & Felson, 1979).

Demographic factors

Studies reported that age, gender and sexuality increased adolescents engagement in risky online behaviours and the risk of participants experiencing online sexual victimisation. Nine studies considered demographic factors as predictors of risky internet behaviours such as making face to face contact with strangers, visiting chat rooms, disclosing personal information and communicating with strangers or people known exclusively online (Beyens & Eggermont, 2014; García, 2014; Hillier, Mitchell & Ybarra, 2012; Mitchell & Finkelhor, 2003; Pujazon-Zazik, Manasse & Orrell-Valente, 2012; Stamoulis & Farley, 2010; Wolak, Finkelhor & Mitchell, 2008; Wolak, Mitchell & Finkelhor, 2003).

Age. One study reported that older teenagers (15 to 17 year olds) were more likely to disclose personal information to strangers and meet strangers offline who they first encountered online than younger teenagers (12 to 15 year olds) (García, 2014). This finding in consistent with previous literature that has reported that older children are more are risk in comparison to younger children. Livingstone et al. (2011) found that 20% of adolescents in the United Kingdom aged 15 to 16 years old reported receiving a sexual message online in the past 12 months, compared with 5% of 11 to 12 year olds. The systematic review exploring victim risk factors found that participants who experienced online sexual solicitation were aged between 13 to 17 years (Flanders, Cosic & Profaca, 2009; Soo, Kalmus & Ainsaar, 2012). Whittle et al. (2014) interviewed 8 victims of online grooming and sexual exploitation and reported that victims were aged 13 on average at the time of the offence. This demonstrates that victims of online grooming that led to sexual exploitation, either online or offline, were also slightly younger than those who typically receive sexual solicitations. However, Whittle et al.'s (2014) study used 8 participants, therefore, it is not possible to generalise this finding. Thus, these results suggest that older adolescents are involved in using the internet in a more risky way and are prone to online sexual victimisation.

This may be due to developmental changes that occur during adolescence. The theory of psychosocial development (Erickson, 1950, 1963) outlines eight stages that individuals encounter from infancy through to childhood, adolescence and adulthood that develops identity (Adams, 1998; Marcia, 1993). The fifth stage, occurring during adolescence (about 12 to 18 years), is characteristic of an individual forming their identity. As part of identity formation, adolescents' want to expand their social network and explore romantic relationships, take risks and seek sensation (DeLamater & Friedrich, 2002; Livingstone & Gorzig, 2014; Steinberg, 2008;). This is supported by Livingstone and Görzig's (2014) study who reported that higher sensation seeking was associated with receiving sexual messages online. This natural development and curiosity transitions into the online environment where adolescents commonly socialise with peers and form new friendships. Thus, this can increase victims' exposure to adult sex offenders who are actively seeking vulnerable victims (Webster et al., 2012).

Gender. Previous studies and law enforcement statistics reported that females experience more sexual solicitation and exploitation than males (Gijn-Grosvenor & Lamb, 2016; May-Chahal et al., 2018; Santisteban & Gámez-Guadix, 2017). Santisteban and Gámez-Guadix (2017) collected data from 2,731 participants aged between 12 and 15 years old. The

findings reported that females (15.9%) were sexually solicited more than males (9.3%). Also, sexual interactions between adults and female victims (15.6%) were greater than male victims (9.3%). Alternatively, some research that has used transcripts reported that males are victimised more than females. Gijn-Grosvenor and Lamb (2016) analysed transcripts that included 101 convicted offenders who groomed children online. The findings highlighted that 35 offenders groomed female victims and 49 groomed male victims. These findings may be influenced by the methodologies used to collect data. For example, Gijn-Grosvenor and Lamb (2016) analysed transcripts that involved convicted offenders and decoy victims. The decoy victims included 52 and 49 volunteers pretending to be girls and boys respectively. Therefore, these encounters did not occur naturally and do not reflect cases where real boys and girls were groomed and sexually exploited.

The studies identified in this systematic review highlighted that there are gender differences in relation to adolescents' engaging in risky online behaviour. For example, Stamoulis and Farley's (2010) study highlights that engagement in risky online behaviours was more common in younger females and older males. Moreover, the identified studies indicated that males were more likely to arrange face to face meetings with strangers, send sexual pictures to online strangers, post personal information, visit chatrooms, interact with strangers and share personal information (i.e., mobile number) (Beyens & Eggermont, 2014; García, 2014; Pujazon-Zazik, Manasse & Orrell-Valente, 2012; Stamoulis & Farley, 2010; Vanderhoven et al., 2014). Whereas, females are more likely to post more contact information and form close online relationships (Stamoulis & Farley, 2010; Wolak, Mitchell, Finkelhor, 2003). This potentially suggests that males and females motivations to engage in risky online behaviours are different. For example, García (2014) reported that males desire to flirt online whereas females want to expand their social network.

Figures from a national survey and law enforcement agencies have reported that 70% to 80% of adolescents from a national sample and reports received by law enforcement agencies included female victims respectively (Child Exploitation and Online Protection Centre, 2013; Wolak et al., 2006). Some studies identified in this review have found similar findings. For example, Flanders, Cosic & Profaca (2009) conducted a national survey and gathered data from 2,880 adolescents. The results highlighted that 35% and 23% of females and males respectively were frequently asked intimate questions respectively. This suggests that the discrepancy between males and females is greater in law enforcement figures in comparison to national

surveys. This may be due to law enforcement figures generally relating to cases that are detected or reported and potentially show an overrepresentation of female victims, and a potential underrepresentation of male victims. This may be because males feel more humiliated and ashamed about their sexually abusive experiences, and are likely to disclose as a consequence (Sorsoli, Kia-Keating & Grossman, 2008).

In contrast, Chang et al.'s (2014) study reported that males experienced greater online sexual solicitation in comparison to females. These findings may be because these males engaged in more risky internet behaviours than their female counterparts. This potentially suggests that their online exposure was greater and consequently they experienced more sexual solicitations (Cohen & Felson, 1979; Olson et al., 2007). It may also be that the offenders who approached victims in this sample preferred males as opposed to females. Therefore, this indicates that factors such as offender's preference and motivations, and adolescents' online exposure and engagement in risky online behaviours, can contribute to the victimisation experience.

Sexuality. Two studies reported that sexuality is a predictor of online risky behaviours (i.e., visual sexual communication with online strangers and having friends that are known exclusively online) (Beyens & Eggermont, 2014; Hillier, Mitchell & Ybarra, 2012). The first study used a quantitative approach and collected data using an online survey (Beyens & Eggermont, 2014). The other study adopted a qualitative approach, used online focus groups and compared LGB individuals' responses with non-LGB individuals (Hillier, Mitchell & Ybarra, 2012). The latter study showed that LGB and non-LGB participants' accounts differed. The findings suggested that LGB participants made more friends online, maintained these friendships for several years and sought emotional support. This is consistent with previous research that highlights the identity development process that LGB undergo and the characteristics associated with this can cause vulnerability in the online environment (Silenzio et al., 2009). Previous practitioner research that gathered information from practitioners reported that individuals who were exploring their sexuality were more likely to be sexually exploited online (Palmer, 2015).

These findings can be explained in relation to developmental processes. A key component of identity formation that generally occurs during adolescence is individuals exploring their sexual orientation (Plummer; 1975; Ponse, 1978; Troiden, 1979). Research has highlighted that LGB individuals become aware of same-sex attraction around the age of 11 and their same-sex sexual contact occurs around 16 years old (Maguen et al., 2002). This emphasises that this

period is crucial for individuals' to develop their LGB identity. In addition, LGB individuals experience milestones that their non-LBG counterparts do not. A key difference is that LGB individuals experience the 'coming out' process in comparison to non-LGB individuals (Cass, 1979; Troiden, 1989). Coleman (1982) described five developmental stages: pre-coming out, coming out, exploration, first relationships, and identity integration. In the pre-coming out stage, individuals know something is different about themselves, but are not conscious of same-sex feelings. In the second stage, coming out, individuals have admitted to themselves that they have homosexual feelings, although they may not have a clear understanding of their sexuality. Individuals then move into the exploration stage, where they experiment with their newly recognised sexual identity. There are three developmental tasks that individuals face in this third stage and these are: 1) they must develop interpersonal skills for meeting those of similar sexuality, 2) they need to develop a sense of personal attractiveness and 3) they must learn that sexual activity does not in and of itself establish healthy self-esteem. In the fourth stage, individuals learn same-sex relationship skills and in the final stage they bring together both their public self and private self to create an integrated homosexual identity.

It may be that during the exploration stage, adolescents go through a period of emotional and behavioural exploration with homosexuality online. These individuals generally encounter greater psychological and mental health problems (i.e., distress, anxiety, depression, suicide), psychosocial problems (i.e., lack of access to support services homeless, unemployment) (Kosciw et al, 2013; McCann et al., 2017; Stein, 2012). This is potentially because LGB face issues such as negative societal views on homosexuality, prejudice, discrimination and can be isolated from society (McCann et al., 2017). The resulting discrimination can often lead to individuals feeling rejected, ostracised and marginalised leading to feelings of shame and social isolation (Grossman & D'Augelli, 2006; Reisner et al, 2015).

Therefore, it may be that adolescents' engage in risky behaviours such as forming connections with people met online, interacting with individuals known exclusively online and having friends that are known exclusively online to explore their sexuality. This may be heightened when their offline social network is scant due to stigma and a lack of support. Therefore, LGB individuals may experience difficulty to express themselves offline and seek support, therefore, the safety and social control afforded by the internet may motivate individuals to seek sexual outlets and pursue encounters online (McKenna, Green, & Smith, 2001). This can potentially explain why LGB individuals are more likely to experience online sexual victimisation as they

are more exposed to offenders and offenders can groom them effectively using supportive and caring strategies (Malesky, 2007; Palmer, 2015).

Disability

The type and definitions of disability ranged in studies exploring disability in relation to online sexual victimisation. One study defined children who received special education services or had been diagnosed with physical disability as disabled (Wells & Mitchell., 2008). Whereas, the other study used a sample of students who attended special needs classes within regular schools (Muller-Johnson et al., 2014). These studies highlight that disabled individuals are more likely to receive sexual solicitations in comparison to those who are not disabled. This suggests that, similar to the offline environment, adolescents with disabilities are especially vulnerable to online sexual abuse (Wissink et al., 2015). This can be due to the cognitive, social and behavioural developmental processes involved in disabled individuals.

The Disability Identity Development Model (Gill, 1997), suggests that the developmental pathway for individuals who experience a disability differs in comparison to non-disabled individuals. Forber-Pratt et al. (2017) conducted a systematic review that consisted of 41 studies. They investigated a wide range of physical and cognitive disabilities (i.e., intellectual disabilities, hearing impairments, psychiatric disabilities). The findings suggested that identity formation among disabled individuals differed in terms of the way they see themselves, their bodies and interactions with the world. Disabled individuals experience intellectual impairments, may miss or misinterpret communicative cues, experience greater difficulty interpreting social situations and responding appropriately (Smith et al., 2010). Mazurek, Kanne and Wodka (2013) suggested that as disabled individuals experience difficulty in forming and maintaining relationships offline, they are more likely to use the internet to engage with others. Thus, their vulnerability can transition from the offline world into the online world and, potentially, their lack of risk awareness and social skills may put them at risk of being sexually abused online.

In addition, disabled individuals lack assertiveness or independence and rely on others to nurture them. Therefore, this overdependence and unquestioning compliance may make them especially vulnerable to online sexual victimisation (Gill, 1997). An offender can build deceptive trust and gain compliance from victims who may not question the offenders' motives or behaviour. Generally, there is very little empirical research in relation to how the

developmental and characteristics of individuals who experience disability relates to online sexual victimisation vulnerability. Therefore, it is important to consider these factors as this can potentially prevent victimisation of disabled individuals.

Psychological factors

The systematic review found that individuals who experienced psychological difficulties were more likely to engage in risky online behaviours and also be at risk of online sexual solicitation and exploitation. The synthesis of data suggested that individuals who experienced depressive symptomology, low self-esteem and loneliness experienced more sexual solicitation, grooming and sexual exploitation (Mitchell, Ybarra & Finkelhor, 2007; Whittle, Hamilton-Giachritsis, 2014). For example, Whittle, Hamiliton-Giachritsis & Beech's (2014) findings indicated that victims of online grooming and sexual exploitation engaged in risky online behaviours (i.e., shared personal information online, have open profiles, close online relationships with strangers) and experienced low self-esteem, confidence and mood as well as loneliness. Five studies revealed that adolescents who experience high emotional distress, suicidal attempts, self-harm, depressive symptomatology and feeling isolated were more likely to engage in online risky behaviours (i.e., chat room use, sending personal information about themselves, forming close relationships and interacting with a person met online) (Beebe et al., 2004; Beyens & Eggermont; 2004; Mitchell, Wolak & Finkelhor, 2008; Mitchell & Ybarra, 2007; Walsh, Wolak & Mitchell, 2013; Ybarra, Alexandra & Mitchell, 2005). Furthermore, Beyens and Eggermont (2014) reported that individuals experiencing social anxiety were also more likely to engage in visual sexual communication with a stranger.

There are a few possible explanations for why individuals experiencing psychological issues are more vulnerable to online sexual victimisation as well as engaging in risky online behaviours. Individuals who experience psychological difficulties can be vulnerable to online sexual advances and be motivated to engage in risky online behaviours due to their internet use and underlying psychological mechanisms (Livingstone & Görzig, 2014). Studies have reported that individuals who experience depression, social anxiety, low self-esteem and confidence use the online environment for different reasons in comparison to those who do not experience psychological issues (Bonetti et al., 2010). Social anxiety relates to individuals worrying about and fearing social situations and an inability to cope in social situations (Shepherd & Edelmann, 2005). In addition, depression relates to individuals feeling sadness, experiencing low mood and a loss of pleasure or interest in activities (Wender & Klein, 2005).

These mental health characteristics can create loneliness, withdrawal from social networks, low self-esteem and confidence (Lasgaard et al., 2011).

Research has suggested that individuals experiencing these psychological difficulties are more likely to be friendly online, have a social network that is exclusively online friends and feel that their online friends understand them better (Sanders et al., 2000) They also use the online environment to seek emotional support, interact with others, disclose their feelings and personal information, and experience more satisfaction with online friends (Morahan-Martina & Schumacher, 2013). The literature highlighted that depressive and socially anxious individuals use the internet as a medium to compensate for their social fears, distress, loneliness, depression, anxiety and low self-esteem (Bonetti et al., 2010).

Consequently, these individuals are more prone to socialising, seeking friendships and engaging with individuals only known online as they prefer online communication in comparison to offline communication (Van den Eijnden et al., 2008). These individuals generally benefit from the anonymity, lack of social cues and asynchronistic communication the internet offers. This may be because they find online anonymity and lack of social cues rewarding. Thus, they are able to establish social relationships, connectedness and a sense of belonging while social rejection and intimidation is minimalised. Therefore, they engage with people only known online to compensate for their lack of social functioning in the offline environment (Morahan-Martin & Schumacher, 2003). Thus, this systematic review supports the social compensation hypothesis (Williams & Karau, 1991) rather than the rich-get-richer hypothesis (Kraut et al, 2002).

Qualitative and quantitative studies highlighted that individuals who experienced online sexual solicitation and exploitation also experienced a negative or stressful situation. Typical stressful situations were parent's divorcing, death in the family, moving to a new home and caregivers losing their job (Mitchell et al., 2001; Whittle et al., 2014; Ybarra et al., 2004). This indicates that individuals may experience poor emotional regulation and an inability to cope or deal with their stressful situation. Victims can potentially resort to using the online space to regulate their emotions which can lead to engagement in risky behaviours (i.e., talking to strangers, display themselves sexually). Also, it may be that offenders grooming techniques (i.e., appearing caring and supportive) are more likely to be successful among these victims.

Beebe et al. (2004) reported that emotional distress may lead to individuals seeking and building connections online with people not known in the offline environment. This is consistent with the literature that indicates that when individuals experience emotional distress their self-control mechanism breaks down and can increase self-destructive tendencies (i.e., desire to punish themselves or experience suffering) (Piers & Singer, 1971). Thus, an individual who feels distress may not conduct healthy and adaptive behaviours but rather engage in self-defeating behaviours. Moreover, research suggests that emotional distress diminishes rational thinking and prevents the capacity to effectively regulate oneself. Individuals who are emotionally distressed are less likely to function effectively, and as a result, they become unable to regulate their behaviour toward the pursuit of positive outcomes and goals. Therefore, they become more impulsive, risk-oriented or preoccupied (Leith & Baumeister, 1996). Applying this to the context of online risky behaviours, it may offer an explanation as to why children and young people who experience distress may engage in more risky online behaviours. Subsequently, this can lead to encounters with online sexual offenders who may offer them affection, support and feeling of security so they can fulfil their needs (Tice et al., 2001). Psychological factors relating to online risky behaviour and victimisation are explored further in chapter 5, 6 and 7.

Research exploring online sexual offending has reported that offenders deliberately target individuals who display low self-esteem, disclose their feelings, appear that they are needy and willing to continue interaction with the offenders (Malesky, 2007; Tener et al., 2015). Therefore, children and young people's motivations for using the internet can place them at risk of being targeted by sexual offenders. As the grooming process involves the offender making the child feel special, grooming may be easier among children who experienced these feelings (Black et al., 2015; O'Connell 2003). Also, a key part of the grooming involves isolating children or young people from their social networks, in order to minimise detection and create a sense of trust (Olson et al., 2007) Thus, it may be that individuals who are already experiencing isolation in their lives may also be easier to groom and sexually exploit.

Poly victimisation

The systematic review identified two studies that reported engagement in risky online behaviours (i.e., chat room use and meeting someone offline who they first encountered online) was related to offline victimisation (i.e., sexual abuse, physical neglect and abuse) (Beebe et

al., 2004; Noll et al., 2009). One study recruited participants who had experienced childhood sexual abuse, physical abuse and neglect and findings suggested that abused individuals were more likely to meet someone offline that they encountered online (Noll et al., 2009). In addition, Beebe et al.'s (2004) reported that chat room use was common among individuals who experienced sexual and physical abuse.

This systematic review also highlighted that victims of online sexual solicitation and exploitation also experienced other forms of sexual and non-sexual victimisation. Non-sexual victimisation experiences included being attacked by a gang or another person, had something stolen, were involved in fights with friends, bullied either online or offline and experienced physical neglect and abuse. Sexual victimisation experienced involved being sexually abused and being raped (specifically disabled participants). Some studies highlighted that the victimisation experiences (i.e. being attacked by a gang, physical and sexual abuse) occurred in the past year of their lives (Mitchell, Finkelhor & Wolak., 2007; Ybarra, Leaf & Diener-West, 2004). Whereas some studies did not state how much earlier in the victims lives the victimisation experiences occurred (i.e. childhood or a short period before the online sexual victimisation) as the questions did not specify a timeframe (Mitchell, Finkelhor & Wolak, 2007).

These results are consistent with previous literature that indicates that individuals who experience multiple forms of victimisation are at an increased risk of experiencing further victimisation (Finkelhor et al., 2011). Also, individuals who encounter victimisation experiences, particularly of a sexual nature, develop a tendency to engage in risky sexual behaviours. They are also more likely to experience internalised and externalised behaviours and engage in delinquent behaviours in comparison to their non-victimised counterparts (Finkelhor et al., 2005; Finkelhor, Ormrod & Turner, 2007, 2009). This can be due to victimised individuals' psychological and emotional development being impaired that can potentially make them vulnerable to further sexual abuse. This can be explained by the Traumagenic model of sexual abuse (Finkelhor & Browne, 1985). This is discussed further in chapter 5, 6 and 7. Research indicates that childhood sexual abuse creates a propensity towards risk-taking behaviours (i.e. substance use, running away from home). These characteristics, therefore, can place victims in risky situations where they can be exploited by offenders.

Research also indicates that individuals who suffer different types of victimisation experiences learn frequent disappointment from their caregivers, which reinforces their unmet need for safety (Cohen et al., 2012; Kerr et al., 1999; Marshall et al., 1993). Poly-victimised adolescents have been found to have more anxiety toward unfamiliar relationships, decreased trust in others, and greater isolation than adolescents with fewer victimisation experiences (Cohen, 2012; Loding, 2007). Additionally, poor attachments can lead to problematic behaviours later on in life such as engaging in inappropriate and risky sexualised behaviours (Burk & Burkhart, 2003; Marshall, 2010). It may be that individuals who experience a lack of affection, sensitive and emotional care from their caregivers behave sexually as a way of coping and meeting their emotional and security needs (Burk & Burkhart, 2003; Marshall, 2010; Marshall et al., 1993; Seto & Lalumière, 2010). In contrast, studies have highlighted that children who are protected from victimisation experiences are more likely to develop secure caregiver attachments that are characterised by high self-worth and positive caregiver relationships (Bowlby, 1969; Rice, 1990; Rosenthal & Kobak, 2010).

Although the theoretical assumption can be that they have poor psychological and interpersonal functioning that can be influenced by the victimisation experiences. These individuals may present in a way online that increases their vulnerability. The findings from the systematic review studies focus on victims receiving sexual solicitation (not specifically sexual exploitation). Therefore, it is unclear the role other forms of victimisation plays in online grooming and sexual exploitation.

Problematic offline behaviours

The systematic reviews reported that offline anti-social behaviours (i.e., delinquency, substance and alcohol use) and engagement in highly sexualised behaviours increased online risky behaviour engagement as well as online sexual victimisation. Four studies indicated that offline risky behaviours are associated with adolescents' engaging in online risky behaviours (Beebe et al., 2004; Williams & Merten., 2008; Mitchell, Wolak & Finkelhor, 2008; Pujazon-Zazik, Manasse & Orrell-Valente, 2012). Two studies observed blog and teen dating website profiles and the other two collected data via surveys. These studies highlighted that engaging in anti-social / delinquent behaviour such as skipping school, engaging in sexual activity offline (e.g. multiple sexual partners, one night stands), alcohol use and cigarette smoking were

associated with posting personal information online, using chat rooms and interacting with people met online.

Research shows that individuals who engage in risky offline behaviours have a greater tendency for thrill seeking (Soo et al., 2012). It may be that these individuals' personality traits contribute to their online and offline risky behaviours. In addition, research has highlighted numerous factors that are theoretically linked with the offline behaviours listed above. For example, studies have reported that peer norms and acceptance of an individuals' behaviour relate to delinquency, alcohol and cigarette use and sexual behaviour. Also, poor emotional coping and regulation of emotions is related to the offline risky behaviours (Magar et al., 2008). For some adolescents, it may be that they experience poor psychological functioning and engage in externalised behaviours to manage their negative affect (Wills et al., 2011). Therefore, they may also interact in a risky manner online to cope with their negative emotions or experiences in the offline environment. In support of this, Mitchell, Wolak & Finkelhor (2008) investigated a sample of adolescents who conducted a national survey and findings indicated that adolescents' who interacted with strangers online reported a tendency for rule-breaking and aggressive behaviour. This potentially suggests that individuals who have particular personality traits (i.e., impulsivity, poor problem solving skills, poor coping mechanisms) may be more vulnerable as a result of engaging in risky online and offline risky behaviours. Additionally, these findings indicate that the tendency to engage in offline risky behaviours also transitions into the online environment. In contrast, an observational study reported low levels of delinquent behaviour (i.e., stealing, shoplifting or criminal activity) in relation to online risk behaviours (Williams & Merten, 2008). However, this study may not have captured all risky offline behaviours that an individual engages in due to not posting it online.

The identified studies exploring online sexual victimisation also identified that anti-social behaviour such as being naughty at school, substance use and delinquency increases the chance of receiving sexual advances (Noll et al., 2009; Mitchell, Ybarra & Finkelhor, 2007; Wells & Mitchell, 2014). The findings also reported that engaging in sexual behaviours offline and having partners in the offline environment as a risk factor that increased the likelihood of children and young people experiencing online sexual victimisation. Research indicates that victims who experience sexual abuse during childhood are significantly more likely to engage in highly risky offline behaviours (i.e., have multiple sexual partners and substance use)

(Fergusson, Horwood & Lynskey, 1997; Lalor & McElvaney, 2010; Luster & Small, 1994). Also, studies and meta-analysis findings have reported that anti-social behaviour, alcohol consumption, low levels of parental monitoring and support, peer norms and suicidal ideations increased the chance of adolescents engaging in sexual behaviours offline (Luster & Small, 1994; Van De Bongardt et al., 2014).

These findings can provide an explanation for why individuals engage in risky sexual and non-sexual behaviours (online and offline). These factors could potentially be an underlying issue that causes children and young people to engage in sexual activity offline, interact with people sexually and portray themselves in a sexual manner online. In addition, victims' exposure to sexual behaviour and content can normalise sexual requests they receive from offenders. For instance, during the grooming process, offenders aim to desensitise victims to the sexual exploitation by introducing sexual content and conversation. Therefore, it may be easier to groom a victim who has already been exposed to sexual activity. However, it is important to empirically consider sexual behaviours, attitudes in relation to sexual activity and motivations to engage in online sexual behaviours online.

Family relationships

The systematic review highlighted that parental monitoring, presence and relationships with parents and siblings play a role in children's and young people's vulnerability to experiencing online solicitation, grooming and sexual exploitation (Noll et al., 2009; Wells & Mitchell, 2008) as well as engaging in risky online behaviours (Liau, Khoo and Hwaang, 2005; Mitchell, Wolak & Finkelhor, 2008; Shin & Ismail, 2014; Stamoulis & Farley, 2010; Williams, Merten 2008; Wolak, Mitchell & Finkelhor, 2003;). The results indicate that restrictive parenting leads to greater risky online behaviour usage. For example, Shin and Ismail (2014) investigated the impact of parental behaviour on adolescents' online risk taking behaviours and findings demonstrated that restrictive mediation (i.e., controlling the child's internet use) was related to posting more personal information and adding people never met face to face to friend lists on social networking sites. In addition, Liau, Khoo & Hwaang (2005) reported that parental supervision (i.e., not being allowed to meet people face to face who were first encountered online, talking to strangers and giving out personal information was associated with meeting someone known online in the offline environment.

These findings are consistent with Livingstone and Helsper's (2008) study that explored parental regulation from 906 parent and 1511 children and young peoples (12 to 17 year olds) perspectives by interviewing them. Results suggested that parental bans were associated with a greater likelihood of the child giving out such information. However, it is not clear whether the ban occurred prior to the adolescent engaging in the risky online behaviour or once parents were aware that their child had given out personal information. These findings suggest that children who experience over protective parenting may encounter reduced autonomy and support, and perhaps less opportunity to engage in conversations about internet use and their lives in general. This may also lead children and young people to seek contact online and form relationships in the offline environment to fulfil their support and intimacy needs.

Alternatively, Williams and Merten (2008) reported that adolescents' who were involved in sharing personal information about themselves online also experienced more positive rather than negative interpersonal relationships with parents and siblings. A number of studies reported that engaging in risky internet behaviours was associated with negative interpersonal relationships (Shin & Ismail, 2014; Mitchell, Wolak & Finkelhor, 2008; Wolak, Mitchell & Finkelhor, 2003). These studies reported that negative relationships with parents such as experiencing high levels of conflict and low communication were associated with risky online behaviour usage (i.e., adding people known exclusively online to friend lists, posting personal information and forming close relationships). This suggests that individuals who appear to lead a 'rich' offline life and may potentially use the online environment to expand their social network. Thus, supporting the rich-get-richer hypothesis (Kraut et al., 2002). In contrast, it appears that some adolescents may lack a support system in the offline environment (i.e., lack of parental presence). Therefore, these individuals may engage in online risky behaviours to compensate for their lack of social connections in the offline environment. This finding supports the social compensation hypothesis (Williams & Karau, 1991). Essentially, it may be that both groups of adolescents want to expand their social networks and form connections with others, however, for different reasons.

The review also highlighted that parental presence and interpersonal difficulties between parents and children / young people was associated with online sexual victimisation. (Noll et al., 2009; Wells & Mitchell, 2008). These results highlighted that parental presence and monitoring decreased the likelihood of online sexual exploitation (Noll et al., 2009) whereas high conflict with parents increased aggressive online sexual solicitation (Wells & Mitchell,

2008). Previous literature has reported that during the adolescence period parents generally provide less support and warmth, are less close and spend less time with their children (Batholomew, 1990). This suggests that a natural decline in parental support, influence and emotional connection between parents and children occurs, partially due to the shift from parental influence to peer influence. However, those who experience conflict with their parents may experience even less support and emotional connection with their parents. Studies have highlighted that children who experience interpersonal issues with their parents are more likely to have formed insecure attachments, experience loneliness and isolation (Bretherton & Munholland, 1999; Bowlby, 1973, 1980). This could be an underlying mechanism that causes victim vulnerability. For example, securely attached individuals are more likely to express concerns, feeling uncomfortable or issues that distress them (Cassidy, 1994). Therefore, children or young people experiencing negative sexual encounters online may feel unable to disclose their experiences to their parents as they are unavailable.

It may also be that the parent and child hostility leads victims to engage in risky online behaviours such as adding people known exclusively online to friends lists, posting personal information and forming close relationships (Mitchell, Wolak & Finkelhor, 2008; Shin & Ismail, 2014; Wolak, Mitchell & Finkelhor, 2003). They may engage in these behaviours due to a lack of emotional support in their offline relationships (i.e., parents). Research exploring grooming patterns have emphasised that offenders aim to build friendships and relationships with their victims (Black et al., 2015; O'Connell, 2003). Therefore, victims may feel supported, listened to, and that their emotional needs are satisfied when offenders appear emphatic and supportive (Glaz & Buchanan, 2015). Also, victims who experience greater hostility with their parents may enable an offender to avoid detection. For example, during the risk assessment stage offenders usually enquire about the victim's relationship with their parents and their parent's schedule (Black et al., 2015; O'Connell, 2003). Therefore, offenders may believe that the chance of being detected is low among victims whose parents do not monitor their internet use and have poor relationships with them.

Peer influence

The findings highlight that peer influence is related to online sexual victimisation (Mitchell et al., 2007). Mitchell et al. (2007) conducted a national survey and reported that adolescents' who used the internet from a friend's home and in the presence of friends were more likely to

experience online sexual solicitations. Adolescence is characterised as a period where individuals are influenced less and spend less time with their parents than when they were a child (Steinberg & Morris, 2001). An individual generally transitions from being less influenced by their parents to being more susceptible to peer influences. This can be a consequence of children striving for greater autonomy, wanting to become part of social networks outside of their families, building friendships and wanting to develop their own identity (Rice & Dolgin, 2005). Adolescents begin to self-disclose less to their parents and become more secretive while the frequency of peer interactions increases as well as individuals seeking social and emotional support from peers (Brown, Dolcini, & Leventhal, 1997; Hergovich, Sirsch, & Felinger, 2002).

This highlights that during adolescence individuals are strongly influenced by their peers and peer norms. Research has highlighted that adolescents' behaviour tends to be similar to that of their peers (Brechwald & Prinstein, 2011; Heilbron & Prinstein, 2008). This can be explained by Social Learning Theory (Bandura, 1969) that suggests that engagement in new behaviours is promoted by observing the behaviours of valued social referents, such as peers. This process is referred to as role-modelling, imitation, or observational learning (Bandura, 1971). Thus, an individual is more likely to engage in behaviour the more their peers engage in that behaviour. This is due to them perceiving the behaviour as correct, functional and positive (Cialdini & Trost, 1998; Fekadu & Kraft, 2002; Rivis & Sheeran, 2003). The findings indicate that peers or peer norms may enable victims' risky online behaviours that can place them at risk of being targeted by sex offenders (Mitchell et al., 2007). However, further research is required to understand the influence peers have on a child or adolescents decision to interact with strangers online and comply with sexual advances.

Protective factors

The above has highlighted many factors that increase the likelihood of children and young people being sexually victimised online. However, only one study focused on protective factors (Whittle et al., 2014). Whittle et al. (2014) interviewed 8 participants who had experienced online grooming that resulted in online sexual exploitation or a contact sexual offence. A number of protective factors were identified relating to interpersonal relationships and the victim's environment. These include having a supportive and close relationship with family

and friends, consistent friendships, social support and schooling as well as a happy living environment reduced the impact of the abuse.

There is a general lack of understanding in relation to factors that reduce the likelihood of a child and young person being sexually victimised (i.e. solicited or exploited) online as well as factors that protect them from experience negative psychological consequences once the abuse has occurred. The little information known about these areas derive from clinical samples and victims known to social services and criminal justice. Therefore, it is important to consider a broader range of factors that can reduce and protect against the psychological damage a victim experiences as well as use non-clinical or non-criminal justice samples. These findings can offer a holistic understanding of protective and resilience factors that can be useful for child protection services, internet safety campaigners, therapists, psychologists and other professionals involved with children and young people (i.e., teachers).

Methodological and theoretical limitations relating to adolescents' engagement in risky online behaviours and victim risk, resilience and protective factors literature.

Methodological limitations. Seventeen and 15 studies were critically appraised using the Quality Assessment Tool for Quantitative Studies (Thomas et al., 2004) for the engagement in risky online behaviour and online sexual victimisation systematic reviews respectively. Two studies in each of the systematic reviews were critically appraised using the NICE Checklist for qualitative studies. Two studies were rated strong in relation to the confounder component of the quantiative quality assessment tool (Noll et al., 2009; Vanderhoven et al., 2014). This is due to the matching of participant characteristics in both groups (e.g., abused and non-abused girls) (Noll et al., 2009). Most studies in both systematic reviews did not match characteristics among those who engaged in risky online behaviours or experienced online sexual experiences and those who did not. This does not account for individual differences and can bias findings.

Most of the studies in both systematic reviews were rated as weak in relation to the data collection component. This suggests that reliable or valid measures were not used, mainly due to studies using single item measures to investigate psychological, behavioural and interpersonal factors (Chang et al. 2014; Mueller-Johnson et al., 2014; Wells & Mitchell, 2008). These studies used data from national surveys such as the Minnesota Student Survey or the Youth Internet Safety Survey (Mitchell, Wolak & Finkelhor, 2008; Mitchell & Ybarra, 2007; Walsh, Wolak & Mitchell, 2013; Wells & Mitchell, 2008; Wolak, Mitchell & Finkelhor,

2003; Ybarra, Alexander & Mitchell, 2005). These national surveys generally aimed to cover a greater breadth of factors about adolescents' internet use, as well as their behavioural, psychological and interpersonal factors. As a result, generally one or two items were used to measure variables. This is a practical method to collect data about a range of factors, however, this compromised the reliability and validity of the study.

The national surveys measured variables using binary response formats (yes / no responses). Thus, it can be argued that this data provided less understanding of the victim's life, psychological, behavioural and interpersonal characteristics as the surveys provided information about whether a certain event occurred, or a characteristic was present or not (e.g., sexual abuse was experienced or not). This does not provide detailed data about the frequency of sexual behaviour or suicidal risk (i.e., thoughts to end life or actual suicidal attempt). Therefore, future research should consider using reliable, valid and clinical assessment tools to measure these factors as well as determine the extent of factors. This information could provide more in depth knowledge of risk factors that increase adolescent risky online behaviour usage and online sexual victimisation experiences.

In relation to sampling, the review indicated that studies that conducted national surveys were generally rated as strong. This rating was due to the large sample sizes, random (in some studies random stratified) selection of participants, and a high response rate. This suggests that using these methods reduced selection bias and, in turn, provided data that was more representative of the sample in question (i.e., adolescent internet users). In comparison, other studies used convenience sampling by recruiting victims who were known to clinical services and authorities (Noll et al. 2009; Whittle, Hamilton-Giachritsis & Beech, 2014). Therefore, selection bias is greater amongst these studies, however, this is anticipated considering the nature of the studies. For example, gaining access to victims of online grooming and sexual exploitation is problematic. Some of the victims may be children, thus ethically it would be inappropriate to ask child victims of their abusive sexual experiences with adults. Also, even if access was granted, conducting such research may interfere with their recovery process. Thus, to reduce selection bias by using random selection and large datasets is not plausible in this research area.

Theoretical limitations and directions for future research. This systematic review has identified key areas that require further empirical investigation. Much of the current literature on adolescents engaging in risky online behaviours and victim vulnerability is descriptive. The identified studies reported factors (e.g., interpersonal and psychological difficulties, other victimisation experiences) that increase a victims' vulnerability to online sexual solicitation, grooming and exploitation (Noll et al., 2009; Wolak et al., 2001). However, a number of these studies did not provide a theoretical explanation for the results. For example, Muller-Johnson et al. (2014) reported that disabled individuals experience greater sexual victimisation in comparison to their non-disabled counterparts. This study provided little theoretical explanation for why these individuals are more likely to encounter sexual victimisation. Research exploring the developmental pathway of a disabled individual has reported that their cognitive development, psychological, interpersonal and social functioning differs to a non-disabled individual (Gill, 1994). However, the reasons why these individuals are sexually victimised greater has not been empirically tested.

Some studies provided explanations for why participants engage in risky online behaviours. For example, some studies have provided support for both the social compensation hypothesis (Williams & Karau, 1991) and the rich-get-richer hypothesis (Kraut et al., 2002). However, some studies did not provide theoretical explanation of the results (García et al, 2014). This review has provided potential explanations as to why some risk factors are associated with adolescents engaging in risky online behaviours and online sexual victimisation. For example, adolescents who experience psychological difficulties may have difficulties in regulating their emotions and experiencing social deficits in the offline world. Thus, as a result they may resort to using the online environment to overcome these issues. More research is required to empirically test these assumptions, and how they relate to online grooming and sexual exploitation vulnerability.

There are many factors during infancy and childhood that shape individuals' wellbeing and experiences. This includes the role of parents, traumatic experiences, and relationships with families and peers. The existing literature has mainly focused on exploring risk factors that occur in the individuals' life in the previous year of their life (from completing the study). This is due to researchers asking participants about their experiences that occurred in the previous month or 1 year of them completing the questionnaire. Therefore, there is little understanding of the influence childhood psychological and interpersonal factors have on risky online usage

and vulnerability to online sexual solicitation or exploitation. In addition, there is a lack of in depth understanding of the role interpersonal communication with peers and family, attitudes towards risky internet use, the ability to cope with stressful situations and regulate emotions influences online sexual solicitation and exploitation. Understanding these characteristics can offer a more holistic perspective on victim vulnerability and can be useful for prevention interventions.

Most of the research exploring online sexual victimisation has determined risk factors associated with online sexual solicitations (Mitchell, Ybarra & Finkelhor, 2007; Wells & Mitchell, 2007; Wolak et al., 2006). Studies using national samples have measured online sexual solicitation via three questions. These questions ask participants if they have been approached by someone on the internet that asked then personal questions (i.e., body looks, sexual things), requested to talk about sex or do something sexual that they did not want to do. These questions are problematic as it is not known how the participants responded to the requests, to what extent they communicated with the person and whether they complied with the sexual request. Thus, little is known about the risk factors associated with online sexual exploitation. This is problematic as some children or young people who receive sexual solicitations may be resilient and not comply, whereas, others will successfully be exploited. It is, therefore, important for future research to consider the latter group of individuals as they are more likely to experience harm and, thus, require greater support and safeguarding.

Studies that have explored this phenomenon have generally used samples that consist of child protection personnel or victims identified via clinical or law enforcement services (Wells & Mitchell., 2007; Whittle et al., 2014; Palmer, 2015). Thus, there is an issue with these samples as they include participants and cases that have been reported or identified to law enforcement of health care services. This does not include victims who do not recognise their experience as abusive or a criminal offence, did not report their crime or their experiences were not detected by parents or professionals. Also, studies that gather data from victims who were groomed online and sexually exploited use victims who are receiving therapeutic support from professionals and are deemed to be suitable to participate in research by professionals. In other words, professionals believe that these victims will not experience adverse consequences or their treatment will not be affected by engaging in research. Therefore, these samples cannot be generalised to all victims of online sexual exploitation.

This review identified one study that explored resilience factors that decrease the likelihood of children and young people experiencing online sexual victimisation and one study exploring protective factors decreasing the impact of the online sexual abuse. This general lack of knowledge in this area suggests that future research should examine other factors (i.e., parent and peer relationships, home environment, psychological and behavioural characteristics) that can prevent online sexual abuse, as well as can assist in the recovery of victims. This can provide different stakeholders with information to increase resilience in children and young people, and better treat victims of online grooming and sexual exploitation.

There is also a lack of understanding of victims' motivations for interacting with offenders and engaging in risky online behaviours. Gaining empirical evidence relating to this can reveal how victims' feel around the time of the offence, the underlying issues that lead them to interact with offenders and engage in risky online behaviour. This can in turn help professionals to address the victims' needs and potentially reduce their chances of being sexually victimised online. Understanding risk and resilience factors holistically and comprehensively, particularly risk factors associated with sexual exploitation, can provide practitioners with information to identify potentially vulnerable individuals.

Online grooming method results

A total of 10 studies were identified that explored the methods and techniques used by online sex offenders to groom and sexually exploit children and young people. The identified studies were published between 2005 and 2015, and data originated from Sweden, Finland, Germany, United States, United Kingdom and Italy. One study collected data from law enforcement officers, 1 from victims of online grooming and sexual exploitation, 1 from a victim and offender dyad and 3 included transcripts of the interaction between offenders and victims/decoys. A further four studies obtained data from perpetrators of online grooming and/or sexual exploitation of a child or young person. Among the studies that used perpetrators, 3 included convicted samples and one was a community sample.

In relation to sampling methods, the identified studies used convenience and stratified sampling. Also, 1 study recruited participants via different method, thus, was unaware of the sampling strategy. The remaining studies did not report their sampling strategy however it appears that these studies using convenience sampling. Information relating to the sample, sampling and data collection methods are included in Tables 16 and 17 respectively.

Table 16. Information relating to the samples and sampling methods used in studies that investigated methods and techniques offenders use to groom and sexually exploit victims

Sample	N of studies	Sampling	N of studies
Law enforcement personnel	5	Convenience	1
Victim	1	Stratified	1
Victim and offender dyad	1	Unknown	1
Transcripts	3	Not reported*	7

* These studies did not explicitly state the sampling method used however it appears convenience sampling was used.

Table 17. Data collection methods used in studies that investigated factors methods and techniques offenders use to groom and sexually exploit victims

Data collection method	N of studies
Transcripts	3
Online questionnaire	1
Questionnaire	1
Interviews	4
Telephone interviews	1

It is difficult to provide an accurate result of participant ages as some studies provided a range of offenders' age, some include a mean age and others did not provide any information. Moreover, some studies provided an age at the time of the offences, whereas others at the time of data collection. None of the studies explicitly stated their sampling methods, however, it appears that convenience sampling was used for all the studies.

The studies identified chatrooms, online profiles of minors, bulletin board posting, instant messenger, webcams, gaming platforms, forums and social networking sites as channels used to groom and sexually exploit children and young people. Two studies did not report the online environments where the offence took place. The studies reported a variation in the length of time of grooming a victim. This ranged from minutes to months. The identified study characteristics are included in Table 20 and the researcher's review is in Table 21.

Table 18. Studies investigating the methods online groomers use to groom and sexually exploit victims

Study	Country (where data was obtained)	Objective	Sample characteristics	Study characteristics	Key findings and main conclusions	Author(s) limitations and recommendations
Bergen et al. (2014)	Sweden Finland, and Germany	To explore the prevalence of identity deception and wanting to keep the interaction a secret, and how these behaviours relate to the outcome of sexual interactions online among a sample of adults who self-reported engaging in sexual interactions online with adults, children and adolescents.	**Sample:** Adults who self-reported online sexual interactions with an adult, child or adolescent **All participants:** n = 776 Age: Female m = 27.9 years, male m = 29.4 years old Gender: Female = 41.6% male = 58.4% **Offenders** (those who interacted sexually with children or adolescents) N = 136 Age (at the time of the offence): m = 25.4 years Gender: Female = 27.9%, male = 72.1% Ethnicity: NR Sexuality: Heterosexual = 57.8% Homosexual = 14.2% Bisexual = 28% **Victims**	**Design:** NR **Sampling:** Unknown **Data collection:** Online questionnaire **Offence:** Engaged in online sexual interactions with a child or an adolescent **Comparator:** Adult recipients **Length of grooming:** NR **Internet environment:** NR **Measures:** "Did you receive a revealing or sexual picture portraying the other person?" "Did you ever engage in cybersex with this person?" "Did you ever meet the person offline?" "Did you engage in sexual contact with the other person offline" Yes/no responses **Analysis:** Independent samples t-tests	• There was a positive association with using identity deception and receiving a sexual picture. • Identity deception and pretending to be younger increased the likelihood of having engaged in cybersex. • Identity deception did not increase the likelihood of having engaged in offline sexual contact. • Pretending to be younger and to be physically more attractive significantly decreased the likelihood of having met offline. • Suggesting keeping online interactions a secret increased the likelihood of cybersex. • Keeping the online interactions and offline meetings a secret increased the likelihood of having engaged in sexual contact offline. **Main conclusions:** 1) A large proportion (52.6%) of participants pretended to be younger in this study compared to previous studies using convicted perpetrators. This might be due to the method of self-report in the present study or a possible difference between convicted adults for sexual solicitation of adolescents and the participants in the present study (e.g., convicted perpetrators were caught because they did not deceive the contact about their identity and were therefore more easily identified). 2) Participants receiving sexual pictures could be a sign of the rising popularity in uploading	**Limitations:** 1) The researchers were unable to identify how many participants were recruited via the different online forums (i.e., Facebook, Twitter and online social discussion forums). Thus, the sampling frame is unknown. 2) There are issues relating to whether the sample was a true representation of online sexual offenders. Firstly, the sexual theme stated in the information could have produced a sample generally more interested in sexually related behaviours. Secondly, the questionnaire was a self-reported measure so there may be an underrepresentation of individuals who communicate with children and adolescents. 3) The responses to some of the questions were scant. This is because most questions in the survey were not compulsory. 4) Some questions may be misinterpreted by the participants. For example, the term "sexual or revealing picture" entails a myriad of possible subjective interpretations. **Recommendations:** None reported

			N = NR Age: younger than 13 – 17 years old Gender: NR		(e.g. onto online social networks) and sending (e.g. via smart phones) revealing pictures of oneself. 3) Identity deception increased the chance of receiving a sexual picture but suggested online secrecy did not. Approximately 50% received a sexual picture, many received a sexual picture without asking for it. This could be due to posting revealing pictures is quite popular; hence it may not require deceptive behaviours to receive one. 4) Pretending to be younger and physically more attractive decreased the likelihood of having met the contact offline. This might be because: a) children and adolescents are attentive to signs of deception and being careful when it comes to the decision meeting an online stranger offline or b) participants who deceive their contact never intend to meet with the contact offline fantasy driven as opposed to contact driven.	
Black et al. (2015)	United States	Consider the similarities and differences in the grooming process in online environments by analysing the language used by online offenders when communicating with their victims.	**Offenders** N = 44 offenders Age: 25 – 54 years old Gender: 100% male **Victims** Participants: Online vigilant group decoy Age: 12-15 years old Gender: Female n = NR male n = NR	**Design:** NR **Sampling:** NR **Data collection:** 44 transcripts acquired from the Perverted Justice website **Offence:** Online grooming (contact driven) **Length of grooming:** 1 - 47 days m = 8.75 days **Internet environment:** Chatroom **Analysis:** Linguistic inquiry word count and content analysis of strategies	Stages refer to O'Connell's (2003) stages. • The mention of offenders behaviour Being inappropriate ($p<.001$), discussion of the dangers of communicating with strangers over the internet ($p=.009$), flattery ($p<.001$), was used significantly more in the first stage ($p<.001$). • Stages one ($p=.01$) and two ($p=.02$) Have significantly more risk assessment related words than stage three. Assessing the target's parents' schedule was significant ($p<.001$), revealing that almost half (15 of 37) employed this strategy in the first stage, and 68% of the sample had enquired about parent's schedule by the second stage. • Friendship terms were not used more in the first stage of the grooming process ($p = .54$) and relationship terms were not used more in the second stage ($p=.75$).	**Limitations:** 1) The transcripts included a male only sample. Therefore, the results cannot be extrapolated to the grooming process used by female sex offenders. 2) The transcripts indicated that the victim and offender had communicated through other mediums such as telephone. Therefore, researchers were not privy to the entire conversation between the offender and decoy. 3) Transcripts included conversations with decoys, not real adolescent victims. 4) A small percentage of transcripts were used.

- Declaration of love and trust not significant p=.57 though it was first mentioned most often in stages two and four.
- Exclusivity terms used more in stages Three (p=0.1) and four (p=0.003) than during the first stage. Stage three has significantly more sexual terms than stage one (p=.004) and stage four (p=.006).
- Stage five did not have a significantlyhigher number of sexual terms. Stage 5 also did not have more meeting terms (p=.22).

Main conclusions:
1) Strategies employed by offenders did not occur in the linear step-by-step fashion proposed by O'Connell (2003).
2) Offender's assessment of risk is advanced in online contexts relative to face-to-face grooming. Risk assessment occurs early potentially to assess if the interaction is an online sting operation or to determine whether the target is worth investing their time into as a potential victim.
3) Offenders very quickly introduce blunt and explicit sexual comments.
4) Consistent with O'Connell's (2003) findings, exclusivity terms were more common in the third stage. There were no differences between the friendship forming, relationship forming stage and other stages. This is perhaps due to the multi-conversation nature of the transcripts. This refers to the interaction including words that fit the relationship and friendship forming stage.
5) Flattery was used in the first stage. This may have been to increase the likelihood that the target would respond positively.

Recommendations:
Future research should:
1) Assess whether male and female online offenders approach the grooming process differently. Further differences in the approach to grooming adolescent males vs females should be explored.
2) Examine whether offenders behave differently, or employ different strategies, on the phone or through text messaging than they do in private conversations online.
3) Consider using a larger sample.

Malesky (2007)	United States	Understand how sex offenders select their online victims.	**Sample:** Inmates in the Federal Bureau of prisons' sex offender treatment programme **Offenders** N = 31 Age (at the time of the offence): 23 to 52 years of age (M = 36.62) Gender: Male = 100% Ethnicity: Caucasian (94%), Asian/Pacific Islander (3%), African American/Black (3%) **Victims** Participants: Some were a law enforcement agent pretending to be a child. Age: NR Gender: NR	**Design**: NR **Sampling**: NR **Data collection**: Questionnaire Inmates in the Federal Bureau of Prisons' Sex Offender Treatment Programme (SOTP) **Offence**: Attempted to, or did perpetrate contact sex offenses against minors they met and communicated with over the Internet **Length of grooming:** NR **Internet environment**: Chat rooms 81%, online profiles of minors 48.4%, bulletin board postings 9.7% **Measures:** "What initially attracted you to a particular child/adolescent online that you wanted to establish a relationship with for sexual purposes?" **Analysis:** Researcher placed participants' comments in categories that reflected similar themes	Factors that served as an impetus for the participant to contact the minor: • A minor mentioning sex in any fashion online (e.g., in a child's online profile, screen name, posting, e-mail), appeared "needy" (when a child would do anything to keep talking to you) or "submissive", when victims are always online (shows a low sense of parental contact or interest in the child), when the minor's screen name was "young sounding". • Once online contact was established with a minor: 52% sent IIOC to minors, 97% engaged in sexually explicit online conversations with minors and 29% represented themselves as children while having online conversations with actual children/adolescents. **Main conclusions**: 1) Offenders read online profiles of children in an attempt to identify potential victims. 2) Offenders select victims who were willing to make sexual comments or discuss sexually related issues or topics.	**Limitations:** 1) Given that self-report was utilized to collect data, participants had the opportunity to minimise their sexually deviant internet usage and number of contact victims. 2) It is relatively common for sex offenders to minimize and deny their sexual offences and illegal sexual histories. However, due to the confidential nature of the research, no attempts were made to verify the veracity of the respondents' report. 3) All participants in this study were voluntarily involved in the SOTP. Individuals who enter this program often are very motivated to stop their sexually abusive behaviours. Thus, caution must be exercised when generalising the results of this study to sex offenders who chose not to engage in treatment or who are highly psychopathic. 4) The sample of offenders consisted almost exclusively of Caucasians. Therefore, these findings may not be generalisable to internet sex offenders of other racial and ethnic backgrounds. In addition, given that over half of the participants in this sample had completed at least junior college, the results of this study may not be generalisable to individuals with less formal education. **Recommendations:** 1) Minors should avoid topics of a sexual nature and not be drawn into sexual conversations over the internet. 2) Children should not provide personal information or make sexual remarks in their online profile or as part of their screen names.

						3) Parents/guardians should be involved with their children's online activity (i.e., known who they are communicating with and not allow them to spend inordinate amounts of time online). 4) Parents should convey to their children the importance of informing the parents if they receive online pornography/IIOC. 5) Children should inform parents if anyone engage them in online sexual conversation. 6) Future research should gather data from offenders who do not seek treatment for their sexual deviancy.
Marcum (2007)	United States	Examine tactics used by online predators	**Offenders** Age: 24, 50, 51 year old Gender: Male = 100% **Victims** Participants: Decoy Age: 12 - 13 Gender: Female = 100%	**Design**: NR **Sampling**: NR **Data collection**: First 3 transcripts chosen on the 'Perverted Justice' website **Offence**: Online grooming **Length of grooming**: Days, 3 months **Internet environment**: Chatroom **Analysis:** Latent coding	• Manipulation • Deception • Aggressiveness • Offenders seek approval that their sexual comments/behaviour is acceptable. **Main conclusions:** 1) All men used manipulation to lure their victims and were very blunt toward the adolescent females with their intentions of sexual activity.	**Limitations:** 1) Without having any knowledge about the life histories or current life styles of the three adult males in the case study, it is hard to make any solid assumptions regarding why they are sexually attracted to young children. 2) The sample consisted of three men therefore generalisations to the population of Internet predators cannot be made. **Recommendations:** 1) Policy makers can create courses of action to prevent sexual exploitation from occurring. The public can be aware of the manipulation techniques used to lure children into developing online and offline relationships with predators and can educate them on how to protect themselves. 2) Review communication between combinations of different genders of adolescents and adults. 3) Use a greater number of case studies.

						4) Analyse lifestyle and past experiences of predators.
Quayle et al. (2014)	Italy and United Kingdom	To explore the ways in which people convicted of online grooming identified the young people they targeted and the strategies that they used to engage them in both online and offline sexual behavior, while avoiding detection.	**Sample:** 12 convicted offenders (4 from Italy and 8 from the United Kingdom) **Offenders** N = 12 Age (at the time of the offence): Range 21-56 years old m=37.8 years old Gender: Male = 100% Ethnicity: White European = 100% **Victims** Participants: Young people targeted by offenders Age at the time of the offence/study Age: 11 - 15 (m = 13.3) years. old Gender: Female (n = 11) male (n = 1)	**Design**: NR **Sampling**: NR **Data collection:** Semi-structured interviews with convicted offenders **Offence**: Online grooming (contact driven) **Length of grooming**: NR **Internet environment**: Chatroom and instant messenger were the preferred **Analysis:** Constructivist grounded theory approach	1) Creating a private space in which to offend • Selecting technologies • Gaining access • Managing thoughts and feelings 2) Targeting minors • Choosing a target • Using visual images • Enabling fantasy • Meeting offline **Main conclusions:** 1) Offenders used profile information to selectively target young people. Technology afforded the opportunity to simultaneously contact and communicate with multiple victim within a discrete period of time, dropping the ones who did not respond and engaging with others thought to be easier targets. 2) From the perspective of the offender the internet allowed them to manipulate aspects of their identity, avoid detection by the selection of sites not requiring registration and enabled the control of privacy through the choice of privacy settings and migration across technological platforms. 3) Engagement with young people was for fantasy and for some was a precursor to an offline sexual assault.	1) The sample consisted of a small group of offenders. 2) The sample includes white male offenders and majority of the victims were females. Thus, the results cannot be generalised across other populations. 3) The sample was obtained from two European countries and there may have been differences in the treatment offered to respondents. As treatment programs encourage honest disclosure of information and insight about offending this may have resulted in differences between accounts. **Recommendations:** This tentative model requires further research.

Webster et al. (2012)	United Kingdom, Belgium and Norway	Describe how information, communication technology (ICT) may facilitate online grooming	**Sample:** 33 convicted offenders **Offenders** N = 33 Age (at the time of the offence): 18 – 55 and above Gender: Male = 100% **Victim:** Gender: Male (n = 5), female (n = 28) Age: 5 – 9 (n = 1), 10 – 12 (n = 5), 13 – 15 (n = 27)	**Design:** Qualitative **Sampling:** Convenience **Data collection:** Semi-structured interviews and chat logs **Length of grooming:** minutes, hours, days or months **Offence:** Online grooming **Internet environment:** Forums, chatrooms, webcams, gaming platforms (for males) **Analysis:** Framework and theme analysis	1) Scanning • Being in online spaces • Appraising the characteristics of particular young people online - virtual-sexual idealistic/romantic and physical characteristics 2) Identity • Online identities were shaped to present the men positively to young people • 'Minor' changes, major changes and no identity change 3) Style • Limited conversation and an instant sexual request/act characterised these approaches • Gentle socialisation (did not make instant sexual requests) • Complimentary • Mentor • Experience congruence • Some adopted a style of text to present themselves favourably. This included using text-type ('Hi gorgeous hope to cu l8r') and emoticons 4) Intensity • Visual desensitisation (sending young people adult-pornography and/or IIOC) 5) Language • Sexual test or subtle sexual Discussion. Competitions to masturbate to ejaculation or telling sexual jokes helped promote sex as entertainment 6) Incentives • Gifts • Threats	**Limitations:** None reported **Recommendations:** 1) Educate various stakeholders (i.e., campaigners, professionals and parents/carers) on the dangers of online grooming.

					Main conclusions: 1) Offending behaviour and grooming processes are heterogenous. Offenders remained at different behavioural points for various lengths of time according to a dynamic inter-relationship between their goals and needs, and the style, needs or reactions of the young person. 2) Movement through the different features of online grooming is neither unitary or linear. Instead, it is cyclical, involving a pattern of adoption, maintenance, relapse, and readoption over time.	
Whittle, Hamilton-Giachritsis & Beech (2014)	United Kingdom	To explore how the process of grooming takes place online	**Sample** 8 victims of online grooming that lead to either contact of online sexual abuse **Offenders** Age: 17-approximately 50 years old Gender: Male = 100% Ethnicity: White = 100% **Victims** Participants: n = 8 Age: (at the time of offence) 12 – 14 years old m = 12.88 year old (at the time of the study) m = 15.88 Gender: Female n= 6 Male n = 2	**Design:** NR **Sampling:** NR **Data collection:** Semi-structured interviews **Offence:** Grooming that lead to contact and non-contact abuse **Length of grooming:** 10 days to 1.5 years **Internet environment:** NR **Analysis:** Thematic Analysis, data driven approach	• Conversations (normal, mutual interests, victim focused and confiding) • Deception (webcam trickery, lies about interests and identity) • Regular/intense contact (increased methods of contact and talking through the night) • Secrecy (encouraging victim secrecy, allowing victims to decide secrecy) • Sexualisation (sexual chat, sexual photos and videos, sexual compliments, sexual contact and overemphasize sexual side of relationship) • Kindness and flattery (generosity, good listener, genuine fun, helping with homework, supportive, traditional and sexual compliments, promises about the future, personality and physical compliments) • Erratic temperament and nastiness (blackmail,threats, bribery, anger, possessiveness, encouraging jealousy, fights and being contradictory)	**Limitations:** 1) Victims may not have fully disclosed information because they did not know the interviewer. 2) Results may not be fully accurate due to the length of time between the offence and the interview. 3) The findings cannot be generalised to all victims of online grooming and sexual exploitation. Firstly, participants were likely to have been at different stages of their recovery. This does not represent all victims as those who were engaging in therapeutic or participating in research would have caused detrimental effects were not included. Also, victims aged between 13 and 18 at the time of interview and at different developmental stages. 5) The sample size is small. **Recommendations:** 1) Educational programmes for young people, parents, carers, child protection professionals and teachers can distinguish age appropriate relationships from inappropriate sexual relationships. Also, educate them about young peoples young online usage and

		• Grooming others (grooming friends and family) **Main conclusions:** 1) Grooming within this sample was not a linear or homogeneous process. 2) Offenders may adopt, relapse and re-adopt various manipulation strategies as necessary. 3) Grooming behaviour remains constant, irrespective of the environment and that child sexual offenders utilise technology both to facilitate access to victims and facilitate the abuse. However different manipulation techniques are utilised by different offenders (sometimes differing by victim) and that, although regularly sharing similar themes, the process of grooming is a unique experience to each victim. 4) Victims commonly feel immediate positive effects of the grooming such as trust, love, attention, support, excitement and confidence boosting; these tended to enmesh the victim and establish the abusers hold over them. In some cases, the grooming techniques gradually evoked more overtly negative effects on the victim such as fear, confusion, lack of control, and distancing from family. Therefore, perhaps there is a 'tipping point'.	the potential consequences, empower them to risk assess.

Whittle, Hamilton-Giachritsis & Beech (2015)	United Kingdom	To explore the dynamic of the relationship between victims and offenders, to examine similarities and differences in their perspectives of the same events	**Sample** 3 victims and 3 perpetrators of online grooming and sexual abuse **Offenders** N = 3 Age (at the time of the offence): 20-49 Gender: Male = 100% Ethnicity: NR **Victims** Participants: n = 3 Age (at the time of the offence): 12 - 14 years Age (at the time of study): 13 - 18 years Gender: Female 100%	**Design:** NR **Sampling:** NR **Data collection:** Semi-structured interviews with victim and offender dyads **Length of grooming:** Few days - several months **Offence:** Online grooming leading to sexual abuse both online and offline **Internet environment:** Social networking sites (Netlog, Facebook/MySpace), MSN **Analysis:** Thematic analysis	• Normal conversation, getting to know each other, discussed similar interests, regular/intense contact (all dyads), identity deception (1 out of 3 dyads), kindness and flattery (all dyads), erratic temperament and nastiness (all dyads), secrecy (2 out of 3 dyads), and grooming others (1 out of 3 dyads), sexual conversation, sexual photos/videos, feelings of "love" and "being in a relationship", longevity **Main conclusions:** 1) The grooming process varies depending on the individuals involved. 2) Offenders intentionally manipulate victims' emotions so victims feel enmeshed in the relationships with their offenders. 3) Offenders attributed intense contact to the victim. This is perhaps because of offenders' denial however victims did pursue continued engagement with the offender. 4) It is likely that offenders perceive sexualisation as most important to blame allocation and therefore this theme would be more likely to evoke cognitive distortions (resulting in disagreements) as a minimisation technique. The victims may also attribute blame to the sexualisation of the relationship and it should not be overlooked that they may also have minimised the extent of their role within this dynamic, most likely, as a means of coping, result of shame, embarrassment or fear of judgement or getting into trouble. 5) Victims did not view the sex offender as abusive at the time of the offence and, even with hindsight, not all of them consider it to be abuse.	**Limitations:** 1) This research is based on interviews with offenders and victims and therefore is subject to each individual's recollection and interpretation of events. 2) The researcher assumed that the offenders have a greater motivation to change details than the victims; most likely due to denial, cognitive distortion or a desire to be perceived more positively by the interviewer. 3) The offenders were at varying stages of sex offender treatment programs at the time of interview and this is likely to have a direct influence on their levels of acceptance. It is also possible that the victims may have provided incorrect information, most likely due to reframing events as part of coping, forgetting details, or a desire to be perceived more positively by the interviewer. 3) Police files were not accessed during analysis and therefore this analysis is based purely on the opinions of those involved, rather than the evidence of the case. 4) The study is based on a small sample of case studies and thus it is unlikely to be representative of all types of grooming behavior and relationships between victims and offenders. **Recommendations:** 1) Within a therapeutic framework, victims can be reassured that they should not feel guilt or responsibility if they enjoyed or even contributed to the sexualisation of the relationship as this can be a result of the grooming dynamic.

						2) Educating young people about healthy, age appropriate relationships and assisting them in being able to identify exploitative and abusive situations should assist prevention efforts.
Williams, Elliot & Beech (2013)	United States	To establish possible strategies that internet sex offenders use within the grooming process	**Offenders** N = 8 Age: 26 – 36 (m = 31.8) years old Gender: Male = 100% **Victims** Participant: Decoy Age: 12-14 years old Gender: Female = 100%	**Design:** NR **Sampling:** NR **Data collection**: 8 transcripts acquired from the Perverted Justice website **Length of grooming**: 1 -2 hour **Offence:** Online grooming **Internet environment:** Chatroom **Analysis**: Thematic analysis	1) Rapport- building (create friendship) • Co-ordination • Mutuality • Positivity 2) Sexual content • The introduction of sexual content into the conversation • The maintenance and escalation of sexually related conversation 3) Assessment • Assessing the environment • Assessing the child **Main conclusions:** 1) The study has similarities with O'Connell's (2003) study (i.e., themes of secretiveness, security, interest in the child, putting the child in control and assessing the child's trust, gaining empathy and understanding. Internet sex offenders look for accessibility, opportunity and vulnerability within a child). 2) The differences between this study and O'Connell (2003) is the order in which each theme becomes prevalent depends on the offender as an individual. Not all offenders presented as a child or younger.	**Limitations:** 1) The transcripts included an undercover researcher posing as a child so this may not reflect what happens in reality. 2) Larger variety of participants would increase the generalisation of the grooming themes for different types of offenders. 3) A small number of transcripts were used. The external validity of this study can be increased by increasing the amount of transcripts. **Recommendations:** 1) Future research should consider using a larger number of transcripts, two types of offenders and the approach they use within the grooming process. 2) Future research should focus on providing evidence for the themes in a quantitative way. This could be achieved by devising a questionnaire for internet sexual offenders that would ask about the grooming themes found within this study to see whether the approaches they used were consistent with the themes. 3) Future research should look at transcripts of male offenders grooming male victims and also grooming themes used by female internet sex offenders.

Wolak, Finkelhor & Mitchell (2004)	United States	To describe the characteristics of episodes in which juveniles became victims of sex crimes committed by people they met through the internet	**Participants:** Sample: state, county and local law enforcement agencies (n = 2574) **Offenders** N = 129 Age (at the time of the offence): Gender: Female 1% Male 99% **Victims** n = NR Age: 12-17 Gender: Female = 75% Male = 25% Ethnicity: Non-Hispanic White 81% African-American 7% Asian 5% Hispanic White 3% Other 1%	**Design:** NR **Sampling**: Stratified **Data collection**: Mail survey followed by telephone interviews **Length of grooming:** 1 month (64%) **Offence:** attempted or completed sexual exploitation of a minor in which the offender and victim first met on the Internet **Internet environment:** Chatrooms (76%) **Measures:** Details about the online meeting, offender and victim characteristics (demographic, family, emotional and behavioural characteristics) **Analysis:** Descriptive analysis	• 48% of offenders sent pictures online to victims, 47% sent or offered gifts (ranged from small tokens like jewellery and teddy bears to items like clothing, cell phones, and digital cameras) or money. • 5% of offenders represented themselves online as peers of victims by claiming they were age 17 or younger. Some offenders started off saying they were teens, but later introduced that they were older. 25% of offenders shaved a few years off their true ages, but still presented themselves as much older than their young targets. • 21% of offenders hid or misrepresented their motives, most of these deceivers were open about wanting sex from their victims. Most misrepresentations involved insincere promises of love and romance. A few offenders posed as "friends" and then assaulted their victims, and a small number devised more elaborate ploys, for example luring girls by claiming to run modelling or casting agencies 80% brought up sexual topics during online communications with victims. • 20% engaged in cybersex with victims. • 18% transmitted sexual pictures to victims online. • 26% of offenders lied at some point about their physical appearance or some other aspect of their identity like their name, family status or employment. • 6% of cases involved coercion. The victims in these cases were	**Limitations:** 1) Because most sex crimes against minors are never reported to the police and many of those known to law enforcement do not culminate in arrest, this sample cannot be said to represent the characteristics of all internet-initiated victimisations that occurred during the period of the study, but only those that ended in the arrest of an offender. 2) Some errors and biases may have been introduced because law enforcement investigators were interviewed 3) Our findings were somewhat limited by the small sample size, and a larger sample would have allowed for a more nuanced analysis of findings. **Recommendations** 1) Educating teenagers about why online relationships with adults are a bad idea. They would benefit from understanding the manipulations that adult offenders engage in, and from understanding that adults who care about their well-being would not propose sexual relationships or involve them in risky encounters. 2) Future study about the nature and characteristics of online relationships in general will help to distinguish between the qualities of healthy and unhealthy relationships so that prevention can be aimed than the latter while not discouraging the former. 3) Future research needs to identify vulnerable youth populations and evaluate the impact of victimisation by non-forcible sex crimes. 4) Future research should evaluate the effectiveness of various prevention

		pressured into having sex or doing sexual things, like engaging in bondage, that they did not want to do. **Main conclusions:** 1) Offenders did not generally deceive victims about being older adults who were interested in sexual relationships. 2) The majority of offenders did not use force or coercion to sexually abuse their victims.	messaged aimed at reducing risky behaviour online.

Table 19. A critical evaluation of the studies included in the systematic review that explored online grooming methods

Study	Researchers' review
Quantitative studies	
Bergen et al. (2014)	1) This study covered a broad range of participants (i.e., offenders who were not convicted, female offenders). 2) A definition for cybersex was not reported. 3) No method was used to verify results, so online and offline sexual experiences may not have been reported truthfully. However, this is not plausible due to the data collection method (i.e., anonymous online questionnaires). 4) The participants were asked to report their sexual conversations with strangers in the previous year. This does not include children and adolescents known to the offender offline. 5) The response to the sexual interaction outcomes were binary. This, therefore, does not show the frequency of interactions.
Black et al. (2015)	1) The transcripts included contact driven offenders so these findings cannot be generalised to fantasy driven offenders. 2) The data was not verified using other sources, therefore, results can be biased. For example, verification could be obtained from victims / decoys, offenders and assessments obtained for law enforcement or therapeutic purposes who were part of the case however accessing information. However, identifying these offenders is challenging due to practical reasons. 3) Transcripts were selected randomly which reduces selection bias. 4) Secondary data was used.
Wolak, Finkelhor & Mitchell (2004)	1) Not all offenders had been convicted (77%), 4% had their charges dropped and 19% were pending the outcome of their cases. All of these cases however were known to the criminal justice system so the sample does not include undetected offenders. 2) There could potentially be bias as the analysis used practitioner reports on the offenders/case.

	3) Random stratified sampling frame was used to identify law enforcement agencies. This type of sampling was robust, and thus reduced selection bias. It provided a representative sample of law enforcement officers who had encountered a case involving sexual exploitation of a minor that was initiated online. 3) This study reported how frequently each grooming processes occurred (e.g., offender use of incentives, deception, sending pictures and coercing victims). However, further analysis such as correlational analysis could have been undertaken to determine the relationship between the online grooming method variables and online sexual victimisation.
Qualitative studies	
Malesky (2007)	1) The results are limited to online groomers who were convicted and engaging with the SOTP. Therefore, these findings cannot be generalised to offenders who are undetected and/or not willing to engage in treatment for their sexual offending. 2) Data was collected from male offenders, therefore, findings cannot be generalised to the ways female offenders groom victims.
Marcum (2007)	1) The transcripts included male offenders and victim decoys. Therefore, the findings cannot be generalised to female offenders and actual child/adolescent victims of online grooming. 2) There is no information reported on offender goals or motivations (i.e., fantasy driven or contact driven). 3) The transcripts were not selected at random which can potentially bias findings.
Quayle et al. (2014)	1) The sample consisted of convicted offenders and those known to the criminal justice system. Thus, this not include those offenders whose crimes are unreported or undetected. 2) Offenders from the United Kingdom had engaged in the SOTP and offenders from Italy had received individual treatment. Therefore, this sample is motivated to change their behaviour and potentially recognise that their behaviour is problematic. This can consequently influence findings. 3) There is a possibility that these offenders are not solely online groomers, but may engage in other child sexual abuse that is undetected. 4) The offenders were generally convicted for contact driven offences, so these findings cannot be generalised to fantasy driven offenders.

Webster et al. (2012)	1) The grooming process findings cannot be generalised to female offenders as all offenders were males. 2) The sample consisted of cases that were known to the criminal justice system and the offenders were all convicted for the offence. Thus, these findings cannot be generalised to offenders who are undetected or their crimes unreported. It may be that their techniques are different and more successful in avoiding detection.
Whittle, Hamilton-Giachritsis & Beech (2014)	1) This study only includes victims that were known to the criminal justice system and/or child protection services. This does not include victims whose experiences were unreported or undetected. 2) This study excluded victims who had known mental health or severe learning difficulties due to ethical reasons. The literature has highlighted that these groups of individuals are significantly more likely to experience online sexual victimisation so the grooming pattern may be different for these individuals.
Whittle, Hamilton-Giachritsis & Beech (2015)	1) The cases used in this study only included female victims and male offenders. This cannot be generalised to male victims and female offenders. 2) This study collected data from two sources (i.e., victim and offender) about the online grooming and sexual exploitation experiences. The accounts were verified and important differences emerged suggested that offender and victims perceptions influence results.
Williams, Elliot & Beech (2013)	1) Only the first hour of the interaction between the offender and victim was analysed. This does not convey the full interaction process between the victim and offender. 2) The sample consisted of male offenders and victims were decoys. Therefore, the findings cannot be generalised to female offenders or interactions that involve offenders and actual victims.

Table 20. Quality appraisal of qualitative studies investigating the methods offenders use to groom victims using the NICE Checklist for qualitative studies

Study	Theoretical approach	Study design	Data collection	Trustworthiness	Analysis	Overall assessment
Malesky (2007)	+	-	+	-	-	-
Marcum (2007)	++	+	-	-	++	+
Quayle et al. (2014)	++	+	++	++	++	++
Webster et al. (2012)	++	++	++	++	+	++
Whittle, Hamilton-Giachritisis & Beech (2014)	++	-	-	++	++	+
Whittle, Hamilton-Giachritisis & Beech (2015)	++	++	++	++	++	++
Williams, Elliot & Beech (2013)	++	-	++	++	-	+

++ (all or most of the checklist criteria has been fulfilled, + (some of the checklist criteria has been fulfilled) and – (few or no checklist criteria has been fulfilled.

Table 21. Quality appraisal of quantitative studies investigating the methods offenders use to groom victims using the Quality Assessment Tool for Quantitative Studies

Study	Selection bias	Study design	Confounders	Blinding	Data collection method	Withdrawals and dropouts	Global rating
Bergen et al. (2014)	Weak	Moderate	Weak	Moderate	Weak	Not applicable	Weak
Black et al. (2015)	Moderate	Weak	Not applicable	Not applicable	Not applicable	Not applicable	Unable to provide a rating
Wolak, Finkelhor & Mitchell (2004)	Strong	Weak	Not applicable	Weak	Weak	Not applicable	Weak

Online grooming method discussion

This systematic review synthesised studies that investigated the methods online groomers use to select, groom and sexually exploit victims under the age of 18. The results support many theoretical perspectives that relate to online and offline sexual offending, interpersonal communication and relationship development (Altman & Taylor, 1973; Elliot, 2017; O'Connell, 2003; Olson et al., 2007; Webster et al., 2012). The results are presented below.

The preliminary phase

Previous theoretical perspectives have highlighted the importance of offenders gaining access to victims during the initial phase of offending for the abuse to take place (Cohen & Felson, 1979; Lorenzo-Dus, Izura & Pérez-Tattam, 2016; Olson et al., 2007). In relation to the preliminary phase, studies reported that offenders selected a virtual environment where they could gain access to victims that can lead to initiation and maintenance of contact with the victim (Quayle et al., 2014; Webster et al., 2012). This systematic review revealed that sexual solicitation and exploitation occurs in chatrooms, via the online profiles of minors, bulletin board postings, instant messenger, webcams, gaming platforms, forums and social networking sites (Black et al., 2015; Malesky, 2007; Quayle et al., 2014; Webster et al., 2012; Whittle, Hamilton-Giachritsis & Beech, 2015). Newer literature has suggested that apps such as Instagram, WhatsApp and Snapchat are also used to groom children (Palmer, 2015). Grooming and sexually exploiting children relating to new apps had not been empirically investigated up to the point this review was conducted. Service providers continuously introduce new features (i.e., video chat, location settings) that can assist an offender in the grooming and sexual exploitation of a child or young person process. Adolescents' social networking use has shifted over recent years (e.g., using Twitter and Facebook less to using Instagram and Snapchat more) (Ofcom, 2016). Therefore, to empirically test each social networking app and related features is not possible. Therefore, it may be more important to determine general online features present in the online environment (i.e., video calls, sending pictures, messaging), irrespective of the specific app or website and inform children and young people about how grooming can occur using these features. It is also important to focus on building resilience among children and young people so they are better equipped at dealing with sexual advances regardless of the social networking app.

These findings are consistent with previous theoretical perspectives that highlight that offenders strategically place themselves in online environments where they can access and approach children (Olson et al., 2007; Webster et al., 2012). In the offline environment, offenders strategically place themselves in positions of power or within families where they can gain access to children (Olson et al., 2007). However, in the online environment, offenders can select an online platform where they can interact with children or young people and actively seek to target vulnerable victims who they perceive to be suitable victims (Malesky, 2007; Quayle et al., 2012; Webster et al., 2012).

Some offenders used specific online environments to gain access to children and young people and speak with other offenders and exchange IIOC. Whereas, other offenders used online platforms (i.e., Facebook and chat rooms) for their routine daily activities as well as engage in illegal activity (i.e., contact victims). Furthermore, offenders viewed available profiles and chose victims who shared personal information (i.e., contact details, interests) and displayed provocative photographs. Additionally, victims were selected based on the offenders' preference of the victims' physical appearance and age. This supports Routine Activity Theory (Cohen & Felson, 1979) as motivated offenders increased their chance of encountering suitable victims in a space where adolescents' regularly socialised and shared information about their offline lives.

During the preliminary phase, studies reported that some offenders scan the online environment to identify and target vulnerable victims. The victim identification process can vary from offenders carefully selecting victims who they perceive to be vulnerable to offenders targeting the first child or young person that they encounter, usually wanting to gain immediate sexual gratification (Quayle et al., 2014; Webster et al., 2012). One study indicated that offenders seek victims who display themselves sexually (via online profiles, screen names or E-mails), appear 'needy', and whose screen names indicate that the victim is young (Malesky, 2007). This demonstrates that information available to the offender prior to solicitation and grooming can assist them in selecting a vulnerable victim. This is consistent with previous literature indicating that children and young people who post personal information, display themselves sexually online (i.e., have a sexual profile picture or name), talk about sex with someone they met online, and send pictures to someone they met online, are more likely to become victims (Mitchell, Finkelhor & Wolak, 2007; Noll et al., 2009).

In addition, the systematic review found that a small number of offenders created deceptive identities in preparation for grooming and sexually exploiting victims (Bergen et al., 2014; Malesky, 2007; Marcum, 2007; Wolak, Finkelhor & Mitchell, 2004). Those who did this generally changed their name, age (sometimes pretended to be a child or adolescent), marital status, occupation and/or their own picture (sometimes using a younger picture of themselves). Wolak et al. (2004) found that some offenders who initially pretended to be peers later disclosed themselves to be older. The results consistently showed that offenders altered their identities to appear younger and more attractive. This demonstrates that offenders aimed to portray a positive self-image in order to encourage victims to respond (Bergen et al., 2014). Bergen et al. (2014) also found that identity deception increased the chance of online sexual exploitation (i.e., offender and victim engaging in cybersex), and decreased the likelihood of the offender and victim meeting offline or experiencing offline sexual exploitation. This suggests that offenders who use deceptive identities were fantasy driven, and created an identity that makes them more appealing to victims. It may be that this group of offenders are not comfortable with meeting their victims offline, perhaps due to their own vulnerabilities (intimacy deficits) and motivations. Thus, they may not be concerned about using their true identity as they are not motivated to meet the victim offline. Whereas, those offenders who want to build a genuine relationship with the victim and seek intimacy do not change their identity, as they want to be liked, believe they are in a genuine relationship with the victim and intend to arrange offline meetings (Webster et al., 2012). Another study highlighted that some offenders were deceptive about their motives (Wolak, Finkelhor & Mitchell., 2004). For example, some offenders misrepresented their motives by offering insincere promises of love and romance.

The grooming process

The systematic review findings support existing grooming and sexual offending theories such as the theory of luring communication (Olson et al., 2007), the self-regulation model of sexual grooming (Elliot, 2017) and the model of cybersexploitation (O'Connell, 2003). The results indicate that the online grooming and sexual exploitation process is consistent with Social Penetration Theory (Altman & Taylor, 1973). This theory suggests that intimate relationships develop as individuals proceed through layers from superficial (i.e., hobbies, interests) to deep (i.e., personal and intimate information) conversations. The findings suggested that the initial conversation was superficial that involved offenders asking victims about their work and social

life (i.e., school, friends, hobbies). Black et al.'s (2015) study reported that the friendship forming stage occurs early in the interaction. This is proceeded by the relationship forming stage where the conversation extends to more personal conversations about emotions, money and religion. Moreover, the identified studies consistently highlighted that communication between the victim and offender is intense, regular, often speaking everyday (Quayle et al., 2014; Whittle et al., 2014). This was not applicable to cases where the sexual solicitation occurs immediately, perhaps within seconds or minutes (Webster et al., 2012).

Additionally, the results are consistent with the rapport-building and deceptive trust development components of the self-regulation model of sexual grooming (Elliot, 2017) and the theory of luring communication (Olson et al., 2007). These elements suggest that offenders create a sense of trust by giving the child or young person attention and making them feel exclusive and special (O'Connell, 2003). It is worth noting that building a friendship and rapport may be easier among certain groups of victims who lack intimacy, emotional support in their offline lives, experience psychological issues (i.e. low self-esteem and confidence), or are exploring their sexuality. These individuals have been found to be more likely to interact with strangers online, seek emotional support, disclose personal information and form close relationships in the online environment (Morahan-Martin & Schumacher, 2003; Ospina et al., 2009; Wolak, Finkelhor & Mitchell, 2008; Ybarra et al., 2015). Offenders have reported that they deliberately target victims who appear to lack intimacy and need approval (Malesky, 2007). This can increase their vulnerability to becoming victims of online grooming and sexual exploitation.

Another important element for offenders during the online grooming and sexual exploitation process is to avoid being detected (O'Connell, 2003). The identified studies reported that offenders risk assess the child, the environment and significant others (i.e., parents and friends) to avoid detection. Offenders often enquire about victims' parents' schedules and their relationship with parents, and encourage victims to be secretive about their encounters (Bergen et al., 2014; Black et al., 2015; Whittle et al., 2014; 2015; Williams et al., 2013). Similar to Olson et al. (2007), offenders used techniques geared towards ensuring that victims do not reveal the nature of their relationship to others. This review shows that isolation and the need for secrecy are characteristics that are present in online grooming processes in the same way as they are in the offline environment (Olson et al., 2007). Bergen et al. (2014) reported that keeping the relationship a secret increased online sexual exploitation. Also, victims who kept

the offline meeting a secret were at an increased risk of having engaged in offline sexual contact. This is consistent with the isolation process and 'security management' phases in the grooming processes (Elliot, 2017; Lorenzo-Dus, Izura & Pérez-Tattam, 2016; Olson et al., 2007). These findings are also consistent with O'Connell's (2003) risk assessment stage which occurs after the friendship forming and relationship building phase. However, Black et al. (2015) found that offenders generally risk assessed earlier in the offender and victim interaction. This study focused on contact driven offenders, therefore, they may have wanted to determine the likelihood of detection if committing contact offences. Thus, it is not clear whether risk assessment occurs earlier for fantasy driven offenders.

Moreover, the self-regulation model of sexual grooming (Elliot, 2017) highlighted the importance of incentivisation during the grooming process. One study reported that half the sample of 126 offenders sent or offered the victim an incentive (e.g., such as clothes, digital cameras, phones, jewellery or money) (Wolak, Finkelhor & Mitchell, 2004). Furthermore, Webster et al. (2012) found that offenders engaged in two types of incentives. Firstly, they provided victims with gifts (e.g., mobile phones, webcams and money). This type of incentive can make victims feel special or provide victims with practical resources that can facilitate the abuse. For example, some victims cannot afford technology (e.g., a mobile phone) to talk to their abuser so the offender will provide the victim with the resources.

The other method relates to offenders threatening victims to engage in sexual contact or to maintain the sexual abuse. The identified studies show that some offenders are aggressive and/or coerce their victims to maintain or escalate the offence (Marcum, 2007; Whittle et al. 2014, 2015; Wolak, Finkelhor & Mitchell, 2004). These offenders used blackmail, threats, possessiveness and controlling behaviour to groom victims for sexual purposes. The results show that offenders blackmailed and threatened to show sexual pictures of the victim to their parents if they did not send them more sexual pictures. Also, offenders were aggressive towards the victim to get them to meet offline (Malesky, 2007). Wolak, Finkelhor and Mitchell (2004) showed that a small proportion (6%) of victims were coerced into performing sexually. These findings support the self-regulation model of sexual grooming (Elliot, 2017) as providing remunerative incentives (i.e., money and materialistic gifts) reinforced behaviours that increase the likelihood of offenders sexually offending. Furthermore, coercive (i.e., threats, blackmail, aggression) included offenders punishing or removing behaviours that are important to their sexual offending behaviours. Thus, when offenders display nastiness and are aggressive they

may feel compelled to be compliant with offender requests. This is supported by Whittle et al.'s (2014) study which found that when offenders were erratic and nasty towards the victim, they felt anxious and attempted to please the offender to regain kindness. This technique can be implemented by offenders to instil fear in their victims for them to ensure compliance, as well as avoid being detected (Webster et al., 2012). Therefore, the findings suggest that offenders engage in remunerative and coercive incentives to maintain and facilitate the grooming and sexual exploitation process.

The systematic review findings are also consistent with the model of grooming (Craven et al., 2006) and the theory of luring communication (Olson et al., 2007), highlighting that perpetrators groom family and friends as well as the victim. Specifically, Whittle et al. (2014) found that one out of eight cases they examined involved the parents being groomed. The victims' friends were also groomed, and more often than parents. The study also found that victims' friends found the victim and offender relationship exciting and were also in regular contact with the perpetrator as well as the victim (Whittle et al., 2014). This may be a technique that offenders adopt to monitor the level of risk of being detected and identify other victims.

The results of the systematic review also demonstrate that some online groomers engage in validation techniques (Black et al., 2015; Marcum, 2007). This involves offenders acknowledging that their behaviour is inappropriate and, in some cases illegal, yet still sexually soliciting victims, attempting or engaging in sexual activity with the victim. Offenders may engage in this method to seek approval from victims to make their behaviour seem acceptable (Marcum, 2007). They may also use this technique to justify their inappropriate behaviour and support their cognitive distortions. Moreover, Black et al. (2015) indicated that this stage generally occurs during the first stage of the interaction between the offender and victim.

A central part of the grooming and sexual exploitation process is the introduction and maintenance of sexual conversation and activity. Consistent with O'Connell's (2003) sexual stage, this systematic review identified that offenders engaged in sexually explicit conversations and used sexual content to groom a victim. They used techniques such as portraying sex as entertainment, talking sexually, exchanging sexually explicit pictures, offering sexual compliments and sending IIOC (Malesky 2007; Wolak, Finkelhor & Mitchell, 2004; Whittle et al., 2014). These methods are used to desensitise victims to the abuse and test whether the victim will comply with the outcome of the grooming (i.e., online or offline sexual

activity). Methods such as the offender sending the victim IIOC can also be used desensitise the victims to the intended abuse (Webster et al. 2012). However, Quayle et al. (2014) suggested that in some instances the victim initiated the production of sexual images of themselves rather than the offender. Thus, it is important to consider the psychological characteristics of offenders and victims to establish their motivations and aims of engaging in sexual conversations and activity. The identified studies outline that the way offenders introduced sexual conversation varies as some offenders' request for sexual activity immediately whereas other offenders gradually introduced sexual topics (Webster et al., 2012). This is potentially determined by the offenders' motivations and aims as some offenders will want to gain immediate sexual gratification whereas others will engage in conversation with the victim, build rapport and an emotional connection prior to sexually abusing them.

In addition to this, offenders engage in the grooming process so they can build trust and establish whether the victim will comply or reject the sexual abuse (Olson et al., 2007). The systematic review reports that offenders use techniques to test victims' compliance to the sexual abuse. Webster et al. (2012) reported that offenders introduce 'gentle socialisation' or 'sexual test'. These methods include introducing sexual conversations in a subtle way to test how victims respond and compliance. This is consistent with offline sexual offending and falls in line with the cycle of entrapment component of the luring theory (Olson et al., 2007). This emphasises that this stage relates to offenders establishing how successful they have been in grooming the victim. An important element of establishing this and determining how likely a sexual act is likely to occur is by determining the victims' response. In the offline environment, victims may express curiosity, dissociate from reality, act normally or sexually. This may lead the perpetrator to believe that the victim 'liked' the abuse (Olson et al., 2007). Whereas, if victims used force or fought back then this may indicate to the offender that the victim rejected the abuse (Elliot et al., 1995; Olson et al., 2007). As verbal and non-verbal cues are available in the offline environment, it may be possible for the offender to determine this by touching the victim.

However, in the presence of a lack of social cues online, the offender may subtly introduce sexual conversations and jokes relating to sex in an attempt to establish the victims' compliance, and whether they will reject the sexual abuse (Webster et al., 2012). Thus, perhaps a positive response from the victim may enable the offender to continue interacting with the

victim sexually. However, if they are met with resilience they may adapt their responses according to the victims.

O'Connell (2003) suggested that each stage occurred in a sequential manner, however, the results of Webster et al. (2012) and Black et al. (2015) contradicted these findings. The results showed that the strategies employed by offenders did not occur in the linear step-by-step fashion as proposed by O'Connell (2003). Black et al. (2015) reported that friendship terms were not used more in the first stage and relationship terms were not used more in the second stage. Whereas, discussion of dangers of communicating with strangers online, the offenders' behaviour being inappropriate and flattery occurred more during the first stage of the interaction process. Additionally, words relating to risk-assessment occurred significantly more during the first and second stage of the communication than the third stage. For example, almost half of offenders enquired about the victim's parents schedule during the first stage and 68% by the second stage. This suggests that offenders risk-assess early in the interaction perhaps to determine whether the interaction is an online sting operation or to assess whether the victim is worth investing time to groom and sexually exploit. Furthermore, consistent with O'Connell's (2003) framework, terms relating to exclusively were used more in stages three than the first stage. Also, sexual terms were used more in stage three than stage one and four. This suggests that these stages do not occur in order, but offenders adapt their approach according to the victim and move from one stage to the other accordingly (Black et al., 2015; Webster et al., 2012; William et al., 2013; Quayle et al., 2012). The results indicate that offenders use certain grooming methods (i.e., rapport building, being deceptive) according to their goals (i.e., contact driven, fantasy driven). However, this study is limited to contact driven offenders, offender and decoy interactions, and interactions that took place in chatrooms. This cannot be generalised to fantasy driven offenders, actual victim and offender interactions, and sexual exploitation that occurs in other online environments.

Theoretical and methodological limitations relating to online grooming methods literature.

The authors of the identified studies, the quantitative and qualitative critical appraisal tools and, the researcher identified several methodological and theoretical limitations of the identified studies. Seven studies were critically appraised using the NICE Checklist for qualitative studies and three studies were critically appraised using the Quality Assessment

Tool for Quantitative Studies (Thomas et al., 2004). Among the quantitative studies, Bergen et al. (2014) and Wolak, Finkelhor and Mitchell (2015) were rated as weak. This was mainly because data was not collected using valid or reliable measures, there was little or no blinding of participants or researchers, and confounders were not adequately addressed. These are important elements in critically appraising quantiative studies, however, they are not relevant to online grooming methods literature. Black et al. (2105) used transcripts that included the interaction between an offender and decoy, and analysed the order of stages in the grooming process according to the model of cybersexploitation (O'Connell, 2003). Therefore, many of the quantitative quality assessment components did not apply to this study. Thus, a rating was unable to be obtained for this study.

Overall, the quantitative and qualitative critical appraisal tools indicated that most of the studies were methodologically poor. The results suggest potential biases due to the samples used and selection of participants. Thus, the samples or transcripts that were used provide a partial understanding of the methods used to groom and sexually exploit victims. For example, Bergen et al. (2014) used a sample of undetected perpetrators from the public who had self-reported engaging in sexual interactions with children and young people. However, there are limitations associated with this sample of offenders. For example, the participants only include those who are willing to disclose their online behaviours and interactions with children, and many offenders would be reluctant to disclose this due to fear of detection or social desirability. Also, the authors suggested that the sampling method is unknown (it appears to be convenience sampling), so it is unclear how representative the sample is to the population of online sexual offenders and their grooming methods. However, considering the difficulty of accessing this sample, identifying participants via convenience sampling is still helpful as it provided a useful insight into non-convicted offenders and their grooming patterns.

Moreover, a study that interviewed victims of online grooming and sexual exploitation used convenience sampling, and reported that the participants included those who were unlikely to experience detrimental consequences while engaging in the study (Whittle et al., 2014). Therefore, this does not include those victims who do not recognise their experience as abuse (may believe they are in a relationship with their abuser), victims whose experiences are unreported or undetected, those who experienced adverse consequences and are in the process of recovery. Although these victims are not included, it is difficult to gain data from those who do not realise they are being exploited or haven't reported their crimes due to ethical and

practical reasons (i.e., lack of access to these victims). Accessing a victim sample that is known to services is also problematic as conducting research using victims who are engaging in therapeutic support can jeopardise their treatment and potentially cause more distress. Also, Whittle et al. (2014) interviewed victims of online grooming and sexual exploitation. They reported that the victims may not have disclosed information due to not knowing the interviewer. Also, the length between the interview and the offence means that victims were in different stages of recovery. Alternatively, Wolak, Finkelhor & Mitchell (2004) used a stratified random sample to collect data from law enforcement personnel. This sampling technique reduces selection bias and increases the likelihood of the results representing the general population of law enforcement officers in comparison to convenience sampling. However, it is not plausible to determine whether these findings were similar or differed to other studies as other studies measured different variables, using various measures, data collection methods and samples.

The existing literature has used samples of convicted and non-convicted offenders, as well as victims known to authorities. These findings have provided insight into the online grooming methods offenders use to sexually exploit children and young people. Quantiative research has shown the order in which grooming stages occur and qualitative research has provided information about techniques and method used to build rapport, introduce sexual content, manipulate and coerce a victim (Black et al., 2015; Malesky, 2007; Marcum, 2007; Whittle et al., 2014). Despite this, the samples and sampling methods limit findings. The majority of identified studies use convenience sampling. However, empirical studies that use random selection to identify participants are deemed as good quality research (Martínez-Mesa et al., 2016). However, this is problematic among a sample of online groomers as this sample cannot easily be accessed. In addition, these offenders are unlikely to willingly respond to research relating to sexual abuse of a child due to a fear or being caught by the police. Therefore, the existing literature provides a partial understanding of online grooming methods. There may be differences or similarities between offenders who are detected and convicted and those whose crimes remain undetected in relation to their grooming approach. For example, undetected offenders may encounter psychological characteristics that contribute towards them successfully avoiding detection. However, establishing this is a challenge due to accessing samples.

In relation to study design, the nature of quantitative studies that explore online grooming processes generally do not include comparison groups such as offenders who do not groom children or young people or groom victims for different purposes (Black et al., 2015; Malesky, 2007; Marcum, 2007; Quayle et al., 2014; Webster et al., 2012; Whittle et al., 2014; 2015). These studies use transcripts, victim or offender accounts and do not compare the interaction or victim/offender experiences with non-grooming interactions or experiences. For example, Black et al. (2015) used transcripts and mainly focused on understanding the sequence of online grooming according to the model of cybersexploitation (O'Connell, 2003). Furthermore, other studies gathered information about the grooming process from the victim and offender perspective (Webster et al., 2012; Whittle et al., 2014, 2015). However, Bergen et al. (2014) collected data from offenders and had a comparison group of participants who interacted sexually with adults. Using comparison groups can offer information about key differences in interactions between offenders, and victims and perhaps other interactions such as non-sexual and sexual peer-to-peer interaction. Understanding the difference between these interactions can enhance understanding of methods that are specifically used by offenders to groom children and young people for sexual purposes. This can, in turn, be used to implement better educational interventions for children and young people, as well as provide law enforcement and practitioners information that can detect offenders.

Furthermore, some of the qualitative studies in the systematic review rated as poor for the study design component (Malesky, 2007; Whittle et al., 2014; William et al., 2013). This means that these studies did not provide a justification or explanation for using a qualitative approach, sampling strategy, research question, data collection or data analysis techniques. For example, Malesky (2007) used a questionnaire to collect data from convicted offenders about the identification of victims and grooming patterns. In addition, Whittle et al. (2014) used semi-structured interviews to collect data from victims of online grooming and sexual exploitation, and Williams et al. (2013) used transcripts from the Perverted Justice website. Moreover, both of these studies used Thematic Analysis (Braun & Clarke, 2006) to analyse the data, whereas, Malesky's (2007) study placed participants' comments into categories. These are all data collection methods and analysis techniques that are typically used within psychological research that enable a researcher to understand a phenomenon in detail. Although a key component of the qualitative quality assessment tool was not fulfilled, research has shown the effectiveness of collecting data via semi-structured interviews and observational studies as well

as using qualitative methods to analyse data (Warrington et al., 2016). More detail relating to this topic is included in chapter 2.

Moreover, the qualitative quality assessment tools reported that most of the studies did not verify the results using other sources or use the triangulation method (Malesky, 2007; Marcum, 2007; Quayle et al., 2014; Williams, Elliot & Beech, 2013; Wolak, Finkelhor & Mitchell, 2004). These studies used either transcripts, collected data from offenders or law enforcement. However, verifying data and accessing victims, offenders, police records, law enforcement and practitioners that relate to the same case can be difficult for practical and ethical reasons. For example, referring to studies that use transcripts, it is difficult to trace information about the offenders' life. For example, transcripts obtained from the Perverted Justice website are limited regarding information about the offender. Similarly, referring to Bergen et al.'s (2014) study, it is difficult to obtain information about the grooming processes and victim characteristics from offenders who completed online questionnaires anonymously. Therefore, this body of research can be limited and subject to bias as a consequence of the related practical and ethical issues. Nonetheless, the results provide an insight into the processes involved in online grooming that can influence the development of theoretical knowledge and training interventions (aimed at protecting children and identifying grooming and sexual exploitation).

Studies have emphasised the difference of perception in relation to different participants (i.e., victims and offenders). This is apparent in Whittle et al.'s (2015) study that interviewed 3 dyads of victims and offenders. The offenders and victims had encountered the same grooming experience, however, they reported different experiences relating to the initiation of contact and sexual conversation, grooming techniques and relationship status. For example, one offender suggested that the victim added her as a friend after talking in a group chat and then he accepted, whereas the victim suggested that the offender sent a friend request and she accepted. Also, the victim stated that the offender initiated the sexual abuse whereas the offender suggested that the sexual content was initiated by both himself and the victim which was then stopped by the offender. Furthermore, offenders suggested that they were not kind or flattery towards the victims whereas the victim suggested that they were. The difference in accounts, despite experiencing the same interaction, may be influenced by victim's feelings towards the offender and offenders' cognitive distortions. The results emphasise that offenders and victims provided different accounts about feelings and initiation of the grooming process despite encountering the same experience. Thus, these findings highlight the importance of

offenders' and victims' perceptions relating to the grooming process. Therefore, verifying accounts can provide a more comprehensive understanding of the grooming experience as well as mapping grooming methods with offender and victim characteristics. However, an associated challenge is the accuracy of each sources accounts. It would not be clear whether the offender or the victims' account is accurate as both may be biased as a consequence of cognitive distortions or feelings for the other person. Despite this, these findings indicate how the offender perceives that victim and how the grooming methods make the victim feel (i.e., victim believes that they are in a relationship with the offender). However, a way to strengthen the validity is to analyse transcripts associated with the case and gather information from the law enforcement officer who investigated the case. However, due to practical issues mentioned above this can be a challenge.

Furthermore, using the quantitative critical appraisal tool, studies were rated as weak in relation to data collection (Bergen et al., 2014; Wolak, Finkelhor & Mitchell, 2004). These studies did not use reliable or valid measures to collect data about methods used by offenders to groom and sexually exploit victims. For example, Bergen et al. (2014) used single item measures in relation to different aspects of sexual online and offline communication with a child or adolescence (e.g., engaging in 'cybersex', meeting offline and receiving sexual images from the victim). These elements were measured using a yes or no response, therefore, findings are limited as it is not clear to what extent offenders interacted with children and young people. In addition, Wolak, Finkelhor & Mitchell (2004) used single item measures to measure offenders' behaviours and grooming patterns. This may be problematic in relation to online grooming processes and methods as participants providing a yes or no response does not provide in-depth knowledge. Thus, studies that have used transcripts or interviews may provide more useful data as it includes information about the process and why certain methods occur (i.e., blackmail to instil fear into the victim) rather than whether a method occurred or not.

The existing literature provides a theoretical understanding of the methods offenders use to groom and sexually exploit victims, however, there are many theoretical gaps in the literature. Firstly, the existing literature uses samples or transcripts that include male offenders who groom and sexually exploit children or young people. This limits the understanding of online grooming processes to male offenders only. In comparison, research has not explored female online groomers and their grooming patterns. Previous research indicates that offline female sexual offenders have similar traits and engage in similar grooming patterns to their male

sexual offending counterparts (Beech et al., 2009; Ford, 2006). Beech et al. (2009) conducted semi-structured interviews with 15 incarcerated female child sexual abusers. The researchers aimed to establish cognitions among these offenders using the implicit theory (Ward & Keenan, 1999) and findings showed that the viewing children as sexual objects, perceiving the world as dangerous, uncontrollability and nature of harm implicit theories were consistent among female offenders. However, these participants did not experience the entitlement cognition, suggesting that male and female offenders may differ in this aspect. These findings are related to offline sexual offending, however, it is important to consider female offenders and their techniques to select, groom and sexually exploit victims in the online evironment. Secondly, this systematic review has highlighted techniques and methods that offenders use to select, initiate contact, groom and sexually exploit victims and provided support for offline and online sexual offending theories (Elliot, 2017; Olson et al., 2007). However, there are no empirical studies that directly apply the theoretical perspectives to the online grooming methods used by male and female perpetrators.

Moreover, research indicates that online grooming patterns and methods used by offenders vary depending on the offenders' motivation to sexually offend (Webster et al., 2012). Thus, it is important to understand online grooming patterns in accordance with offenders' motivations (i.e., intimacy seeking, fantasy driven, and contact driven) as the selection, initiation, maintenance and escalation processes may differ for different types of offenders. Additionally, it is important to consider the role of victim characteristics in the grooming process. Many of the studies that use transcripts use decoys that are restricted for legal reasons (i.e., unable to approach victim first or introduce sexual conversation so it does not jeopardise the criminal investigation). This means that an understanding of the victims' role within the grooming process is unclear and limited. This can potentially be addressed by using transcripts that include real victims and inferences can be made about the victims' characteristics. Also, data collected from victims' themselves can provide a comprehensive understanding of their motivations to engage with victims and risk factors that create vulnerability. This is addressed in the victim risk, resilience and protective factor systematic review.

Therefore, understanding grooming patterns in relation to different groups of offenders (i.e., female offenders) and their motivations (i.e., seeking intimacy, gaining immediate sexual gratification, wanting to engage in contact sexual offending) can offer practitioners, law enforcement and other stakeholders with useful information. This information can develop

theoretical perspectives of online grooming that relate specific groups of offenders (i.e., males and females) with their motivations and psychological characteristics that contribute towards online sexual offending. This information can provide recommendations for detection and treatment of male and female online sex offenders. Furthermore, understanding grooming patterns associated with victims' vulnerability and their role within the grooming process can provide a holistic and comprehensive understanding of the grooming process. Also, this information can be implemented in training professionals and children and young people about online sexual risks. This can potentially result in better detection and safeguarding of vulnerable children and young people.

Online groomer results

A total of three studies were included in the systematic review. The publication dates ranged from 2010 to 2012. Two studies were conducted in America and one in Europe (UK, Belgium and Norway), and all studies used male participants who were convicted of sexual offences. The age range of offenders across all three studies varied considerably (i.e., 18 to 55 years old) and they were male. It was difficult to calculate the mean age of offenders as the identified studies generally reported the age range of offenders and not the mean age.

Data was collected via police interview videotapes, interviews with offenders and a psychological screening and risk assessment. Two studies did not use comparators whereas the other study used IIOC offenders and contact sexual offenders as comparison groups. Information relating to the sample, sampling and data collection methods are included in tables 22 and 23.

Table 22: Samples and sampling methods of studies investigating online groomer risk factors

Samples	N of studies	Sampling	N of studies
Convicted perpetrators	3	Convenience	2
		Not reported*	1

* This study did not explicitly state the sampling method used, however, it appears convenience sampling was used.

Table 23: Data collection methods of studies investigating online groomer risk factors

Data collection method	N of studies
Police videotapes of interviews	1
Psychological and risk assessments	1
Interviews	1

Table 24. Studies investigating online groomer risk factors

Study	Country (where data was obtained)	Objective	Sample characteristics	Study characteristics	Key findings and main conclusions	Author(s) limitations and recommendations
DeLong, Durkin & Hundersmarck (2010)	United States	Address the types of cognitive distortions possessed by a sample of men who were arrested for attempting to solicit sex from minors online.	**Sample:** Convicted **Participants:** n = 18 Age: 19 - 47 years Gender: Male = 100% Ethnicity: White (n = 14,) Asian (n = 2), African American (n = 1), Turkish (n = 1) Occupation**:** Physician, governmental accountant, students, a paramedic, unemployed (number not reported) **Victim:** Law enforcement decoys **Type of offence:** Soliciting sex from children (all but one man travelled to a planned meeting for sex with a minor)	**Design:** Qualitative **Sampling:** Convenience **Data collection:** Police interview videotapes **Dates:** NR **Comparators:** None **Measures:** Binary coding system (yes/no) **Analysis:** Grounded theory inductive approach - content analysis	• 17 of 18 (94.4%) participants employed some type of cognitive distortion. • 77.8% of the cognitive distortions related to justification / rationalisation (devised self-satisfying but incorrect reasons for their behaviour, often seeking to deflect guilt or intent citing things such as outside circumstances) • 67.7% related to minimisation (denial of the extent of the offence); denial of intent to commit an offence (stressor, mistake) and denial of responsibility victim desire) and 16.6% were related to refutation (full denial of the offence). **Main conclusions:** 1) All offenders, except one, displayed cognitive distortions to some extent. Therefore, these finding are consistent with previous literature that suggest offenders conceive of their victims in a self-serving manner.	**Limitations** 1) The sample was small thus a larger sample size would allow for a more sophisticated analysis of the cognitive distortions held by these offenders. 2) The analysis was limited to custodial interviews. Chat logs and clinical interviews would allow for a more complete picture of the participants distorted cognitions. 3) The men used in this study are not representative of the population of men arrested in internet sex stings. 4) The participants' behaviour may have been different for two-thirds of the participants as television cameras were present during the police interrogation which can bias results. 5) Cognitive distortions were measured using participants statements made during police interviews. This may have minimised the criminal liability of their conduct. **Recommendations:** 1) Provide mental health professionals with information such as being aware of the obfuscations offered by 'travellers' (i.e., men who solicit sex from children online).

Seto et al. (2012)	United States	To compare online solicitation offenders, IIOC offenders and contact sexual offenders on sociodemog-raphic variables, psychological variables, and existing risk measures	**Sample:** Convicted **Participants:** N = 70 Age: m = 35.10 years old Gender: Male = 100% Ethnicity: White (n = 69) **Victim:** Law enforcement decoys **Type of offence:** Soliciting sexual contact from a minor	**Design:** Quantitative **Sampling:** NR **Data collection:** Arkansas Sex offender Screening and Risk Assessment (SOSRA) Program – semi-structured interviews, record reviews including criminal history searches from the National Crime Information Centre, child maltreatment reports, probation/parole notes and treatment records **Dates:** Autumn 1999 **Comparators:** IIOC offenders (n=38) and contact sexual offenders (n=38) **Measures:** Stable-2007 (sex drive/preoccupation, deviant sexual preference, cooperation with supervision, capacity for relationship stability and emotional identification with children (13 items) Static-99, Modified Static-99, Vermot Assessment of Sex Offender Risk (VASOR) **Analysis:** Pearson $\chi 2$ and ANOVA	• Solicitation offenders had higher academic achievement, more problems on capacity for relationship stability, higher sex drive/preoccupation and more likely to use IIOC than contact offenders. • Solicitation offenders were younger at the time of conviction, less likely to acknowledge paraphilic sexual interests, had lower deviant sexual preferences and sex drive/preoccupation than IIOC offenders. • No difference between the groups on ethnicity, emotional identification with children, cooperation with supervision, employment problems, drug problems, alcohol problems or presence of previous paraphilia diagnoses. **Main conclusions:** 1) The three groups were similar in relation to demographic factors except age at conviction. Static risk factors differed among the groups and dynamic risk factors were similar across the groups. 2) Solicitation offenders were more similar to contact offenders than to IIOC offenders in their child-related activities, suggesting more interest in having contact with children.	**Limitations:** 1) The researchers who reviewed the clinical files were not blind to the offender groups which can influence findings. 2) The authors assumed that the risk measures provide valid estimates of risk to reoffend for online offenders, in the absence of follow-up studies examining the predictive accuracy of these specific measures for this population. 3) Online offenders with no official history of contact sexual offending were selected to provide the cleanest group comparisons. This results in groups that are not representative of online offenders overall. **Recommendations:** 1) Results show that solicitation offenders differ in meaningful ways from contact offender and IIOC offenders regarding risk recidivism. Therefore this influences their treatment and supervision needs. 2) More comparison studies are needed to establish similarities and differences between different offenders.

Webster et al. (2012)	United Kingdom, Belgium and Norway	Describe the behaviour of both offenders who groom and young people who are 'groomed'	**Sample:** Convicted **Participants:** n = 33 Age: 18 - 55 and above Gender: Male = 100% **Victim:** Gender: Male (n = 5), female (n = 28) Age: 5 – 9 (n = 1), 10 – 12 (n = 5), 13 – 15 (n = 27) **Type of offence:** Online grooming (no offline meeting) (n = 7), online grooming (offline meeting) (n = 26)	**Design:** Qualitative **Sampling:** Convenience **Data collection:** Interviews **Dates:** 2010 **Comparators:** None **Measures:** Convictions for sexual offending, whether the offender used their own or another identity, the nature and extent of indecent image use, if they contacted other offenders online, the type of offence-supportive beliefs held by the offenders, the speed of contact made with young people, how contact was made and sustained; and the outcome of the offence (online offending and/or offline meeting) **Analysis:** Framework and theme analysis	• Full Scale Intelligence Quotient (FSIQ) score of over 110 was common. • Three typologies were reported: 1) Intimacy-seeking No previous convictions for sexual offending, had offence supportive beliefs that involved seeing contact with the young person as a 'consenting relationship', did not change their identity, wanted to be liked for who they were, did not have any indecent images of children, did not have contact with other sexual offenders online 2) Adaptable Style Had previous convictions for sexual offending against children, offence supportive beliefs that involved their own needs and seeing young people as mature and capable, did not discuss the encounter in terms of a 'relationship'. 3) Hyper-Sexualised Offence supportive beliefs involved 'dehumanising' young people. Some men had previous convictions for having indecent images of children. **Main conclusions:** 1) The behaviour of groomers varies widely. 2) It is unclear if static risk assessments are reliable for online groomers without offline contact histories and no previous conviction. For static scales to accurately assess the future risk for online grooming, the number of people contacted online and whether multiple identities were used would be helpful. 3) It would also be useful to consider the following dynamic risk factors: the role of indecent images and sexual chat in maintaining the offence process; the impact of the online environment on disinhibition, with particular regard to anonymity and identity masking.	None reported **Recommendations:** 1) A multi-disciplinary and public health approach should be taken to address the needs of online groomers and ensure online safety. 2) The industry can implement interventions that can reduce the sharing of indecent images of children and offence-supportive beliefs. 3) It is important to develop robust data across Europe that could contribute to large scale meta-analyses of online groomers' risk factors. A collaborative project that sets out and co-ordinates data collection standards for professionals working with online groomers would be a very helpful.

Table 25. A critical evaluation of the studies included in the systematic review that explored online groomer risk factors

Study	Researchers' review
Quantitative studies	
DeLong, Durkin & Hundersmarck (2010)	1) The study is limited due to a number of factors. Firstly, convenience sampling was used, therefore, this only includes offender interviews that were available to the researchers. Secondly, convicted offenders were used. This does not include offenders whose crimes are undetected or unreported. Thirdly, the offenders were interacting with decoy victims so this sample may not include offenders who adopt more sophisticated methods to avoid detection. Lastly, the sample consists of male offenders only. This means that the existing findings cannot be generalised to other online groomers (e.g. female offenders, non-convicted offenders). 2) Cognitive distortions were measured during custody interviews. Therefore, offenders may not have been truthful, reported their experiences accurately or denied the offence to avoid prosecution. 3) The data was secondary. This can be beneficial as well as have biases. For example, the data is readily available. However, it may not comprehensively address the research question as some data may be missing or lack depth as it was collected for a different purpose.
Seto et al. (2012)	1) The sample provides a limited understanding of solicitation offenders. Firstly, participants were all male so these factors cannot be generalised to females. Secondly, the sample had been convicted of their offences so this does not include offenders who are undetected. Thirdly, the offenders scored in the lower range of risk measures suggesting that the study sample was overall low in risk for sexual recidivism. Therefore, this does not include those who are highly likely to reoffend so their characteristics may be different. 2) The offenders were generally part of a sting operation whereby the victim was a decoy so this limits findings to convicted offenders only. 3) Although the researchers attempted to include a solicitation only group, it was identified that 20% of the solicitation offenders admitted to the undetected use of IIOC and 21% were suspected and 29% admitted to undetected contact offences. However, it is not clear whether the offences were related to the solicitation cases or were separate offences entirely. Thus, these findings do not represent those offenders who exclusively groom children online. 4) To be included in the solicitation group the offender must have denied having sexual contact during the SOSRA interview. This may not mean that these offenders were solicitation only offenders as they may have engaged in sexual contact with a minor but denied it for fear of prosecution.

Qualitative study	
Webster et al. (2012)	1) A comparison group was not included in the study, therefore, conclusions about online groomers in comparison to other sexual offenders (i.e., contact offenders, IIOC offenders) cannot be drawn. 2) The findings are also limited to males only as the sample does not include female offenders. 3) The sample consists of a convicted sample. Online groomers from the United Kingdom were recruited via the National Offender Management Service (NOMS). This means that undetected offenders are not included in this sample so the typologies cannot be generalised to all online groomers. 4) The interview schedules included a variety of topics (i.e., social and employment history, family, internet usage, experience of custody, vulnerability factors, preparatory behaviours prior to grooming/contacting a child, equipment used, victim selection, online presentation, risk management, assessment and treatment). This enabled researchers to understand the offender's characteristics and behaviours comprehensively. 5) A semi-structured approach was used to collect data therefore researchers were able to expand on areas of interests, allowing them flexibility to gain in-depth and rich data.

Table 25. Quality appraisal of qualitative studies investigating online groomer risk factors using the NICE Checklist for qualitative studies

Study	Theoretical approach	Study design	Data collection	Trustworthiness	Analysis	Overall assessment
Webster et al. (2012)	++	++	++	+	++	++

++ (all or most of the checklist criteria has been fulfilled, + (some of the checklist criteria has been fulfilled) and – (few or no checklist criteria has been fulfilled.

Table 26. Quality appraisal of quantitative studies investigating online groomer risk factors using the Quality Assessment Tool for Quantitative Studies

Study	Selection bias	Study design	Confounders	Blinding	Data collection method	Withdrawals and dropouts	Global rating
DeLong, Durkin & Hundersmarck (2010)	Weak	Weak	Not applicable	Not applicable	Not applicable	Not applicable	Weak
Seto et al. (2012)	Moderate	Moderate	Weak	Moderate	Moderate	Not applicable	Moderate

Online groomer discussion

Three studies were identified for the systematic review that aimed to synthesise data on online groomer risk factors. These studies used different recruitment, data collection methods and outcome measures (i.e., demographic, cognitive distortions, motivations, previous offending histories, online behaviour, sexual and cognitive attributes). The identified studies showed that offenders' motivations to groom and sexually exploit victims varied and that their behaviour differed depending on their motivations. For instance, Webster et al. (2012) outlined three types of offenders (intimacy seekers, adaptable and hyper-sexualised offenders). Their behaviour varied depending on their desired goal of forming an intimate relationship with a victim or wanting immediate sexual gratification. Specifically, intimacy seekers wanted to be liked, did not change their identity, did not possess IIOC, communicate with other offenders or have previous convictions for sexual offences. Whereas adaptable style offenders had previous convictions for sexual offending against children and did not view the interaction with the victim as a relationship and hyper-sexualised offenders had previous convictions for IIOC and communicated with other offenders.

These findings are partially consistent with previous sexual offending theories such as the Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984; Howitt & Sheldon, 2007). This theory suggests that offenders develop cognitive distortions that justify their offending behaviours and assists their sexual offending behaviours. The identified studies consistently showed that offenders exhibited offence supportive beliefs/cognitive distortions (DeLong, Durkin & Hundersmarck, 2010; Webster et al., 2012). DeLong et al. (2010) reported that 95% of the sample exhibited cognitive distortions, however, the level of cognitive distortions varied as some offenders denied the whole offence whereas some offenders denied the extent of the offence. The study found that perpetrators deflected guilt and intent to external circumstances (e.g., not knowing the legal age of sexual consent, alcohol consumption), denied their intent to commit the offence (i.e. it was a mistake), or completely denied the offence. Those who fully denied the offence expressed they had not engaged in the criminal behaviour and that they were set up or arrested due to police misperception. This systematic review also indicated that online groomers' offence supportive beliefs were associated with their offending goal of seeking intimacy or wanting immediate sexual gratification. For instance, Webster et al. (2012) outlined that intimacy seekers offence supportive beliefs related to viewing the victim as 'consenting' to the relationship. Alternatively, hyper-sexualised offenders' offence supportive beliefs

referred to ‘dehumanising’ the victim and adaptable style offenders viewed the victim as mature and capable. These cognitive distortions support the implicit theories particularly the implicit theories that support viewing children as sexual objects (Ward & Keenan, 1999). Thus, the results suggest that offenders’ behaviour and cognitive distortions differ depending on their motivations to sexually offending.

This systematic review identified one study that determined psychological and interpersonal characteristics among online groomers and compared this group of offenders with IIOC and contact offenders (Seto et al., 2012). It found that online groomers were more intelligent, experienced more problems on capacity for relationship stability, had higher sex drive and preoccupation and were more likely to use IIOC than contact offenders. Online groomers were also found to be younger, less likely to acknowledge paraphilic sexual interests, have lower deviant sexual preferences and sex drive/preoccupation than IIOC offenders. However, there were no differences between ethnicity, emotional identification with children, cooperation with supervision, employment, drug, alcohol problems or present of previous paraphilia diagnoses.

In general, there is very little empirical understanding of the psychological, cognitive, interpersonal, social, developmental and behavioural characteristics of online groomers. Research has mainly focused on IIOC offenders and identified many psychological and interpersonal factors (i.e., loneliness, cognitive distortions, preoccupation with sex, intimacy deficits) that increase the likelihood of offending (Elliot et al., 2009; 2013; Middleton et al., 2006). These findings have formed the basis of treatment specific for IIOC offending. However, in comparison, little is known about online groomers. This is theoretically problematic as characteristics and motivations to engage in grooming children and young people differ from IIOC offenders. For example, some offenders who groom children and young people seek to form intimate relationships and may lack the social abilities to form relationships with adults. Therefore, the existing literature provides a partial understanding of online grooming offenders. Understanding risk factors associated with online groomer perpetrators more comprehensively can contribute toward the development of effective detection and treatment.

Theoretical and methodological limitations relating to online groomer literature.

This systematic review identified three studies that met the inclusion criteria. This indicates that there is a lack of empirical evidence on risk factors that increase the likelihood of an online

groomer sexually offending. More research is required to understand the demographic, interpersonal, behavioural, psychological, social and developmental risk factors that are associated with this behaviour. Existing research suggests that offenders' behaviours relate to their motivations to sexually offend online (Webster et al., 2012). However, little research has focused on the different types of online groomers (i.e., contact driven, fantasy driven, intimacy seekers or hyper-sexualised) and their specific aetiology. This information will enable a better theoretical understanding of online groomers, their motivations and risk factors. This can consequently provide professionals with information that can inform better detection, prevention and treatment interventions.

Moreover, the authors of the identified studies and the critical appraisal tools highlighted numerous theoretical and methodological limitations. For example, the identified studies reported that the findings are limited because small samples were used. For example, one study used a sample of 33 online groomers and another used 18 offenders (DeLong et al., 2010; Webster et al., 2012). Therefore, generalising these findings to all online groomers is problematic. Furthermore, the methods used to select participants (i.e., convenience sample) increase the likelihood of selection bias thus findings are less likely to represent the general population of online groomers. This indicates that the selection of the sample does not representative the general population of online groomers. However, gaining access to online groomers in a systematic, random and stratified manner is impossible for practical and ethical reasons.

Another limitation among the identified studies is the samples that were used. For example, all the identified studies used samples of convicted offenders which excludes those who have not been detected or those that were not convicted. Further research will benefit from examining samples of online groomers from the general population who have not been detected as these offenders may have different risk factors. For instance, they may inherit personality traits that cause them to avoid detection. This can be done by using methodology similar to Bergen et al's (2014) study. Also, this systematic review indicated that there are many samples that are not empirically investigated, therefore, results cannot be generalised. For instance, Seto et al. (2012) recruited a sample of participants who were voluntarily engaging in the sex offender treatment programme and were motivated and willing to address their offending behaviour. The results cannot be generalised to those offenders who do not want to engage in treatment and those who do not view their offending behaviour as inappropriate or problematic.

Another issue with a convicted sample is that it cannot be fully established that solicitation offenders are solely solicitation offenders and have not engaged in previous online or offline sexual offending. For example, law enforcement may not be aware of their full offending history and offenders will generally be hesitant to disclose other offending behaviours. Additionally, the identified studies reported that, as male, Caucasian and junior college graduate offenders were generally used, the findings cannot be generalised to female offenders, those from other ethnic groups and those who have lower formal education. Future research should consider these other samples to determine if their aetiology is similar or different. This has practical implications for treating offenders.

Moreover, the identified studies collected data using semi-structured interviews with online groomers, risk assessments and police video tapes (DeLong et al., 2010; Seto et al., 2012; Webster et al., 2012). This indicates that information known about online groomer characteristics originates from limited data collection methods. There is a need to investigate online groomer characteristics using a range of other methodologies (e.g., psychometrics) as this can provide useful information. The quantitative quality assessment tool, in relation to the data collection methods, provided a moderate rating for Seto et al.'s (2012) study and a rating for DeLong et al.'s (2010) study was not applicable. This shows that there is a need for valid and reliable measures to be used to collect data about online groomer characteristics. Also, studies that collected data from perpetrators using questionnaires and interviews show that data was not verified using other methods such as police cases. This can bias findings as offenders can under-report their experiences, deny and minimise their experience (Bergen et al., 2014; Malesky, 2007). Additionally, during an interview they may disclose in a manner than portrays themselves as socially desirable rather than express their true opinions about sexual offending against children. To minimise bias, data should be verified using other sources (i.e. clinical reports, chat logs, law enforcement perspectives), however, this is impossible due to practical reasons.

Among the identified studies, only one study used comparison groups to compare online groomers with contact offenders and IIOC offenders (Seto et al., 2012). This allowed differences in psychological and interpersonal characteristics to be established between the different offenders. However, there is lack of studies that explore online groomers in comparison to other sexual offenders and no offenders (i.e., control). Further research should consider using comparison groups and control groups as well as measuring the same variables

using the same measures. This will allow data to be synthesised in an objective, reliable and unbiased way. It is also important for participants to be matched on factors such as age, ethnicity and occupation to minimise the influence of confounding factors. However, this is impractical because it is a challenge recruiting samples of online sexual offenders.

Moreover, as the existing literature uses cross-sectional research designs it is not plausible to establish cause and effect. Thus, it is not possible to establish whether the factors cause the offending behaviour or vice versa. In addition, DeLong et al. (2010) obtained data from police interview videotapes. This can provide biased findings as offenders may not fully disclose about the offence, deny it completely or minimise it in an attempt to avoid punishment or prosecution. Furthermore, previous offline sexual offending models, such as the pathways model (Ward & Siegert, 2002), have been applied to IIOC offending. However, few studies have empirically applied this model to online grooming and sexual exploitation offending. Future research should consider using standardised, reliable and valid scales to measure emotional dysregulation, social and intimacy deficits, sexual scripts and anti-social attitudes. Although, Seto et al.'s (2012) findings indicate that offenders may experience intimacy deficits, it is unclear to what extent the pathways model fits with online groomer pathways to sexually offend online.

In summary, there is a general lack of research exploring online groomer risk factors. The limited studies that focus on this topic suggests that data collection methods, research designs, samples and sampling strategies bias the existing findings on online groomer risk factors. The existing literature measures different variables and outcome measures, and those that measured similar outcome measures (i.e. cognitive distortions) used different data collection methods. Therefore, it is not possible to draw firm conclusions or apply the findings to previous sexual offending models such as the pathways model.

Systematic review limitations

Although robust, systematic and transparent methods were used to search, screen and appraise studies, there are limitations of the methods that can bias the results. Firstly, one researcher searched databases, imported identified references to Refworks and deleted duplicate references. Therefore, it is possible that errors occurred during this process. However, duplicates were deleted manually to reduce the risk of losing references due to technical reasons. In addition, one researcher screened the studies using the inclusion/exclusion criteria,

critically appraised and synthesised findings. This was due to a lack of resources. Thus, as a second reviewer was not used, inter-rater reliability of conclusions and quality assessment ratings was not determined. Also, other methods to identify studies that met the inclusion criteria were not employed such as screening identified studies reference lists and contacting experts due to time constraints. Therefore, there is chance that relevant studies may not have been included.

Secondly, this systematic review used narrative summary to synthesise findings. This method was used as more objective methods such as meta-analysis were not appropriate due to the heterogeneity of the design, variables measured and samples used. Narrative summary is a subjective method and it has been claimed that the researcher's interpretation of the identified studies can bias overall findings (Noblit & Hare, 1988). However, this highlights the importance that future research should aim to use standardised, reliable and valid measures among similar samples. This will allow findings to be synthesised in a more objective manner.

Thirdly, the quality assessment tools can potentially provide distorted conclusions in relation to the identified studies. Quantitative quality assessment tools in general aim to critically appraise healthcare and medical research that explores the effectiveness of interventions or differences in conditions. Therefore, components such as blinding participants, accounting for confounding factors, drop out rates and random allocation are key to the quality assessments. However, research exploring online grooming processes, for instance, has used quantitative methods to explore the frequency of particular methods used or the order in which offenders' groom victims. Moreover, some studies investigating offender characteristics or victim vulnerability did not use comparison groups, therefore, these quantitative assessment tools were a challenge to apply to this research area. This, therefore, may impact on the quality assessment ratings and provide lower ratings.

OVERALL CONCLUSION

In summary, the systematic reviews have identified key findings relating to the online grooming process, offender characteristics, adolescents' engagement in online risky behaviours, and victim risk, resilience and protective factors. These findings are summarised in figure 3 in chapter 7. Additionally, the reviews highlighted methodological limitations specific to each research area. It is also worth noting that the searches for the systematic review were conducted between July and September 2015. It is clear that new information and studies relating to offender and victim characteristics and grooming methods has emerged at a later date (Hamilton-Giachritsis et al. 2017; Lorenzo-Dus, Izura & Pérez-Tattam, 2016) and some relevant studies did not meet the inclusion criteria (e.g., Tener at al., 2015). Whilst newer information and studies were not available at the time of the systematic review and, thus, did not inform the planning of subsequent empirical studies, it will be included in the chapters relating to the empirical studies of the PhD programme and the discussion chapter (chapter 7). The PhD findings will be discussed in relation to the systematic reviews, newer literature (after the systematic reviews were conducted) and practical and theoretical implication (e.g. policies).

Aims for the subsequent PhD studies

The systematic reviews have identified theoretical and methodological gaps in the literature, however, it is not possible to address all these for this PhD programme. Therefore, this PhD focused on victim vulnerability associated with online sexual solicitation, grooming and exploitation. This is an important area to consider as it has theoretical relevance and can provide practical implications. Also, this research topic can enhance the exiting literature in a number of ways. The victim risk, resilience and protective factor systematic review highlighted numerous factors (i.e., poor mental health, interpersonal difficulties, substance use, delinquency) that increase victim vulnerability. These factors had a strong theoretical link with attachment styles, emotional regulation and adverse childhood experience and these variables can provide potential explanations for why children and young people become vulnerable to online sexual victimisation.

The existing literature mainly focuses on risk factors relating to sexual solicitation as opposed to sexual exploitation. In addition, the studies do not consider early childhood factors that can create online sexual victimisation vulnerability. Exploring these areas specifically can expand the literature by indicating whether childhood development, psychological traits and

interpersonal functioning cause victim vulnerability as well as provide information about pathways that lead victims to being sexually solicited and exploited online. Therefore, the subsequent PhD studies aimed to:

1) Explore whether attachment styles, emotional regulation and adverse childhood experiences predict sexual solicitation and exploitation.

2) Investigate the influence early childhood experiences, psychological, interpersonal, social, behavioural and environmental factors on online grooming and sexual exploitation vulnerability.

3) Explore victims' motivations to engage in risky online behaviours, interact with online groomers and comply with sexual requests.

The first study aimed to investigate the first aim by using a quantitative approach. The systematic review highlighted that some of the identified studies used single item measures and did not use reliable and valid measures to collect data about psychological and interpersonal

variables. Therefore, this study aimed to address this gap and used valid and reliable measures to explore childhood experiences, psychological and interpersonal factors.

The second study aimed to address the last 2 aims using qualitative methodology. It collected information from a sample of professionals and non-clinical victims who did not report their crimes to authorities. It obtained information about early childhood experiences (i.e., relationship with parents, traumatic experiences), as well as experiences that the victim endured during adolescence (i.e., psychological, behavioural and interpersonal difficulty). Moreover, this study focused on victims' motivations to engage with offenders as well as risky online behaviours such as interacting with people met online and using chatroom and dating sites. More details of the aims of the studies and results are outlined in chapter 2, 5 and 6.

CHAPTER 5

PREDICTING ONLINE RISKY BEHAVIOURS, ATTACHMENT PATTERNS, EMOTIONAL REGULATION AND ADVERSE EXPERIENCES WITH ONLINE SEXUAL SOLICITATION AND EXPLOITATION

ABSTRACT

The existing literature on online sexual solicitation, grooming and exploitation lacks an understanding of the role early childhood interpersonal and psychological factors play in vulnerability. Additionally, research has not used valid and reliable psychometric measures to assess whether attachment with others, emotional regulation and adverse experiences predict online sexual victimisation. Therefore, this study aimed to explore whether these factors, as well as online risky behaviours, predicted being sexually solicited or exploited online. A retrospective and quantitative approach was used to collect online questionnaire data from 238 students and members of the public. It comprised of the following scales: The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), the Relationship Scales Questionnaire (Bartholomew & Horowitz, 1991) and Child Abuse and Trauma Scale (CATS; Sanders & Becker-Launsen, 1995). Multiple regression analysis suggested that attachment styles, emotional dysregulation and adverse childhood experiences were not significant predictors of online sexual exploitation. However, impulse control difficulties and offline sexual abuse predicted online sexual solicitation. These results are discussed in relation to psychological theories.

INTRODUCTION

Existing research on online grooming and sexual exploitation has identified numerous factors that contribute to a child/young person's vulnerability to this form of victimisation online (Livingstone et al., 2011; Webster et al., 2012; Whittle, Hamilton-Giachritsis, & Beech, 2014). These studies have generally reported that online and offline behavioural characteristics (i.e., anti-social behaviour, risky online and offline behaviour), interpersonal (i.e., relationship with peers and parents) and psychological factors (i.e., self-esteem, depression symptomatology, confidence) are associated with online sexual victimisation. However, little research focuses on the early psychological, interpersonal and developmental processes that contribute to a child or young person being vulnerable to online sexual solicitation and exploitation. Research has indicated that these risk factors are strongly linked with psychological and interpersonal deficits such as poor attachment with caregivers, poor internal working models, difficulties in regulating emotions, and experiencing trauma and adverse experiences (Groh et al., 2017; Mikulincer, Shaver & Pereg, 2003; Schore & Schore, 2008). These factors can potentially provide a psychological explanation for why children and young people are vulnerable to online sexual vicitmisation. Thus, this study aimed to explore the influence attachment patterns, emotional regulation, childhood trauma and adverse experiences have on online sexual solicitation and exploitation victimisation.

Attachment Theory

Psychological and child developmental theories suggest that an individual moves through various developmental processes from birth through childhood, adolescence and adulthood that shape the development of interpersonal, psychological, social and emotional functioning (Bowlby, 1998; Goldberg, 2000). Theorists have emphasised that the attachment individuals form with their primary caregivers during infancy significantly influences their future well-being (Ainsworth, 1989; Berger, 2001; Bowlby, 1973). Attachment is generally defined as the emotional connection between people that produces a desire for continual contact as well as feeling of distress during separation (Berger, 2000). Furthermore, Goldberg (2000) suggested that attachment includes social, emotional, cognitive and behavioural components, and that is a property of social relationships in which a weaker, less skilled individual relies on more competent and powerful one for protection. According to Ainsworth (1989) and Bowlby (1973; 1982), attachment refers to an enduring emotional bond that allows the infant and later, adolescent, to move away from the primary caregiver and explore the world with confidence.

Importantly these definitions emphasise the importance of the emotional connection between an infant and a primary caregiver (i.e., mother, father or significant other) who provides security and protection.

Attachment Theory (Bowlby, 1969, 1973, 1988) highlights that infants are equipped with innate tendencies to form bonds with their primary caregivers as a function of survival. Bowlby (1969) suggested that infants universally form an emotional attachment to their primary caregiver during the first year of life, but that the quality of that attachment relationship is dependent on the sensitive responding, care and availability of the caregiver. The development and quality of infant's bonds with their primary caregivers is significantly influenced by their experiences with them. These experiences are considered to shape an infants' social, cognitive, psychological and interpersonal development and influence their adolescent and adult life (Bowlby, 1973; Erickson, 1950, 1963).

Research has identified four attachment patterns that indicate the quality and security of their attachment bond with their caregiver and these are: Secure attachment and insecure attachment (dismissive, preoccupied and fearful) (Ainsworth, 1989). Research suggests that the different attachment styles strongly influence an individual's subsequent psychological, behavioural and interpersonal functioning (Ainsworth, 1989; Feeny & Karantzas, 2017; Feeny & Noller, 1990; Lewis-Morrarty et al., 2015). Research has reported that poor attachments with caregivers are associated with negative outcomes, whereas secure attachments are related to more positive outcomes (Groh et al., 2017; Lewis-Morrarty et al., 2015).

Empirical studies and meta-analytic reviews suggest that individuals who experienced secure attachments also experienced better mental health, and thus, encounter less internalised (i.e., depression, anxiety, social withdrawal, low self-esteem and self-harm) and externalised (i.e., aggression, substance use, conduct problems and delinquency) behaviours than individuals who experience insecure attachments (Cassidy & Appleyard, 2008; Feeny & Noller, 1990; Fox & Hane, 2008; Lewis-Morrarty et al., 2015; Oldfield et al., 2016). Individuals who formed secure attachments generally encountered caregivers who were responsive, met the infant's emotional and physical needs, and acted as a base for exploration during their infancy (Malekpour, 2007). These processes enable an individual to develop healthy psychological functioning (i.e., high self-esteem, worth) and emotional regulation systems as they learn that their caregivers effectively relieve stress and their child's needs are supported (Cassidy, 1994).

These individuals are better equipped at dealing with stressful situations and expressing their emotions or concerns. Also, they develop better social skills, and form more prosocial relationships and friendships that are based on security and trust (Brownfield & Thompson, 1991; Groh et al., 2017; Knox, 2014; Loding, 2007; Main, 2000; Rice, 1990; Thompson, 1991). Moreover, individuals who are securely attached experience a greater capacity for intimate relationships, are better able to adapt to their partners, and are more comfortable with intimacy than individuals who experience insecure attachment (Batholomew, 1990; Feeny & Karantzas, 2017; Hazen & Shaver, 1987).

Studies have also indicated that having parents or caregivers who are unable to meet the needs of children (i.e., keep them safe, provide emotional support) leads to a breakdown in the attachment system, with insecure attachments being formed. Consequently, these individuals are more likely to develop distrust towards their caregivers and learn that their needs will not be met (Burk & Burkhart, 2003; Grossman & Grossman 1990; Main, 2000; Marshall, Hudson, & Hodkinson, 1993). Research indicates that insecure attachment is associated with many problematic behaviours such as delinquent behaviour, poly-victimisation experiences, emotional dysregulation and poor mental health (Booth-LaForce et al., 2005; Feeny & Noller, 1990).

A central part of attachment theory is that children develop an internal working model of attachment as a result of their experiences with their primary caregivers. This relates to a mental representation of the self, attachment figures and relationships in general. The working models guide children's interactions with caregivers and other people throughout their lives as well as serving as a template for how an individual will function and maintain other close relationships (Bowlby, 1973; Bowlby, 1977; Bretherton, 1990; Collins & Read, 1994). This model emphasises that individuals form internal working models based on the extent to which their caregiver satisfied their needs and provided a sense of security. Thus, children's internal working models of attachment can influence their overall psychosocial adjustment, social behaviour, perceptions of others, mental health, development of self-esteem and sense of self (Thompson, 2000, 2006).

These internal working models comprise of two dimensions and these are: positive model of self and/or others and negative model of self and/or others. A positive self-model refers to *"an internalised sense of self-worth that is not dependent on ongoing external validation"*

(Bartholomew, 1993, p. 40). This emphasises that negativity of the self-model relates to a self-image of being unworthy of love and support and a need for others' acceptance in order to maintain a positive self-regard. Individuals who form positive self-models generally experience responsive and sensitive care from their attachment figures. Consequently, they form representations of the self as worthy of love and care and of the attachment figure as sensitive and someone who they can rely on in times of need. Thus, individuals with positive self-models generally experience better psychological outcomes, view themselves as self-sufficient, secure, and lovable (Kinniburgh et al., 2017). In addition, these individuals form expectations that other interpersonal relationships are supportive, receptive, and accepting. Also, they perceive intimate relationships as rewarding, worthwhile and based on security, similar to the ones they developed with their attachment figures during childhood (Bartholomew, 1990; Groh et al., 2017).

In contrast, children who experienced unresponsive and unavailable attachment figures tend to develop negative perceptions of relationships with other people and of themselves. Bartholomew (1990) highlighted that acquiring a negative other model relates to viewing others as unreliable and rejecting and is externalised as avoidance of closeness to minimise disappointment. These individuals generally perceive themselves as dependent, insecure, unworthy of love and affection (Bowlby, 1973, 1980; Bretherton & Munholland, 1999). Furthermore, insensitivity or a lack of caregiving can lead to individuals experiencing a lack of trust, feelings of disappointment, anger, and insecurity (Fonagy et al., 1997). This can essentially impact negatively on forming and maintaining interpersonal relationships as individuals view them as unrewarding and experience avoidant intimate tendencies (Ainsworth et al., 1987; Griffin & Bartholomew, 1994; Main, 1981). Research has also suggested that individuals who experience negative self-models have a greater predisposition to depression, anxiety disorders, low self-esteem and self-acceptance (Bowlby, 1988; Griffin & Bartholomew, 1994).

Based on the mental models of self and others, Bartholomew (1990) developed the Four-Category Model of Attachment. This model crossed the self-model dimension with the other-model dimension to form four quadrants representing distinct attachment styles. These dimensions include secure (i.e., comfortable with intimacy and autonomy), preoccupied (i.e., preoccupied with relationships), dismissing (i.e., dismissing of intimacy, counter-dependent) and fearful attachment (i.e., fearful of intimacy, socially avoidant). The secure attachment style

relates to positivity of both models, the dismissing style refers to positivity of the self-model and negativity of the other-model, the preoccupied attachment style with negativity of the self-model and positivity of the other-model, and the fearful attachment style with negativity of both models. Batholomew (1990) emphasised characteristics that relate to each of these attachment patterns in relation to intimacy and relationships.

Bartholomew (1990) suggested that individuals who experience preoccupied attachment are more likely *"to reach out to others to fulfil their dependency needs"* and desire a need for affiliation (Bartholomew, 1990, p. 165). These individuals crave excessive intimacy, lack confidence, rely more on others and seek relationships to fulfil their dependency needs. They also feel unloved, are unable to cope and experience problematic behaviours during intimate relationships. Also, individuals who experience preoccupied attachment generally self-disclose more (even disclose inappropriately) and are emotionally expressive (Griffin & Bartholomew, 1994). Moreover, individuals who experience fearful attachment style generally experience low self-confidence, seek external validation and relational intimacy but distrust others and fear rejection (Batholomew, 1990; Griffin & Bartholomew, 1994).

A dismissive attachment style is associated with individuals not desiring, or fearing, close relationships. These individuals are generally uncomfortable with intimacy, are self-reliant, view relationships as unnecessary and are unmotivated when it comes to initiating or maintaining intimate relationships (Bartholomew, 1990). Griffin & Bartholomew (1994) reported that dismissing individuals are self-confident but experience low emotional expressiveness, warmth, elaboration and caregiving. Furthermore, dismissive individuals often focus their attention on work, hobbies, self-improvement, or other activities that do not involve relationships. Their communicative behaviour is likely to be characterised by intimacy avoidance and low levels of disclosure (Feeney, Noller, & Hanrahan, 1994).

An assumption of attachment theory is that the internal models of attachment individuals form remain relatively stable across the life span (Fraley, 2002; Scharfe & Bartholowmew, 1994). However, some research has emphasised that the stability of attachment can alter for individuals who are involved in changing environments such as mothers' not being present due to work commitments or a change in caregivers. This suggests that life events and the environment may influence the relationship between an infant and caregiver, thus, influencing the attachment between the two (Hamilton, 2000; Waters, Weinfield & Hamilton, 2000).

However, studies have tested the attachment theory assumption and reported that attachment patterns are relatively stable over time. Longitudinal studies have reported moderate stability of attachment patterns over periods ranging from weeks to months and years (Fraley, 2002; Hamilton, 2000; Hammond & Fletcher, 1991; Shaver & Brennan, 1992). Scharfe and Bartholomew (1994) collected data from university students, aged between 20 and 35, who were in romantic relationships of two years or more and had no children. They collected data at two time points using self-reported measures, semi-structured interviews and reports from participants' romantic partners. The results highlighted that attachment was stable over a period of 8 months as ratings were classified into the same category at both time points. In addition, Fraley (2002) conducted a meta-analysis using studies that reported stability of attachment from infancy to adulthood (19 years). The findings revealed that attachment from infancy to adulthood was moderately stable indicating that experiences and interactions with caregivers and the way internal working models were developed remained relatively stable across an individual's lifespan. Thus, these findings suggest that attachment is a relatively stable construct over short and long periods of time.

Although Attachment Theory (Bowlby, 1969, 1973, 1988) has provided a theoretical perspective on psychological and interpersonal functioning, it has also been criticised. These limitations relate to cultural variations, multiple attachments and a lack of environmental consideration (Hazan & Shaver, 1994; Field, 1996). There are concerns surrounding whether attachment is a universal construct or whether this varies across cultures (Keller, 2013; Van Ijzendoorn & Sagi-Schwartz, 1999). There is evidence to suggest that there are variations in attachment in different cultures. For example, in collectivist cultures there is a higher likelihood of anxiety prone attachment patterns whereas in individualist cultures avoidance prone attachments are more common (Jin et al., 2010; Simonelli et al., 2014). Also, some cultures promote multiple caregivers providing the new born infant with human needs (i.e., breast-feeding) and affection (i.e., being held). Therefore, contrary to the attachment theory viewpoint that a bond is often developed between an infant and a single and primary caregiver, in some cultures multiple attachments are formed (Field, 1996). In addition, a mother is favoured as a primary attachment figure, and fathers and siblings are considered as secondary attachment figures. However, multiple, simultaneous attachments may occur between the child and the mother, father, and siblings that may also be considered primary attachments, particularly in families where fathers and siblings share in the caregiving duties. Moreover, Hazan and Shaver (1994) emphasised that the Attachment Theory (Bowlby, 1969, 1973, 1988) is confined to the

infancy and childhood period of an individuals life and does not consider attachments that occur in adolescence and adult life (i.e., partners and peers). Thus, Field (1985) suggested that Attachment Theory (Bowlby, 1969, 1973, 1988) should accommodate multiple attachment to a variety of figures at different stages of life. In addition, attachment styles should be considered in the context of cultures and family dynamics.

Previous literature exploring online sexual victimisation has highlighted risk factors (i.e., delinquency, mental health issues, hostile relationships) that are theoretically linked with attachment styles and internal working models (Palmer, 2015; Ospina et al., 2009; Whittle et al., 2014). Also, the grooming and sexual exploitation process relates to offenders deliberately seeking vulnerable victims online (i.e., those who experience low self-esteem and confidence) (Malesky, 2007; Tener et al., 2015). It may also include offenders being intimate with the victim and making them feel special (Webster et al., 2012). Thus, it may be that the bonds formed in a victims infancy can be an underlying psychological factor that influences their vulnerability to engage in risky online behaviours and/or online sexual solicitation or exploitation victimisation. For example, it may be that attachment styles that are associated with intimacy and psychological deficits are related to greater engagement in risky online behaviours (i.e., interact and self-disclose to strangers). Also, individuals who experience interpersonal and psychological difficulties, perhaps as a consequence of their attachment, may be more prone to interact with offenders who offer them support and affection. It is important to consider attachment in relation to engagement in risky online behaviours, sexual solicitation and exploitation as this can influence the development of effective interventions aimed at identifying vulnerable children and young people as well as treating victims of online grooming and sexual exploitation.

Emotional regulation

Another key component involved in psychological functioning is the ability to regulate emotions. According to Schachter and Singer (1962), emotion is defined as a state of physiological arousal and of cognition appropriate to this state of arousal. Emotions can be related to physiological factors (i.e., increased heart and breathing), subjective feelings, cognitive factors and the desire to take action (Siegler, DeLoache & Eisenberg, 2010). During infancy and childhood, infants develop systems to regulate these emotions (Siegler, DeLoache & Eisenberg, 2010; Stifter, Spinrad & Braungart-Rieker, 1999). Emotional regulation refers to

"*the extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features*" (Thompson, 1991; p.271). Importantly, emotion regulation emphasises the functional nature of emotional responses, with regulation referring to an ability to act effectively in the context of emotionally salient events (Morris et al., 2007).

Research highlights that an essential component of children's successful interpersonal and psychological development is related to how effectively they regulate their emotional responses (Denham et al., 2003; Eisenberg, Spinrad & Morris, 2002; Kopp, 1992). Gratz and Roemer (2004) proposed that effective emotion regulation involves functioning in the following areas: the awareness and understanding of emotions, acceptance of emotions, ability to control impulsive behaviours, engagement in goal congruent behaviours in the context of distressing emotional experiences, and having access to and flexible use of situationally appropriate emotion regulation strategies. According to Gratz and Roemer (2004), the absence of any or all of these skills will result in difficulties in emotion regulation.

Research has highlighted factors that influence the development of effective or ineffective emotional regulatory systems, as well as the consequences of the inability to regulate emotions (Frick & Morris, 2004; Silk, Steinberg & Morris, 2003). Studies indicate that difficulties in regulating negative emotions relate to aggression, emotional, behavioural, interpersonal and psychological problems (Cicchetti, Ackerman & Izard, 1995; Eisenberg et al., 2001). Likewise, positive emotional regulation is linked with better mental health and coping mechanisms, better interpersonal communication, as well as lower levels of delinquency and anti-social behaviour, fewer conduct problems and less violent behaviour (Cole et al., 1996; Wills et al., 2011).

The ability to regulate emotions has a considerable impact on individuals' future well-being and functioning. Research has highlighted that the development of an individual's capacity to effectively regulate emotions is influenced by many factors. A key contributor is an individuals' family dynamics (Morris et al, 2007). Morris et al. (2007) suggested that within a family context, individuals' emotional regulation mechanisms are developed as a result of observations, parenting practices and behaviours, and the emotional climate of the family. A key factor is the infant and parent relationship, secure or insecure attachments formed between infant and child and the caregivers availability (Morris et al., 2007). Siegler, DeLoache & Eisenberg (2010) suggested that infants transition from reliance on caregivers to regulate their emotions to self-regulation of emotions. For example, during the first few months of an infants'

life, their caregiver often regulates their emotional arousal by rocking, calming or soothing them when they feel distressed or require their needs to be met. As infants' movement develops and their ability to control their attention increases, they self-sooth and regulate their own emotions by, for example, diverting their attention away from the distressing source (Denham, 1998). Studies have found that problems can occur when parents do not sufficiently or effectively regulate their childs' distress (Cassidy, 1994; Goldberg, 2000). For example, brain structures that buffer against stress may not develop sufficiently, and the infant may grow up to be anxious and emotionally explosive (Nelson & Bosquet, 2000).

Research has highlighted that environmental and interpersonal factors also play a role in children's ability to regulate their emotions. For instance, children who originate from a poor social background (i.e., low income, single-parent households, maltreatment and abuse) are more likely to develop unhealthy emotional regulation techniques (Hackman, Farah & Meaney, 2010). These characteristics are also related to the formation of poor attachments, suggesting that these interrelated factors can manifest and contribute towards problematic behaviours (Cassidy, 1994). These findings emphasise the importance of attachment with caregivers, parental styles, family expressiveness, caregiver presence has on an individual's ability to regulate their emotions (Goldberg, 2000).

Cognitive factors are also associated with emotional regulation (Baumeister, Heatherton & Tice, 1994). Studies have reported that an inability to regulate emotions is associated with poor distress management, low levels of self-control and an inability to delay gratification (Greenberg, Kusché, & Speltz, 1991). Thus, individuals may therefore engage in self-destructive and problematic behaviours (i.e., smoking, drinking, eating, gambling) to feel better and to resolve their negative emotional state. Research has reported that children and young people who experience online sexual solicitation or exploitation also engage in self-destructive and problematic behaviours (i.e., substance use, alcohol use) (Noll et al., 2009; Ospina et al., 2009). This could indicate that individuals engage in these behaviours as they are unable to effectively regulate their emotions. They may also engage in other problematic or risky behaviours (online and offline). One of these can be interacting with another individual to regulate their own emotions. For example, gaining empathy from another individual may make someone feel better and reduce the negative affect they are experiencing (Reeck, Ames & Ochsner, 2016). Thus, when an offender approaches a victim online and appears supportive, caring, romantic and flatters them, the victim may experience low self-regulation and control. Thus, they may want to gain the immediate gratification of being listened to, cared for and

loved. Therefore, they may be more willing to engage with the offender, disclose about their negative experiences in an attempt to relieve their negative affect.

Childhood trauma

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM) defines trauma as '*direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury or a threat to the physical integrity of another person; or learning about an unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate'*. It also states that '*the person's response to the event must involve intense fear, helplessness, or horror or in children the response must involve disorganised or agitated behaviour*' (American Psychiatric Association, 2000). Sneddon (2003) provided definitions and discussed the characteristics of sexual abuse, emotional abuse, physical abuse and neglect. Sexual abuse involves adults, adolescents or children engaging in sexual activities that children may not understand, are not able to give informed consent and can occur on a contact or non-contact basis (Holmes & Slap, 1998). Emotional abuse consists of behaviours such as belittling, terrorising and isolating children from others, rejection and inappropriate socialisation (Glaser, 2002). Physical abuse occurs when physical harm or injury is inflicted on children and/or purposely failing to prevent them from physical injury (Malinosky-Rummell & Hansen, 1993). Neglect occurs when an adult fails to protect a child from any type of danger or there is a persistent failure to care for him or her. It could involve insufficient attention and emotional availability to the child and a lack of stimulation, food, clothing, shelter, hygiene, nutrition, supervision, medical care or education that could result in harm to the child (Erickson, Labella & Egeland, 2017).

Studies have highlighted a variety of factors that may result in children experiencing trauma, and the consequences of encountering adverse and traumatic experiences. Research indicates that children who are exposed to any kind of trauma (i.e., maltreatment, physical abuse, sexual abuse) are more likely to experience poor psychological, interpersonal, behavioural and social functioning in comparison to their non-abused counterparts (Cohen et al., 2006; Lewis et al., 2016; Stubenhort, Cohen, & Trybalski, 2010; Turner et al., 2012). Mullen et al. (1996) examined a community sample of women and reported that a history of abuse (maltreatment, physical and sexual abuse) was associated with increased rates of psychopathology, sexual

difficulties, decreased self-esteem, and interpersonal problems (i.e., breakdown of intimate relationships). These individuals were also more likely to have experienced a disruptive family background. In addition, studies that have explored clinical and non-clinical samples, have shown that mental health difficulties, substance use, alcohol use and aggression are significantly associated with childhood sexual abuse (Werner et al., 2016).

Another problematic outcome is that children who have experienced trauma are at an increased risk of experiencing further victimisation (Classen et al., 2005). Studies that have collected data from adolescent and adult participants have reported that those individuals who experienced sexual abuse during childhood were significantly more likely to experience sexual revictimisation (i.e., rape, sexual assaults, sexual exploitation) later on in life (Siegel & Williams, 2003; Casey & Nurius, 2005; Werner et al., 2016). This suggests that individuals who experience abuse during childhood are prone to negative experiences and poor psychological, interpersonal and behavioural functioning throughout their lives.

From an attachment theory perspective, individuals who have experienced sexual abuse are more likely to experience difficulties in forming relationships (Bartholomew & Horowitz, 1991; Bowlby, 1969). During infancy and childhood, individuals form expectations of relationships and learn how to relate to others in intimate relationships. However, experiencing sexual abuse can distort this process that can affect relationships building negatively. For example, individuals develop issues surrounding security and trust (Kelly et al., 1996). In addition, maltreatment can cause children to develop insecure attachment relationships. This can cause deficits in perceptions of themselves, peer relationship and ability to regulate emotions (Stubenhort et al., 2010).

Theoretical perspectives have provided explanations for why victims' experience adverse future experiences and how the sexual abuse manifests throughout their lives (Finkelhor & Browne, 1985). Finkelhor and Browne (1985) synthesised literature and analysed clinicial observations and formulated the Traumagenic model of sexual abuse. This model highlighted four aspects associated with the individual's feelings and experiences after the sexual abuse. These are traumatic sexualisation, stigmatisation, betrayal, and powerlessness. These dynamics are thought to alter and distort the child victims' emotional, interpersonal, psychological and cognitive functioning (i.e., view of the world, others and themselves). Traumatic sexualisation refers to victims' sexual feelings and attitudes being developed in an inappropriate and

dysfunctional manner. This can lead to victims' experiencing highly sexualised behaviours, sexual preoccupations and repetitive sexual behaviours (Ginty et al., 2017; Persson, Pfaus & Ryder, 2015). Specifically, some children display knowledge and interests that are not developmentally appropriate to their age, as well as perpetrating sexual violence against their peers (Cook et al., 2017).

Betrayal refers to victims' realisation that a trusted person manipulated them and caused them harm. Clinicians have reported that, as a result, depression and loss of trust, impaired judgement and overdependency in intimate relationships can occur (Finkelhor & Browne, 1985). These individuals may feel a need to regain trust and security, therefore, may appear clingy and overly dependent in interpersonal relationships. Alternatively, victims may also be hostile and aggressive to manage the betrayal related distress (Cook et al., 2017; Gamache, Van Ryzin & Dishion, 2016; Wohl, & Kirschen, 2018).

Powerlessness relates to sexual abuse victims feeling disempowered and feeling that they have lost power over themselves (Toon & Ainscough, 2018). This may be due to victims' personal space being invaded during the sexual abuse and despite resisting, the abuser still perpetrates the abuse. A common factor associated with powerlessness is the experience of fear, anxiety, depression, suicidal tendencies, low self-efficacy and poor coping skills (Browne & Finkelhor, 1986; Finkelhor, 1990). Thus, these victims may experience an inability to deal with stressful situations, employment difficulties and a high risk of subsequent victimisation experiences (Kendall-Tackett, Williams & Finkelhor, 1993).

Stigmatisation relates to the negative connotations (i.e., feeling guilt and shame) that victims of sexual abuse experience as a consequence of the abuse. These can derive from the offender, family members or society in general. Thus, these victims may experience low self-esteem, isolation and be more likely to engage in problematic and self-destructive behaviours such as alcohol and substance use and prostitution (Boudewyn & Liem, 1995; Reynolds, 2016). This model emphasises that negative attitudes toward the self, the world, or others, formed as a consequence of the sexual abuse, are likely to cause significant problems during a child abuse survivor's lifetime (Finkelhor & Browne, 1985).

Moreover, Finkelhor & Berliner (1995) suggested that victims who experience poly-victimisation may be affected more negatively. This is supported by Finkelhor, Ormrod, and

Turner (2007) who conducted a longitudinal study among children aged between 2 and 17. They reported that victims who were exposed to different forms of victimisation experienced more psychological issues. It is important to note, however, that not all sexually abused victims experience long term psychological or interpersonal issues (Dufour, Nadeau & Bertrand, 2000). There may be protective factors that one experiences that may delay the onset of symptoms or buffer against the negative impact of the sexual abuse. Research has shown that early disclosure of the abuse and a supportive social network can reduce victims experiencing mental health issues (Dufour, Nadeau & Bertrand, 2000; Lamb & Edgar-Smith, 1994; Paine & Hansen, 2002).

Research has suggested that individuals who have experienced abusive childhood experiences and more prone to engage in self-destructive behaviours, sexual behaviours and impulsive behaviours (Boudewyn & Liem, 1995; Finkelhor & Berliner, 1995; Reynolds, 2016). This can be a driving factor that leads abused children or young people to engage in sexual and general risky behaviours online that can place them at risk of online sexual victimisation. Thus, it is important to empirically consider childhood abuse and neglect in relation to vulnerability to online risky behaviours, sexual solicitation and exploitation victimisation as this can have significant practical implications.

Rationale and aims of the study

Given the importance of attachment, emotional regulation and adverse childhood experience in human functioning, it is important to consider these aspects in relation to online sexual victimisation. Research has suggested that risk factors associated with online sexual victimisation include externalised behaviours (i.e., substance use, alcohol use) and internalised behaviours (i.e., depression, self-harm, loneliness) (Ospina et al., 2009; Whittle et al., 2013). Furthermore, studies have reported that engagement in highly sexualised behaviours, experiencing poly-victimisation and poor interpersonal functioning increase the likelihood of children and young people being sexually solicited, groomed and exploited online (Mitchell, Finkelhor & Wolak, 2007; Ybarra & Finkelhor, 2007). Moreover, some offenders have reported specifically targeting victims who display low self-esteem, appear needy, are lonely or seeking affection (Tener et al. 2015; Malesky, 2007). From a theoretical perspective, these factors are strongly linked with poor attachment, emotional dysregulation and traumatic experiences (i.e., maltreatment and sexual abuse). Therefore, this study aimed to empirically

investigate the role attachment patterns, ability to regulate emotions and adverse childhood experiences had on children and young people being sexually solicited and exploited online. It is hypothesised that adverse experiences, poor interpersonal and psychological functioning is related to online sexual solicitation and exploitation.

The existing literature has reported that hostility towards parents, depression, stressful life events, eating problems, low self-esteem and confidence are significantly related to online sexual victimisation (Whittle et al., 2014; Ospina et al., 2009). Therefore, it is important to consider these 'vulnerability factors' in relation to engagement in risky online behaviours and vulnerability to online sexual solicitation and exploitation. It is hypothesised that greater psychological and interpersonal deficits will be correlated with online sexual victimisation.

Research has also reported that engagement in online risky behaviours is a significant risk factor associated with online sexual solicitation and exploitation. Studies have reported that interacting with strangers, meeting online strangers offline and disclosing personal information online increase online sexual victimisation vulnerability (Mitchell, Finkelhor & Wolak, 2005; Santisteban & Gámez-Guadix, 2017; Ospina et al., 2010; Whittle et al, 2014; Ybarra et al., 2007). This study aimed to investigate the influence early childhood experiences, psychological and interpersonal functioning has on participants engaging in risky online behaviours. This can provide an insight into those individuals who are highly likely to engage in different types of risky online behaviours (i.e., sexual or non-sexual communication with strangers, meeting people offline known exclusively online, having a public profile). In turn, this can increase vulnerability to online sexual requests and being sexually exploited. Previous studies have reported that individuals who are dissatisfied with their offline lives and experience psychological difficulties (i.e., distress, self-harm, depressive symptomatology, isolation) are more likely to engage in risky online behaviours (Beebe et al., 2004; Mitchell, Wolak & Finkelhor, 2008; Mitchell & Ybarra, 2007; Walsh, Wolak & Mitchell, 2013). It is hypothesised that individuals who experience poor psychological, interpersonal functioning and attachment are more likely to engage in risky online behaviours, potentially due to poor self-control, a tendency to seek support and engage in risky behaviours. Individuals who engage in risky online behaviours are of particular importance as these people are more likely to be sexually victimised online. Thus, interventions aimed at detecting vulnerable victims can be targeted toward this group.

METHOD

Participants

This study recruited 238 participants (132 females, 103 males) via opportunity and snowball sampling. Participants included University of Central Lancashire (UCLan) students and members of the public. Participants' age ranged from 18 to 30 years (m = 21.13 SD = .239). Most of the participants were heterosexual, followed by homosexual, bisexual and transgender/gender minority. Furthermore, the majority of the participants were White (66%), followed by Asian or Asian British. A small amount of the sample was Black or Black British or another ethnicity. Almost half of the sample reported that they had no religion. Just over a quarter of the sample were Christian and one fifth of the sample were Muslim. A small portion of the sample reported being Hindu or Buddhist. These demographics are included in table 28.

Design

This study used an online survey to gather information. A mixed method approach was used. The quantitative questions measured online sexual victimisation, general and risky online behaviours, psychological, social and interpersonal factors. The data was analysed using correlation and multiple regression analysis. The qualitative part of the survey gathered information about the participants' online sexual victimisation experiences, how it made them feel and offender characteristic. Additionally, this study used a cross-sectional design and a retrospective approach was undertaken as participants aged between 18 and 30 were asked to report their experiences when they were under the age of 16.

Table 28. Frequency relating to participants' demographic information

Demographic factors	Percentage of participants	Number of participants
Gender		
Female	55.5%	132
Male	43.3%	103
Transgender	0.4%	1
Prefer not to say	0.8%	2
Sexuality		
Heterosexual	80.3%	191
Homosexual	7.1%	17
Bisexual	9.7%	23
Transgender/Gender minority	0.4%	1
Prefer not to say	1.3%	3
Not reported	1.3%	3
Ethnicity		
White	66%	157
Black or Black British	5.0 %	12
Asian or Asian British	23.1%	55
Other	5.9%	14
Religion		
Christian	26.9%	64
Muslim	20.2%	48
Hindu	0.8%	2
Buddhist	1.7%	4
No religion	47.1%	112
Other	3.4%	8

Measures

The online questionnaire used quantitative and qualitative measures to gather information. The quantitative part consisted of measuring demographics, general and risky online behaviours, psychological, interpersonal, developmental and social factors. The qualitative part of the study gathered information about the grooming process, how the experience made the victim feel and offender characteristics. More detail about the quantitative and qualitative measures are listed below. The questionnaire, which includes the participant information sheet and debrief sheet, is included in Appendix 4.

Demographics and internet use. The first part of the questionnaire established demographic information such as age, gender, sexuality, ethnicity and religion. Additionally, the questionnaire gathered information regarding participants internet use when they were under the age of 16 such as frequency of internet use, types of online environments used to

communicate with people met online (e.g., blogs, social networking sites, instant messaging) and the type of information they posted online (i.e., interests, feelings, relationships and psychological or physical problems they were experiencing).

Risky online behaviours. Participants were also asked about their engagement in risky internet behaviours. The items measure participants overall risky online behaviours, privacy risk, communication risk, disclosure risk and sexual communication risk. These measures originated from existing literature that investigated online risky behaviours and online sexual solicitation (Livingstone et al., 2011; Ybarra et al., 2015). A total of 19 items ($\alpha = .91$) measured online risky behaviours such as "when you were under the age of 16, how often did you: 1) have a public social media profile? and 2) view sexual material online. Risky online behaviours were measured using a 5 point Likert scale and responses ranged from '1 = never', '2 = not very often', '3 = sometimes', '4 = a lot' to '5 = all the time'. The overall score was calculated by adding the responses of each risky online behaviour items and scores ranged from 19 to 95. A high score indicated that individuals engaged in a higher frequency of risky online behaviours. The Cronbach's alpha for this scale was .91 which indicates high internal consistency.

Online sexual victimisation. In terms of online sexual victimisation, receiving unwanted sexual solicitation was measured using 3 items. These items were: when you were aged under 16, how often did you: 1) receive unwanted requests for sexual information about yourself from someone you didn't know online that you thought was over 18 (e.g., physical appearance, your sexual activities)?, 2) have someone you didn't know that you thought was over 18 try to get you to talk about sex online? and, 3) have someone you didn't know that you thought was over 18 ask you to do something sexual that you did not want to do online?'. This was measured using a 5 point Likert scale that ranged from '1=never' to '5=all the time'. Previous studies have used these items to collect data about online sexual solicitation (Mitchell et al., 2013). The higher the score indicated the more online sexual solicitation participants encountered from individual who they believed to be over the age of 18. The Cronbach's alpha score for these items was .92 which indicates high internal consistency.

Sexual exploitation was measured using the following item: "If you had one of the last three experiences, how often did you comply?'. The sexual solicitation and exploitation questions were measured using a 5 point Likert scale that ranged from '1=never' to '5=all the time'. The

higher the score suggested more sexual solicitation and exploitation experiences. Participants were further asked if they had encountered any of the sexual solicitation experiences and how old they were at the time of the sexual solicitation. Also, participants were asked who asked them to do this (options were friend, family member or relative, girlfriend/boyfriend, person met online, stranger and other) and who they told about their experience (options were no one, friend, parents, siblings, police, teachers and other). In relation to the latter two factors, participants were able to check more than one item and if they selected other they were asked to specify.

Participants were also asked when they were under 16, how often did someone aged over 18, who you met online: 1) use information you posted online to initiate a conversation or befriend you? and 2) use information that you posted about your feelings initiate a conversation or befriend you. These questions were used to establish potential grooming and responses were the same as online sexual solicitation and exploitation. These measures used a 5 point Likert scale and responses ranged from '1=never' to '5=all the time'. The higher the score indicated the more online grooming experiences participants encountered. These items indicated that the Cronbach's alpha score was .91 which suggests high internal consistency.

Vulnerability factors. Single item measures were used to establish participants psychological, interpersonal and social functioning when they were aged under 16. Participants were asked how often they experienced depression / low mood, loneliness, anxiety, low self-esteem, low confidence, self-harm, eating problems, conflict with parents/siblings and stressful situations. These items were developed according to the literature on online sexual solicitation and exploitation. Research has suggested that psychological and interpersonal factors (i.e., depression, loneliness, conflict with parents) are related to adolescents being sexually solicited and exploited (Whittle et al., 2014; Livingstone et a., 2014; Noll et al., 2009). The vulnerability factors were measured using a 5 point scale ranging from '1=never' to '5=all the time'. A high score indicated that the participant experienced more of the trait in question. The scores on these items were combined to create one score for vulnerability. The scores ranged from 9 to 45 and a higher score indicated that the individual was experiencing more problems with psychological and interpersonal functioning. The Cronbach's alpha score ($\alpha = .90$) showed that internal consistency was high.

Emotional regulation. The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) was used to measure emotion regulation. Participants were asked to rate the statements that applied to them when they were an adolescent (aged under 16). This scale consisted of 36 items and used a 5 point scale ranging from 'almost never' (0-10%) to 'always' (91-100%). This scale consists of six subscales. The first subscale is 'non-acceptance of emotional responses' that consists of 6 items such as 'when I'm upset, I feel guilty for feeling that way' and 'when I'm upset, I feel like I am weak'. The second subscale is 'difficulties engaging in goal-directed' and this consists of 5 items such as 'when I'm upset, I have difficulty concentrating' and 'when I'm upset, I have difficulty thinking about anything else'. The third subscale is 'impulse control difficulties' which comprises of 6 items such as 'when I'm upset, I lose control over my behaviours' and 'I experience my emotions overwhelming and out of control'. The fourth subscale is 'lack of emotional awareness' and this includes 6 items such as 'I care about what I am feeling' and 'I am attentive to my feelings'. The fifth subscale, 'limited access to emotional regulation strategies', consists of 8 items such as 'when I'm upset, it takes me a long time to feel better' and 'When I'm upset, my emotions feel overwhelming'. The last subscale is 'lack of emotional clarity' that is made up of 5 items such as 'I have difficulty making sense out of my feelings'. Higher scores are indicative of greater problems with emotion regulation. This measure yields a total score of difficulties in emotional regulation as well as scores on six subscales. A high score on this scale is indicative of participants experiencing more difficulty in regulating their emotions. Additionally, the DERS has showed high internal consistency in this study ($\alpha = .92$) and previous studies. For example, Williams et al. (2015) and Pisetsky et al. (2017) reported internal consistency of 0.88 and 0.84 respectively.

Attachment. The Relationship Scales Questionnaire (Bartholomew & Horowitz, 1991; 1994) was used to measure four attachment styles (preoccupied, secure, dismissive and fearful). This scale asked participants about their feelings about close relationships when they were an adolescent (aged under 16). This questionnaire consists of 30 items and each item as measured on a 5 point scale ranging from 'not at all like me' to 'very much like me'. This scale consisted of four subscales. The first subscale is 'secure attachment' that consists of 5 items such as 'I find it easy to get emotionally close to others' and 'I am comfortable depending on other people'. The second is 'fearful attachment' that includes 4 items such as 'I find it difficult to depend on other people' and 'I find it difficult to depend on others completely'. The third subscale measured 'preoccupied attachment' using 4 items like 'I want to be completely

emotionally intimate with others' and 'I find that others are reluctant to get as close as I would like'. The last subscale, 'dismissing attachment' consists of 5 items such as 'it is very important to me to feel independent' and 'I prefer not to have other people depend on me'. This scale generated four scores for each attachment style and these were calculated by determining the average of the items relating to the attachment style. A higher score indicated that has more traits relating to the attachment style.

This study indicated poor internal consistency for the secure (α = .58) and preoccupied attachment (α = .45) subscales and fair internal consistency for the dismissing subscale (α =.68). In addition, the fearful subscale reported high reported high internal consistency (α = .82). This is fairly consistent with previous studies that reported similar Cronbach alpha scores. For example, Otani et al. (2016) reported that the Cronbach's alphas for the secure, dismissing, preoccupied and fearful subscales were 0.54, 0.55, 0.64 and 0.67, respectively. Furthermore, Ghosh and Dasgupta (2015) reported that the Cronbach's alpha ranged from 0.41 for the secure scale to 0.70 for the dismissing scale.

Childhood abuse and trauma. The Child Abuse and Trauma Scale (CATS; Sanders & Becker-Launsen, 1995) was used to measure sexual abuse, punishment and negative and neglectful home environment experiences during childhood and as a teenager. This scale consists of 38 items, 3 subscales and items were measured using a 5 point scale. The subscales were 'sexual abuse', 'punishment' and 'neglect/negative home atmosphere'. The 'sexual abuse' subscale comprised of 6 items such as 'did you ever witness the sexual maltreatment of another family member?' and 'did you ever have traumatic sexual experiences as a child or teenager?'. The 'punishment' subscale uses 6 items such as 'when you were punished as a child or teenager, did you feel the punishment fit the crime?' and 'when you didn't follow the rules of the house, how often were you severely punished?'. The 'neglect/negative home atmosphere' subscale consists of 14 items such as 'was your childhood stressful?' and 'were you lonely as a child?'. Higher scores indicate higher child abuse and trauma experienced as a child or teenager. Sanders and Becker-Lausen (1995) reported internal consistency between 0.63 and 0.90, however, this study reported high internal consistency (α = .91).

The qualitative part of the questionnaire gathered information about participants' sexual solicitation and exploitation experiences with someone they perceived to be over the age of 18

when they were a child. They were also asked about their feelings about the online sexual experience and the demographics of the offenders involved.

Procedure. Prior to conducting the study, ethical approval was applied and granted by the University of Central Lancashire's (UCLan) ethical committee. The study was advertised on social media (i.e., Facebook, Twitter, LinkedIn), a Psychology study website (http://psych.hanover.edu/research/exponnet.html), the SONA system (a university system) and UCLan's student messages bulletin. The descriptions used to advertise the study on each platform are included in Appendix 5. Additionally, students were approached face to face on the UCLan campus. The researcher explained the aims of the study and gave potential participants a web-link. Once participants were on the weblink they were directed to a participant information sheet and those who consented to participating completed and submitted the online questionnaire. Participants could access the debrief information throughout the questionnaire or after submitting the questionnaire by clicking on a link at the bottom of the page or clicking submit.

Data analysis

The quantitative data was analysed using correlational analysis and multiple regression in SPSS. Pearson correlations were used to determine the associations between online sexual victimisation (i.e., sexual solicitation and exploitation), behavioural, developmental, psychological and interpersonal factors. In addition, multiple regression analysis was undertaken using the enter method to established whether online behaviours, psychological, developmental and interpersonal factors predicted online risky online behaviours, online sexual solicitation and exploitation.

The data screening process highlighted that most of the variables were non-normally distributed (listed below). Therefore, using the same variables, nonparametic statistical analysis was conducted to determine whether non-normally distributed data influenced the overall results. Thus, a negative binomial regression was undertaken. However, the data was not a good fit for the model, suggesting that the data was not skewed enough for this type of analysis. Moreover, a binary logistic regression (an analysis that has no distributional assumptions) was conducted and identified the same variables as significant.

In addition, an ordinal logistic regression was conducted to determine if having the dependant variable as categorical impacted on the results of the analysis. The dependent variables (i.e., online sexual solicitation and exploitation) were collapallsed to comprise two categories (i.e., experienced sexual solicitation or not, experienced sexual exploitation or not). This analysis highlighted that the same variables were significant that were shown as significant in the multiple regression analysis.

Using these analysis methods highlighted that non-normally distributed data or the use of categorical or continuous variables as a dependent variable did not impact the overall findings. Thus, the multiple regression analysis was an appropriate analysis as the results were verified using other methods that did not have parametric assumptions.

RESULTS

Data screening

Prior to analysis, data was screened for missing data, outliers, normality and whether cases met the inclusion criteria. In total, 243 participants completed the questionnaire. However, 5 cases did not meet the inclusion criteria. Three cases did not include an age so it was unclear whether participants were aged between 18 and 30. A further 2 cases were removed as one listed an age of 43 and the other 99. After deleting these cases, a total of 238 participants remained. The following section, 'online sexual solicitation data screening', includes information about outliers and normality relating to this dataset. These participants were included in the correlation and multiple regression analysis determining predictors of online sexual solicitation.

Moreover, among the 238 participants, 191 responded to the sexual exploitation question (i.e., if you had one of the last three sexual solicitation experiences, how often did you comply?). This compromised a separate dataset and this was screened for outliers and normality and analysed using correlation and multiple regression analysis. Information relating to data screening is included in the 'online sexual exploitation data screening' section below.

Missing data

A missing value analysis was conducted to identify the amount and pattern of missing data. All missing values were represented by the value -99 in the dataset. The analysis showed that the data set included missing values. However, each variable did not have more than 5% missing data which is deemed an acceptable amount as it does not signficantly impact on the results (Schafer, 1999). Therefore, no cases were deleted as a consequence of substantial missing values. Missing values for each item are included in Appendix 6. In addition, the missing value pattern indicated that missing data was more prominent in the latter part of the questionnaire.

Little's MCAR (Missing Completely at Random) test indicated that the data for internet usage (χ^2 (103) = 98.24, p = .614) and vulnerability factors (χ^2(30)=20.91, p=.89) was missing completely at random. However, data for the following items was not missing at random: online risky behaviours (χ^2 (172) = 251.97, p < .001), emotional regulation (χ^2 (819)=947.62, p=.001), attachment (- χ^2 (479)=775.65, p< .001) and adverse childhood experiences (χ^2 (629)=859.81, p<.001).

The literature outlines that missing data can be dealt with in a few ways. These are: 1) listwise deletion, 2) pairwise deletion and 3) computing scores. The first two methods involve deleting cases that contain missing values which would result in a reduction of sample size and, in turn, decrease statistical power (Schlomer, Bauman & Card, 2010). Therefore, it was decided that missing values would be computed to maintain a complete dataset.

Multiple Imputation (MI) and Expectation Maximisation (EM) are common methods used to compute missing results. Both of these methods offer variability in calculating values, therefore, EM was conducted to estimate missing values (Kang, 2013). Missing values were replaced with mean scores. Once this was completed, there were no missing values in the dataset. The mean scores for each variable were also compared before and after the computation of missing data. There were no substantial differences between the means indicating that the overall results would not be affected by the missing data.

Online sexual solicitation data screening

Outliers

A Mahalanobis distance analysis was conducted to identify multivariate outliers. This test revealed that 6 cases included multivariate outliers (df(39),72.055, $p < 0.001$). Thus, following the recommendations of Tabachnick and Fidell (2007), these cases were removed from the dataset. Once the multivariate outliers were deleted, 232 cases remained. As a rule of thumb, Peduzzi et al. (1996) suggested that 10 participants per variable are sufficient for analysis. Therefore, this analysis required 200 cases, and the sample size exceeded the recommended amount for the analysis relating to online sexual solicitation.

Additionally, the data was screened for outliers. The screening showed that internet frequency and a number of online risky behaviours such as communication risk, sexual communication and meeting people online that they did not know in the offline environment via sharing contact lists, voice over IP (Skype) and blogs contained outliers. Additionally, variables relating to abusive experiences such as experiencing child sexual abuse, neglect, sexual solicitation and being befriended by someone participants believed to be an adult also contained outliers. Moreover, attachment variables (i.e., secure attachment, preoccupied attachment, dismissing

attachment, self model and other model) included outliers. See Appendix 7 for boxplots for all variables, including those that contain outliers.

According to Tabachnick and Fidell (2007), outliers can be addressed by altering the scores so that the outlier is one above the highest score within the range. However, altering the data was problematic for a couple of reasons. Firstly, the responses did not truly represent the participants' responses. Those scoring highly on items (i.e., depression, self-harm, risky online behaviours), altering their responses to one highest meant that they were no longer scoring highly on that variable. For example, participants who rated the online risky behaviour scales, such as 'sending someone you met online pictures of yourself' or being sexually solicited as a 5 meant that their score was reduced to a lower score (i.e., 3 or 4). Thus, it was decided that outliers would not be altered for the analysis as the participants' responses were valuable and altering the data would not be representative of their behaviours.

Normality of distribution

Tests of normality revealed that the majority of variables were non-normally distributed. These are: daily internet usage ($D(232) = .83$, $p<.001$), engaging in overall risky online behaviours ($D(232)=.93$, $p<.001$), privacy risk ($D(232)=.88$, $p<.001$), communication risk ($D(232)=.93$, $p<.001$), disclosure risk ($D(232)=.95$, $p<.001$), sexual communication risk ($D(232)=.75$, $p<.001$), meeting someone offline first met online ($D(232)=.59$, $p<.001$) and being befriending online by an adult ($D(232)=.81$, $p<.001$).

Furthermore, the vulnerability factors score ($D(232)=.99$, $p=.026$) and the overall score for difficulties in regulating emotion ($D(232)=.98$, $p=.01$) were non-normally distributed. Moreover, the difficulties in emotional regulation subscales, non-acceptance of emotional responses ($D(232)=.96$, $p<.001$), difficulty engaging in goal-directed behaviours ($D(232)=.98$, $p=.002$), impulse control difficulties ($D(232)=.93$, $p<.001$), limited access to emotion regulation strategies ($D(232)=.75$, $p <.001$) and lack of emotional clarity ($D(232)=.98$, $p =.005$) were non-normally distributed. However, the lack of awareness subscale was normally distributed ($D(232)=.99$, $p=.062$).

Variables relating to abusive childhood experiences such as sexual abuse ($D(232)=.54$, $p<.001$), being punished ($D(232)=.98$, $p=.003$), experiencing neglect ($D(232)=.93$, $p<.001$) and

being sexually solicited online (D(232)=.63, p <.001) were non-normally distributed. All four attachment style variables were non-normally distributed: Secure attachment (D(232)=.98, p=.004), fearful attachment (D(232)=.98, p=.001), preoccupied attachment (D(232)=.99, p=.014) and dismissing attachment (D(232)=.99, p=.025). The self model (D(232) =.99, p=.527) and other model (D(232)=.99, p=.203) data was normally distributed.

The data shows that general internet usage was positively skewed and daily internet usage was negatively skewed. This shows that participants predominately used the internet more than once a day and more than four hours per day when they were under the age of 16. Moreover, online risky behaviours such as communication, sexual communication and meeting someone offline first met online are positively skewed. This shows participants' engagement in these online risky behaviours was less common during adolescence. Furthermore, variables associated with victimisation (i.e., sexual abuse and sexual solicitation) are positively skewed. This demonstrates that the sample experienced less sexually abusive experiences. This is potentially because the responses do not derive from a clinical or victim sample but rather a university sample. Skewness and kurtosis values are reported in table 29.

Table 29. Skewness and kurtosis values for all predictor variables and the criterion variable online sexual solicitation

Variables	Skewness	Kurtosis
Daily internet usage	1.203	1.786
Overall risky online behaviours	1.031	1.027
Privacy risk	-.146	-1.240
Communication risk	.862	.326
Disclosure risk	.332	-.607
Sexual communication risk	1.535	.318
Meeting someone offline first met online	1.994	3.613
Befriend	1.123	.61
Vulnerability factors	.119	-.487
Difficulties in regulating emotion	.308	-.482
Non-acceptance of emotional responses	.313	-.720
Difficulty engaging in goal-directed behaviours	.084	-.735
Impulse control difficulties	.795	-.129
Limited access to emotion regulation strategies	.393	-.752
Lack of emotional clarity	.11	-.502
Lack of emotional awareness	-.081	-.370
Sexual abuse	2.646	6.443
Punishment	.273	.381
Neglect	.887	.358
Online sexually solicitation	1.941	3.036
Secure attachment	.333	.35
Fearful attachment	.087	-.599
Preoccupied attachment	.17	-.028
Dismissing attachment	-.212	.015
Self model	-.099	.196
Other model	-.28	.054

Online sexual exploitation data screening

Outliers

A Mahalanobis distance analysis was conducted to identify multivariate outliers. This test revealed that 2 cases included multivariate outliers (df (39), 72.055, $p < 0.001$). Thus, following the recommendations of Tabachnick and Fidell (2007), these cases were removed from the dataset. Once the multivariate outliers were deleted, 189 cases remained. According to Peduzzi et al.'s (1996) rule of thumb, this is lower than the recommended amounted (21 more cases were needed).

Furthermore, the data was screened for outliers and the following variables included outliers: General internet frequency, overall risky behaviours, communication risk, sexual communication risk, meeting a person met online in the offline environment and lack of emotional awareness. Also, secure attachment, preoccupied attachment, dismissing attachment, self-model, other model, neglect, sexual abuse, befriending, sexual solicitation and exploitation variables contained outliers. The boxplots for all variables are included in Appendix 7. These include variables with outliers.

Tests of normality

Normality tests revealed that most variables are non-normally distributed. For example, daily internet usage ($D(191) = .76$, $p < .001$), engagement in overall risky online behaviours ($D(191) = .93$, $p < .001$), privacy risk ($D(191) = .88$, $p < .001$), communication risk ($D(191) = .92$, $p < .001$), disclosure risk ($D(191) = .95$, $p < .001$), sexual communication risk ($D(191) = .78$, $p < .001$), meeting someone offline first met online ($D(191) = .60$, $p < .001$) and being befriending online by an adult ($D(191) = .83$, $p < .001$) were all non-normally distributed.

Moreover, the vulnerability factors ($D(191) = .99$, $p = .063$), difficulties in regulating emotion ($D(191) = .99$, $p = .075$) and lack of emotional awareness ($D(191)$, $= .99$, $p = .055$) were normally distributed. However, the non-acceptance of emotional responses ($D(191) = .96$, $p < .001$), difficulty engaging in goal-directed behaviours ($D(191) = .97$, $p = .001$), impulse control difficulties ($D(191) = .93$, $p < .001$), limited access to emotion regulation strategies ($D(191) = .97$, $p < .001$) and lack of emotional clarity ($D(191) = .98$, $p = .015$) data was non-normally distributed.

In addition, data relating to sexual abuse ($D(191) = .58$, $p < .001$), being punished ($D(191) = .98$, $p = .003$), experiencing neglect ($D(232) = .94$, $p < .001$) and being sexually solicited online ($D(191) = .70$, $p < .001$) was non-normally distributed. Variables associated with attachment style, for example, secure attachment ($D(191)$, $= .98$, $p = .009$), fearful attachment ($D(191)$, $= .98$, $p = .007$), preoccupied attachment ($D(191)$, $= .99$, $p = .035$) and dismissing attachment style ($D(191)$, $= .99$, $p = .034$) were non-normally distributed. However, the self-model $D(191)$, $= .99$, $p = .449$) and other model $D(191)$, $= .99$, $p = .568$) data was normally distributed.

The data represents similar conclusions in regards to skewness and kurtosis of the data as above. The skewness and kurtosis values for the data relating to sexual exploitation are included in table 30.

Table 30. Skewness and kurtosis values for all predictor variables and the criterion variable online sexual exploitation

Variables	Skewness	Kurtosis
Daily internet usage	1.217	1.837
Overall risky online behaviours	1.00	.739
Privacy risk	-.121	-1.29
Communication risk	.98	.59
Disclosure risk	.255	-.787
Sexual communication risk	1.372	1.086
Meeting someone offline first met online	2.001	3.625
Befriend	.977	.135
Vulnerability factors	.115	-.464
Difficulties in regulating emotion	.296	-.410
Non-acceptance of emotional responses	.305	-.763
Difficulty engaging in goal-directed behaviours	.148	-.758
Impulse control difficulties	.778	-.100
Limited access to emotion regulation strategies	.397	-.630
Lack of emotional clarity	.130	-.438
Lack of emotional awareness	-.178	-.322
Sexual abuse	2.401	5.134
Punishment	.261	.439
Neglect	.841	.283
Online sexually solicitation	1.651	1.904
Secure attachment	.318	.44
Fearful attachment	.089	-.495
Preoccupied attachment	.186	.034
Dismissing attachment	-.243	-.004
Self model	-.082	.497
Other model	-.150	.140

Descriptive analysis

Internet use

Among the sample, half of the participants reported that they used the internet more than once a day while 40% used the internet every day. A smaller percentage used the internet once a day, followed by once a month and less than once a month. Furthermore, a small number of participants reported that they did not use the internet every day. Most of the participants used the internet for more than 4 hours per day. Frequencies associated with general and daily internet use are included in table 31 and 32 respectively.

Table 31. Frequency of participants' general internet usage

Internet frequency	Percentage of participants	Number of participants
More than once a day	50%	119
Every day	39.5%	94
Once a day	8.4%	20
Once a month	1.7%	4
Less than once a month	0.4%	1

Table 32. Frequency of participants' daily internet usage

Internet frequency	Percentage of participants	Number of participants
None	.8%	2
1 to 2 hours	17.6%	42
2 to 3 hours	20.6%	49
3 to 4 hours	19.7%	47
More than 4 hours per day	41.2%	98

Risky online behaviour usage

Participants were asked about their engagement in risky online behaviours. The data showed that uploading images of themselves to a website or profile page, accepting friend requests or making friends online with someone participants didn't know offline were common online risky behaviours. Table 33 includes the frequency of participants engaging in various online risky behaviours.

Table 33. Frequency of participants engaging in risky online behaviours when they were aged under 16

Online risky behaviours	Never	Not very often	Sometimes	A lot	All the time
Having a public social media profile	20.2%	13.4%	24.3%	19.3%	22.7%
Participants' uploading an image of themselves to a website/profile page	17.6%	15.5%	28.6%	25.6%	12.6%
Giving someone participants met online their personal details (i.e., phone number, address, school etc.)	56.3%	21.4%	19.3%	2.1%	0%
Sending someone participants met online pictures of themselves	65.1%	16.4%	12.6%	4.2%	1.7%
Accepting friend requests from people participants didn't know offline	16.8%	26.1%	29.0%	18.5%	9.7%
Making friends online with someone participants didn't know offline	17.6%	25.6%	26.9%	19.7%	10.1%
Using a webcam to communicate with someone participants met online	63.9%	14.7%	13.9%	6.3%	1.3%
Pretending to be someone different online	66.4%	12.6%	14.3%	4.6%	2.1%
Seeking comfort or support from someone participants met online	47.9%	17.2%	18.5%	11.8%	4.6%
Meeting up with someone face to face participants first met online	73.1%	15.9%	7.6%	2.5%	0%
Meeting a boyfriend/girlfriend online	77.3%	10.9%	5.9%	4.2%	1.7%
Viewing sexually explicit material online	38.7%	17.2%	23.5%	13.9%	6.7%
Engaging in sexually explicit conversation with someone participants met online	68.9%	13.4%	12.2%	5.0%	0%
Participants sending sexual messages or images of themselves to someone they met online	79.4%	10.9%	6.3%	2.9%	0%
Sending sexual messages or images online to a boyfriend/girlfriend	71.4%	11.3%	7.1%	8%	2.1%

Online risky behaviours	Never	Not very often	Sometimes	A lot	All the time
Sending sexual messages or images online to someone participants knew offline	74.8%	11.3%	9.2%	4.6%	0%
Receiving sexual messages or images from people participants met online	60.1%	16.4%	12.6%	9.2%	1.7%
Receiving sexual messages or images online from someone participants knew offline	70.1%	13.9%	10.9%	4.2%	0%
Receiving sexual messages or images online from a boyfriend/girlfriend	69.7%	10.1%	10.5%	7.6%	2.1%

Online sexual experiences

Participants were also asked about their online sexual victimisation experiences initiated by someone who they believed to be over 18 when they were aged under 16. Table 34 shows the frequency of participants being befriended, sexually solicited and exploited by someone they perceived to be an adult. The data indicates that approximately half of participants were approached by someone they perceived to be an adult who initiated or befriending them using the information they posted online in general or about their feelings. In addition, the results show that most of the participants were not sexually solicited by an adult and a small proportion of the sample experienced online sexual exploitation.

Perpetrator and disclosure characteristics

The data showed that the most common type of perpetrator was someone they had met online (23.1%), followed by a stranger (19.7%), a friend (10.1%), family relative (8.4%) or a boyfriend or girlfriend (8.4%). This information is included in table 35. Furthermore, participants generally did not tell anyone about their sexual victimisation experience. However, those participants who did disclose their experience generally told a friend (13.4%). A small percentage of participants reported their experiences to parents (2.5%), siblings (1.3%) or the police (0.8%). This information is included in table 36.

Table 34. Frequency of participants being sexually solicited or befriended by someone they perceived to be over the age of 18 when they were aged under 16

Online sexual victimisation	Never	Not very often	Sometimes	A lot	All the time
Adults using information participants posted online to initiate a conversation or befriend them	46.6%	25.5%	18.5%	8%	1.7%
Adults using information participants posted about their feelings to initiate a conversation or befriend them	57%	20.2%	15.1%	5.9%	1.7%
Receiving unwanted requests for sexual information about yourself from someone you didn't know online (i.e., physical appearance, sexual activities)	71.4%	11.3%	8.4%	5.9%	2.9%
Have someone you didn't know that you thought was over 18 try to get you to talk about sex online	73%	9.7%	10.1%	4.6%	2.5%
Have someone you didn't know that you thought was over 18 ask you to do something sexual that you did not want to do online	77.7%	8.0%	9.2%	3.8%	1.3%
How often did participants comply to the sexual solicitation requests*	63.9%	9.2%	6.3%	0%	0%

*19% of the sample didn't answer the question so this item applies to the remaining participants

Table 35. Frequency relating to the relationship between the victim and offender

Relationship	Percentage of participants	Number of participants
Friend	10.1%	24
Family relative	8.4%	20
Girlfriend/boyfriend	8.4%	20
Person met online	23.1%	55
Stranger	19.7%	47

Table 36. Frequency relating to who participants told about their online sexually exploitative experience

Relationship	Percentage of participants	Number of participants
No one	25.6%	61
Friend	13.4%	32
Parents	2.5%	6
Siblings	1.3%	3
Police	.8%	2
Teachers	0%	0
Others	3.4%	8

Correlational analysis

A Pearson's correlation coefficient test was conducted to establish correlations between the criterion and predictor variables. The results of this analysis are presented in table 37.

The results highlighted that engagement in overall risky online behaviours ($r = .59$, $p < .001$), as well as specific risky online behaviours were significantly and positively correlated with online sexual solicitation. Specific risky online behaviours include privacy risk ($r = .19$ $p < .001$), disclosure risk ($r=.37$, $p<.001$), meeting people offline who were first encountered online ($r = .23$ $p < .001$), sexual and general communication ($r=.54$, $p<.001$). This suggests that participants who disclosed personal information about themselves, uploaded images of themselves, communicated, accepted friend requests and sought comfort and support with people they met online were significantly more likely to be approached by an adult for sexual purposes. Furthermore, engagement in sexual communication such as having sexually explicit conversations or sending or receiving sexually explicit pictures significantly increased the frequency of participants being sexually solicited.

Overall difficulties in regulatting emotions ($r=.28$, $p<.001$) was significantly and positively correlated with online sexual solicitation as well as the emotional regulation subcomponents. These are non-acceptance of emotional response ($r=.22$, $p<.001$), difficulties in engaging in goal directed behaviour ($r = .14$, $p < .05$), impulse control difficulties ($r=.19$ $p<.001$), lack of emotional awareness ($r=.13$, $p<.05$), limited access to emotional regulation strategies ($r=.19$, $p<.05$) and lack of emotional clarity ($r=.23$, $p<.001$). This indicates that participants who experienced difficulties in regulating their emotions were significantly more likely to be

sexually solicited. Also, participants who experienced psychological and interpersonal difficulties (i.e., feeling low/depressed, anxious, conflict with parents) (r=.22, p<.001), childhood sexual abuse (r=.23, p<.001) and neglect (r=.20, p<.001) were more likely to experience online sexual solicitation. In relation to attachment styles, fearful attachment (r=.15, p<.05) was significantly and positively correlated with online sexual solicitation. Also, the secure attachment scores (r=-.18, p<.001) as well as the self-model score (r=-.23, p<.001) were significantly and negatively correlated with online sexual solicitation. This indicates that participants who were securely attached, experienced less anxiety and had less negative models of the self were less likely to experience online sexual solicitations. In addition, the analysis indicated that sexual solicitation was significantly and positively correlated with online sexual exploitation (r=.48, p <.001) and being befriended by someone met online (r=58, p<.001).

The results further indicated that participants who were sexually exploited online were significantly more likely to engage in online risky behaviours (r=.56, p<.001). The results indicate that communication risk (r =.49, p < .001), sexual communication risk (r=.61, p <.001), disclosure risk (r=.26, p < .001) and meeting someone offline who was first encountered online (r=.22, p<.001) were positively and significantly correlated with online sexual exploitation. This suggests that engaging in online risky behaviours significantly increased the chance of participants complying to the sexual requests received from a perceived adult.

Furthermore, participants who experienced sexual abuse (r=.18, p<.05), displayed psychological and interpersonal difficulties (r = .16, p < .05) were significantly more likely to be sexually exploited online. Furthermore, participants who scored highly on lack of emotional clarity (r=.18, p<.05) and impulse control difficulties (r=.18, p<.05) were significantly more likely to experience online sexual exploitation. This indicates that participants who experience more emotional regulation difficulties were significantly more likely to experience online sexual exploitation.

Table 37. Correlations between the predicator variables and online sexual solicitation and exploitation

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	Sexual solicitation																										
2	Sexual exploitation	.482**																									
3	Befriending	.567**	.34**																								
4	Internet frequency	-.116	-.189**	-.084																							
5	Overall risky online usage	.586**	.56**	.65**	-.23**																						
6	Privacy risk	.191**	.118	.311**	-.127	.549**																					
7	Communication risk	.563**	.493**	.684**	-.204**	.895**	.424**																				
8	Offline meeting	.23**	.224**	.375**	-.075	.544**	.254**	.4489**																			
9	Disclosure risk	.389**	.263**	.569**	-.144*	.713**	.477*	.632**	.411**																		
10	Sexual communication risk	.537**	.613**	.441**	-.191**	.842**	.296**	.611**	.404**	.454**																	

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
11	Vulnerability factors	.218**	.162*	.298**	-.072	.247**	.107	.269**	.03	.185**	.141*																
12	Non-acceptance of emotional responses	.223**	.048	.266**	-.044	.202**	.1	.236**	-.025	.167*	.103	.632**															
13	Difficulties in engaging in goal directed behaviour	.136*	.068	.18**	-.089	.137*	.099	.154*	.039	.124	.077	.555**	.635**														
14	Impulse control difficulties	.186**	.175*	.315**	-.057	.262**	.092	.251**	.106	.152*	.219**	.592**	.642**	.664**													
15	Lack of emotional awareness	.133*	.014	.035	-.015	-.016	.001	-.022	-.099	-.013	-.008	.160*	.081	-.01	.127												
16	Limited access to emotional regulation strategies	.187**	.096	.281**	-.098	-.2**	.142*	.224**	.021	.115	.104	.703**	.755**	.752**	.753**	.133*											
17	Lack of emotional clarity	.231**	.177*	.308**	-.049	.148*	.087	,177**	.004	.12	.087	.553**	.538**	.445**	.567**	.432**	.618**										
18	Overall difficulties in emotion regulation	.238**	.121	.308**	-.081	.214**	.121	.233**	.014	.148*	.132*	.72**	.83**	.788**	.845**	.339**	.921**	.764**									
19	Sexual abuse	.283**	.18*	.329**	-.025	.279**	.128	.236**	.233**	.281**	.215**	.177**	.181**	.065	.207**	.183**	.156*	.22**	.217**								

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
20	Punishment	.102	.032	.179**	.081	.029	.032	.028	.009	.094	-.036	.272**	.269**	.212**	.294**	.21**	.248**	.261**	.325**	.288**							
21	Neglect	.189**	.079	.289**	.031	.247**	.149*	.207**	.119	.202**	.166*	.499**	.492**	.394**	.438**	.112	.509**	.31**	.515**	.44**	.533**						
22	Other model	-.097	-.012	-.072	-.057	-.02	-.112	.011	.046	.037	-.02	-.412**	-.427**	-.341**	-.368**	.074	-.387**	-.328**	-.431**	-.103	-.295**	-.417**					
23	Self-model	-.188**	-.113	-.325**	.049	-.188**	-.098	-.250**	-.005	-.084	-.095	-.593**	-.574**	-.471**	-.551**	-.268**	-.64**	-.586**	-.686**	-.131*	-.237**	-.404**	.291**				
24	Secure attachment	-.175**	-.077	-.19**	-.008	-.082	-.079	-.113	.065	.038	-.042	-.516**	-.49**	-.374**	-.417**	-.347**	-.526**	-.576**	-.596*	-.117	-.273**	.371**	.571**	.750**			
25	Fearful attachment	.145*	.063	.234**	.003	.132*	.139*	.139*	.003	.063	.076	.578**	.592**	.494**	.562**	.086	.59**	.456**	.628**	.137*	.309**	.507**	.818**	-.678**	-.558**		
26	Preoccupied attachment	.096	.170*	.283**	-.035	.205**	.062	.265**	.062	.125	.13*	.46**	.472**	.415**	.424**	.024	.507**	.388**	.506**	.117	.117	.326**	.056	-.774**	-.352**	.026	
27	Dismissing attachment	-.005	0.47	-.009	.088	.009	.08	-.039	.00	-.018	.041	.26**	.308**	.27**	.22**	-.192**	.222**	0.99	.221**	.086	.192**	.348**	-.793**	.04	-.165*	.592**	.026

* * p < .001 * p <0.05

Multiple regression analysis

Three multiple regression models were performed using the enter method.

Factors predicting engagement in risky online behaviours

The first multiple regression analysis, model 1, aimed to investigate whether psychological, interpersonal and behavioural factors predicted the frequency of online risky behaviours. This model explained a significant amount of variance in participants engagement in risky online behaviours when they were under the age of 16 $F(15,216)=4.128$ $MSE=485.85$, $p<.001$. The R^2 value was 0.22 which indicates that 22% of the variation in online risky behaviours was explained by the model. This model indicated that three variables were significant predictors of engagement in online risky behaviour and these were: impulse control difficulties ($r=.26$, $p=.017$), sexual abuse ($r=.28$, $p=.005$) and frequency of internet use ($r=-.23$, $p=.001$). The results indicated that using the internet less frequently, higher levels of impulse control difficulties and prior sexual abuse were related to higher levels of engagement in risky online behaviours. The results are included in table 38.

Table 38. Multiple regression analysis investigating behavioural, psychological and interpersonal factors as predictors of the frequency engagement in risky online behaviours

Predictor	**B**	**SE B**	**β**	**P value**
Model 1				
Secure attachment	.585	1.649	.030	.723
Dismissing attachment	-1.190	1.329	-.077	.372
Fearful attachment	-.318	1.310	-.026	.809
Preoccupied attachment	1.138	1.222	.070	.353
Non-acceptance of emotional responses	.082	.195	.042	.677
Difficulties in engaging in goal directed behaviour	-.232	.231	-.091	.350
Impulse control difficulties	.488	.203	.240	.017*
Lack of emotional awareness	-.232	.181	-.095	.201
Limited access to emotional regulation strategies	-.199	.187	-.141	.286
Lack of emotional clarity	.027	.274	.009	.920
Sexual abuse	.829	.292	.199	.005*
Punishment	-.411	.222	-.136	.065
Neglect	.209	.107	.180	.052
Vulnerability factors	.228	.137	.154	.097
Internet frequency	-3.281	.974	-.207	.001**

N = 232, ** p < .001 * p <0.05
F(15,216) = 4.128 MSE = 485.85, p <.001
R^2 = 0.22%, Adjusted R^2 = .17%

Factors predicting online sexual solicitation

The second multiple regression analysis, model 2, was conducted to examine the amount of variance psychological, interpersonal and behavioural factors explained the frequency of online sexual solicitation participants experienced. This model explained a significant amount of the variance in participants' receiving sexual solicitations online when under the age of 16 by someone who they perceived to be over the age of 18 $F(20, 211)=8.963$ $MSE=39.09$, $p<.001$. This model indicated that the R^2 value was 0.459 suggesting that this model accounted for 46% of the variance in behavioural, psychological and interpersonal factors predicting online sexual solicitation. This model identified that preoccupied attachment ($r=.096$, $p=.016$), impulse control difficulties ($r=.19$ $p = .045$), sexual abuse ($r=.28$, $p=.028$), communication risk ($r=.56$, $p<.001$) and sexual communication risk ($r=.54$, $p<.001$) were significant predictors of online sexual solicitation. The results suggested that higher levels of sexual abuse, communication risk and sexual communication risk predicted higher frequency of online sexual solicitation. Also, lower levels of preoccupied attachment and impulse control difficulties were related to higher frequency of online sexual solicitation. Results are included in table 39.

Table 39. Multiple regression analysis investigating behavioural, psychological and interpersonal factors as predictors of online sexual solicitation frequency

Predictor	**B**	**SE B**	**β**	**P value**
Model 2				
Secure attachment	-.141	.324	-.032	.664
Dismissing attachment	-.290	.261	-.082	.266
Fearful attachment	.294	.254	.106	.247
Preoccupied attachment	-.580	.238	-.157	.016*
Non-acceptance of emotional responses	.044	.039	.098	.257
Difficulties in engaging in goal directed behaviour	.046	.045	.084	.310
Impulse control difficulties	-.081	.040	-.176	.045*
Lack of emotional awareness	.028	.035	.051	.428
Limited access to emotional regulation strategies	.008	.037	.025	.828
Lack of emotional clarity	.057	.053	.086	.281
Sexual abuse	.128	.058	.135	.028*
Punishment	.039	.043	.057	.371
Neglect	-.015	.021	-.058	.459
Vulnerability factors	-.001	.027	-.003	.967
Privacy risk	-.188	.115	-.098	.105
Communication risk	.239	.048	.408	.000**
Offline meeting	-.309	.214	-.089	.151
Disclosure risk	.038	.108	.026	.723
Sexual communication risk	.194	.037	.357	.000**
Internet frequency	.113	.192	.031	.558

N = 232, ** p < .001 * p <0.05
F(20, 211) = 8.963 MSE = 39.09, p < .001
R^2 = 0.46%, Adjusted R^2 = .41%

Factors predicting online sexual exploitation

The third multiple regression, model 3, included participants who responded to the online sexual exploitation question. This model investigated whether psychological, interpersonal, social and behavioural factors predicted the frequency of participants being sexually exploited online by someone they perceived to be an adult when they were a child (i.e., under the age of 16). This model explained a significant amount of the variance in participants' being sexually exploited when under the age of 16 by someone who they perceived to be over the age of 18 $F(20,168)=5.592$, $MSE=1.643$ $p<.001$.This model indicated that the R^2 value is 0.409 suggesting that the psychological, behavioural and interpersonal factors account for 41% of the variance in predicting online sexual exploitation. This model indicated that the frequency of engaging in sexual communication with people met online ($r = .613$, $p < .001$) and online sexual solicitation ($r =.482$, $p=.036$) significantly predicted online sexual exploitation. The findings indicated that higher levels of online sexual communication risk and sexual solicitation were related to increased levels of online sexual exploitation. Results are included in table 40.

Table 40. Multiple regression analysis investigating behavioural, psychological and interpersonal factors as predicators of a child being sexually exploited online by someone they perceived to be an adult

Predictor	**B**	**SE B**	**β**	**P value**
Model 3				
Secure attachment	-.033	.091	-.031	.719
Dismissing attachment	.124	.076	.147	.105
Fearful attachment	-.029	.074	-.063	.693
Preoccupied attachment	.105	.111	.118	.350
Non-acceptance of emotional responses	-.018	.011	-.171	.106
Difficulties in engaging in goal directed behaviour	-.008	.013	-.062	.550
Impulse control difficulties	.007	.012	.058	.574
Lack of emotional awareness	-.001	.011	-.005	.953
Limited access to emotional regulation strategies	.002	.011	.025	.854
Lack of emotional clarity	.013	.016	.081	.408
Sexual abuse	.006	.016	.028	.703
Punishment	.011	.012	.064	.388
Neglect	-.006	.006	-.088	.327
Vulnerability factors	.003	.008	.033	.722
Privacy risk	-.034	.033	-.075	.299
Communication risk	.013	.015	.094	.397
Offline meeting	-.006	.055	-.008	.911
Disclosure risk	-.019	.031	-.053	.546
Sexual communication risk	.054	.011	.434	.000**
Online sexual solicitation	.040	.019	.180	.036*
Internet frequency	-.064	.054	-.075	.237

N = 189, ** p < .001 * p <0.05
F(20,168) = 5.592, MSE = 1.643 p < .001
R^2 = 0.41%, Adjusted R^2 = .34%

DISCUSSION

This study aimed to explore the influence risky online behaviours, internal working models / attachment styles, emotional regulation and adverse childhood experiences had on online sexual solicitation and exploitation. Key findings in relation to theoretical perspectives are discussed below.

Risky online behaviours

Among the sample, nearly all participants used the internet every day when they were under the age of 16, while nearly half used it for more than 4 hours per day. In comparison to this study, previous research has reported a lower frequency of adolescents sending sexual pictures of themselves to people known in the offline environment, meeting online strangers offline, sharing personal information and talking sexually with someone met online (Beyens & Eggermont, 2014; Liau, Khoo & Hwaang, 2005; Livingstone et al., 2011; Ofcom, 2016; Ybarra et al., 2007). These findings are expected as the samples and sampling methods differ. Studies that reported that adolescents engage in lower levels of online risky behaviours used national samples and recruited participants via random sampling. This study used convenience sampling and recruited a smaller sample size in comparison. Therefore, the prevalence of risky online behaviours in this sample is potentially less representative of internet users in general.

Predictors of online risky behaviours

The multiple regression analysis found that internet frequency, sexual abuse and difficulties in controlling impulsive behaviours significantly predicted the frequency of participants' risky online behaviour usage. The results indicated that the more time participants spent online the less they engaged in risky online behaviour and were less likely to be sexually exploited by an adult. According to the Routine Activity Theory (Cohen & Felson, 1979), a crime is more likely to occur when an offender and victim converge in a space without the presence of a guardianship. These findings suggest that it is not merely the online presence that increases their exposure to potential offenders, but rather the type of online activities children and young people are involved in. This study aimed to separate online risky behaviours into different categories depending on the nature of communication (sexual or non-sexual) and type of risk (e.g. privacy disclosure or meeting offline). This enabled a more detailed theoretical

understanding of the influence risky online behaviours had on online sexual solicitation and exploitation. This is discussed further below.

Previous literature has reported that individuals who have experienced offline childhood sexual abuse are more likely to engage in risk taking behaviours that can place them at risk of further sexual victimisation (Leiting & Yeater, 2017). This can be due to them developing self-destructive tendencies as a consequence of feeling betrayed and harmed by the perpetrator (Finkelhor & Browne, 1985). This study suggests that risk taking tendencies translate into the online environment as participants who experienced prior offline sexual abuse engaged in significantly higher levels of online risky behaviours. This can also create vulnerability to experience further online sexual abuse, perhaps due to their psychological vulnerabilities and offenders being able to identify this in the online environment. This is discussed further below.

Previous literature has reported that an inability to control impulsive behaviours is linked with externalised (e.g., acting aggressively) and internalised (e.g., self-harming) behaviours (Cassidy, 1994). Individuals who had difficulty controlling impulsive behaviours are also more likely to experience irrational thinking, emotional distress and are more willing to engage in behaviour that will result in immediate gratification (Beebe et al., 2004). Thus, they may engage in risky behaviour. This may lead them to exercise less self-control and use the online environment to escape from or manage their negative affect by interacting with online strangers. This study indicated that participants may find it gratifying to engage in risky online behaviours such as speaking with strangers and seeking comfort from these individuals as a way of dealing with their negative affect.

Risky online behaviours and online sexual solicitation

Consistent with previous findings, the multiple regression analysis found that participants who communicated with online strangers, as well as engaged with individuals sexually, were significantly more likely to experience online sexual solicitation (Sklenarova et al., 2018). This suggests that individuals who interacted with strangers to seek comfort/support or to interact sexually, made and accepted friends online, sent sexual images and interacted about sexual content were significantly more likely to experience sexual solicitation. It may be that during their interactions, offenders were able to build a rapport, assess whether the child or young person was a suitable victim, and then sexually solicited them. These findings are discussed further below.

Previous literature has reported that having a public profile was not a common feature relating to being grooming and sexually exploited online (Whittle, Hamiliton-Giachritsis & Beech, 2014). The correlational analysis found that having a public profile was significantly related to experiencing more frequent sexual solicitations, but, not sexual exploitation. This suggests that although offenders had the opportunity to access, communicate and send a sexual request to children due to their profile and personal information being accessible, this does not necessarily translate to children complying with those requests. This is consistent with previous literature that suggests some offenders scan the online environment, gather information about the victim to establish their vulnerability and to solicit them (Webster et al., 2012). However, this alone does not significantly predict online sexual exploitation. The theory of luring communication (Olson et al., 2007) and Routine Activity Theory (Cohen & Felson, 1979) emphasised that 'gaining access' is a key component in sexual victimisation, thus, having a public profile can facilitate this. However, these theories highlight that victimisation occurs when access to a victim is accompanied by other factors such as victim and offender vulnerability.

Risky online behaviours and online sexual exploitation

The multiple regression analysis that explored predictors of online sexual exploitation found that sexual communication was a significant predictor of online sexual exploitation. Theories explaining the grooming and sexual exploitation process of a child have emphasised that desensitising victims is a key aspect in perpetrating sexual abuse (O'Connell, 2003; Olson et al., 2007). Thus, individuals who engage in more online sexual communication with online strangers may already be desensitised to sexual content. Previous literature has suggested that peer norms predict adolescents' engagement in risky online sexual behaviours (Baumgartner, Valkenburg & Peter, 2011). The DDM (Omarzu, 2000) highlights that norms influence an individual's decision on how to self-disclose, as well as to what extent. Therefore, if individuals believe that their peers will approve of their behaviour they are more likely to engage in online sexual communication. As a result, when an offender introduces sexual content they may not find the request unusual as the norm permits them to perceive it as acceptable and potentially rewarding. Their exposure to sexual content and communication can facilitate the desensitisation process and indicate to an offender that the victim may be an easier target to groom (Olson et al., 2007). It is important to note that this study used a cross-sectional retrospective design, therefore, it is not possible to establish cause and effect. Thus, it is not

known whether those who were sexually solicited and exploited more frequently engaged in more frequent sexual communication as a result of their sexually abusive experiences or whether their sexual communication placed them at greater risk.

The multiple regression results found that the frequency with which participants engaged in the other forms of risky behaviours (i.e., privacy risk, disclosure risk and meeting people met online offline) were not significant predictors of online sexual solicitation or exploitation. This suggests that sexual experiences reported within this sample, may have included offenders who were fantasy driven as opposed to contact driven (Webster et al., 2012). Thus, offenders may not have been interested in initiating an offline meeting or grooming someone who is willing to meet offline as it does not facilitate their sexual goals. In addition, previous studies have reported that information participants disclose online can provide offenders with information about the potential victim (Malesky, 2007; Quayle et al., 2012). This can assist them in deciding whether or not to approach the individual as well as how to groom them (Tener et al., 2015). This study, however, suggests that the information that participants disclose (e.g., their school, address, picture of themselves) does not significantly predict online sexual victimisation. Thus, this may not be enough information for the offender to determine the victims' suitability (Cohen & Felson, 1979).

These findings suggest that the types of online risky behaviours children engaged in may have provided an offender with opportunities to access victims, initiate conversation, build rapport and request sexual pictures or engage in sexual conversation. However, other factors such as psychological and interpersonal traits relate to online sexual victimisation vulnerability and these are discussed below.

Attachment

This study explored whether attachment styles predicted risky online behaviour, online sexual solicitation and exploitation. The results found that these traits were related to the frequency of adolescents being sexually solicited and exploited by an adult online. The correlational analysis suggested that higher levels of secure attachment were related to lower levels of emotional regulation difficulties and vulnerability characteristics (i.e., self-harm, eating problems, confidence, low self-esteem). These findings are consistent with previous literature that finds that secure attachment is linked to less externalised and internalised behaviour problems, better psychological health, as well as lower levels of intimacy and interpersonal issues (Batholomew,

1990; Baumeister & Leary, 2017; Hazen & Shaver, 1987; Feeny & Karantzas, 2017). The results found that individuals who reported higher levels of secure attachment traits were significantly less likely to experience grooming and sexual solicitation. Research has highlighted that individuals who experience positive interpersonal relationships with their caregivers are more likely to feel emotionally secure, internalise that they are a loveable and worthy person, encounter better coping mechanisms, a higher sense of self-worth, self-esteem and confidence (Suzuki & Tomoda, 2015). They also have better capacity and skills to deal with stressful situations, express themselves and inform others in uncomfortable situations (Cassidy, 1994; Kinniburgh et al., 2017). Thus, individuals who scored highly on the securely attached measure may be more resilient to online sexual requests due to better developed social, interpersonal and psychological system. They may also be better equipped at recognising exploitative situations and seeking support from their caregivers or peers. Thus, if they encounter difficult or potentially sexually abusive experiences online, they may feel more comfortable approaching someone or dealing with the situation which can reduce their likelihood of being sexually exploited.

The correlational analysis reported that frequency of risky online usage and experiences relating to sexual solicitation and exploitation was lower for individuals who scored higher on the dismissive attachment scale. The literature has reported that dismissive attachment is characteristic of individuals who experience high self-confidence, low self-disclosure and emotional expressiveness, rely less on others, experience less intimacy and involvement in romantic relationships (Batholomew, 1990; Griffin & Bartholomew, 1994). This can potentially explain why these individuals are not sexually exploited more frequently. For instance, creating rapport by disclosing personal information and building a trusting and romantic relationship is a central part of grooming that can lead to sexual exploitation in some cases (O'Connell, 2003). However, if individuals do not desire a close relationship are not interesting in forming romantic relationships and self-disclose less, then an offender may not be successful in their attempt to groom and sexually exploit them. This study also found that individuals who experienced highly secure and dismissive attachment traits engaged in lower risky online behaviours. Therefore, it may be that these individuals exposure to potential sexual offenders was lessened which can also contribute to them experiencing less sexually abusive experiences (Cohen & Felson, 1979).

The correlational analysis results indicated that those with higher fearful traits were more likely to experience sexual solicitation. However, they were not likely to experience more frequent sexual exploitation. Previous studies have reported that fearful individuals experience low self-confidence, seek external validation and relational intimacy but distrust others and fear rejection (Batholomew, 1990; Griffin & Bartholomew, 1994). Although this attachment style relates to wanting intimacy and romantic relationships, their distrusting nature may be a deterrent for engaging with online sexual offenders and complying with their sexual requests. In some grooming cases, building deceptive trust is a key aspect that leads to children being successfully sexually abused (Olson et al., 2007). This can ultimately lead the child to become isolated, secretive and more inclined to comply with the sexual abuse. However, if individuals' underlying psychological mechanisms relate to not trusting individuals, this can result in the offender not achieving their sexual goals.

The correlational analysis reported that participants who scored higher on preoccupied attachment were significantly more likely to be sexually exploited online. In contrast, the multiple regression found that the frequency of participants experiencing sexual solicitation was significantly lower for individuals who scored higher for preoccupied attachment. The literature suggests that preoccupied individuals lack confidence, feel unloved, experience greater elaboration, are preoccupied with forming intimate and close relationships, are more emotionally expressive and self-disclose more (even disclose appropriately) (Bartholomew, 1990; Griffin & Bartholomew, 1994; Nisenbaum & Lopez, 2015). The data also suggested that participants who experienced higher preoccupied attachment traits were also more likely to engage in greater frequency of online risky behaviours, particularly generally and sexually interacting with online strangers.

This could be explained by Routine Activity Theory (Cohen & Felson, 1979) as their online behaviour increases their exposure to motivated offenders. However, the results indicated that they received significantly fewer sexual solicitation requests which suggests other elements of Routine Activity Theory (Cohen & Felson, 1979) (e.g., victim suitability and offender characteristics) may have deterred a sexually exploitative situation. Previous literature has reported that offenders actively scan online environments to target individuals who have traits similar to that of a preoccupied individual (Maleksy, 2007; Webster et al., 2012). However, this finding should be considered in the context of factors that were not empirically tested in this study. For instance, there are other factors that individuals with preoccupied traits may

have experienced during their adolescent life that could act as protective factors (e.g., social support, relationship status). In addition, this study did not collect information relating to the offenders' motivations or grooming approach. Webster et al. (2012) reported that 'vulnerable' victims who sought intimacy and affection were more likely to be targeted by intimacy seeking offenders. Therefore, it may be that the offenders involved in the experiences reported by participants were 'hypersexualised' or 'expert' offenders (Tener et al., 2015; Webster et al., 2012). Thus, their goal may have been to gain immediate sexual gratification rather than seek intimacy or a relationship.

Previous literature highlights that victims who experience low self-esteem, loneliness and appear to be 'needy' are deliberately targeted by online groomers (Malesky, 2007; Tener et al., 2015; Webster et al., 2012). This study partially supports this as participants who scored higher on attachment styles that relate to higher self-esteem and confidence, less trust and intimacy issues were related to less frequent online sexual victimisation. This suggests that these characteristics may be the underlying psychological factor that increases vulnerability to sexual victimisation. Therefore, it is important for future research to quantitatively explore self-esteem, trust and levels of confidence in a similar sample to establish a better understanding of the influence psychological characteristics has online sexual victimisation in a non-clinical sample of victims. Additionally, this study reported low internal consistency relating to the secure and preoccupied attachment. Therefore, it is important for future research to use attachment scales that are more reliable and valid, thus, provide more robust findings.

Emotional regulation

Previous literature has conceptualised emotional regulation difficulties into components that relate to the awareness and understanding of emotions, acceptance of emotions, the ability to engage in goal-directed behaviour, refraining from impulsive behaviour and access to emotion regulation strategies perceived as effective when experiencing negative emotions when experiencing negative emotions (Gratz & Roemer, 2004). This study explored these aspects and found that an inability to control impulsive behaviours was a significant predictor of the frequency of risky online usage and online sexual solicitations. The results indicated that individuals engaged in more risky behaviours when they were unable to control their impulsive behaviours. This suggests that when individuals experienced negative affect and were unable to control their emotions they used the online environment more frequently to engage in risky behaviours. This supports previous literature that reported that adolescents' who engaged in

online risky behaviours (i.e., interacted with strangers online) demonstrated a tendency for rule-breaking and aggressive behaviour (Mitchell, Wolak & Finkelhor, 2008).

The multiple regression found that those who were better able to control their impulsive behaviours experienced greater online sexual requests by online sexual offenders. This finding potentially contradicts cases reported in the literature that highlight that victims who experience bereavement, parents splitting up, victimisation experiences (i.e., bullying) and/or conflict with parents are more likely to be sexually solicited, groomed and sexually exploited (Mitchell, Wolak & Finkelhor, 2008; Shin & Ismail, 2014; Whittle et al., 2014; Wolak, Mitchell & Finkelhor, 2000). Noted in some grooming cases is that offenders appear supportive and caring, compliment and flatter victims (Black et al., 2015; O'Connell, 2003). Therefore, victims who experience difficulty in their offline environment such as hostile relationships, feeling lonely and isolated may find it particularly rewarding to speak with someone who listens to their concerns, provides support and makes them feel special (Tener et al., 2015). This process may make them feel better and act as an 'escape' from their stresses (Tice & Bratslavsky, 2000). However, the results of this study are not consistent with such claims. Thompson (2006) emphasised the importance of context when investigating difficulties in emotional regulation. This study did not consider the context of the participants' lives around the time of their online sexual encounters with adults. Considering the context can offer a more holistic and broader understanding of experiencing online sexual solicitation, online risky behaviours and experiences that cause negative affect. This is explored further in chapter 6.

Adverse experiences

This study explored the influence of childhood adverse experiences (i.e., punishment, physical neglect and sexual abuse) on the extent participants engaged in risky online behaviours, received sexual solicitations and were sexually exploited. The multiple regression analysis indicated that the more sexual abuse participants experienced as children the more frequently they engaged in risky online behaviours as well as be sexually solicited. This finding is consistent with previous literature that has reported that sexual abuse is a significant risk factor of online sexual solicitation (Beebe et al., 2004; Noll et al., 2009; Wells & Mitchell, 2008).

Sexually abused victims form interpretations of others and themselves that can lead to problematic cognitions and behaviours (Mullen et al., 2018). For instance, the Traumagenic model of sexual abuse (Finkelhor & Browne, 1985) suggested that sexually abused victims

form distorted attitudes about sex, feel betrayed, powerless and experience stigma. These elements can cause individuals to feel lonely, isolated, experience low self-esteem and low confidence. The data suggests that participants who experienced offline childhood sexual abuse also experienced greater psychological and interpersonal difficulties (i.e., low self-esteem, confidence, anxiety, depression, poor emotional regulation). It may be that these individuals' online activity communicated loneliness and isolation, and this is identified by an offender while scanning the online environment (Webster et al., 2012).

The literature also highlights that child sexually abused victims have a higher propensity to engage in self-destructive behaviours (e.g., preoccupied with sexual behaviours, engaging in repetitive and highly sexualised behaviours) as a form of coping with their sexually abusive experiences (Boudewyn & Liem, 1995; Reynolds, 2016). The data supports this notion as individuals who were frequently sexually abused during childhood, were also more likely to engage sexually online with people known exclusively online. This can create vulnerability for individuals to experience further abuse, however, this study found that this did not significantly predict the frequency of online sexual exploitation.

A possible explanation for this is that individuals who have been sexually abused feel betrayed that they were harmed and consequently develop a lack of trust (Mullen et al., 2018). Previous studies have reported that individuals attempt to regain control and security by becoming overdependent and 'clingy' in interpersonal relationship (Finkelhor & Browne, 1985). Alternatively, victims may become hostile and aggressive to manage the betrayal and not develop trusting relationships (Cook et al., 2017; Gamache, Van Ryzin & Dishion, 2016). It appears that participants used in this study may exhibit a pathway that relates to the latter. For example, the correlational analysis suggested that individuals who experienced more frequent offline childhood sexual abuse did not have attachment traits that related more to wanting intimacy and close relationships. Therefore, these results suggest that participants previous childhood experiences can place them at risk of being sexually solicited, however, their trust in others may be a protective factor that leads to them not complying to sexual requests.

Limitations

Although this study has contributed to the literature on online sexual victimisation, it also had limitations. There were issues in relation to the data that could have biased findings. The sexual exploitation dataset required an additional 21 cases to fulfil the recommended amount of cases

required for analysis (Peduzzi et al., 1996). The shortage of participants may be due to participants not wanting to answer questions relating to their online sexually abusive experiences, which in turn, compromised the statistical power of the study. In addition, data was predominately missing towards the end of the questionnaire, indicating that more participants did not answer questions relating to attachment and childhood abusive experiences. This may be because these questions related to unpleasant and traumatic experiences, therefore, participants did not want to answer. Alternatively, it may be due to participants becoming bored of answering questions and, thus, did not continue to the end of the questionnaire. To address the latter, counterbalancing the online behaviours, emotional regulation, childhood abusive experiences and attachment scales could potentially have equally distributed the missing data.

This study used self-reported measures to collect data about online sexual experiences, relationships with others, adverse and abuse experiences, and psychological factors (i.e., feeling depressed, emotional dysregulation). These are sensitive research topics and it is possible that individuals underreported their online sexual experiences, potentially due to shame or feeling guilty (Krumpal, 2013). However, collecting data via an online survey may have minimised this as the researcher was not present face to face and participants were able to complete the questionnaire anonymously. The benefits of this method are discussed in chapter 3.

There are also issues surrounding the sample that was used for this study. This study aimed to investigate characteristics amongst a general sample of adults who were internet users during adolescence. However, the sample of students utilised does not fully represent a general sample as a range of different individuals from the public are not included (e.g., uneducated individuals, those from lower socioeconomic backgrounds) (Cardak & Ryan, 2006). Consequently, these findings were limited due to the sample utilised and cannot be generalised to other samples of victims (i.e., clinical, those who did not go to university). It may be characteristics that are common in these groups (e.g., low emotional regulation, poor socio-economic backgrounds) can influence their online sexual victimisation vulnerability (Gross & Muñoz, 1995).

This study also used a retrospective design and asked adults to report their experiences when they were under the age of 16. Thus, there is a gap between participants encountering their online and offline experiences and recall. This can consequently influence findings as participants may not fully recall their experiences due to forgetting about them (Conway et al.,

2016). Alternatively, this method has potential benefits. For example, adults may recognise that their online and offline experiences were problematic or abusive at a later date. Also, using an adult sample was beneficial because ethically, more sensitive questions about online sexual encounters with adults and adverse childhood experiences such as sexual abuse could be asked. Thus, adults were fully aware of the nature of the study and could consent and complete the questionnaire. Whereas, sensitive questions may not be appropriate for a sample of children. Lastly, from a practical perspective, this sample was easier to access in comparison to victims who were receiving treatment or had encountered therapeutic services, child protection or law enforcement services. Accessing this sample may have been lengthy and problematic. This is because children and young people may have been working with therapists to recover from their abusive experiences or feel that they cannot participate in a study that explores online grooming and sexual exploitation (Whittle et al., 2014).

Despite the limitations relating to the sample, this sample was considered appropriate and beneficial for a number of reasons. Firstly, the sample was more representative of victims who did not report or were detected by law enforcement, clinical services or child protection agencies. Thus, this sample offered an insight into participants' online and offline experiences, as well as developmental, psychological, interpersonal and social factors where they may not have recognised their experience as abusive. These participants generally did not report their experience or were not detected by others (i.e., parents or authorities). Also, this sample may not be typically detected by clinical services for mental health issues or therapeutic reasons and present symptoms that would make them associated with clinical services. Therefore, it is important to understand risk factors amongst a non-clinical sample as these individuals may present different risk factors such as positive interpersonal and psychological characteristics, less internalised and externalised behaviours (Bakermans-Kranenburg & Ijzendoorn, 2008).

Studies have reported that clinical and non-clinical samples may experience different levels of psychological, interpersonal and behavioural problems. Clinical samples experience greater adverse, neglectful and abusive experiences, more internalised and externalised behaviours and greater attachment disruptions (Bakermans-Kranenburg & Ijzendoorn, 2008). Thus, it may be that the pathways to online sexual victimisation may differ for clinical and non-clinical individuals in relation to psychological and interpersonal factors. It is important for future studies to consider using the same measures among a sample of clinical victims. This can

identify any similarities or differences amongst these groups which can be implemented in detection and treatment interventions.

These results can have practical implications for professionals. For example, knowing risk factors associated with each group can lead to the development of more targeted interventions according to the aetiology of clinical and non-clinical victims. Also, it can influence who delivers interventions. For example, it may be useful for mental health professionals (i.e., social workers, nurses, psychologists) to detect vulnerable clinical victims. Whereas, individuals who present less risk factors typically seen in non-clinical samples (i.e., those experiencing less insecure attachment and less emotional dysregulation) are thus less likely to encounter mental health services. Therefore, it is important that professionals such as teachers may be able to detect these potential victims. This is discussed further in chapter 7.

This study aimed to explore illegal online sexual encounters by asking participants if they interacted sexually with someone they perceived to be over the age of 18. It is possible that the individuals who sexually solicited or exploited participants were not adults. For example, it may be that the perpetrator was deceptive about their age, therefore, their true age was not known. Also, victims may also not recall the offenders' age accurately due to the time period between the incident occurring and recall of the experience. However, this limitation is not specific to retrospective studies as children who self-report recent online sexual solicitation and exploitation experiences may also not truly know the age of the perpetrator.

From a theoretical perspective, this study reported that the variance explained in factors predicting the extent of participants engage in risky online behaviours, experience online sexual solicitation and exploitation was 22%, 46% and 41% respectively. This suggests that there are other factors involved in individuals becoming targets of sexual solicitation and exploitation as well as engaging in risky online behaviours. This study did not measure factors that can impact of attachment styles, emotional regulation and buffer against the negative impact of sexual and physical abuse (e.g., social support, positive relationships). It also did not consider the context of participants' lives during adolescence (e.g., their family situations, school life, relationships with peers) or their motivations to engage in risky online behaviours or engage with offenders. In addition, little is known about the type of offender that sexually solicited or exploited participants (e.g., hypersexualised, intimacy-seekers) or the grooming methods. Understanding these factors holistically can offer a more comprehensive understanding of

victim risk and resilience factors and can explain the results of this study further. Chapter 6 explores these factors in more depth.

CONCLUSION

The existing literature lacked an understanding of the influence developmental aspects such as attachments, ability to regulate emotions and experience abusive experience during infancy and childhood played a role in online sexual victimisation later on in life. Also, previous studies did explore these factors empirically in a sample of non-clinical victims of online sexual exploitation. This study has revealed that attachment traits can influence the frequency of an individual experiencing online sexual solicitation or exploitation. For example, attachment traits such as secure, dismissive and preoccupied can be protective factors. Also, abusive experiences such as sexual abuse can create vulnerability to online sexual victimisation. These findings are further discussed and in relation to practical implications in chapter 7.

CHAPTER 6

EXPLORING RISK AND RESILIENCE FACTORS ASSOCIATED WITH ONLINE GROOMING AND SEXUAL EXPLOITATION FROM THE PERSPECTIVES OF VICTIMS AND PROFESSIONALS

ABSTRACT

The existing literature exploring demographic, psychological, interpersonal, social and developmental risk factors associated with online grooming and sexual exploitation victimisation is limited. Therefore, this study aimed to explore victim vulnerability associated with children and young people being groomed online and consequently sexually exploited either online or offline. This study adopted a retrospective research design and used qualitative semi-structured interviews to collect data. Participants included adults who were groomed and sexually exploited online when they were adolescents (n=2) and professionals who encountered victims of online grooming and sexual exploitation (n=5). The results highlighted two superordinate themes: 'grooming processes' and 'victim characteristics'. The first superordinate theme addressed the length of grooming and the interaction between the victim and offender. Moreover, the 'victim characteristics' superordinate theme included risk factors relating to demographic, behavioural, developmental, interpersonal, social and psychological factors. The findings generally demonstrated that the online grooming and sexual exploitation process varied from seconds, minutes, days to months. Also, offenders used various techniques to groom and sexually exploit victims such as selecting victims who appeared to lack intimacy as well as flattering and complimenting them. Furthermore, participants reported that extreme maltreatment and abuse, poor and neglectful parenting and other victimisation experiences were common in the lives of online sexually abused victims. Other risk factors included experiencing poor mental health, engaging with delinquent peers and encountering improper schooling. Additionally, the findings indicated that victims who experienced positive relationships with peers, consistent and supportive parenting and limited abusive experiences were also sexually victimised. The theoretical, methodological and practical implications of the results are discussed below.

INTRODUCTION

Research suggests that children and young people are exposed to negative and abusive experiences in the online environment such as harassment, bullying and receiving hate related comments (Näsi et al., 2014; Oksanen et al., 2014). They also encounter the risk of being sexually solicited, groomed and exploited by adult sex offenders (Ospina et al., 2009; Webster et al., 2012; Whittle et al., 2014). This is a significant concern for various stakeholders (i.e., parents, child protection and law enforcement personnel) who aim to protect and safeguard vulnerable children and young people from the risk of sexual abuse. Thus, it is essential to understand risk factors associated with this group being vulnerable to online sexual victimisation for theoretical and practical reasons. This information can expand the existing literature on online grooming and sexual exploitation risk factors, and in turn develop theory and the design of future research. It can also inform the development of interventions that are aimed at preventing online sexual abuse and detecting vulnerable/high risk victims.

Research has emphasised that some victims' vulnerability exists in the offline environment and transitions into the online environment, whereas other victims are only at risk online (Palmer, 2015; Whittle et al., 2014). This indicates that characteristics associated with the internet such as perceived anonymity, disinhibition, lack of proximity and accessibility can create vulnerability online (Cooper, 1998; Suler, 2004). Moreover, empirical studies have explored psychological, environmental, social, behavioural and interpersonal risk factors that increase the chance of children and young people being sexually solicited and exploited online (Livingstone et al., 2011; Mitchell, Finkelhor & Wolak, 2007). Studies investigating online sexual solicitation have used national, clinical and high school samples of children and young people (Chang et al., 2014; Livingstone & Görzig, 2014; Noll et al., 2009; Wells & Mitchell, 2014). These studies have reported numerous risk factors that increase the likelihood of children and young people being sexually solicited. These include abusive experiences (i.e., sexual abuse, physical neglect and abuse), mental health problems (i.e., depression) and interpersonal difficulties (i.e., conflict with parents). Additionally, engaging in online risky behaviours (i.e., talking to people met only online, sharing personal information and harassing other online) and offline risky behaviours (i.e., delinquency, alcohol use and substance use) also increase online sexual solicitation victimisation (Livingstone & Görzig, 2014; Mitchell, Wells & Mitchell, 2008, 2014; Wolak, Finkelhor & Mitchell, 2008; Ybarra & Finkelhor, 2007; Ybarra, Leaf, & Diener-West, 2004).

In comparison to the online sexual solicitation literature, few studies have focused on the risk factors associated with online grooming and sexual exploitation. The few studies that have explored this phenomenon have used samples of victims recruited from high schools, child protection services or gathered information from practitioners or offenders (Palmer, 2015; Webster et al., 2012; Whittle et al., 2013, 2014). For instance, Palmer (2015) collected data from practitioners who dealt with victims of online sexual abuse and reported that three groups of individuals were particularly vulnerable to online sexual victimisation. These groups are youth who are diagnosed with autistism, experience mental health difficulties and are exploring their sexuality/sexual orientation. These findings support previous findings that reported that these factors are common among children and young people who experience online sexual solicitation or exploitation in clinical and non-clinical samples (Livingstone et al., 2011; Whittle et al., 2013, 2014; Ybarra et al., 2015).

Research has highlighted that disability is a significant factor that increases online sexual solicitation and exploitation (Palmer, 2015; Livingstone et al., 2011). For instance, the 'EU Kids Online' survey interviewed 25,000 children and their parents throughout Europe and found that young people with an intellectual or physical disability faced an elevated level of risk compared to others (Livingstone et al., 2011). This can potentially be a result of their lack of risk awareness and difficulty interpreting social situations. This vulnerability exists in the offline environment and can translate into the online world (Howlin et al., 2004).

Several studies have reported that youth who experience psychological difficulties (i.e., depression, mental health disorders, low self-esteem and confidence) are more likely to experience online sexual solicitation and exploitation (Mitchell, Ybarra & Finkelhor., 2007; Ospina et al., 2010; Palmer, 2015; Wells & Mitchell, 2007; Whittle et al., 2014). For instance, Wells and Mitchell (2007) surveyed 31,382 social workers and mental health professionals and reported that one in four of youth clients in treatment with an internet-related problem had experienced an online sexual exploitation. Results indicated that 61% of youth who experienced online sexual exploitation had a current mental health diagnosis, 68% had a lifetime diagnosis of mood disorders, depressive disorders, bipolar disorders, conduct and disruptive disorder, anxiety disorders, personality disorder, substance-related and psychotic disorder. This suggests that psychological deficits that relate to these disorders (i.e., intimacy deficits, impulsivity, feeling low and wanting comfort) can potentially result in individuals

engaging in online risky behaviours that can increase vulnerability to sexual victimisation. Moreover, Mitchell, Ybarra & Finkelhor (2007) surveyed a national sample of 1,501 children and young people and reported that those individuals who reported experiencing depressive symptoms were more likely to encounter unwanted online sexual solicitations. Additionally, Whittle et al. (2014) interviewed 8 participants who had experienced online grooming and consequently were sexually exploited either online or offline. Seventy percent of victims reported that they experienced low self-esteem, 63% reported feeling lonely and half of the sample indicated that they felt low during the time of grooming. These victims can be vulnerable to online sexual solicitation and exploitation as some offenders scan the online environment and deliberately target victims who appear 'needy', experience low self-esteem and confidence (Malesky, 2007; Tener et al., 2015).

Research has also highlighted that lesbian, gay, bisexual and transgender (LGBT) adolescents are more likely to experience online sexual solicitation and exploitation than their non-LGBT counterparts (Palmer, 2015; Ybarra et al., 2015). Ybarra et al. (2015) suggested that LGBT youth were more likely than non-LGBT youth to have online friends and considered these friends as providing better emotional support than their offline friends. It may be that this group of individuals' exposure to offenders is heightened due to their motivations (i.e., seek friendships and relationships) for using the internet which can place them at risk of being approached by offenders.

Research indicates that an individuals' cognitive, social, interpersonal, behavioural and psychological functioning matures from childhood through to adolescence and adult life (Bowlby, 1973, 1998; Steinberg, 2005). Their development can be influenced by cultural, societal, environmental and interpersonal factors (i.e., relationship with parents, siblings and peers) as well as their own individual characteristics (Baumrind, 1971; Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006). Therefore, it is important to consider risk factors associated with online grooming and sexual exploitation in relation to developmental, psychological, behavioural and interpersonal functioning. This information can provide a better understanding of the underlying psychological mechanisms that create vulnerability in children and young people.

The ecological model (Bronfenbrenner, 1979) suggests that there are different layers of individual, relationship and societal characteristics, each nested inside the next, that influence

human development. These layers compromise of the individual and the environment. At the centre of the multiple layers lies the individual child (i.e., microsystem), along with their individual characteristics (i.e., biological factors, gender, age, temperament, psychological and physical traits). It also refers to the immediate environment in which the child directly interacts such as their immediate family, home, neighbourhood and school. Over time the child interacts with the second (i.e., mesosystem), third (i.e., exosystem) and fourth (i.e., macrosystem) layers. The mesosystem consists of the connections that exist among the microsystem (i.e., the child's immediate and extended family, school environment), and the exosystem relates to the general culture context in which all the other systems are embedded (i.e., laws, society and culture). The child encounters each layer over time and their relationship with each component is bidirectional. For example, the child's relationship with their parents may affect them and vice versa. Thus, an individual's development is influenced by individual, environmental and social characteristics (Bronfenbrenner, 1979; Bronfenbrenner & Crouter, 1983; Bronfenbrenner & Morris, 2006; Tudge et al., 2009). Previous research has suggested that factors relating to the microsystem (i.e., loneliness, low confidence) and mesosystem (i.e., poor school life) increase the likelihood of online sexual solicitation and exploitation (Whittle et al., 2014).

The ecological model (Bronfenbrenner, 1979) has emphasised the importance of parents and parenting on child and adolescents' psychological and interpersonal development. Parenting style refers to "*a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviors are expressed*" (Darling & Steinberg, 1993; p. 488). Baumrind (1971) defined parenting style as standards and demands set by parents for their children that include their responses to and communication with their children (Pong, Hao & Gardner, 2005). Parenting style can be conceptualised along two dimensions: parental demand (e.g., control) and parental response (e.g., warmth). Thus, four parenting styles can be distinguished: authoritative (high demand and high responsiveness), authoritarian (high demand and low responsiveness), permissive (low demand and high responsiveness) and indifferent or neglectful (low demand and low responsiveness) (Baumrind, 1971; Maccoby & Martin, 1983).

According to Baumrind (1971), authoritative parents are characterised as being demanding, responsive, caring, open minded, warm, and supportive towards their children's opinions. They also provide direction and support, promote autonomy and self-discovery whilst having limits for their children (Keshavarz & Baharudin, 2009). These types of parents typically set high yet

achievable goals for their children and encourage and support them to reach their goals (Baumrind, 1971; Keshavarz & Baharudin, 2009). Moreover, permissive parents are generally warm, highly nurturing, responsive and under-demanding. However, they lack parental control, discipline and lean towards their children's impulses, desires and actions (Baumrind, 1971). Furthermore, authoritarian parents generally expect obedience from their children, are highly unresponsive, demanding, controlling and exert control and power over their children. These parents generally do not show affection, praise or reward their children (Baumrind, 1971; Brown & Iyengar, 2008). Additionally, neglectful parenting refers to parents who lack demandingness and responsiveness and these types of parents are usually not involved in their children's activities (Maccoby & Martin, 1983; Pong, Hao & Gardner, 2005).

Studies have shown that different parenting styles are correlated with different psychological, interpersonal and behavioural outcomes (Dusek & Danko, 1994; Kaufinann et al., 2000; Pinquart, 2017). Research generally shows that an authoritative parenting style is associated with positive social, behavioural, interpersonal and psychological outcomes (Kaufinann et al. 2000; Rothbaum & Weisz, 1994; Simon & Conger, 2007). Whereas adolescents who experience authoritarian, permissive or neglectful parenting encounter greater psychological and behavioural issues (i.e., delinquency, depression, anxiety, poor coping mechanism) (Chen, Dong & Zhou, 1997; Dusek & Danko, 1994; Kim & Chung, 2003; Pinquart, 2017; Wagner, Cohen & Brook, 1996; Wolfradt, Hempel & Miles, 2003).

Wagner, Cohen and Brook (1996) reported that adolescents who experience warm parenting by their mother and father were less likely to suffer symptoms of depression in reaction to stressful events in comparison to adolescents who experienced harsher discipline by both parents. They suggested that these individuals may have higher self-confidence and efficacy due to their interactions and caregiving received by their parents, thus, are able to seek support from their parents during stressful times (Baumrind, 1991). Chen, Liu & Li (2000) also reported that children who receive parental warmth from their parents develop feelings of security, cooperate behaviours, social competence, confidence and trust towards others. These results suggest that parental social support can enhance psychological resources (e.g., self-esteem), and therefore allows adolescents to cope with stressful events (Baumrind, 1991; Cohen & Wills, 1985). Moreover, children who have authoritarian parents are more withdrawn, mistrusting and unhappy (Keshavarz & Baharudin, 2009). These children also tend to be self-oriented and have negative attitudes towards the world, which leads to deviant behaviours and problems adjusting to change (Chen, Dong & Zhou, 1997).

These findings are also supported by meta-analysis results (Gershoff, 2002; Gershoff & Grogan-Kaylor, 2016; Rothbaum & Weisz, 1994). Rothbaum and Weisz (1994) conducted a meta-analysis that included 47 studies that investigated the relationship between parental behaviours and externalising behaviour. The results indicated that parental guidance and approval were associated with low levels of externalising behaviours. In contrast, high levels of externalising behaviours were associated with low parental guidance, approval and, coercive behaviours (i.e., physical punishment). Similarly, Pinquart (2017) conducted a meta-analysis using 1,435 studies that included 1,053,288 children and young people. They explored the relationship between parenting styles and externalising symptoms (aggression, disruptiveness, defiance, hyperactivity, and impulsivity) in children and adolescents. The results showed that parental warmth, behavioural control, autonomy granting, and authoritative parenting predicted declines in externalising problems over time. Moreover, harsh control, psychological control, authoritarian and permissive parenting predicted an increase in externalising behaviours. Moreover, two other meta-analyses reported that harsh parenting is associated with increased aggression and delinquent/antisocial behaviour (Gershoff, 2002; Gershoff & Grogan-Kaylor, 2016).

Previous literature has reported that hostility between parents and children, a lack of parental presence as well as monitoring increases the likelihood of online sexual victimisation (Mitchell et al., 2007; Noll et al., 2009; Wells & Mitchell, 2008). Noll et al. (2009) used a clinical sample of females to investigate the role of parental guardianship on children and young people being sexually victimised. The results reported that parental presence and monitoring decreased the likelihood of children and young people being sexually exploited. Previous findings have also reported that a lack of parental supervision increases the chance of children and young people engaging in risky online behaviours (Liau, Khoo & Hwaang, 2005). The findings suggest that a lack of parental guardianship is associated with children and young people experiencing greater exposure to offenders, thus, increasing their chances of being sexually victimised.

Parents tend to restrict online usage or monitor it whereas friends may enable their risky online behaviours and test boundaries to see what is acceptable. The literature has suggests that parents banning their children from using the internet is generally more effective in younger children (9 to 12 year olds) than older children (Livingstone et al., 2014). This may be due to individuals generally transitioning from being less influenced by their parents to being more susceptible to peer influences. Thus, individuals become more secretive in relation to their

parents, self-disclose more to friends and are controlled less by their parents. This can be a consequence of children striving for greater autonomy, wanting to become part of social networks outside of their families, building friendships and wanting to develop their own identity (Steinberg, 2008). These findings suggest that peers and parenting history can play a role in children and young peoples' susceptibility to engaging in risky online behaviours, being groomed and sexually exploited (Noll et al., 2009, Sasson & Mesch, 2014; Wells & Mitchell, 2008).

Gaps in the literature and aims of this study

The existing literature on online grooming and sexual victimisation has methodological and theoretical limitations. These include the outcome measures (i.e., online sexual solicitation, grooming and sexual exploitation), samples used to collect data, data collection methods and variables explored. The following section highlights these limitations, as well as how this study addresses some of them.

Online sexual solicitation vs online sexual exploitation. The existing literature has highlighted many risk factors that are associated with online sexual victimisation. However, there are many limitations of the existing research evidence. In general, the existing literature exploring online sexual victimisation is limited. Most of the literature in this area focuses on participants who received sexual solicitation, but there are fewer studies which focus on the victims who were successfully groomed and sexually exploited either online or offline. This is partly due to the methodology used in surveys to explore risk factors associated with online sexual victimisation (Baumgartner, Valkenburg & Peter, 2010; Ybarra & Finkelhor, 2007). These studies asked participants about online experiences relating to online sexual solicitation as opposed to online sexual exploitation. For example, national surveys conducted in America asked participants if anyone ever tried to interact sexually with them, request for sexual information or act sexually online when they did not want to. These items included a binary response (yes or no) which is problematic because it does not provide further information about the frequency of online sexual solicitation the participant experienced, or how they responded to the sexual requests (Mitchell, Wolak & Finkelhor, 2008; Mitchell, Ybarra & Finkelhor, 2007; Wells & Mitchell, 2014). Thus, it is unclear to what extent and how victims were sexually exploited as well as the context surrounding the online sexual experiences.

Another survey conducted in Holland asked participants how often they were asked to talk about sex and do something sexual when they did not want to (Baumgartner, Valkenburg & Peter, 2010). The response categories ranged from 'never' to 'six times or more' on a five point Likert scale. Similarly, further questions were not asked about how the victims responded to the sexual requests. In addition, Davidson et al. (2016) asked participants if someone had asked them for sexual information about themselves, asked them to do something sexual online or meet up in person to engage in sexual activity. The follow up questions asked about the gender of the solicitor, the relationship between the participant and solicitor and who the participant spoke to about the sexual experiences. This does not provide an understanding of risk factors relating to those individuals who were groomed and complied with offenders' sexual requests (Davidson et al. 2016; Wells & Mitchell, 2014; Livingstone & Görzig, 2014). Therefore, this study aimed to explore risk factors associated with victims who experienced sexual solicitation, grooming and exploitation online or practitioners who engage with victims (i.e., engaged in sexual conversation, exchanges naked pictures).

Samples used to explore online sexual victimisation. Previous studies have used online groomers, practitioners and victims of online grooming and sexual exploitation to establish risk factors associated with online sexual victimisation. However, these studies have generally used cases or victims that were known to law enforcement, therapeutic or child protection services (Noll et al., 2009; Webster et al., 2012; Whittle et al., 2013, 2014). In addition, studies that collect data from victims of online grooming and sexual exploitation are limited to clinical or criminal justice samples (Noll et al., 2009; Whittle et al., 2013; Whittle et al., 2014). This means that little is known about victims who do not report their experiences to others or whose experiences were not detected by parents, teachers, law enforcement or child protection services. This is potentially due to the challenge of accessing these samples due to victims not recognising that their experience was abuse or not being involved with therapeutic services (Bryce, 2010). Despite this, it is important to explore this sample as their risk factors may be similar or differ to those whose experiences are known or detected and are engaging with therapeutic services. Understanding risk factors associated with these victims who are known to professionals, as well as those who are not, will provide a broader understanding of victim characteristics and can potentially contribute towards detection and protection interventions).

Therefore, this study gathered information about victims who were known to professionals as well as those who did not report their experiences. Data regarding the former group of victims was collected from professionals who encountered victims of online grooming and sexual exploitation. The latter group of victims were university students who experienced online sexual exploitation when they were under the age of 16. Although this sample is not representative of all types of victims of online grooming and sexual exploitation, it does however provide some access and insight into risk factors associated with victims who did not report their abusive experiences to professionals.

In relation to professionals providing accounts about victim characteristics, studies have generally used child protection personnel to collect data (Palmer, 2015). In comparison, very little data has been collected from law enforcement personnel. It is also important to consider their perspective as they can provide useful information about the grooming processes and victim characteristics. For example, law enforcement will gather evidence such as online conversations between the victim and offender, as well as interview victims, their families and offenders. Therefore, they may be able to provide information about the offenders' motivations, grooming methods and victim characteristics. Thus, this study aimed to collect data from professionals involved with victims, law enforcement personnel, and victims of online grooming and sexual exploitation. It is important to use these different samples as each will provide different perspectives that can contribute to a holistic understanding of online sexual victimisation vulnerability. For example, child therapeutic personnel (i.e., psychologists) may be able to provide an in-depth account of the victims' life, parental relationship and early life experiences as they generally conduct psychological assessments as part of their role. Law enforcement professionals may be able to provide data regarding the interaction between the offender and victim, offender characteristics and the grooming processes as they generally collect this information as evidence in order to prosecute the offender. Lastly, victims can disclose their motivations to engage with offenders, their experience with the offenders and how the offenders made them feel. In addition, they can share information about their childhood and life around the time of the offence that they did not disclose to professionals or others.

Theoretical gaps in the literature. The existing literature generally lacks theoretical knowledge of the role psychological, environmental, behavioural, interpersonal and developmental factors play in online sexual exploitation vulnerability. Therefore, this study

aims to consider these aspects and contribute towards a comprehensive understanding of risk factors that increase the likelihood of victims being groomed and sexually exploited online. In addition, there is little known about victims' motivations to engage with the offender, and to comply with their requests for meeting offline or engaging in sexual activity. It is important to develop further understanding of these issues. This can subsequently influence the development of interventions for vulnerable children and young people which address their underlying needs, as well as protect them from online grooming and sexual exploitation.

The current literature mainly focuses on victims' experiences, psychological, interpersonal and behavioural aspects that occurred in their life around the time of the offence (Whittle et al., 2013, 2014). There has been less focus on developmental processes and early life experiences that potentially contribute to victim vulnerability. Given the importance of early attachment to interpersonal and psychological functioning, it is important to consider how these factors may also influence victim vulnerability (Bowlby, 1998; Erikson, 1968; Ainsworth, 1989). Thus, this study gathered information from law enforcement, practitioners and victims about their early life experiences (i.e., relationship with parents, siblings, adverse or traumatic experiences). Overall the aims of the study were to explore:

1) Developmental, behavioural, psychological and interpersonal risk factors associated with children and young people being sexually solicited, groomed and sexually exploited online.
2) Victims motivations for engaging in risky online behaviours, interacting with online sexual offenders, and complying with sexual requests.
3) The processes involving an online sexual offender grooming and sexually exploiting a victim.

This information was obtained from law enforcement personnel, child protection professionals and victims of online grooming and sexual exploitation via semi-structured interviews. A qualitative approach was deemed appropriate as this provided a detailed understanding of online grooming processes, victim characteristics and motivations for engaging with offenders. The rationale for using this approach is included in chapter 3.

METHOD

Participants

This study used a sample of 2 victims and 5 professionals that were recruited via convenience sampling. The victim sample included 1 male and 1 female aged 24 and 25 respectively. These victims were enrolled as students at the University of Central Lancashire (UCLan). Participants were eligible to take part in the study if they had experienced an online sexual experience (e.g., talking sexually or interacting sexually via webcam) with someone they perceived to be over the age of 18 when they were under the age of 16.

The professional sample consisted of a consultant forensic psychologist, a children's home manger, a foster carer and two detective inspectors. These professionals were all based in the North West of England and employed by Coastal Child and Adult Therapeutic Services (CCATS), Greater Manchester Police or Lancashire County Council. The eligibility criteria for this sample was that they must have encountered at least one case that involved a victim being groomed online and consequently sexually exploited either online or offline by an adult in the past year. The victim that they encountered must have been aged 16 or under at the time of the offence.

Design

This study used a retrospective research design. Thus, the victim sample consisted of adults who had experienced online sexual victimisation when they were a child. The professional sample generally discussed cases of online grooming and sexual exploitation that they had experienced throughout their careers, and focused on a specific case in more detail that they encountered in the previous year.

This study used a qualitative methodology to gather data from victims and professionals. Data was collected using semi-structured face-to-face interviews. Three semi-structured interview schedules were developed for three different groups (i.e., victims, law enforcement officers and practitioners). These interview schedules are included in Appendix 8. The interviews with victims mainly focused on their general and risky internet usage when they were under the age of 16. They were also asked about their experiences about interacting with a person or people they perceived to be an adult online. This included questions about how they were approached,

the interaction process, their motivations to interact with the offender and the outcome of the interaction (i.e., online sexual exploitation, offline sexual exploitation, offline meeting). They were also asked about their experiences, behavioural, psychological and interpersonal functioning when they were a child. Additionally, participants were asked about how their online sexual experiences with a perceived adult had impacted on them and who they reported their experiences to.

Interviews with practitioners and law enforcement officers involved asking participants about cases that were generally referred to their service or reported to the police, how they were recorded within their systems, and typical victim characteristics. They were also asked to elaborate on a specific victim/case that they had encountered in the previous year. Questions were also asked which related to the grooming process such as how the interaction between the offender and victim was initiated and maintained, its outcome and how it was reported or detected by authorities. Additionally, participants were asked about aspects of the victim's psychological, interpersonal and behavioural functioning around the time of the offence as well as during childhood. They were also asked questions about the training and support that they had received in relation to identifying or helping victims who have been groomed and sexually exploited online.

Procedure

Prior to conducting the study, ethical approval was obtained by the University of Central Lancashire's (UCLan) ethical committee. In regards to the victim sample, participants were recruited using two methods. The first method involved participants who had completed a previous study that investigated online behaviours, psychological, developmental and interpersonal factors. This study collected data via an online survey and participants who were interested in a follow up study were asked to leave their contact details in a secure database. Details regarding this study are included in chapter 4. Thus, those participants who provided their contact details were contacted via email using the email in Appendix 9.

The second method included advertising the study via the university's student message system and putting up posters on UCLan's campus. The student messages advert and poster included the aims of the study, what the participants would be required to do and instructions on what to do if interested in participating. These adverts are included in Appendix 10. Interested

participants emailed the researcher who sent them a participant information sheet electronically. The participant information sheet is included in Appendix 11 and was sent to participants who were recruited via both methods. A time and location was arranged for those participants who agreed to participate on university campus.

In relation to the professional sample, managers/senior members of organisations were contacted using the email included in Appendix 12. Those who agreed sent information to their staff and interested participants emailed the researchers. These participants were emailed a participant information sheet and those who agreed a meeting was arranged. Once participants agreed, a time and a suitable place (i.e., their workplace) was arranged to conduct the interview. When the participant (i.e., victim or professional) and researcher met and prior to conducting the interview, they were given a participant information sheet, which they signed and if they consented. The researcher then commenced the interview using the appropriate interview schedules. After completing the interview, participants were given a debrief sheet.

Data analysis

There are numerous data analysis methods used to analyse qualitative data such as Thematic Analysis, Grounded Theory, Interpretative Phenomenological Analysis (IPA) and Discourse Analysis (Braun & Clarke, 2006; Glaser & Strauss, 1967; Smith & Osborn, 2004; Strauss & Corbin, 1990). These approaches generally have different aims of analysis as well as methods to conduct analysis (Starks & Trinidad, 2007). IPA is concerned with exploring participants' perception of their personal and social world and the way they make sense of their lives, experiences as well as their perceptions and views (Hefferon & Gil-Rodriguez, 2011; Larkin & Thompson, 2012; Smith & Osborn, 2004; Smith, Flowers & Osborn, 2013). Grounded Theory aims to develop explanatory theory of social processes (Charmaz & Belgrave, 2007; Starks & Trinidad, 2007; Strauss & Corbin, 1990). Discourse Analysis emphasises the role of language in participants' expression, narrative and perspectives. This approach aims to understand how people use language to create and enact identities and activities (Starks & Trinidad, 2007).

Thematic Analysis is related to summarising and identifying broad themes within a dataset (Braun & Clarke, 2006). This study utilised this approach as it is used to identify patterns within a dataset and has the flexibility to explore rich and detailed qualitative data. This approach can

be used to analyse data using pre-determined theory, as well as when there is a lack of theoretical perspectives to drive the analysis (Fereday & Muir-Cochrane, 2006). This analysis adopted an inductive approach as the nature of this study was exploratory given the lack of theoretical understanding of the key research questions addressed. Thematic Analysis (Braun & Clarke, 2006) was also deemed appropriate as this allowed the researcher to identify key patterns and themes about grooming processes and victim risk factors from different perspectives (i.e., law enforcement, practitioners and victims of online sexual exploitation). It did not focus on understanding participants' use of language, cognition and expression so other forms of analysis were not suitable (Starks & Trinidad, 2007).

Braun and Clarke's (2006) principles were followed to analyse the data. The data was firstly transcribed after participants were interviewed. The transcripts were then read numerous times and this constituted the first phase of the Thematic Analysis process (i.e., getting familiar with the data). The data were coded line-by-line and descriptive codes were generated (e.g., positive or negative relationships with parents, poor mental health). More abstract coding was then undertaken and the original codes combined or recoded. As the last stage of the Thematic Analysis process, the themes and sub-themes were labelled and defined. These were reviewed, and further sub themes were generated. For example, 'family dynamic' and 'relationship with peers' were created as subthemes of 'social structure'. The data was also separated into categories which constituted the superordinate themes (i.e., online grooming processes, offender characteristics and victim characteristics), followed by themes (i.e., social structure, behavioural and psychological factors). These are highlighted in detail along with quotes to support the themes and subthemes in the results section (Braun & Clark, 2006).

RESULTS AND DISCUSSION

The dataset consisted of 7 transcripts that include accounts from law enforcement personnel (n=2), practitioners (n=3) and victims of online grooming and sexual exploitation (n=2). The victims reported their own online grooming and sexual exploitation experiences and the professionals discussed general victimology as well as a specific victim that they encountered.

In relation to the victims' accounts and the specific victims that the professionals discussed, 5 cases included victims being approached online by people they had met online. One case involved a victim being approached online by people she knew in the offline environment. Another victim was sexually solicited by someone she met online, however, did not respond to the sexual solicitation and reported the experience immediately to care staff. Among the cases, one victim was sexually solicited online but did not comply with the sexual request, and four were groomed and sexually exploited specifically online. One victim was groomed online and sexually exploited online and offline, and one victim was groomed but this did not lead to sexual exploitation as care home staff and the police intervened. A summary of the victims, their experiences, grooming and offender characteristics are included in tables 1 and 2. Moreover, details about the professionals and characteristics relating to the online grooming and sexual exploitation cases that they dealt with are included in tables 3 to 7. These tables are included in Appendix 13.

Online grooming and victimisation themes

The analysis identified 2 key superordinate themes. There were: 1) grooming processes and 2) victim vulnerability. The first superordinate theme included themes relating to the "length of grooming" and "victim-offender interaction". The second superordinate theme, 'victim vulnerability', related to characteristics that increase the likelihood of children and young people being sexually solicited, groomed and exploited online. This superordinate theme includes 6 themes and these are demographic factors, behavioural factors, psychological factors, social structure, school and resilience. More details about these themes are included below.

Grooming process

This superordinate theme related to the processes involving an adult sexual offender identifying, grooming and sexually exploiting a child or young person. The 'grooming process'

superordinate theme includes 2 themes, and these are 'length of grooming' and 'victim-offender interaction'.

Length of grooming

Participants reported that the time involved in the grooming process from initial contact to sexual exploitation (i.e., victims sending sexual images of themselves) varied considerably. One detective reported that the online sexual exploitation occurred within *"seconds",* whereas one victim participant revealed that it took *"hours"* or *"days"* until sexual conversation emerged. Furthermore, this victim reported that he met his abuser offline after a year of interacting with him although no sexual abuse occurred in the offline environment. Quote 1 and 2, in table 41, outline the time between initial contact to sexual exploitation or an offline meeting.

These findings are consistent with previous literature that highlights that the online grooming process can vary from seconds to months or years (Tener et al., 2015; Quayle et al., 2012). Previous findings have reported that offenders who generally seek instant sexual gratification sexually solicit multiple victims simultaneously (Webster al., 2012). Quote 2, in table 41, highlights an instance where the offender sent an immediate sexual request. These offenders, generally 'experts' or 'hypersexualised' offenders, do not attempt to 'groom' or converse with the victim to build a friendship or relationship as they want to quickly gain sexual gratification (Tener et al., 2015; Webster et al., 2012). Thus, victims who respond to these sexual requests may comply within seconds. This is supported by quote 3 that highlights an offender sending sexual requests immediately to multiple victims. These findings also imply that the speed of grooming and sexual exploitation is quicker in the online environment than traditional offline sexual abuse. This may be due to individuals perceived anonymity which can reduce the likelihood of being detected. Also, gaining direct access to children offline can be lengthy as the offender usually embeds themselves within a family environment to build trust with these individuals so they can access the child (Olson et al., 2007). Whereas, the online environment allows offenders to directly communicate with children, making the process quicker and easier (Winters, Kaylor & Jeglic, 2017).

In contrast, some offenders spend more time grooming the victim in an attempt to build a relationship and form an intimate relationship. These offenders generally seek an intimate relationship with the victim (this is discussed in more detail below) (Black et al., 2015; O'Connell, 2003). This suggests that the length of grooming is dependent on the offender's

method of sexually exploiting victims which can be driven by their motivations and need for sexual gratification.

This may be particularly useful for practitioners who encounter online sexual offenders so they can engage in therapeutic work with them that aims to address their needs (i.e., sexual interest in children and/or intimacy deficits). Also, these findings can impact on educational interventions for children and young people as well as parents and professionals. This is discussed further in chapter 7.

Table 41. Extracts relating to the 'length of grooming' theme

Quote number	Extract
Quote 1	*"I: So how long were you talking to this person for?* *P: Before I met them?* *I: Yeah* *P: Erm I think over a year" Transcript 1 Male victim*
Quote 2	*"P: I want to see pictures of you* *I: How well what's the time period roughly* *P: Minutes if that, I mean you're talking seconds 'cause you know how fast it is" Transcript 6 Detective Sergeant*
Quote 3	*"P: He literally lost all that desire to try and groom them and it just became a case of going straight in with sexual requests and it varying success because some of the kids were just like right okay whatever whereas others would be blocking him and getting rid of him so it was quite a large investigation* *I: How many did he successfully* *P: Erm* *I: Exploit or groom and exploit?* *P: Hundreds and hundreds erm* *I: Right* *P: Yeah there was erm we identified about three hundred and fifty of them in total" Transcript 4 Detective sergeant*

Victim-offender interaction

This theme relates to the interaction process between the victim and offender from initial contact to being sexually exploited, and this continuing online or offline. It highlighted that offenders who exploited their victims after months or years generally flattered and complimented them, developed a friendship and an intimate relationship before introducing sexual content. In contrast, some offenders who sexually solicited victims within seconds did not attempt to build an intimate relationship or friendship but rather sent a sexual request immediately. One detective reported that the offender spent minimal time building a relationship and sexually solicited victims immediately, within *'seconds'* of interacting with

them. Quote 4, in table 42, indicates that the offender did not attempt to build rapport or a relationship with the victim and wanted to gain immediate sexual gratification online and offline. This offender appears to be fantasy and contact driven as well as hyper-sexualised (Webster et al., 2012; Quayle et al., 2012).

Some offenders aimed to build a relationship and rapport with their victims by initially being *'friendly',* complimenting and flattering the victim which then led to sexual conversations and requests for sexual images (in some cases very quickly). The male victim participant reported that the interaction with the offender was "*friendly*" as well as "*sexual*" during the initial phase of the interaction. This indicates that some offenders approached the victim and built a friendship and quickly introduced sexual content. This is outlined in the table 42 (quote 5).

This is consistent with previous literature that highlights that offenders utilise these techniques to build a romantic connection with the victim as they desire intimacy or believe that this technique will be effective in grooming and sexually exploiting victims (Black et al., 2015; Malesky, 2007). Previous studies have reported that offenders will compliment, flatter, make the victim feel special and suggest keeping the interaction a secret in order to establish trust and avoid detection. This also increases the likelihood of online sexual exploitation occurring (Baryshevtsev et al., 2018; Bergen et al., 2014; Black et al., 2015; O'Connell, 2003; Whittle et al., 2014; Winters, Kaylor & Jeglic, 2017). In relation to the female victim, the victim-offender interaction progressed slower than the case the detective sergeant described above. This victim reported that the initial conversation *"started off with a normal conversation"* which included the offender asking for the victims *"age, sex and location".* This then progressed into *"general like small talk erm just about films and stuff and then from there they'd start off like oh I'm horny".* This victim stated that the offenders told her that she *"was pretty"* and that he *"really liked"* her. Another case, reported by the foster carer, included the offender building an intimate relationship, emotional connection and rapport with the victim. This is outlined in table 42 (quote 6).

The foster carer also reported that the offender and victim were engaged. This made the victim feel special and believe that their relationship was exclusive and had longevity. Quote 7, in table 42, highlights this. These findings are consistent with the model of cybersexploitation (O'Connell, 2003) stages, particularly the "friendship-forming" and "relationship-forming", "exclusivity" and "sexual" stage. The findings indicate that the offenders aimed to build a friendship and romantic relationship, asked about hobbies and attempted to make the victim

feel special by stating that they liked the victim before introducing sexual comments and requests. This also supports previous empirical studies that reported that victims believed that they were special, experienced feelings of 'love' and that their relationship with the offender was exclusive and had longevity (i.e., being engaged to the offender) (Whittle et al., 2015). Also, one victim participant experienced low self-esteem and the offenders made her feel special and that she was *"wanted".* Thus, this victim may have complied and engaged with the offender to fulfil her psychological needs and the offender may have deliberately exploited this vulnerability (Malesky, 2007; Tener et al., 2015).

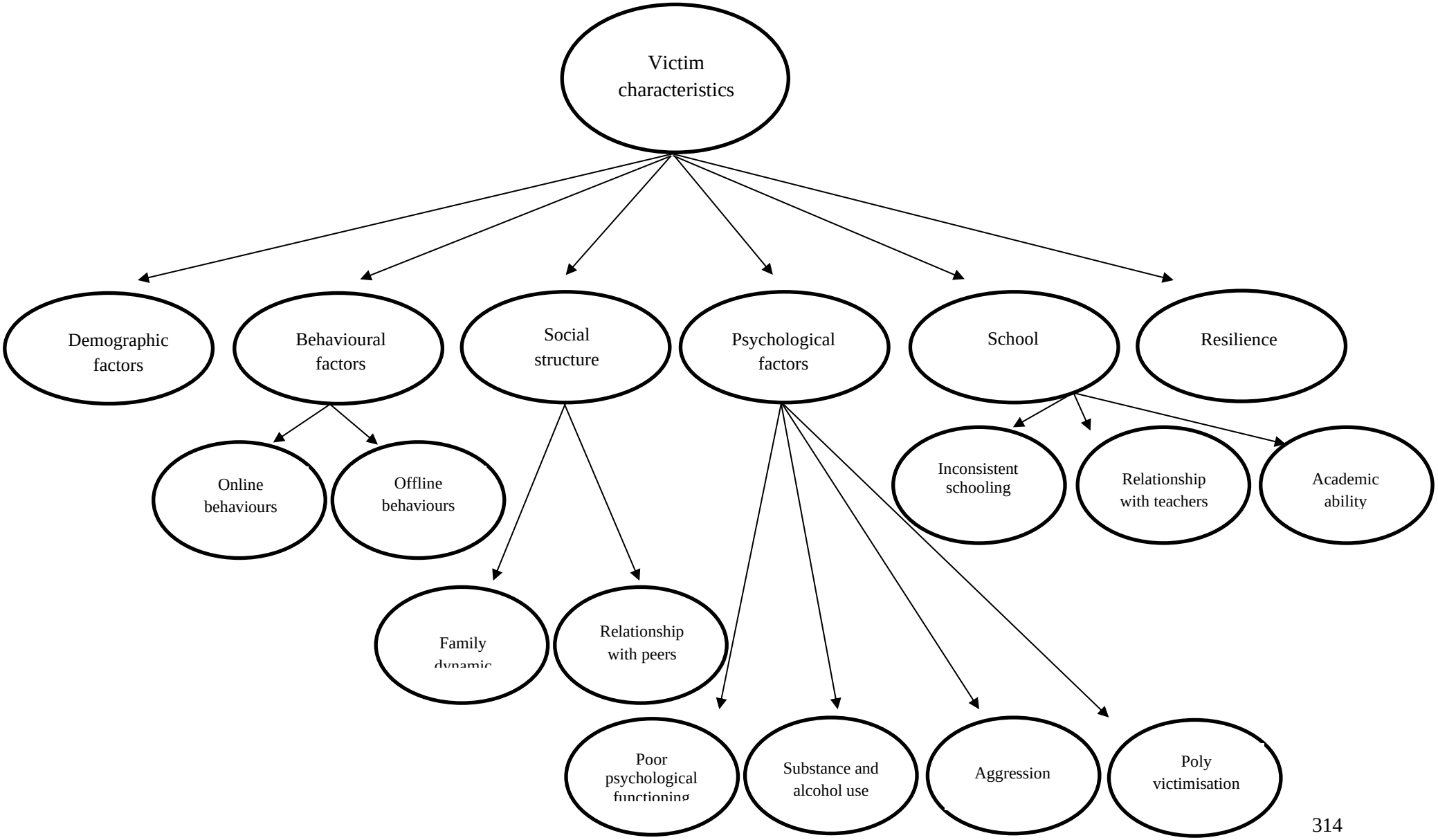
One offender instilled fear into the victim by stating that she would get in trouble if she told anyone about their interaction. The victim reported that the offender stated that "*it was me that would get into trouble"* and this made her feel "*frightened".* This technique contributed to the victim not disclosing the abuse to anyone which allowed the perpetrator to avoid detection, maintain the offence and repeatedly sexually abuse her online. This is outlined in table 42 (quote 8). According to the fourth stage of the Four-Preconditions Model of Sexual Abuse (Finkelhor, 1984), this is a common method used by offenders to overcome the victim's resistance so the abuse can continue and the offender can avoid detection.

This theme highlights that offenders used different techniques to groom and sexually exploit victims, potentially depending on their motivations to sexually offend. Offenders either sent victims sexual requests immediately, spend minimal time building a relationship or build a friendship and intimate relationship before sexually soliciting and exploiting them. It appears that victims who were sexually exploited within seconds of initial contact may be targeted by hypersexual offenders. These offenders do not want to spend a significant amount of time building a relationship and grooming a victim, but rather require sexual gratification immediately (Webster et al., 2012). Whereas, other offenders seem to desire intimacy and aim to build a friendship and relationship with victims and sexually exploit them after weeks, months or years of interacting (Black et al., 2015; Webster et al., 2012). Therefore, the grooming approach varied among this dataset, potentially depending on the offender's motivations.

Table 42. Extracts relating to the 'victim-offender interaction' theme

Quote number	Extract
Quote 4	"*P: She'd been approached online on Facebook ... and then has engaged in conversation he the offender has then incredibly sexually explicit with her erm obviously commenting on her pictures commenting on what she looks like et cetra wanting to meet up offering to buy her things take her out in the car" Transcript 6 Detective Sergeant*
Quote 5	*"I: When you first started to talk to this person online what was the conversation like then?* *P: Very friendly, probably sexual as well as some points ... I suppose if you're sharing erm naked pics and stuff then you probably would comment on them and you would say oh yes that's really appealing to me or whatever* *I: Okay* *P: Erm that kind of stuff or you would probably say as well or discuss what what are your or the things that arouses you and that kind of stuff" Transcript 1 Male victim*
Quote 6	*"P: He got in touch with her saying how great her poems was and how deep and all of this and then there was this whole mo mutual with everyone could see online of sort of you know ego stoking of each other* *I: Could you give an example?* *P: Well just saying how erm you know only you can see into my soul you know, and erm I I I I've never met anybody who can understand me like you can. And all of this and er when you're reading she was saying haw that's really sweet" Transcript 3 Foster carer*
Quote 7	*"P: They were engaged they never met they were engaged and they were going to spend the rest of their lives together" Transcript 3 Foster carer*
Quote 8	*"I felt quite uncomfortable but I still did it because I felt uncomfortable and I felt like I couldn't say no... I think part of it was 'cause I'd already done it once so I felt I had to do keep doing it erm again with that older guy saying that it would be me who would get into trouble. I felt if I said no that he was gonna just get in touch with anyone" Transcript 7 Female victim*

Figure 2: Themes and subthemes relating to the subordinate theme 'victim characteristics'



Victim characteristics

This superordinate theme relates to characteristics that increase the likelihood of children and young people being sexually solicited, groomed and sexually exploited online. The themes identified were: Demographic factors, behavioural factors, social structure, psychological factors, school and resilience. Among these themes, the behavioural factors, social structure, psychological factors and school themes include subthemes. These are summarised in figure 2.

Demographic factors

Age

The detective sergeant revealed that the age of the victim at the time of the online sexual solicitation and exploitation experience varied from 6 to 18 years, suggesting that various age groups were victimised. Moreover, some professionals reported that the victims that they encountered were aged between 11 and 15. The victim participants were aged 14 and 15 when they were approached by adults, groomed and sexually exploited online. This suggests that among this sample, the victims were predominately aged between 11 and 15 at the time of their online sexual victimisation experience. Extracts relating to victim's ages are provided in table 43 (quote 9 and 10).

Consistent with previous studies, these results emphasise that adolescents are vulnerable to being sexually solicited, groomed and sexually exploited online (Whittle et al., 2015; Wolak et al., 2006). During adolescence, individuals undergo cognitive, psychological, behavioural and social development that can contribute towards vulnerability. Adolescents are focused on forming their identity, taking risks, building or exploring romantic relationships and expanding social networks (Steinberg, 2008). These developmental aspects can relate to adolescents' taking risks online (i.e., interacting with people met only online, arranging to meet offline) and offenders can exploit this natural curiosity and development. This may even be exacerbated by other psychological, social and behavioural factors. These can relate to victims wanting to explore their sexuality, seeking approval, compensate for their low self-esteem. This is discussed further below.

Previous studies reported that individuals most at risk of being sexually solicited were aged between 13 and 17 years (Livingstone et al., 2011; Ospina et al., 2009; Wolak et al., 2004). However, the findings emphasise that younger children (as young as 6 or 7 years) are also sexually victimised online as well as adolescents. This is supported by quote 11 in table 43. It

may be that younger children are being targeted and sexually exploited online because their internet and social media usage has increased over recent years. For instance, the Ofcom (2016) survey suggested that children's internet use (i.e., hours spent online each week) has nearly doubled from 2007 to 2016. This suggests that this age group are using the internet more, thus, their exposure to offenders may be greater online in comparison to children from years prior (Cohen & Felson, 1979). These findings, therefore, emphasise that it is important to focus interventions on protecting younger children from sexual exploitation as well as adolescents. For example, identifying who is most at risk of online grooming and sexual exploitation among younger children can influence more targeted and effective online safety education initiates. It is important to consider this age group and their motivations for interacting and complying to the offenders sexual requests. Understanding this more comprehensively can influence training for professionals who encounter younger children (e.g., teachers, CAMHS staff, psychologist, clinicians). Thus, it will be useful for future studies to determined risk factors relating to young children (i.e., 6 to 10 year olds).

Gender

In terms of gender, the professionals reported that most of the victims that they encountered while investigating online sexual offending or treating victims were females. One detective reported that one *"hundred percent"* of the cases he dealt with included female victims. Another detective reported that they arrested an online sexual offender and identified 350 female victims that he had sexually exploited online. Quote 12, in table 43, highlights this.

The findings also highlighted that males were also targeted by offenders. For example, a detective mentioned that one of the offenders he encountered would sexually exploit males and send the indecent images to other online sexual offenders in exchange for indecent images of girls. According to the self-regulation model of sexual grooming (Elliot, 2017), offenders will behave in a manner that will fulfil their goal and sexual desire. Therefore, it appears that this offender's preference and sexual interest in children was specific to female minors. However, to obtain these images he exploited boys to reach his goal. Therefore, exploiting males can be a strategy used to obtain sexual images of female children and to satisfy their sexual desire. This is outlined in table 43 (quote 13).

Professionals reported that males are also victimised, however, these cases are *"very underreported".* Quote 14, in table 43, provides an example of this. They highlighted issues surrounding reporting and the identification of male victims that can lead to an underrepresentation of male victims. For instance, one detective reported that there was a *"stigma"* attached to males and that they are less likely to disclose or talk about their experiences. This is supported by quote 15 in table 43.

This extract also emphasises the role of organisations and interventions that contribute to the underrepresentation of male victims. For instance, the detective constable highlighted that there is a lack of interventions targeted specifically towards males where they can report their abusive experiences. Thus, this can be a barrier towards males disclosing online sexual exploitation experiences. In addition, the Consultant Forensic Psychologist reported that more females are referred to the service in relation to online grooming and sexual exploitation. However, male victims are later identified via risk assessments conducted by professionals. This is outlined in table 43 (quote 16).

These findings are consistent with previous literature that highlights that females are more likely to experience online sexual victimisation in comparison to males (Gijn-Grosvenor & Lamb, 2016; Santisteban & Gámez-Guadix, 2017; Wolak et al., 2006). However, it is important to note that males may be less likely to report their sexually abusive experiences due to feelings of shame, embarrassment and guilt (Sorsoli, Kia-Keating & Grossman, 2008). Also, interventions designed for reporting sexually exploitive experiences are targeted more towards female victims and fewer opportunities for male victims exist compared to their female counterparts. Therefore, it is imperative that initiatives are taken to enhance males' reporting their abusive experiences by developing forums where males feel comfortable to disclose their experiences without feeling ashamed or embarrassed.

Table 43. Extracts relating to the 'age' and 'gender' subthemes within the 'demographic factors' theme

Quote number	Extract
Quote 9	*"I: How old were you when they started interacting with you?* *P: Around fourteen I think" Transcript 7 Female victim*
Quote 10	*"I: How old was the victim at the time?* *P: So most of them were twelve to thirteen" Transcript 6 Detective constable*
Quote 11	*"P: In terms of ages we're seeing a lot younger children now erm it's kind of we've had some cases where the victims are as young as like six or seven who got access to the internet and had been exploited through various means all the way up through to eighteen" Transcript 4 Detective sergeant*
Quote 12	"*P: Yeah there was erm we identified about three hundred and fifty of them in total... the ones he'd definitely sort of exploited and the ones we could definitely identify but there's lots of others that we weren't able to track down* *I: Okay was it just females or was it males as well?* *P: Just females" Transcript 4 Detective Inspector*
Quote 13	*P: But most of all what that was doing was to build up a bank of images of boys of an indecent nature so he could swap them with other sexual sex offenders to get back images of girls. So he wasn't primarily interested in the offender himself of young boys but he was pretending to be a fifteen or sixteen year old girl, would take sexual images of other girls off online and pretend to be them so there were boys contained within that" Transcript 6 Detective Constable*
Quote 14	*"P: The case I've talked about is a is a girl* *I: Yeah* *P: But there's a lot in terms of young boys as well a lot it's kind of underreported" Transcript 2 Consultant Forensic Psychologist*
Quote 15	*"P: In relation to sharing so girls tend to from me experience share a lot with friends erm boys just don't ... boys tend to be very similar that they don't want to talk about things that are going on in their lives so within a a point of friendship groups they won't speak and that's where we pick up a lot of stuff in relation to engaging with services i dot e the police and social care I think there isn't really set up and aimed at boys as well so if you look at a lot of our CSE stuff it's always predominately aimed towards that female end we have done the CSE week of action this year to do with sport so it is getting better but I think I think it's took a long time to even aim at girls I think it's slowly getting there with boys but I think at the heart of it it's a boy problem" Transcript 6 Detective Constable*
Quote 16	*"P: You tend to see it more with woman kind of girls in particular because that's what comes forward erm however you know a lot of the assessment on males that I've done a lot of them actually really are at risk as well" Transcript 2 Consultant Forensic Psychologist*

Background

Furthermore, law enforcement personnel reported that the victims that they encounter *"come from literally every different background"*. The analysis revealed that victims range from

"*wealthy backgrounds"* to poorer lower-class families. Quote 17, provided in table 44, emphasises that many victims originate from lower socio-economic backgrounds. This is also supported by a victim's account that stated he encountered *"crappy living conditions"* as a child.

Moreover, two sources (i.e., a victim and a detective inspector) reported that they / the victim lived in a remote and rural area. These participants reported that living in such an environment meant that there was a lack of opportunities to socialise and contributed to little risk awareness. For example, the victim reported that due to living in an isolated area he was unable to form homosexual relationships and explore his sexuality, therefore, resorted to using the online environment to socialise. Moreover, a detective reported that one victim was naïve and lacked risk awareness as a consequence of living in a remote area. Thus, this contributed to the victim complying with the offender's sexual requests. An example of this is in table 44 (quote 18).

This theme emphasises that risk factors relating to demographic factors range considerably. The results indicate that younger children as well as adolescents are groomed and sexually exploited online as well as victims that originate from different socio-economic backgrounds. It may be that social aspects that relate to 'poorer' families may result in victims being vulnerable (e.g., less offline opportunities to socialise and engaging in activities). In addition, the results show that males and females are vulnerable to online sexual exploitation. However, the reasons why they are exploited may differ. For example, sexually exploiting males may be a technique offenders use to obtain indecent images of female children to satisfy their sexual desires and preference. Therefore, these findings emphasise that female and male victims are sexually exploited according to the offender's motivation. Implications relating to this are discussed in the chapter 7.

Table 44. Extracts relating to the 'background' subtheme within the 'demographic factors' theme

Quote number	Extract
Quote 17	*"P: It happens to people of all races ages and class structures as it does the vast majority and as much as people tell you it's no, is very working class very poor families very low education families" Transcript 6 Detective constable*
Quote 18	*"P: Sort of lived quite a sheltered life in a rural area and erm didn't really have sort of have any sort of vast awareness of the world sort of thing. Erm yeah she was just very naïve and the main thing* *I: So when you say she lived a sheltered life could you just expand on that a little bit? P: Erm she wasn't [sigh] she wasn't from like an inner city area she wasn't sort of out aware of lots of things like perhaps sometimes I've worked in Manchester inner city a lot and it's a lot there's lots of different areas of it and in the inner city you've got kids who would go out literally all the time with each other all the time to school and they're very aware of what's going on the sexual behaviours starts at a very young age she was from quite a sort of sheltered er quite a remote area didn't really have all those connections" Transcript 4 Detective inspector*

Behavioural factors

This theme relates to victims' behavioural factors that create vulnerability and increase the likelihood of them being groomed and sexually exploited. This theme consists of two subthemes: Online behaviours and offline behaviours.

Online behaviours

The online behaviours subtheme refers to victims' general and risky internet use. The findings indicate that the victims generally used the internet to socialise with their friends and connect with their family. For example, one victim reported using the internet for *"talking to my friends".* The analysis revealed that online risky behaviours included engaging with strangers, accepting friend requests from many individuals not known offline, intentionally viewing sexually explicit material online, as well as using chatrooms and dating websites. Quote 19 and 20, in table 45, are examples of these. Also, the detective sergeant reported that the victim he worked with had *'thousands and thousands of friends'* online, indicating that she accepted and made friend requests to people not known in the offline environment.

Overall, this sub-theme is consistent with previous literature that emphasises that online risky behaviours increase the likelihood of children and young people being subjected to online sexual victimisation (Whittle at al., 2014; Ybarra & Finkelhor, 2007; Ybarra et al., 2007). These risky online behaviours, particularly having excessive friends who are known

exclusively online, interacting with strangers, using dating and chatroom sites, can increase victims' exposure to motivated offenders and chances of interacting with offenders (Cohen & Felson., 1979). Previous literature has suggested that offenders scan the online environment and target victims who they deem to be vulnerable (i.e., those who appear to want to interact with the offender, appear needy) (Malesky, 2007; Tener et al., 2015). This combined with victims risky online usage creates an opportunity for offenders to identify and target victims (Webster et al., 2012).

The analysis also revealed victims' motivations for using the internet and engaging in risky online behaviours (i.e., interacting with people met online). The victim accounts indicated that they used the internet to compensate for lacking a social network in the offline environment. One victim mentioned that due to being gay and experiencing a lack of opportunities to socialise and explore romantic relationships in the offline environment, he resorted to seek these relationships online as well as *"learn"* about romantic relationships with homosexual males. He also emphasised that the internet provided an opportunity to engage with like-minded people. In addition, this victim reported that the internet was an *"escape"* from the offline world. This is highlighted in table 45 (quote 21 and 22).

In addition, a victim participant reported that she used the internet and engaged in risky online behaviours because she was bored and wanted to *"pass the time".* See quote 23 in table 44. This victim also reported that her motivations to go online and interact with people she had not met offline related to her *"feeling good about myself".* This potentially suggests that the victim lacked meaningful activity in the offline environment, and this could have resulted in her seeking relationships online. In addition, she resorted to interacting with people she met online to overcome issues related to self-esteem as demonstrated by quote 24 in table 45.

In general, victims reported that they were motivated to engage in risky online behaviours to seek approval, pass time, be liked by others and to learn about romantic relationships (particularly homosexual relationships). These findings, therefore, support the social compensation hypothesis (Williams & Karau, 1991) as victims use the online environment to engage with strangers to compensate for their psychological issues. In addition, research suggests that online sexual offenders actively seek and exploit adolescents' who use the online environment to fulfil their social, psychological (i.e., low confidence, self-esteem) and intimacy needs, particularly when these victims lack a social network in the offline world (DeLamater & Friedrich, 2002; Steinberg, 2005; Tener et al., 2015). According to Routine

Activity Theory (Cohen & Felson, 1979), victim suitability is a key component in sexual exploitation occuring. Therefore, these characteristics potentially increase their suitability and their visibility in the online environment making them easier to target and groom.

Previous literature has reported that LGBT individuals are more likely to experience greater online and offline (i.e., being bullied, raped or sexually assaulted, physically assaulted, harassed, online sexual solicitation and exploitation) victimisation than their non-LGBT counterparts (Palmer, 2015; Ybarra et al., 2015). The findings indicate that victims exploring their sexuality are at risk of being sexually exploited online because they engage in risky online behaviours (i.e., seek intimate relationships online with strangers) that can make them vulnerable. The existing literature highlights that LGBT individuals engage with strangers online and appraise online strangers/people met online as better than their offline friends at providing emotional support (Ybarra et al., 2015). This study reported that the homosexual victim was motivated to interact with offenders so he could learn about relationships and explore romantic relationships. This is consistent with Coleman's (1982) developmental stages which theorised that individuals who are homosexual undergo additional stages in their development that includes developing skills relating to same-sex relationships. These findings suggested that victims use the online environment and interact with online sexual offenders as they have limited offline opportunities to socialise and explore romantic relationships. Thus, they may be more likely to respond to offenders 'caring' and 'supportive' interactions as the victims may desire support and acceptance that they do not receive offline and offenders use this technique to groom victims (Malesky, 2007).

This emphasises the need for meaningful and appropriate offline forums where victims can address underlying psychological concerns that can influence victim's engagement in risky online behaviours (i.e., talking to online strangers to seek approval). It is also important that adolescents have an environment where they can address their social needs, form or explore homosexual relationships in a safe way. The victim participant reported that if these opportunities were available offline, particularly in a school setting, then this could potentially have resulted in him using the internet to form relationships. This is highlighted in table 45 (quote 24 and 26).

Table 45. Extracts relating to the online and offline behaviour subthemes within the 'behavioural factors' theme

Quote number	Extract
Quote 19	*"P: Erm when I was about thirteen I started going on chatrooms ... erm used to talk to a lot of people I didn't know" Transcript 7 Female victim*
Quote 20	*"P: Pornographic websites that's always something that erm sort of would go and see" Transcript 1 Male victim*
Quote 21	*"P: I think due due to my sexuality 'cause I'm gay so it's it was also a way to connect with erm with other people because I was in a small town so you wouldn't obviously see err you know friends that are the same case as you so going on internet was also sort of a window to erm to see people that are the same" Transcript 1 Male victim*
Quote 22	*"P: The whole social contact and find people from the LGBT community that I can relate to" Transcript 1 Male victim*
Quote 23	*"P: Like to pass the time like little weird things and then a chatroom" Transcript 7 Female victim*
Quote 24	*"I: Erm in terms of going online to speak to these people what were your motivations to do that?* *P: Just to feel nice* *I: Yeah* *P: To feel erm like I was pretty and like it was just to escape from what was really happening" Transcript 7 Female victim*
Quote 25	*"P: The lack of gay friends in high school obviously sort of pushes to look for social contact online" Transcript 1 Male victim*
Quote 26	*"I: If you have an environment at school for instance where you could meet like societies or something* *P: Gay people yeah would you still be seeking that online? P: Erm perhaps not as much I think" Transcript 1 Male victim*
Quote 27	*"P: She was missing a huge amount of episodes" Transcript 6 Victim*
Quote 28	*"P: At the age of twelve falling pregnant" Transcript 6 Victim*

Offline behaviours

In relation to the second sub-theme, the findings indicated that victims engaged in problematic offline behaviours that increased their vulnerability to being targeted by online sexual offenders. Some victims, particularly those who were in care and experienced abusive and poor parenting, would go missing from their care placements, some for long periods of time. Quote 27 and 28, in table 45, demonstrate this.

The results also demonstrated that some victims engaged in highly sexualised behaviours offline. Some victims were in sexual relationships with someone other than the perpetrator in the offline environment and/or were pregnant around the time of the offence (by someone other than the perpetrator). Research has highlighted numerous factors that contribute towards the onset of sexualised behaviours during adolescence. Previous literature has reported that the intention or motivation to have sex is a strong predictor of engaging in sexual activity or intercourse, initiating intercourse, participating in sexual behaviours and being in riskier sexual situations where sexual intercourse can occur (Buhi & Goodson, 2007). Moreover, studies have reported that peers and peer norms are significantly associated with offline sexual behaviours. For example, adolescents who believe that their peers have had sex and have peers who have pro-social attitudes towards sexual behaviours are more likely to engage in sexual behaviours offline (Fores, Tschann & Marin, 2002; Kinsman et al., 1999). The findings indicate that peers and peer norms (i.e., peer sexual behaviours and attitudes towards sex or their approval of sexual) can influence the onset and engagement of sexual activity. This may also translate into the offline environment and it may be that peer norms permit victim to engage with offenders sexually. However, this study did not elicit information about victims' peer attitudes and their involvement in sexual activity in the offline environment. Therefore, it is important to consider this aspect for future research, particularly the role of peer norms in relation to online sexual victim vulnerability and risky online usage.

Another key aspect that relates to adolescents engaging in sexual behaviour offline is parental involvement, monitoring, supervision and the quality of relationship between the parent and child (Buhi & Goodson, 2007). Research has provided mixed findings as some studies outline that parental relationship quality has no influence on the onset of sexual intercourse occurrence (Buhi & Goodson, 2007; French & Dishion, 2003). Whereas, other studies have suggested that positive parental relationship quality and spending increased time with parents can delay the onset of sexualised activity / intercourse (Ramirez-Valles et al. 2002; Ream & Savin-Williams, 2005). The results indicate that victims who were engaging in highly sexualised behaviours, were also in sexual relationships offline and pregnant during the time of the offence. These victims also experienced parental neglect, were in foster placements or children care homes, had little or no contact with parents and/or experienced conflict with their caregivers. This, therefore, supports previous literature that suggests that a lack of parental monitoring and supervision plays a role in adolescents engaging in sexual activity (Buhi & Goodson, 2007). This potentially indicates that a lack of parental monitoring, supervision and a good quality

relationship with parents can increase vulnerability in the offline environment for some victims. Implications relating to this are discussed in chapter 7.

Social structure

This theme relates to victims' social structure and relationships with their biological parents, adoptive parents, siblings and peers during infancy, childhood and adolescence (i.e., around the time of the offence). Two subthemes were identified, and these include "family dynamics" and "relationship with peers".

Family dynamics

The findings suggested that some victims experienced a positive and supportive family dynamic whereas other victims experienced poor parenting, a disruptive family environment and a lack of consistent care from caregivers. The professionals reported that many of the victims that they encountered lived in children's homes during the time of the offence. These accounts show that victims had been fostered or adopted as a result of poor parenting and neglect from their biological parents. Some victims were adopted early on in life whereas other victims entered social care and were fostered during late childhood or early adolescence. This is supported quote 29 and 30 in table 46.

Regardless of when they were adopted, these victims experienced *"chaotic lifestyles",* extreme neglect and maltreatment from their biological parents. Quote 31 to 33 listed in table 46 provide accounts from professionals about victims who were living in children's home and the reasons that these victims were involved with social services (i.e., foster placements of children's home). These extracts indicated that victims experienced maltreatment, emotional abuse, physical abuse and neglect during their infancy (this led them being removed from the family home) or throughout their childhood by their biological parents. One detective reported that a victim experienced physical abuse from her father who was a convicted drug dealer. Moreover, the professionals reported that some victims were suspected to have experienced sexual abuse by their family members (i.e., father and brother). These findings indicate that the victims' experienced poor parenting, neglect and their emotional needs as well as basic human needs were not met by their biological parents. Additionally, these victims experienced neglectful, disruptive and inconsistent care from their caregivers. Quote 34 and 35, in table 46, provide examples of these experiences.

The results also demonstrated that the victims' biological parents exposed them to inappropriate and traumatic experiences. For example, one victim reported that she *"spent a lot of time in pubs*" with her father while her mother was working during childhood. Another victim, as reported by a detective, was taken to nightclubs and was involved in her father's drug dealing criminal activity at the age of 11 or 12. Moreover, the foster carer reported that the victim she looked after experienced traumatic experiences such as getting kidnapped by her father. These are highlighted in table 46 (quote 36 to 39). Additionally, many of the victims had biological parents who were drug and/or alcohol users, involved in criminal activity and some victims were exposed to illegal drugs in their homes from an early age. For example, the foster carer reported that the victim's *"mum was a drinker dad erm drugs".* This was a contributory factor that was associated with victims receiving neglectful, inconsistent and inappropriate care. Additionally, the parents' drug and/or alcohol use placed the children in "*extensive risk within the home"* and resulted in the victims experiencing extreme neglect. Quotes 40 to 43 in table 46 support this.

Table 46. Extracts relating to the 'family dynamics' subtheme within the 'social structure' theme

Quote number	Extract
Quote 29	*"P: They were in care that's why he and her were removed although there'd been massive neglect all their life" Transcript 3 Foster carer*
Quote 30	*"P: A young girl who'd been adopted when she was younger erm extreme erm parental neglect prior to adoption, her and her brother were adopted into the same family" Transcript 2 Consultant Forensic Psychologist*
Quote 31	*"P: They've difficulties in the family erm by the very nature why they've been taken out of the family ... they have got difficulties engaging with their parents either one parent or both parents" Transcript 2 Consultant Forensic Psychologist*
Quote 32	*"P: This was ongoing with social services I think there were some issues with her family erm around mother's ability to parent and things like that which possible led to this exploitation and issues at school" Transcript 4 Detective inspector*
Quote 33	*"P: There were referrals going in to er social services mum was saying she couldn't cope whatever partner was there at the time would just be chaos" Transcript 5 Children's home manager*
Quote 34	*"P: Mum's really neglectful they went to school dirty erm if they attended erm he her brother had thirty six percent attendance I don't even what that is so hers would have been similar" Transcript 3 Foster carer*
Quote 35	*"P:I think she hinted at so- that dad had done something sexual to her ... there was sexual abuse by her brothers which she was slightly compliant in they didn't force themselves on her they" Transcript 3 Foster carer*

Quote 36	*"P: Dad kidnapped for a bit erm she saw lots of erm she she was in fear quite a lot because if she spent time with dad then there would be drug paraphernalia and strange men coming in and out of the house" Transcript 3 Foster carer*
Quote 37	*"P: Her father would make threats to her sometimes and try and involve her in drug dealing er and then also took her to places tried to take her into nightclubs at the age of like eleven or twelve" Transcript 6 Detective sergeant*
Quote 39	*"P: Dad was a drug user and died erm and erm dad kidnapped her once" Transcript 3 Foster carer*
Quote 40	*"P: Having lots of drug memorabilia all over the home she wasn't being fed erm she was erm trying to kind of get food erm but the parents had hidden drugs in like pizza boxes and stuff that ... she had been exposed to physical abuse at an early age erm no emotional warmth within the home so about the age of four she was taken out of the home er by social services" Transcript 2 Consultant Forensic Psychologist*
Quote 41	*"P: So erm mum drunk so neglected erm not taken to school enough dirt no proper food in the house erm lots of drugs around them drinking er brothers at home porn on the television by the brothers not necessarily by mum" Transcript 2 Consultant Forensic Psychologist*
Quote 42	*"P: Father is a convicted drug dealer ... she was removed from the care of mum and dad spent a lot of time in custody erm sorry prison and then they fostered went back to mum for a bit mum had another baby again there were concerns about parenting about all three the other two were removed again baby stayed with mum to be a bit older and then she went into a long term er care home so the placements" Transcript 6 Detective sergeant*
Quote 43	*"P: She's the oldest of two girls erm her mum alcoholic heroin addict" Transcript 5 Children's home manager*
Quote 44	*"P: Difficulties within the family home she then became very disruptive, the kind of poor boundaries, she was leaving the home erm not telling her parents where she was, the parents were struggling in terms of managing her, they were trying to the adoptive parents were trying to manage her erm but didn't have the kind of strategies in place the mum I think in particular erm was quite easy for the that young girl to get her way forward so she would kind of persuade her quite easily she wasn't a particular strong parent in terms of the kind of boundaries whereas the adoptive father was a bit too much the other way he was kind of strict so there was a difficulty" Transcript 2 Consultant Forensic Psychologist*
Quote 45	*"P: She was always in conflict with them because they were always telling her what to do 'don't use substances, stop going out at night' and then she would continue with that so there was always this conflict between" Transcript 2 Consultant Forensic Psychologist*
Quote 46	*"P: I* (foster carer) *would obviously get on her nerves even though I did lots of nice things with her" Transcript 3 Foster carer*
Quote 47	*"P: I would say oh yeah [husband's name] said you said this and she'd get really angry at that like it was their secret" Transcript 3 Foster carer*

Quote 48	*"P: My mother's lifestyle and her way of upbringing me she's much more she trusts me more and she kind of doesn't have this thing whole over protective attitude towards me ... I used to communicate with her much closer to my mum than my father" Transcript 1 Male victim*
Quote 49	*"P: As far as I remember with my mum it was pretty good when I was little" Transcript 7 Female victim*
Quote 50	*"P: My parents were divorced" Transcript 1 Male victim*
Quote 51	*"I: How old were you when your parents split up? P: Pff twelve or thirteen it was in year eight" Transcript 7 Female victim*
Quote 52	*"P: I had a brother at that point... Erm we used to fight like hell when we were little I: Yeah P: Like really break the crap out of each other" Transcript 7 Female victim*
Quote 53	*"P: Fighting with my brother [laughs] don't think I can quite forget that" Transcript 1 Male victim*
Quote 54	*"P: They had no idea what had been going on they'd they had a pretty good relationship mum had never raised any concerns there wasn't involvement from social services or anything like that before we turned up" Transcript 4 Detective sergeant*
Quote 55	*"P: Her parents sort of very supportive and looked after her a lot" Transcript 4 Detective sergeant*

The victims who had experienced abusive, inappropriate and neglectful parenting from their biological parents were subsequently involved with social care (i.e., placed in children's homes or foster placements). The results indicate that victims were disruptive within their family environment and did not experience boundaries, and these victims also experienced problematic parenting and conflict with their adoptive parents. For example, the Consultant Forensic Psychologist suggested that the adoptive parents had *"poor parental management", "over permissive parenting"* and a lack of boundaries within the family home. An example of this is that the victim was going out and coming home late or not at all until the next day and the adoptive parents did not know where the child was. Quote 44 and 45, in table 46, highlight a lack of boundaries within the home and a lack of parental management that caused conflict with the adoptive parents.

Moreover, the findings found that most of the victims' experienced hostility and conflict with their parents around the time of the offence. For example, quote 46 and 47, provided in table 46, indicates that the foster carer and the victim experienced a difficult relationship. These

findings support previous studies that have investigated online sexual solicitation and reported that sexual abuse, physical abuse and neglect are risk factors (Noll et al., 2009). Previous findings also reported that conflict and hostility with parents was a risk factor in the previous year of the participant's life (Wells & Mitchell, 2008). These findings, however, expand on that and report that it is a risk factor for online sexual exploitation as well as sexual solicitation and that issues and disruption with parents/parental relationships/care can cause vulnerability.

Previous literature emphasises that when children's emotional and physical needs (i.e., being fed, not attending school, receiving affection and love) are not met by caregivers, they are significantly more likely to experience adverse and negative outcomes later in life (Lewis-Morrarty et al., 2015; Oldfield et al., 2016). This can include behavioural and psychological issues such as poor attachment patterns, alcohol use and interpersonal difficulties. This was supported by the results as maltreated and abused victims were subjected to further sexual and non-sexual abuse, experienced psychological and interpersonal difficulties (i.e., hostility and conflict with adoptive parents or care staff). These findings are consistent with the attachment theory (Bowlby, 1969, 1973, 1988) which emphasises individuals who do not experience care, support and security from their primary caregiver are more prone to experience adverse outcomes later in life (Booth-LaForce et al., 2005; Feeny & Noller, 1990; Groh et al., 2017). Thus, victims who experienced abusive, neglectful and inconsistent parenting encountered numerous adverse events throughout their lives (one being experiencing online grooming and sexual exploitation).

Although most of the victims experienced neglectful parenting, findings indicated that some victims experienced permissive and authoritarian parenting from their caregivers (biological or adoptive parents) (Baumrind, 1971; Maccoby & Martin, 1983). One victim initially experienced neglectful parenting and was subsequently adopted due to maltreatment and neglect. This victim later experienced high nurturance from her foster parent, however, they lacked parental control and discipline. This resulted in a lack of boundaries within the home and the victim would often engage in risky offline behaviours (i.e., stay out late or return the following day, engage in substance and alcohol use). This indicates that permissive parenting can be a risk factor that is related to problematic offline behaviours as well as risky online behaviours that creates vulnerability to being sexually exploited (Kim & Chung, 2003). These findings can be incorporated into training for staff and parents. This is discussed in depth in chapter 7.

Furthermore, consistent with Whittle et al.'s (2014) findings, victims who did not experience foster placements or were not adopted, also experienced family disruption as they reported that their parents had divorced or separated. This experience made them feel anger towards the parent who they felt was responsible for the separation, in both cases the father. One victim reported that she was also angry with her mother for the way she was dealing with the separation. However, generally both victims reported that they had a positive relationship with one parent which was their mothers and a negative relationship with the other parent (father). For example, one victim explained that his mother was *"open-minded"*, however, his father was *"very strict"*, did not trust him and was "*quite protective maybe over protective".* This is highlighted table 46 (quote 48 and 49). This is indicative of an authoritarian parenting style approach (Baumrind, 1971). Research reports that authoritarian parents do not show or offer much affection, praise and/or rewards towards their children (Baumrind, 1971; Brown & Iyengar, 2008). Studies highlight that some offenders flatter, compliment and provide emotional support to victims as part of the grooming process (Black et al. 2015; Malesky, 2007; Marcum, 2007). Therefore, victims who do not feel that they are praised, rewarded or loved by their parent may seek this in the online environment. In turn, offenders can exploit this vulnerability and appear to show intimacy and affection (O'Connell, 2003).

In addition, both victims reported experiencing authoritative parenting style from one parent, however, both of these victims experienced family disruption (i.e., parents splitting) prior to or around the time of the offence. Quote 50 and 51, in table 46, highlight this. This is consistent with previous literature that highlights that parental divorce or separation is a risk factor associated with children and adolescents being sexually exploited (Whittle et al., 2014). Research indicates that parents play a significant role in their children's lives, therefore, a disruption in the parental relationship (i.e., divorce or split) can have a detrimental impact on them (Astone & McLanahan, 1991; Sirvanli-Ozen, 2005; Teachman, Paasch & Carver, 1996). Studies indicate that children whose parents experience divorce or a split experience less time and psychological bonding. During this period, the family dynamic can alter, and the child may encounter hostility and aggression between their parents and a lack of care (Bossong, 1995; Sirvanli-Ozen, 2005; Spigelman, Spigelman & Englesson, 1991). Thus, these findings indicate that some victims experience warmth, autonomy and an authoritative parenting approach, however, disruption between the parents can create vulnerability to being groomed and sexually exploited. This may be because as parents deal with the split (i.e., may encounter

financial difficulties, change their living arrangements, be preoccupied with the divorce), they may not be able to meet the child's intimacy or emotional needs.

The analysis also revealed that victims experienced problematic relationships with siblings and that *"conflict between siblings"* was present. This included having *'fights'* with their siblings, as highlighted by quote 52 and 53 in table 46. In contrast, the results suggested that there were also a group of victims who experienced supportive and consistent parenting, and experienced no issues within their families. This is emphasised in the detective's account provided in table 46 (quote 54 and 55).

These findings indicate that the children and young people who experience supportive or inconsistent, neglectful and improper parenting are vulnerable to online sexual victimisation. The results suggest that parenting patterns and experiencing during the early years of a victims life can contribute towards vulnerability, as well as parental relationships during adolescence (i.e., experiencing hostility, conflict or lack of support). The findings indicate that some victims experienced secure and consistent parenting during childhood, however, the majority of victims experienced neglectful parenting, particularly during the victims' infancy years. This usually led to victims being involved with social services (i.e., on a support plan) or placed in foster care/children's care home. Victims also typically experienced maltreatment (i.e., were not fed, did not attend school), physical and sexual abuse and maladjustment in the home (i.e., exposure to drugs, alcohol and violence). These victims were also more likely to encounter numerous problematic behaviours throughout their childhood and adolescence. For example, victims were more likely to encounter multiple forms of victimisation (i.e., sexual abuse, physical violence, maladjustment in the home), experience greater psychological difficulties and engage in offline anti-social, sexualised and delinquent behaviour.

These findings outline the significance of the role parents have on victim vulnerability, from the early years of a victim's life, throughout their childhood and adolescence. The results indicate that victims who experience abusive, neglectful and inappropriate parenting from infancy up until adolescence experience the most detriment consequences that include online and offline sexual exploitation, alcohol and substance use and psychological issues. These individuals are more prone to forming poor attachments, seeking intimacy and experiencing low self-esteem that can result in them seeking affection online. They may also resort to engaging in online risky behaviours (i.e., talking and sharing how they feel to strangers online) as a consequence of not experiencing love and affection from their caregivers. This, in

combination with offenders deliberately seeking, victims who appear lonely or wanting affection can increase the likelihood of them being sexually exploited. Therefore, it is important to address these victims' underlying psychological factors that can result from a lack of parental care and neglect. This can be done by professionals who encounter children or young people by exploring children's family environment, history of relationship with parents and understanding their psychological issues. It would be important to address underlying psychological issues by supporting children and young people to build their self-esteem and confidence which can potentially increase resilience to online sexual encounters with adults. The practical and theoretical implication relating to this are discussed further in chapter 7.

In addition, victims who have experienced secure and stable parenting are also vulnerable to online grooming and sexual exploitation. However, these victims appear to use the online environment as they are curious about relationships as opposed to seeking intimacy or affection. Therefore, it is important that children and young people have offline groups or forums where they can explore their sexuality and relationships in a safe manner. Also, they can be educated about healthy homosexual relationships in schools and via parents. This is discussed in greater detail in chapter 7.

Relationship with peers

Another theme related to social structure is the victims' relationship with peers during adolescence. The findings highlight that some victims and professionals reported having / victims having positive relationships with peers, whereas others experienced a lack of stable friendships, breakdown of friendships and association with delinquent peers. For example, a detective mentioned that one victim he encountered did not have any issues relating to friendships. Furthermore, a victim reported that she experienced good and positive friendships in school and this is highlighted in table 47 (quote 55).

In contrast, the foster carer and children's home manager reported that victims experienced negative friendships, lacked consistent and stable friendships, and experienced breakdown of friendships. Examples of this are included in table 47 (quotes 56 to 59). This potentially indicates that victims have an inability or lack skills to maintain friendships. Furthermore, the findings indicated that some victims, particularly those who were in foster placements and experienced adverse childhood associated with delinquent and problematic peers. These peers were engaging in alcohol use, substance use and other anti-social behaviours. This is highlighted in quotes 60 to 63 listed in table 47.

Previous studies have reported that victims of online grooming and sexual exploitation experience positive and negative peer relationships (Whittle et al. 2014). This study supports this finding as some victims experience positive relationships with peers, whereas, others experience a lack of meaningful friendships, breakdown of friendships or were associated with problematic peers. Adolescents who experienced a lack of stable friendships and breakdown of friendships can feel isolated and lonely within their social structure (Rotenberg & Hymel, 1999). Thus, it may be easier for offenders to achieve isolation during the grooming process and avoid detection as isolation is already present in the victims' offline environment (Olson et al. 2007). Related implications are discussed in the overall discussion section below.

Table 47. Extracts relating to the 'relationship with peers' subtheme within the 'social structure' theme

Quote number	Extract
Quote 55	*"P: I had a good group of people good group of friends and in our year at school everyone all got on so it was all quite a good friendly friendly year" Transcript 7 Female victim*
Quote 56	*"P: All the others that she was knocking around with ere acquaintances she has she had three or four really good friends at school I'm told I: Right P: But she doesn't I: What were what were P: They kind of disowned her I think" Transcript 5 Children's home manager*
Quote 57	*"P: She struggled keeping er female friends at school erm because she'd fall out with them erm although some of that was that she'd have younger friends and they'd bitch and fall out with them" Transcript 3 Foster carer*
Quote 58	*"P: She talked about people who could talk to but actually there was no depth in terms of what she felt" Transcript 2 Consultant Forensic Psychologist*
Quote 59	*"P: She would also fall out a lot with some of her peers as well erm she felt because her adoptive family would give her money again as a was of trying to please her she then felt that some peers would then try and become friendly with her in an attempt to get this money of her so she kind of felt that she was getting used by some of her peers" Transcript 2 Consultant Forensic Psychologist*
Quote 60	*"P: They tend to engage with peers that are problematic peers that have pro-offending attitudes, delinquency erm they are getting introduced into substance misuse and that's how they're spending their time" Transcript 2 Consultant Forensic Psychologist*
Quote 61	*"P: She spent her time walking around her delinquent peers" Transcript 2 Consultant Forensic Psychologist*
Quote 62	*"P: Started going out of the home quite a lot engage in a lot of delinquent peers started engaging in a lot of substance misuse erm would get approached by various others erm to fo to homes and kind of engage in use of substances" Transcript 2 Consultant Forensic Psychologist*

Quote 63	*"P: She was going she was knocking around with these eighteen to twenty year olds who were al into drugs" Transcript 5 Children's home manager*

Psychological factors

The analysis revealed that all victims experienced psychological issues to some extent. Four key subthemes emerged in relation to psychological characteristics. These were: 1) poor psychological functioning, 2) alcohol and substance use, 3) aggression, and 4) poly-victimisation.

Poor psychological functioning

In terms of poor psychological functioning, the victims and professionals reported that depression, low self-esteem and low confidence was common among those who were sexually solicited, groomed and exploited. One victim participant reported that he felt low during the time of the offence and found it *"very difficult to get up in the morning".* Another common finding was that victims were referred to CAMHS services although most were not formally diagnosed with a mental disorder. Despite this, most of the victims experienced distress and deliberately self-harmed. For example, the Consultant Forensic Psychologist reported that a victim self-harmed due to feeling distressed that originated from the conflict she experienced with her adoptive parents. She described the conflict with her parents *"as very stressful".* Quotes 64 to 66, in table 48, support the above points.

Moreover, professionals reported that victims experienced *"seriously low self-esteem".* A victim participant also reported that he experienced low self-esteem and confidence due to having dyslexia as well as poor teacher support, which affected his academic ability. Another victim participant potentially experienced low self-esteem and confidence due to her physical appearance and being bullied (quotes 67 and 68 in table 48). This victim reported that she was seeking intimacy and approval online. Therefore, the offenders may have deliberately targeted her online, flattered and complimented her because they were aware of her vulnerability (Tener et al., 2015). Similarly, a detective inspector reported similar issues relating to a victim (quotes 69 and 70 in table 48).

Additionally, victims experienced intimacy and attachment deficits that contributed to them responding to people they met online and forming relationships with their abusers. Moreover, the dataset suggested that victims experienced attachment issues, feeling of instability and poor

emotional regulation and coping skills. This was particularly true amongst those victims who were in foster placements, and had experienced poor and neglectful parenting. Quotes listed in table 48 (71 to 76) support this. These characteristics may enable the 'gaining access' stage of theory of luring communication (Olson et al., 2007) as these vulnerabilities can allow the development of deceptive trust. For example, offenders may flatter and compliment individuals to build trust in order to sexually exploit a victim and this may fulfil the needs of victims who are experiencing low self-esteem.

Table 48. Extracts relating to the 'poor psychological functioning' subtheme within the 'psychological factors' theme

Quote number	Extract
Quote 64	*"P: She did she did I had to take her to hospital once because the authority told me she did like a cut that big once" Transcript 3 Foster carer*
Quote 65	*"P: She would engage in deliberate self-injury erm as well saying she was bored but there was also a lot of distress as well because she was distressed about the fact that she had this conflict with her parents" Transcript 2 Consultant Forensic Psychologist*
Quote 66	*"P: Erm while she'd been here she'd scratched herself once with a piece of glass erm prior to that I understand it used to be quite a deep cutting" Transcript 5 Children's home manager*
Quote 67	*"P: At first they made me feel like someone actually liked me because at the time I had erm I always had er keyhole scares on my chest and shoulders and my acne was really really bad erm and that I just felt horrible with that so it was nice to just think that someone might like me" Transcript 7 Female victim*
Quote 68	*"P: I've said already I have me skin problems I was getting bullied quite a lot because of that and because I've always been a bit quieter erm my mum and dad had not long been separated when it started and my dad was my dad's always had problems with alcohol and he was quite violent to my mum" Transcript 7 Female victim*
Quote 69	*"P: I think she was possibly experienced bullying at school like name calling nothing massively serious that was mentioned by one of her teachers erm and I think that was probably the cause of her self-esteem issues and around perhaps as she was starting to get older and comments were being made and she was she wasn't she was quite large for her" Transcript 4 Detective inspector*
Quote 70	*"P: Erm quite a few of the girls had some er a sort of low esteem issues and things like that that he'd would I think probably latched onto but he would say things like you're really attractive you're beautiful and all this sort of thing really like to see you naked and just build it up very slowly but sort of complimenting them and building up that relationship and that trust" Transcript 4 Detective Inspector*
Quote 71	*"P: Yeah she had very low self-esteem because we talk about her father stopped speaking to her and I don't really care about it but actually she did care about is quite a lot, quite low self-worth felt like she was being treated unfair by people around her" Transcript 2 Consultant Forensic Psychologist*

Quote 72	*"P: The victim very much just wanted to be part of a family that was her big main thing" Transcript 6 Detective sergeant*
Quote 73	*"I: Did she experience any low self-esteem or issues? P: Oh massively she had this conversation with multiple people she doesn't feel loved she doesn't feel like she's been welcomed into part of a family" Transcript 6 Detective sergeant*
Quote 74	*"P: To put down roots to anything if you're thinking that you're just going to be moved on again" Transcript 5 Children's home manager*
Quote 75	*"P: She's been removed there's almost like that abandonment" Transcript 3 Foster carer*
Quote 76	*"P: Her mum describes her as that she never really attached" Transcript 5 Children's home manager*

Alcohol and substance use

Another behaviour that was common among some victims was their frequent use of alcohol and substance use. One victim reported that she would take substances (i.e., cannabis, speed) and alcohol to cope with negative interpersonal experiences (i.e., parenting divorcing, being bullied). See quote 77 and 78 in table 49.

In addition, some victims were exposed to drugs within the family home during a young age. For example, one victim's parents encouraged her to take drugs and be part of criminal activity that involved drug dealing. Also, some victims' social structure included peers who were predominately associated with alcohol and substance use. Victims were taking alcohol and drugs with problematic and delinquent peers in environments that were risky, and this was particularly true for those victims where the sexual offence was facilitated online and the abusers knew the victim offline. This is supported by quote 79 and 80 highlighted in table 49.

Research shows that parental, sibling and peer alcohol use also predicts adolescence alcohol use. However, peer alcohol use is the strongest predictor among the three (Chassin et al. 1993; Wills et al., 1998). Considering developmental phases, the adolescence phase is characteristic of a shift from parental to peer influence. This is apparent in a victims' account who reported that she engaged in substance and alcohol use with peers to regulate her emotions and deal with stressful life situations (i.e., parents separating). Psychological characteristics such as thrill-seeking, impulsivity and stressful life events are significant predictors of adolescents' alcohol and substance use (Windle, 2000). It may be that these personality traits also contribute towards victims' online sexual exploitation vulnerability.

Table 49. Extracts relating to the 'alcohol and substance use' subtheme within the 'psychological factors' theme

Quote number	Extract
Quote 77	*P: "Sometimes it would be a few bottles of beer sometimes it would be I think one time I had a half bottle of whisky [laughs] like in one" Transcript 7 Female victim*
Quote 78	*"Yeah I smoked weed and I had speed a few times ... I think it got to a point when I was probably fourteen I was smoking weed once or twice a week" Transcript 7 Female victim*
Quote 79	*"She'd already a heavy cannabis user already at the age of like eleven erm but then again that was supplied by dad" Transcript 6 Detective sergeant*
Quote 80	*"In terms of substance use what was really concerning about her is that she was she was quite happy to try a lot of different things so she wouldn't question stuff so when her peers would bring her various substances she'd just use them she would use things like gas she's use cannabis, she'd use spice erm didn't particularly like the spice but she'd basically would try anything and was erm had no awareness of risk" Transcript 2 Consultant Forensic Psychologist*

Aggression

The analysis revealed that victims also displayed aggression. This included physical and verbal aggression towards biological and adoptive parents, siblings, members of staff and police officers. The Consultant Forensic Psychologist reported that a victim *"experienced a lot of aggression"* while other professionals reported that victims were physically and verbally aggressive. For example, the children's home manager reported that the victim would threaten staff by saying "*I'm going to get you done I'm going to stab you in the face".* Extracts 81 to 83, in table 50, provide examples of victims being verbally and physically violent towards their adoptive parents and staff. Moreover, one professional reported that the victims' aggressive behaviour was influenced by delinquent peers (quote 84 in table 50).

These findings are consistent with previous literature that has reported that aggression is related to online sexual exploitation (Whittle et al., 2013). The literature suggests that aggression is linked with poor emotional regulation and coping. Individuals are likely to 'act out' due to poor childhood experiences (i.e., neglect and abuse). Thus these results are indicative of victims experiencing externalised behaviours, potentially, due to poor emotional regulation. The implications of this findings are discussed in chapter 7.

Table 50. Extracts relating to the 'aggression' subtheme within the 'psychological factors' theme

Quote number	Extract
Quote 81	*"P: She actually she got taken out for a short time is that she threatened her father with a knife as well I: Okay P: Threatened to stab him" Transcript 2 Consultant Forensic Psychologist*
Quote 82	*"P: She was violent attacking staff" Transcript 5 Children's home manager*
Quote 83	*"P: I know they were struggling with her when she was in the home in Rochdale I know they were struggling with her behaviour in the home erm so I'm presuming she was being physically violent until then" Transcript 5 Children's home manager*
Quote 84	*"P: Lots of problems with aggression erm acting out aggression herself she was also being very erm persuaded by these aggressive peers that were saying things like bring a knife in erm because you'll need to protect yourself because people might assault you erm so she started bring a knife into school" Transcript 2 Clinical Forensic Psychologist*

Poly victimisation

This sub-theme emphasises that victims who experienced online sexual solicitation, grooming and exploitation also experienced other victimisation experiences early on in their lives as well as during the time of the offence. In relation to early life experiences, some victims experienced maltreatment, sexual abuse, physical abuse and neglect by their parents or siblings. Extracts 85 and 86, in table 51, highlight professionals discussing that the victim had potentially been sexually abused during childhood by their brother.

In addition, victims also experienced or were indirectly involved in sexual victimisation during their adolescence. For example, the children's home manager and the detective reported that the victims they worked with had also been groomed and sexually exploited offline, separate to the online grooming and sexual exploitation. One case involved a victim being groomed and raped offline by her abusers and then moved to a different care home where she was groomed again by a different group of offenders (this offence was facilitated online). Quotes 87 to 89 provided in table 51 highlight this.

Moreover, a detective reported that the victim that he worked with had been subjected to sexual assault in public and was also involved in a separate offline child sexual exploitation case involving her friend. See quote 90 in table 51. This victim also experienced physical threats and violence from her father and another separate violent incident during adolescence. This

involved her being robbed at knifepoint while she had gone missing from the care home with her partner. These experiences are highlighted table 51 (quotes 91 and 92).

In addition, other victims reported that they experienced offline bullying that involved verbal and physical violence. For example, one victim reported that a group of individuals she knew bullied her and they would throw things at her and spit at her. Moreover, the detective inspector reported that one of the victims was also experiencing offline bullying. This is demonstrated in by quote 93 included in table 51. Although some victims experienced offline bullying, some victims did not encounter bullying and reported positive social experiences in school and with peers. This is highlighted in extract 94.

Another key finding was that victims were exposed to domestic violence within the family home during childhood. The victims reported that their parents argued, would *"fight", "scream"* and *"shout"* at each other (see quote 95 and 96). Moreover, the professionals reported that victims experienced violence within the home and there was abuse and hostility between biological parents or a parent and their partner. In some cases, this resulted in the victim being removed from the home they shared with biological parents. This is apparent in the extracts below. One victim experienced *"a lot of violence within the home"* before the age of 4 while another victim's mother had multiple violent parents. This victim is thought to have also experienced violence, however, she had not yet disclosed this to care staff.

Table 51. Extracts relating to the 'poly victimisation' subtheme within the 'psychological factors' theme

Quote number	Extract
Quote 85	*"P: It was never proven but there were allegations that her older sibling who's two years older than. He had engaged in some level of sexually harmful behaviour against her as well but it wasn't proved" Transcript 2 Consultant Forensic Psychologist*
Quote 86	*"P: She had been abused by her brothers" Transcript 3 Foster carer*
Quote 87	*"P: She'd been living in a private children's home in Rochdale I think for about ten months and got involved with a gang CSE in the Rochdale area and she she was she went missing for a think I think it was fourteen days and it transpired she was with these two guys" Transcript 5 Children's home manager*
Quote 88	*"P: I'm not sure if they identified who she got pregnant by I think that was street grooming I think it was some older it was put down to an older male at school who's a couple of years ahead of her" Transcript 4 Detective inspector*
Quote 89	*"She'd already been a victim previously of a sexual assault in public" Transcript 6 Detective sergeant*

Quote 90	*"P: She was involved in another investigation so there was an awful lot going on in that young lady's life at the time so she'd been witness to physical grooming which was a seventy-two year old male who pretended to be a grandad enticed lots of girls into his house there was a lot of abuse that went on inside again that was one of my jobs but she was a witness to that she wasn't a victim there... she was a witness in that she'd been to this man's flat he'd given her alcohol she'd managed to drag her friend out of there almost paralytic managed to call her care staff to come and rescue her before anything happened in this house with this man" Transcript 6 Detective Sergeant*
Quote 91	*"P: Violence from father a lot of threats from physical violence from father ... being subjected to drugs and being given drugs really" Transcript 6 Detective sergeant*
Quote 92	*"P: During one missing episode with the father of her child not the offender erm they were robbed at knifepoint in the street when he'd gone to buy some drugs" Transcript 6 Detective sergeant*
Quote 93	*"P: I think she was possibly experienced at school like name calling nothing massively serious that was mentioned by one of her teachers" Transcript 4 Detective inspector*
Quote 94	*"P: Very good yep very social very wasn't sort of erm on my own or that kind of child no one was picking on me nothing like that" Transcript 1 Male victim*
Quote 95	*"P: Mum was a drinker dad erm drugs he he worked he was a chef there was a drinker drug taker mum and dad were never married ... I think there's lots of periods of their lives when they were apart but they were always friends bad friends you know so they they there's lots of arguments lots of rowing" Transcript 3 Foster carer*
Quote 96	*"A large amount of domestic violence between parents obviously from a very young age she's been removed she's not had a constant parenting" Transcript 6 Detective Sergeant*

In general, this theme suggests that individuals who exhibit externalised (i.e., aggression, alcohol and substance use) and internalised behaviours (i.e., depression, low self-esteem, self-harm) are also more likely to experience online sexual exploitation. These results support previous findings that depressive symptomology, self-harm, low self-esteem and loneliness are associated with children and young people being sexually solicited, groomed and exploited online (Palmer, 2015; Whittle et al. 2014). Also, this theme is consistent with previous literature that emphasises that individuals who experience neglectful, authoritarian and permissive parenting styles are more prone to experiencing psychological difficulties, higher externalised problems (i.e., alcohol and substance use) and behavioural issues (Pinquart, 2017). This is apparent in the participants' accounts as victims who experienced poor parenting styles also experienced more internalised (i.e., depression, anxiety, self-harm) and externalised

problems (i.e., aggression, substance use, delinquency). Also, these victims were experiencing stressful situations (e.g. being bullied, struggling to learn at school, family conflict) around the time of the offence. Previous literature outlines that individuals who experience warm parenting from their mother and father are less likely to report psychological difficulties in reaction to stressful events than adolescents who experience harsh, strict and discipline by both parents (Wagner, Cohen & Brook, 1996). This form of social support enhances psychological traits (e.g., self-esteem) and provides adolescents the ability to cope with stressful events (Cohen & Wills, 1985; Baumrind, 1991). Previous literature has indicated that authoritative parenting, whether both parents are or just one, results in good psychological and behavioural outcomes for individuals and can buffer against negative and stress situations (Kaufinann et al., 2000; Simon & Conger, 2007).

The results also suggest that victims formed insecure attachment with their caregivers, particularly those who experienced neglectful and abusive parenting during their early years. This can cause victims' to experience intimacy deficits, internalise low self-worth, low self-esteem and a feeling of being unloved and unwanted. This can potentially lead to victims being exploited by offenders who seek intimacy, feeling of being wanted and want to fulfil their emotional needs. This fits with previous literature that emphasises online sexual offenders deliberately seek victims who appear to lack self-esteem, confidence and want intimacy (Tener et al., 2015; Webster et al., 2012; Malesky, 2007).

Studies have reported that parental warmth from parents allows individuals to develop feelings of security, confidence, trust and ability to deal with stressful situations (Chen, Liu & Li, 2000). It could potentially be that victims who experience poor parental care lack emotional and affectionate bonds, therefore, this could be easier for offenders to build intimacy with these victims. For example, one victim who had experienced neglect, poor attachment with her biological parents stated that she wanted to 'be loved' and experience affection. Also, if individuals experienced authoritative parenting this could potentially be a resilient factor as victims may be better equipped (i.e., higher self-esteem, better coping mechanisms) at rejecting sexual solicitations or engaging in risky online behaviours. This may be particularly true for those who experience greater psychological, interpersonal and behavioural problems.

In addition, the findings are consistent with previous literature that highlights individuals who encounter victimisation experiences are significantly more likely to experience subsequent victimisation experiences in comparison to their non-victimised peers (Finkelhor et al., 2011).

Research also indicates that poly-victimised adolescents are more likely to experience internalised (i.e., depression and self-harm) and externalised (i.e., substance use and aggression) symptoms than their non-victimised counterparts (Finkelhor et al., 2005; Finkelhor, Ormrod & Turner, 2007; 2009). These individuals are also more likely to experience poorer psychological adjustment and interpersonal difficulties, particularly when the victimisation experience frequency, severity and duration is greater (Finkelhor et al., 2009; Turner et al., 2010). This is apparent in this study as victims who experienced more victimisation experiences also experienced greater interpersonal and psychological difficulties during adolescence. For example, those victims who experienced physically / sexually abusive and neglectful experiences during infancy also experienced physical and sexual abuse during adolescence while experiencing online sexual exploitation.

School

This theme relates to victims' school environment and experiences and consists of three subthemes. These are 'inconsistent schooling', 'relationships with teachers' and 'academic ability'.

Inconsistent schooling

The analysis indicated that some victims experience inconsistent or a lack of proper schooling. This can be attributed to *"moving around the care system"* or a lack of appropriate parenting (i.e., parents do not ensure that their child is attending school). Moreover, some victims were disruptive in school or were truanting so they had been suspended or expelled. These findings are supported by quotes 97 to 99 in table 52.

Relationship with teachers

The findings indicated that some victims experienced positive relationships with teachers while others experienced negative relationships with teachers. For example, a detective reported that a victim that he dealt with "*had pretty good relationships with teachers".* Moreover, one victim reported that he did not encounter supportive teachers and they *'weren't very knowledgeable on dyslexia'.* He also stated that this impacted on his self-esteem, school ability and "*struggled at school".* This is supported by quote 100 included in table 52.

Academic ability

The analysis consistently showed that victims were performing well academically and achieving highly. A number of professionals reported that the victims were *'bright'*. For

example, the children's home manager revealed that the victim "*was a grade A student"*. In relation to some victims, despite experiencing problems in other aspects of their lives (i.e., neglect, abuse, bullying, lack of parental care, conflict with parents) they were still performing well academically. This is supported by extracts 101 to 103 included in table 52.

Table 52. Extracts relating to the 'inconsistent schooling', 'relationships with teachers' and 'academic ability' subthemes within the 'school' theme

Quote number	Extract
Quote 97	*"P: School environment as well quite problematic within schools they're either not attending schools, they're disruptive in school erm they've been suspended they're being expelled as part of that they then they then truanting from school as well so not actually spending time at school and they're spending time with their kind of erm delinquent peers" Transcript 2 Consultant Forensic Psychologist*
Quote 98	*"P: She became really bored she got really disruptive erm in school she was kind of erm shouting at staff staff were trying to manage her behaviour she's being aggressive erm towards them she couldn't be bothered erm attending school it was boring so she would try and come out of school quite a lot" Transcript 2 Consultant Forensic Psychologist*
Quote 99	*"P: Beyond parental control yeah she was because she was in mainstream school I: Yeah P: They don't last long in mainstream schools they come into care" Transcript 5 Children's home manager*
Quote 100	*"P: Teachers weren't very knowledgeable on dyslexia.... didn't help self-esteem ... I suppose yeah lack of support didn't help my self-esteem" Transcript 1 Male victim*
Quote 101	*"I: Okay what was her school life like? P: Quite bright lazy but quite bright ... she in the end she got a few GCSEs erm I think she got a B for English you know considering erm but yeah she would she would walk out of class not not necessarily not there was no violence or like you like I can't cope and then it would be an excuse really" Transcript 3 Foster carer*
Quote 102	*"P: I think I was doing fairly well at school" Transcript 7 Female victim*
Quote 103	*"P: She was a bright young girl so there were no issues academically or anything like that" Transcript 4 Detective inspector*

Resilience

The dataset included 2 victims who were sexually solicited or groomed yet were not successfully sexually exploited. In one case the authorities (i.e., care staff and police) intervened to prevent the abuse. In the other case, the victim informed care staff who reported the incident to the police immediately. This victim's risk factors included experiencing extreme neglect, maltreatment, physical violence during her early years of life and throughout

childhood. She experienced poor and inconsistent care from her biological parents and had encountered numerous victimisation experiences such as being exposed to domestic violence, physical violence and sexual assault. She also experienced intimacy deficits as she stated she wanted to be loved and be part of a family. In addition, she did not experience stable or consistent schooling, was engaging in highly sexualised and problematic behaviours offline (i.e., became pregnant aged 12, going missing, substance and alcohol use). However, despite these risk factors, she did not comply to the sexual requests from the offender. This analysis showed that there were contextual factors that could have provided resilience to the offenders sexual offending.

Firstly, this case involved the offender approaching the victim on Facebook and immediately requesting for sexual activity and an offline meeting. The offender appears to be a hyper-sexualised offender who wanted immediate sexual gratification (Webster et al., 2012) but also requested to meet in the offline environment immediately. Thus, this demonstrates that there was little attempt to 'groom' the victim by using techniques that were common in the other cases such as building a friendship or rapport with the victim which then led to online sexual exploitation or an offline meeting. Therefore, the offender's approach (i.e., immediate sexual solicitation and request to meet offline) could have contributed towards the victim informing staff immediately. Extracts 104 to 105, included in table 53, highlight the offenders approach and grooming tactic as well as the time it took from the victim being sexually solicited and informing.

Another aspect that may have contributed to the victim resisting the online sexual solicitation is the positive relationships she had formed with professionals. Although she had some negative relationships (i.e., social worker), she had engaged positively with other professionals who she was able to speak to about her issues and when she felt threatened. These professionals provided consistent support and this is highlighted in table 53 (quote 107).

The victim experienced an incident of offline sexual exploitation where a 72 year old male had attempted to sexually exploit the victim and her friend. During this incident "*she'd managed to drag her friend out of there almost paralytic managed to call her care staff to come and rescue her before anything happened in this house with this man".* This indicates that the victim felt that staff were approachable and could assist her in times of need. Moreover, the presence of staff was important in resisting or preventing sexual exploitation from occurring. This is apparent in the children's home manager's account who stated that staff and police intervened

so sexual exploitation did not occur. This shows that victims may have risk factors that make them vulnerable to online grooming and sexual exploitation. However, the presence of guardians in the form of staff or law enforcement can deter the offender as well as having positive and supportive relationships with staff.

Table 53. Extracts relating to the 'resilience' theme

Quote number	Extract
Quote 104	*"P: She'd been approached online on Facebook as the majority are erm Facebook messenger just added somebody from Manchester friends of other friends and then has engaged in conversation he the offender has then incredibly sexually explicit with her erm obviously commenting on her pictures commenting on what she looks like et cetera wanting to meet up offering to buy her things take her out in the car erm so while she's not actually not gone and met him because she was very against it from the beginning she told that care cares and they've all got involved" Transcript 6 Detective sergeant*
Quote 105	*"P: He'd be like hi how are ya put her name and she'd be like I'm alright like who are you and he'd say oh you're sexy so she just sent straight back I'm thirteen you peado 'cause that's her attitude and he then he launched into erm well it don't matter you've got a great bum ... it's within minutes" Transcript 6 Detective sergeant*
Quote 106	*"P: The whole conversation of him from start to her basically telling him to do one and the care staff taking her phone was probably fifteen minutes if that" Transcript 6 Detective sergeant*
Quote 107	*"So the youth worker at [organisation name] she was very close with erm obviously she'd ring her up ... because I dealt with her with all the other stuff she would feel comfortable ringing my office" Transcript 6 Detective sergeant*

OVERALL DISCUSSION

This study aimed to explore the demographic, psychological, behavioural, interpersonal and social risk factors that are associated with online grooming and sexual exploitation. Overall, the results indicated that online risky behaviours, problematic and risky offline behaviours (i.e., truancy from school, engaging in substance and alcohol use, going missing from care placements and engaging in highly sexualised behaviours) and poor psychological functioning increase the likelihood of online grooming and sexual exploitation. Other risk factors included victims experiencing poor social structure such as neglectful and problematic parenting, parental/family disruption, conflict with parents, negative friendships and delinquent peer relationships and poly-victimisation experiences. In contrast, the results indicated that some victims did not experience the above risk factors and encountered positive social networks (i.e., positive friendships and supportive parenting), experienced little psychological issues and victimisation experiences.

These findings have contributed to the existing literature on online grooming and sexual exploitation vulnerability. The results highlight that developmental factors such as parental care and early childhood interpersonal, behavioural and psychological experiences contribute toward online sexual victimisation during adolescence. Additionally, psychological, behavioural and interpersonal factors that occur during adolescence (i.e., during the time of the offence) play a role in vulnerability. These include low self-esteem, aggression, hostility with caregivers, conflict with peers and experiencing other forms of victimisation. Thus, the results suggest that it is not one isolated risk factor that contributes towards online sexual victimisation but rather a combination of multiple risk factors.

The findings indicate that some victims experience poor attachments with primary caregivers, negative perceptions of the self and world, poor coping mechanisms and an inability to regulate emotions in stressful situations. These factors are linked with individuals wanting to feel loved, worthy, experiencing sexualised, externalised and internalised behaviours (Atwool, 2006; Malik, Wells & Wittkowski, 2015; Schore & Schore, 2008). This can consequently result in victims using the internet to cope with their negative affect, fulfil their intimacy needs and seek approval. The results support this assumption. One victim reported that using the internet was an ‘escape’ from the stressful situations she experienced offline (i.e., being bullied and parents separating). She further stated that she interacted with strangers online and complied with their sexual requests because she wanted to be liked and approved. This indicates that she used the

internet and engaged in risky online behaviours to regulate her negative affect. Thus, she aimed to escape or avoid her unpleasant mood states and stressful offline events by engaging with online strangers. Another victim reported that she engaged with offenders because she wanted to feel loved. This emphasises that some victims lack intimacy and want to belong and be loved and this is not fulfilled in other interpersonal relationships in their lives. This feeling is heightened among victims who encountered greater disruption at the microsystem, mesosystem and exosystem levels the ecological model (Bronfenbrenner, 1979).

The findings indicate that risk factors are associated with the microsystem, mesosystem and exosystem levels of the ecological model (Bronfenbrenner, 1979). The results suggest that disruption or impairment at each of these levels can create vulnerability for some victims. The results suggest that, at the individual level, characteristics such as experiencing sexual abuse, physical abuse and psychological difficulties (i.e., low self-esteem, confidence issues, low mood, substance use, alcohol use) are related to victims experiencing online grooming and sexual exploitation. Moreover, in relation to the next level, some victims experienced poor functioning at the mesosystem level. This is categorised as victims experiencing significant disruption within their family dynamic as they witnessed domestic violence and experienced poor parenting. Also, these victims parents were involved in criminal activity, substance and alcohol which resulted in neglect of their child. Additionally, the findings suggested that some victims came from low socioeconomic background, experienced marital discord and parental divorce or separation. Moreover, at the exosystem level some victims were involved with social care. These victims either had social services supporting their family dynamic or they were removed from the family home into care homes or foster placements. These findings indicate that the microsystem, mesosystem and exosystem functions play a role in online sexual vulnerability. However, it is important to note that the macrosystem may also play a significant role, however, this was not explored in depth in this study. Generally, theoretical frameworks such as the ecological model (Bronfenbrenner, 1979) provide a useful framework for understanding the vulnerability associated with online sexual victimisation at different levels of development. Further theoretical and methodological conclusions associated with this study and the overall PhD programme are discussed in chapter 7.

Implications

The results of this study have practical implications for different stakeholders (i.e., children and young people, parents and professionals) that can result in the reduction and identification of online grooming and sexual exploitation. Previous studies have reported that particular groups are vulnerable to online sexual victimisation such as 13 to 18 year olds, LGBT individuals and those experiencing mental health difficulties (Palmer, 2015; Whittle et al., 2014). This study found that younger individuals (as young as 6 year olds) are increasingly becoming targets of online sexual solicitation and exploitation. Although, interventions for children as young as 4 years old exist, these findings suggest that it is important that these interventions are delivered consistently in primary schools so children can stay safe online and disclose their abusive online experiences. Also, it is important that professionals are more vigilant in understanding and monitoring younger children's internet use. They can do this by understanding the victims home situation, relationship with parents, their online usage and mental health difficulties.

Consistent with previous literature, this study reported that homosexual individuals are vulnerable to online sexual exploitation (Palmer, 2015). This study suggested that this can relate to them wanting an opportunity and platform to form romantic relationships, explore and learn about sexuality. The homosexual participant in this study emphasised that he used the internet to explore relationships as he did not have this opportunity offline. He reported that if offline forums were available, he may not have resorted to engaging in risky online behaviours, interacting with offenders and complying with their sexual requests. This emphasises the importance of having educational resources to reduce risky online usage and vulnerability to online sexual victimisation specifically for homosexual individuals. It would also be beneficial for these individuals to have offline forums where homosexual individuals or those exploring their sexuality can safely discuss relationships and explore romantic relationships. Also, it is important for professionals (i.e., practitioners, teachers) to identify and support these individuals as they as likely to experience a range of victimisation experiences (i.e., bullying, sexual abuse online and offline).

Limitations

Although this study has contributed towards the literature on online grooming and sexual risk and resilience factors, it also had many limitations. Firstly, it used a retrospective research

design. Therefore, professionals were required to discuss a case they encountered in the previous year and victims were asked to talk about their experiences when they were 16 or younger. The victims in this sample were aged 24 and 25 and they experienced the online grooming and sexual exploitation when they were aged 14 and 15. Thus, there was approximately a 10 year gap between their experiences and the interview and an even longer period from now untill childhood. Therefore, this can bias findings and accuracy may be comprised as participants may recall events vaguely or may not remember some aspects (Baddeley & Hitch, 1993).

In addition, this sample self-reported their experiences so this can also bias findings as they may under-report their experiences relating to sexual interactions and their negative experiences due to feeling embarrassed and ashamed (Fisher et al., 2003). Moreover, the data collected from professionals may be limited as they may not fully know about the victims' characteristics, their early childhood experiences and motivations. For example, the detectives may know more about the victims' situation during the time of the offence as well as the interaction that occurred between the victim and offender as they collect evidence to prove that the crime occurred. However, the Forensic Psychologist may potentially know more about the victims' early childhood experiences as they conduct psychological assessments. Thus, the information available to the professionals may be dependent on their job role (e.g., law enforcement aims to prosecute offenders, psychologists aim to treat victims), and this could limit findings.

Additionally, it is worth noting that the type of participant used in this study impacts on the information elicited. This study recruited professionals (e.g., a children's home manager, Psychologist, foster carer) and victims of online sexual exploitation who were mainly university students. These participants are likely to report different experiences and risk factors due to the nature of their role and profession. For instance, child protection professionals are more likely to encounter victims who experience more adverse experiences, poor mental health and interpersonal difficulties. This may mean that they do not see victims who do not experience mental health difficulties or have adverse experiences as they would not meet the threshold for them to be referred to a Psychologist or to be placed into foster care. The matrix below highlights which participants discussed the different themes identified by the analysis. In relation to the typologies presented in chapter 7, professionals such as Psychologists, foster carers and children's home managers were more likely to encounter 'chaotic' victims. Whereas the victims who took part in the interviews are more likely to report experiences that related to

‘situational vulnerability’. Detectives may not have had a comprehensive understanding of the victim’s psychological factors or childhood experiences as they are mainly involved in obtaining evidence to prosecute the offender. This may have led them to discuss factors consistent with the ‘naïve / curious’ victim. A description of this typology in relation to previous typologies is provided in chatper 7. Also, the typology is based on the accounts of the 7 participants in this study. It provides an exploratory understanding of the different types of victims, however, further research is required to build on this foundation.

Matrix accounting for themes across law enforcement, child protection and victim participants

	Themes	**Law enforcement**	**Child protection personnel**	**Victims**
Grooming process	Length of grooming	X	X	X
	Victim-offender interactions	X	X	X
Victim characterietics	**Demographics**			
	Age	X	X	X
	Gender	X	X	X
	Background	X		
	Behavioural factors			
	Online behaviours	X		X
	Offline behaviours	X	X	X
	Social structure			
	Family dynamic	X	X	X
	Relationship with peers	X	X	X

	Psychological factors			
	Poor psychological functioning	X	X	X
	Alcohol and substance use	X	X	X
	Aggression	X	X	
	Poly-victimisation	X	X	X
	School			
	Inconsistent schooling		X	
	Relationship with teachers	X		X
	Academic ability	X	X	X
	Resilience		X	X

This study used convenience sampling to recruit victims and professionals. One strategy to recruit victims was via posters and adverts posted around university campus and sent via student messages respectively. Therefore, victims included those who responded to these adverts so these participants were willing and potentially comfortable discussing their experiences. However, recruiting victims who are unknown to clinical and law enforcement services is a challenge due to the nature of the research. This research topic is deemed as a sensitive and intruding topic, therefore, participants may be reluctant to participate in this study. Furthermore, the researcher was involved in interviewing participants and analysing data, therefore, there is an issue of reflexivity. Thus, the data collection and analysis process could be biased as a result of the researchers' own opinions and experiences (Berger, 2015).

This study used different samples (i.e., psychologists, managers, law enforcement and victims) to collect data about online grooming processes and victim risk factors. This triangulation of samples method enabled an understanding of this phenomenon from different perspectives.

However, the triangulation method would have been more valid if the data was collected and verified about the same victim from different perspectives. Also, collecting data from different samples enabled an understanding of different types of victims (i.e., naïve / curious or chaotic victims). For example, the psychologist, foster carer and child's home manager provided more information about those victims who experienced chaotic and problematic lives and, as a consequence, came into contact with the professionals involved in this study. Law enforcement officers were able to provide information about both types of victims (i.e., naïve / curious ones as well as chaotic ones) as they identified these victims once a suspect was arrested. However, both of these were associated with reported or detected cases of victims. The two victims offered information from their perspective who didn't report their experiences or was not detected. This study, therefore, provided a perspective of the online grooming and sexual exploitation vulnerability phenomenon more comprehensively and reduced bias in findings. For example, practitioner sample would be biased towards the typical risk factors.

It is important to note that this study has not provided a full understanding of the risk factors. A comprehensive understanding of victims early childhood experiences and adolescents lives was not obtained. Some professionals (i.e., detective and children's home manager) were unaware of the victims' early life experiences. For example, there may be more experiences that occurred in the victims' lives that professionals were unaware of, therefore, this can limit findings.

CONCLUSION

This study has enhanced the existing literature by reporting victim's motivations for engaging with offenders, psychological, developmental, interpersonal and behavioural risk factors relating to online sexual exploitation. These findings have offered a holistic understanding of a victims vulnerability relating to their infancy/childhood experiences, psychological issues, relationships with others (i.e., peers), school life, family dynamic and adverse encounters experienced throughout life. These findings have significant theoretical and practical relevance and this study has also provided recommendations for future research. These are discussed further in chapter 7.

CHAPTER 7

DISCUSSION AND CONCLUSION

ABSTRACT

This chapter revisits the aims of the PhD programme and provides a summary of the key findings from the systematic reviews and empirical studies. These include demographic, online risky behaviours, psychological and interpersonal factors. These findings are discussed in relation to online grooming, psychological, interpersonal and relationship building theories (Altman & Taylor, 1973; Bowlby, 1998; Olson et al., 2007; Thompson, 1991). In addition, this chapter highlights typologies that were developed from the qualitative study data presented in chapter 6. Knowledge contributions made by each research study as well as theoretical implications and directions for future directions are discussed throughout the chapter. Practical implications are also discussed. Finally, the conclusion section provides a summary of the findings and the contribution this PhD programme can make to this area of study.

DISCUSSION

This PhD programme, firstly, aimed to synthesise empirical data on: 1) factors associated with adolescents' risky internet use, 2) online sexual solicitation and exploitation victim characteristics, 3) online groomer characteristics, and 4) the grooming process. These systematic reviews highlighted factors that increased the chance of online sexual victimisation occurring (e.g., victims engaging in risky online behaviours, offenders experiencing cognitive distortions, and victims and offenders experiencing psychological and interpersonal deficits). Also, numerous theoretical and methodological gaps in the literature were highlighted. For example, the literature relating to online groomer characteristics lacked an understanding of the psychological, developmental, social, interpersonal and motivational factors that contributed to their sexual offending behaviour. Similarly, the existing literature lacked an understanding of risk factors associated with children and young people being sexually exploited online as opposed to sexually solicited. There was also little understanding of the role early life experiences (i.e., traumatic experiences, experiences with caregivers), peer relationships, motivations to engage in risky online behaviours and psychological functioning (i.e., attachment, emotional regulation, coping mechanisms) played in online sexual solicitation and exploitation vulnerability.

The systematic review highlighted a need for further research in all elements of online grooming and sexual exploitation (i.e., the online grooming process, victim and perpetrator characteristics). However, it was not within the scope of this PhD to investigate all the identified gaps in the literature. Therefore, it was decided that victim vulnerability would be explored in more detail (more details regarding this is included in chapter 4). Thus, the systematic review findings influenced the development of the subsequent quantiative and qualitative empirical studies (included in chapter 5 and 6 respectively). The second aim of the study was to explore social, environmental, behavioural, psychological, developmental and interpersonal factors that increased the likelihood of a child or young person being sexually solicited, groomed and exploited online using a mixed method approach.

The quantitative study collected data from 238 participants (mainly university students) by using an online questionnaire. This study investigated whether risky online behaviours, attachment styles, difficulties in regulating emotions and adverse childhood experiences were predictors of online sexual solicitation and exploitation. The results highlighted that interacting with strangers online generally or sexually, experiencing more frequent prior sexual abuse, less

difficulty in regulating emotions and lower preoccupied attachment traits significantly predicted online sexual solicitation or exploitation.

The qualitative study interviewed 2 victims and 5 professionals who had experienced or knew a victim who had experienced online sexual victimisation respectively. The results highlighted that some victims experienced poor psychological (i.e., mental health issues), interpersonal (i.e., problematic relationships with parents and peers) and behavioural (i.e., substance use) functioning. They also experienced more poly victimisation that occurred throughout their lives. Whereas, others experienced fewer issues and generally reported positive relationships with others, school experiences and fewer prior victimisation experiences. Overall, the PhD results identified several risk factors that were associated with children and young people being sexually solicited and exploited online. These are discussed below in relation to literature identified in the systematic review, newer literature (i.e., research published after the systematic review) and theoretical perspectives. Figure 3 provides a summary of the existing research (systematic review findings), as well as the contribution of the empirical studies to the literature.

Demographic factors

Gender. In relation to gender, the PhD thesis findings are consistent with law enforcement statistics and previous studies that used transcripts of offender and victim (Gijn-Grosvenor & Lamb, 2016; Santisteban & Gámez-Guadix, 2017). The results revealed that females were more likely to report online grooming and sexual exploitation experiences and be detected in comparison to males. However, the participants in the qualitative study reported that males are underrepresented for a few reasons. Firstly, males feel ashamed and humiliated of disclosing their abusive experiences. Secondly, there is a lack of interventions aimed at males for them to comfortably disclose their abuse. Lastly, males are not easily identified or referred to services in comparison to females. For example, they are not referred for sexual exploitation but, rather, are identified as being at risk later on during assessments by clinicians. This suggests that there is a need for interventions to be developed specifically for males that cater to their needs. There are organisations that exist in the United Kingdom, that focus on male sexual exploitation currently (e.g., the Blast Project). However, there should be a focus on making services for males of sexual exploitation more mainstream.

The qualitative study highlighted that, in some cases, male and females may be sexually exploited for different reasons. For example, a detective reported that one offender exploited male victims so he could exchange the indecent images with other offenders in exchange for indecent images of girls. This suggests that his sexual preference was for female children, however, he sexually exploited males in order to achieve his sexual goal and satisfaction. These findings suggest that it is important to consider the context in which the abuse of a male or female occurs. Understanding this can potentially contribute towards understanding the offenders aetiology, motivations and, in turn, effective treatment.

Age. In regards to age, the systematic review highlighted that the age range of victims who experienced online sexual solicitation was 13 to 17 years (Flanders et al., 2009; Ospina et al., 2009). Other studies that have explored victims of online sexual exploitation reported that victims were, on average, 13 years old when they encountered their abusive experiences (Whittle et al., 2014). This PhD found that victims' ages ranged from 6 to 18. This emphasises that, as well as adolescents, younger children are increasingly becoming targets of online sexual victimisation. This may be because younger children's online use (i.e., social networking) has increased over the years, their internet use is less regulated and less rules are implemented for younger adolescents (Livingstone et al., 2014; Ofcom, 2016). The existing literature has reported that the adolescent period (12 to 18 years) is related to identity formation which includes forming friendships, exploring sexuality, building romantic relationships and learning about sex (DeLamater & Friedrich, 2002; Erickson, 1950, 1963; Steinberg, 2008). This natural development can lead to vulnerability as adolescents use the internet to facilitate their identity, relationship and sexual development. This is supported by a victims account in chapter 6 who reported that he used the internet to learn about sexual homosexual relationships which, in turn, placed him at risk of encountering online sexual offenders. Thus, it may be that adolescents' natural developmental processes contribute towards them being sexually exploited online.

Considering the rise of younger children being targeted, it is important to consider young children and related risk factors and motivations that enabled them to engage with online sexual offenders. It may be useful to consider this in relation to their developmental stage. The theory of psychosocial development (Erickson, 1950) outlines that individuals aged 5 to 12 undergo the 'competence vs inferiority' stage. During this stage, children become increasingly affiliated with their peer groups, building self-esteem, and develop a sense of pride for of their accomplishments (Erickson, 1963). It is important for future research to consider how their

motivations for using the internet that can increase their vulnerability, offender strategies to groom and sexually exploit younger victims, as well as risk and resilience factors relating to this group. For example, offenders may not attempt to build an intimate relationship with younger children as they may not have developed an interest for exploring sexual or intimate relationships. Therefore, they may send immediate sexual requests and due to the naivety of the children they may respond to this. Understanding these factors can assist in the development of interventions for detecting vulnerable children in that age range.

The ecological model

The ecological model (Bronfenbrenner, 1979) provides a theoretical basis for development that can be applied to the context of online sexual victimisation vulnerability. The results indicate that disruption at the microsystem, mesosystem and exosystem levels can influence vulnerability to online sexual victimisation later on in life for some victims. The following section will thus discuss the role psychological (i.e., the individual), interpersonal (i.e., family and peers) and the environment (i.e., school, the care system) can contribute towards children and young people being sexually victimised online.

Psychological factors

Poor mental health. Systematic reviews, including the one conducted for the PhD programme, highlighted that poor psychological functioning (i.e., self-harm, depression, low mood) increases the likelihood of children or young people being sexually solicited or exploited (Ospina et al., 2010). Research that collected data from clinicians reported that psychological difficulties were commonly seen in the victims they treated, and national surveys of adolescents have identified mental health difficulties as a risk factor (Mitchell et al., 2007; Palmer, 2015). The study outlined in chapter 6 reported that victims of online grooming and sexual exploitation experiencing internalised and externalised difficulties. For instance, victims self-harmed, felt low, experienced low self-esteem and confidence, as well had aggressive tendencies and engaged in substance use and alcohol use.

Internalised behaviours such as feeling low self-esteem was a consistent finding reported throughout this PhD programme as well as previous literature (Ospina et al., 2010; Whittle et al., 2014). Low self-esteem can occur as a result of poor attachment and can lead to individuals seeking approval from others to regulate their self-esteem and self-worth (Harter, 1993).

Considering the grooming process, some offenders aim to flatter and compliment victims leading them to feel special (O'Connell, 2003; Webster et al., 2013). Therefore, those individuals who experienced low self-esteem may find it rewarding to be complimented, and offenders deliberately target these individuals as they believe that they are easier targets (Tener et al., 2015). The literature has also reported that individuals who experience internalised behaviours (i.e., depression, low self-esteem) are more likely to use the internet to fulfil their psychological needs (Bonetti et al., 2010). Studies have suggested that individuals who experience poor psychological functioning are motivated to use the internet to compensate for their poor social skills, seek comfort and support from others and find that engaging with online strangers is easier than interacting with offline friends (Barak et al., 2008). These findings are consistent with the social compensation hypothesis (Williams & Karau, 1991). Studies have also reported that individuals who experience poor psychological functioning are more likely to self-disclose online. This may be because they become disinhibited in the online environment and the lack of verbal cues enables them to disclose greater and be more intimate with online strangers (Suler, 2004). According to the DDM (Omarzu, 2000) individuals self-disclosure depends on the evaluation of the periceved risks and benefits. Therefore, individuals who experience psychological difficulties may percieve self-disclosing online more satisfying because they feel more comfortable and perceive their feelings to be accepted and supported. However, this can place them at risk of becoming 'suitable' victims and becoming targeted by a motivated offender (Cohen & Felson, 1979).

The qualitative study reported that victims of online grooming and sexual exploitation engaged in externalised behaviours such as alcohol use, substance use and aggression. These factors are theoretically linked with poor emotional regulation and impulsivity, and the qualitative study results supported this. For example, these individuals were experiencing negative and stressful situation in their offline lives (e.g., parents splitting, hostile relationships, were in foster placements). They were unable to effectively regulate their negative affect and resorted in taking substances, having alcohol and using the internet to interact with strangers to 'escape' from their problems. These individuals also experienced poor childhood experiences, lacked interpersonal functioning and experienced low self-esteem. These findings suggest that emotional dysregulation, along with other psychological and interpersonal factors, can play a role in victim vulnerability.

The quantiative study explored the extent of emotional regulation on online sexual victimisation using a valid and reliable measure among a sample of university students. The results indicated that emotional dysregulation, overall did not significantly predict the amount of sexual exploitation participants encountered. However, difficulties in controlling impulsive behaviours when feeling negative affect was significantly related to less frequent online sexual solicitation experiences. These findings contrast the qualitative findings that reported that higher emotional dysregulation related to greater online sexual victimisation. These findings can be attributed to the samples used in the qualitative study (mainly clinical victims) and the quantiative study (mainly university students). Differences in these samples and related implications are reported in chapter 5.

Attachment. Theories have suggested that poor psychological functioning is strongly influenced by an individual's early life experiences, particularly interpersonal relationships with caregivers (Bowlby, 1998; Goldberg, 2000). Poor bonds formed between children and their caregivers during infancy can lead to interpersonal difficulties, low self-worth and self-esteem, and craving intimacy and affection later on in life (Feeny & Noller, 1990; Lewis-Morrarty et al., 2015). Previous studies have not empirically investigated the role of attachment styles in relation to online sexual solicitation, grooming and exploitation. Therefore, these aspects were important to empirically investigate as it can offer an insight into the developmental processes that can create vulnerability.

The PhD results found that some attachment traits can act as protective factors, whereas, others can create vulnerability. The quantitative study results highlighted that higher levels of preoccupied attachment were related to individuals experiencing fewer sexual solicitations. However, the correlational analysis reported that preoccupied attachment increased the likelihood of participants experiencing more online sexual exploitation experiences. This study, however, did not provide evidence of contextual factors relating to attachment, online sexual experiences and other experiences the participants encountered during their adolescence. The qualitative study highlighted that victims of online grooming and sexual exploitation who appeared to experience insecure attachment were more likely to be sexually exploited (this is particularly true for the chaotic group which is discussed further below). They also experienced greater adverse childhood experiences, poor interpersonal relationships and psychological difficulties. Therefore, it may be that these individuals' multiple risk factors collectively contributed towards their vulnerability. However, the sample used in the

quantiative study may have experienced insecure attachment, however, they may have experienced positive social support or less victimisation experiences that buffered against the chance of them being sexually solicited.

The results of the correlational analysis conducted in the quantitative study indicated that secure and dismissive attachments can act as protective factors that prevent online sexual solicitation or exploitation from occurring. There are a couple of explanations that can explain this finding. Previous studies have reported that secure attachment style is related to experiencing security, higher self-confidence and self-esteem (Feeny & Noller, 1990; Lewis-Morrarty et al., 2015). Additionally, dismissive attachment styles are associated with less trust in others and being dismissive towards interpersonal relationships (Griffin & Bartholomew, 1994). Therefore, these psychological characteristics may protect against interacting with strangers online, building intimate relationships with offenders or complying to their sexual requests. In some cases, the grooming process is heavily focused on building intimacy, therefore, these psychological traits do not fit the offenders grooming methods (i.e., deliberately seeking vulnerable victims, forming relationships) (O'Connell, 2003). Thus, this may not make them a 'suitable' victim (Cohen & Felson, 1979). Secondly, the correlational analysis found that participants who scored higher on secure and dismissive attachment were significantly less likely to frequently engage in risky online behaviours. This suggests that their exposure to online sexual offenders was minimal, thus, limiting their chance of offenders encountering them (Cohen & Felson, 1979).

On the contrary, the results highlighted in the qualitative study suggested that some victims potentially formed secure attachments (e.g., those with supportive parents, experienced little or no mental health difficulties), however, they still experienced online sexual exploitation. These victims relate closely to the 'naïve/curious' group mentioned below. The findings suggest that these victims complied with the offender's sexual requests due to their curiosity to learn about relationships and nativity to the risks involved than to fulfil their intimacy and affection needs. However, little is known about these victims' backgrounds and traits to make firm conclusions about their attachment styles.

It is important to consider the underlying psychological mechanisms relating to these attachment patterns as they can potentially explain why individuals become vulnerable to being groomed and sexually exploited online. The results suggest that attachment patterns that relate to individuals craving intimacy, wanting love and affection, trusting others and high self-

disclosing increase the chance of online sexual exploitation occurring. These are all characteristics that are explained in Social Penetration Theory as being key in forming intimate relationships, as well as research exploring interpersonal relationship building (Altman & Taylor, 1973; Lucas et al., 2014; Sternberg, 1988). Thus, having a higher propensity to wanting to build intimate relationships may be useful for an offender to build rapport and trust so they can sexually exploit their victim (O'Connell, 2003).

Poly victimisation

Previous literature has reported that individuals who experienced different forms of victimisation experiences are more likely to experience online sexual victimisation (Beebe et al., 2004; May-Chahal et al., 2018; Noll et al., 2009). Studies generally focused on experiences that individuals encountered in the previous year of their lives (Mitchell, Finkelhor & Wolak., 2007; Ybarra, Leaf & Diener-West, 2004). These included online sexual solicitations, being bullied, physically and sexually abused. Thus, little research has focused on adverse and abusive experiences during infancy and childhood, and how this may relate to online sexual victimisation vulnerability. This PhD programme identified that some victims of online grooming and sexual exploitation experienced victimisation during infancy, childhood and adolescence. For example, the qualitative study reported that some victims experienced maladjustment in their homes during infancy (i.e., exposure to drugs, alcohol and domestic violence), sexual abuse and physical abuse and were later victims of physical and sexual abuse during adolescence. In addition, these victims were known to clinical services as a result of their psychological and interpersonal deficits as well as their poor family dynamics (Bakermans-Kranenburg & Ijzendoorn, 2008). More detail regarding these victims is discussed in the 'chaotic victim' section below.

However, participants used in the quantitative study highlighted that participants who were punished, experienced neglect and sexual abuse during childhood did not experience significantly higher levels of online sexual exploitation. The two empirical studies conducted in this PhD provided contradictory results. However, these findings can potentially be explained by pathways of sexually abused and neglected children throughout life, as well as the samples used in these studies. Previous literature has suggested that characteristics such as having a good education and positive peer and family support limits the likelihood of sexually abused victims experiencing further abuse (Domhardt et al., 2015). The quantiative study used a sample of university students. Therefore, in contrast to the victims in qualitative study

(clinical sample), they may have better resilience. There was no evidence of these individuals' social support or other psychological characteristic, therefore, there may be have been other social and psychological factors that protected them against further sexual abuse.

Previous studies and theories have suggested that individuals who are sexually abused as children develop a negative perception of themselves and others. They are usually fearful of intimate and close relationships, being hurt and distrust others (Briere & Elliott, 1994; Finkelhor & Browne, 1985; Mullen et al., 1994). Therefore, as noted in some grooming and sexual exploitation cases, offenders build an intimate relationship with victims (Black et al., 2015; O'Connell, 2003). However, individuals who associate intimate relationships with abuse may be reluctant to interact with offenders and form bonds. Therefore, this can lead to victims not engaging with online sexual offenders and complying with their sexual requests.

Alternatively, some victims of prior sexual abuse develop cognitions that relate to heightened sexualised behaviours and are prone to engage in risky behaviours that can place individuals in vulnerable positions (Abajobir et al., 2017). This can lead to individuals engaging in risky behaviours online that may be appealing to online sexual offenders. Also, some sexually abused victims become 'clingy' in interpersonal relationships, want to feel loved and wanted (Finkelhor & Browne, 1985; Ginty et al., 2017; Persson et al., 2015). Therefore, this vulnerability may make it easier for offenders to groom and sexually exploit victims (Webster et al., 2012). Additionally, these victims generally experience multiple victimisation experiences throughout their lives (Finkelhor et al., 2005; Higgins & McCabe, 2001). Previous literature suggests that individuals who suffer multiple victimisation experiences, particularly over a relatively brief timespan, are at high risk of enduring lasting physical and psychological harm (Finkelhor et al., 2011; Turner et al., 2010). Thus, it is imperative to identify the most vulnerable victims, protect them from additional harm, and treat them effectively to minimise harmful consequences. This is discussed further in the implication section below.

Interpersonal factors

The role of parents. The systematic review found that children and young peoples' relationship with their parents can influence victim vulnerability (Noll et al., 2009; Wells & Mitchell, 2008). The PhD results indicated that all types of parenting styles (i.e., authoritative, permissive, authoritarian, and neglectful) can influence victim vulnerability, however, each has a different pathway that leads to vulnerability (Baumrind, 1971). The qualitative study results indicated that some victims experienced a lack of appropriate care and poor nurturance from

their parents. These parents were alcohol dependant, took substances, exposed their children to drugs and alcohol, and failed to fulfil their basic human needs. These findings are indicative of neglectful parenting and victims who encountered this type of parenting were exposed to more adverse experiences throughout their lifetime, and displayed externalised and internalised behaviours (Lalor & McElvaney, 2010). One victim experienced neglectful parenting from her caregivers during childhood and then later experienced permissive parenting from her adoptive parent at around the time of the grooming and sexual exploitation. This can potentially indicate that the lack of parental control and discipline may been a risk factor, as well as her poor childhood experiences (Baumrind, 1971).

Research has suggested that individuals who experience neglectful parenting develop poor psychological systems and negative perceptions of themselves that relate to low self-esteem and self-worth (Chen, Dong & Zhou, 1997; Pinquart, 2017). Thus, when online sexual offender's offer support, affection and love to potential victims, their psychological needs may be met. Thus, they may be more susceptible to engage with offenders and comply with their sexual requests. Also, parent unavailability is a common characteristic among individuals who experienced neglectful parenting (Baumrind, 1971). This was apparent in some victims cases in chapter 6 and, consequently, they were removed from their family homes and placed into care. This lack of guardianship, combined with their psychological vulnerability, can make it easier for offenders to achieve isolation and trust from the victim, groom and sexual exploit them (Cohen & Felson, 1969; Noll et al., 2009).

The results also indicated that parent's unavailability and controlling approach can be risk factors of online grooming and sexual exploitation. The qualitative study findings suggested that a victim reported that his parent was 'strict', indicating that the parent had an authoritarian parenting style approach. In this circumstance, the parents controlling nature may relate to the victim using the internet to engage in risky online behaviours (i.e., talk sexually with online strangers). This finding is consistent with previous literature that suggests that parents controlling their children's internet use increases their risky internet usage, which can increase vulnerability (Livingstone & Helsper, 2008). Also, previous literature suggests that children who experience authoritarian parenting generally do not gain praise or are rewarded by their parents nor are their parents approachable (Baumrind, 1971; Brown & Iyengar, 2008). Thus, it may be that these individuals use the online environment to discuss their offline issues and, form relationships that are supportive and caring. This is supported by a victims account in the qualitative study who reported that his parent was strict and did not trust him to use the internet.

This led him to secretly use the internet to engage with offenders to learn about romantic relationship and form friendships with like minded individuals.

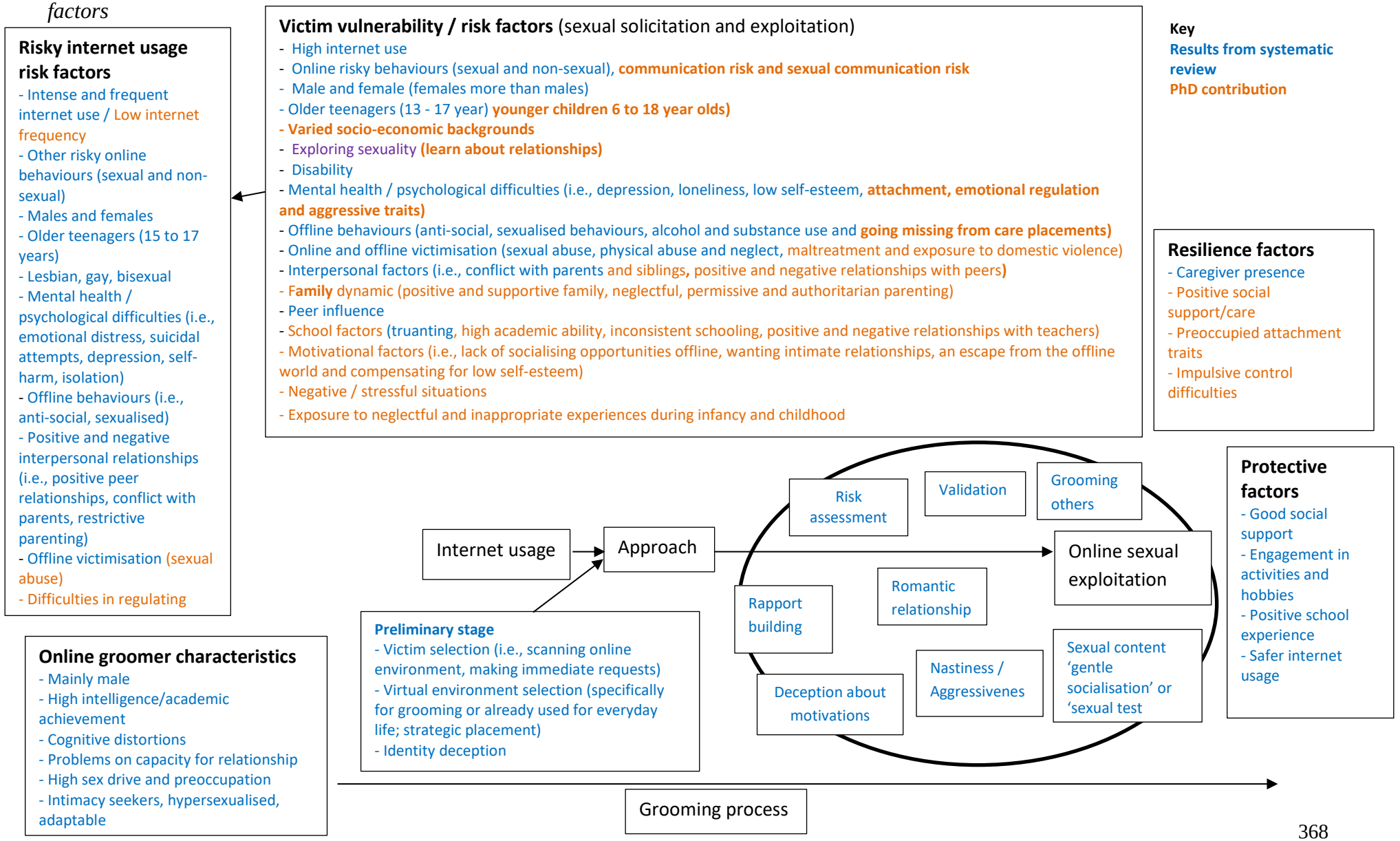
Overall, the PhD findings are consistent with previous theoretical perspectives relating to the grooming process and offender behaviour. Key theoretical models have highlighted the importance of strategic placement, victim and offender characteristics in grooming and sexual exploitation cases (Cohen & Felson, 1979, Olson et al., 2007; Webster et al., 2012). The theory of luring communication 'gaining access' stage (Olson et al. 2007) emphasises that offender characteristics are a key component for the sexual exploitation of a child or young person to occur. This qualtiative study indicated that offenders may groom and sexually exploit victims as a result of their own vulnerability. These offenders spent a period of time grooming the victim with the aim of building an intimate relationship and emotional connection (e.g., complimenting, flattering victims) with them. Previous studies have reported that online groomers experience loneliness and interpersonal difficulties (Briggs, Simon & Simon, 2010; Schulz et al. 2017; Webster et al., 2012), therefore, they may adopt this method to fulfil their own desire of wanting intimacy rather than immediate sexual gratification.

The results of the programme of research found that factors which create victim vulnerability that can also contribute towards the 'gaining access' and 'cycle of entrapment' stages. The results highlight that vulnerabilties such as low self-esteem, wanting to interact with others due to a lack of opportunities in the offline world, exploring sexuality, difficulties regulating emotions, interpersonal difficulties (e.g., conflict between siblings and parents) or a difficult family dynamic (e.g., parents divorcing) can exacerbate the 'cycle of entrapment' phase. For example, it may be easier for an offender to build desceptive trust with a victim who experiences psychological issues (e.g., wanting to be loved and affection). It may also be easier to isolate a victim who is experiencing difficulties/conflict with their family or who is in care due to a lack of bonds and presence of guardians. In combination, this enables the cycle of entrapment phase as some offenders build desceptive trust with victims by fulfilling their own desires (e.g., wanting intimacy) and using methods such as complimenting and flattering ther victim which can potentially fulful the needs of victims experiencing psychological and interpersonal difficulties.

According to Social Penetration Theory (Altman & Taylor, 1973), individuals' behaviour is driven by what they percieve to be rewarding and satisfying. As highlighted in the quantitative

study, communicating more frequently with strangers online in a sexual manner increased the frequency of sexual solicitation requests, as well as sexually exploitative experiences. It may be that individuals find speaking to online strangers in a sexual manner rewarding as a result of developmental factors. The Theory of Psychosocial Development (Erickson, 1950, 1963) highlighted that adolescence is a period where individuals want to form intimate and sexual relationships. Therefore, engaging in online risky behaviours may be rewarding for individuals as they can expland their social network, explore their sexuality and develop their identity. These needs may outweight the related risks associated with their online behaviour. This may also increase their visibility and 'suitability' to motivated offenders (Cohen & Felson, 1979; Malesky, 2007).

Figure 3. Theoretical framework including online groomer characteristics, the grooming process, victim vulnerability, resilience and protective factors



Victim typology

The qualitative findings identified three distinct pathways that lead to the online sexual exploitation of children and young people. These are: naïve / curious victims, chaotic victims and situational vulnerability victims. This victim typology differed in relation to parental care and supervision during childhood and adolescence, support networks, relationships with peers, offline behaviours (i.e., delinquent behaviours, alcohol and substance use), psychological factors and other victimisation experiences. A summary of the characteristics commonly related to each category are included in table 54.

Naïve/curious victims. The naïve / curious group of victims comprised of the smallest group of victims. This group generally displayed little or no apparent risk factors in the offline environment. They engaged in online risky behaviours (i.e., interacting with strangers), yet had little awareness of the risks associated with engaging with strangers online. Their motivations to engage with offenders related to curiosity around exploring friendships and romantic relationships.

These victims typically experienced positive and supportive parenting, and a relatively stable family background and home environment. This group also experienced little or no other victimisation experiences, and few mental health difficulties compared to the other groups. Those who did experience mental health difficulties generally experienced low self-esteem. For example, one victim originated from a stable family background and supportive parents, however, experienced bullying (i.e., name calling) and low self-esteem.

The naïve / curious victim group is partially consistent with Davidson et al.'s (2016) 'inquisitive non-sexual' group. This group generally exhibited little or no offline risk-taking behaviours such as engagement in anti-social behaviour (i.e., truanting school, substance and alcohol use) or association with delinquent or problematic peers. However, similar to the 'inquisitive non-sexual' victims, this group engaged in more risk-taking behaviours online (e.g., interacting with strangers met only online). Unlike the 'inquisitive sexual' group, naïve / curious victims did not meet the offender offline nor did they experience heightened levels of offline victimisation. Moreover, Webster et al. (2012) identified a 'risk-taking' group of victims. These are victims who become disinhibited, seek adventure, are outgoing and confident. However, these results indicate victims experienced low self-esteem, wanted to be liked, used the internet to seek approval from others and compensate for a lack of social networking opportunities in the offline environment. These findings are, therefore, consistent

with the social compensation hypothesis (Williams & Karau, 1991) as opposed to the rich-get-richer hypothesis (Sheldon, 2008).

In relation to the quantiative study, it could be that individuals who experienced online sexual solicitation, low emotional regulation difficulties and less preoccupied attachment traits did not engage with offenders as they did not want intimacy or to build a close romantic relationship. But rather, they used the internet to learn about romantic relationships and this lead them to be sexually victimised. It may also be that the disinhibition effect (Suler, 2004) is heightened for 'naïve/curious' victims. For example, a detective participant in the qualitative study reported that these victims would not usually interact with strangers or take risks in the offline environment like they do online. This is in contrast to 'chaotic' victims who are vulnerable to online and offline sexual abuse, and their vulnerability is an extension of their offline vulnerability.

This typology suggests that these victims do not necessarily display 'typical' risk factors that are reported in clinical, child support, law enforcement samples that discuss victim characteristics (Noll et al., 2009; Palmer, 2015). Therefore, it is important that children who have supportive and good relationships with their parents, are performing well at school and display minimal psychological difficulties, are also safeguarded from online sexual abuse. It is important for teachers, parents and caregivers to be involved in their detection and prevention as clinical staff are not likely to encounter this group of victims. Therefore, it is important that teachers and caregivers receive training that incorporate this group of victims, their related vulnerability and motivations to use the internet/engage with offenders.

Chaotic victims. These victims, in comparison to the other groups, were highly complex and experienced deficits in many aspects in their lives. They exhibited risk factors for sexual victimisation in the online and offline environment. The frequency of victimisation experiences and the extent of mental health, interpersonal and behavioural difficulties were greater among this group of victims in comparison to the other groups. Additionally, 'chaotic' victims experienced the most severe adverse childhood and adolescent experiences, greater poly-victimisation, and exhibited more online and offline risk factors in comparison to the other groups. In relation to sexual and non-sexual victimisation experiences, victims typically had experienced previous physical and sexual abuse, were exposed to domestic violence and physically neglected during infancy. In addition, these victims encountered further sexual and

physical assaults and bullying, and were groomed and sexually exploited offline. Thus, chaotic victims appear to be highly vulnerable in the online and offline environment.

Another key theme among this group of victims was that they experienced neglectful and poor parenting. These victims' parents were involved in criminality, engaged in drug and alcohol use and were aggressive and violent within the family home. The parents were neglectful towards their children as they did not provide a safe environment (i.e., kept drug paraphernalia within the family home) or provide sufficient or appropriate care (i.e., taking them to school, providing clean clothes and food). Also, these victims were exposed to inappropriate situations by their parents (e.g., being taking to clubs or pubs during childhood). Consequently, the victims were associated with social services (i.e., on support plans) or removed from the family home and placed in foster care or children care homes. This typology reveals that victims experienced highly problematic home and family environments, caregiver disruption and extreme maltreatment and abuse throughout their infancy, childhood and adolescent lives.

These victims also appeared to experience greater psychological difficulties in comparison to the other groups. Internalised (i.e., depression, low self-esteem, self-harm) and externalised behaviours (i.e., substance use, alcohol use, aggression) were common among this group of victims. These victims generally did not experience emotional warmth and secure attachment bonds with caregivers thus experiencing intimacy and interpersonal deficits (i.e., wanting to be loved and hostility to others). These victims were also known to CAMHS services, and exhibited greater offline behavioural and interpersonal problematic behaviours. Victims typically engaged in anti-social behaviour such as going missing from home, truanting school and consuming alcohol / drugs. They also engaged with delinquent and unstable peers and displayed offline sexualised behaviours (e.g., some victims were pregnant during adolescence). Moreover, these victims also engaged in risky online behaviours (i.e., having thousands of friends online).

This category is consistent with previous literature that classified victims of online sexual solicitation. For instance, the chaotic group closely resembles Webster et al.'s (2012) 'vulnerable victim' group. This group includes victims who experience loneliness, low self-esteem, psychological disorders, concurrent sexual abuse, problematic home life and difficult relationships with parents. They also seek attention, affection and a loving relationship online. The 'chaotic' group is also similar in some respects to Davidson et al.'s (2016) 'risk-taking aggressive' group. This group is categorised as victims who are aggressive towards others

online and offline, experience other forms of online and offline victimisation, are harassed as well as perpetrating harassment. They also exhibited the highest online and offline risk taking behaviours, as well as anti-social and problematic offline behaviour (i.e., issues with authority, truancy, school exclusion, drug and alcohol use).

In summary, this category highlights a group of victims whose development is impaired as they encounter significant behavioural, psychological and interpersonal issues during infancy, childhood and adolescence. These difficulties relate to poor early parenting and attachment, problematic peer and family dynamics, psychological difficulties and exposure to violence, physical and sexual abuse. They also appear to experience low self-worth, low self-esteem, feel betrayed by their caregivers, feeling of being unloved and developed highly sexualised behaviours and self-destructive tendencies. Thus, these victims may be vulnerable due to their propensity to sexualised behaviours and wanting affection and love. This group also generally display risk factors that relate to early experiences and during the offence, and this vulnerability translates into the online environment.

The findings in chapter 5 reported that these victims generally engage in improper schooling as some are not attending school or receiving education via mainstream schools. They are generally more involved with clinical and social services. Therefore, it is important to have intervention resources targeted towards professionals who are more likely to encounter these victims such as clinicians in mental health services, social service personnel, foster carers or adoptive parents.

Situational vulnerability victims. Similar to the chaotic victim group, this group also exhibited online and offline risk factors. However, these victims did not experience extreme maltreatment and, in comparison, experienced less victimisation experiences, mental health, behavioural and interpersonal difficulties. This group generally did not experience severe maltreatment, sexual or physical abuse during infancy. However, they were exposed to hostility and, in some cases, aggression between their biological parents during childhood. 'Situational vulnerability' victim generally lived with their biological parents during childhood, however, they experienced family disruption later on in life (i.e., parents split or divorced. These victims reported that they experienced a positive relationship with at least one parent. They were also not involved with social services or subjected to neglect or severe maltreatment. For example, one victim reported that her parents separated and this made her feel angry. As a consequence, she consumed alcohol and substances as a way of coping with her situation.

Additionally, victims experienced psychological difficulties such as engaging in substance use, alcohol use, depression, low self-esteem and confidence. Some victims also truanted from school. Moreover, this group experienced non-sexual victimisation experiences such as being bullied, physically assaulted and exposed to domestic violence. Despite this, victims reported a positive school environment as well as positive peer relationships.

Key distinguishing factors between 'situational vulnerability' and the 'chaotic' victims were childhood experiences, the extent and frequency of poly-victimisation, early caregiver disruption and offline behavioural characteristics. For instance, 'moderate vulnerability' experience little or no victimisation during infancy whereas chaotic victims encounter multiple victimisation (i.e., maltreatment, neglect, physical and sexual abuse) during their early years. Additionally, 'moderate vulnerability' victims experience a relatively stable family dynamic during infancy and engage in less anti-social behaviour in comparison to the chaotic victims. It is important that teachers as well as parents and caregivers are trained about these victims and their vulnerability. Perhaps it would be beneficial to identify these victims as vulnerable via psychological wellbeing checks conducted in schools. These can include an online component that gathers information about adolescents' internet use, an awareness of the individual's sexuality, issues at home (i.e., parents splitting) and supporting these individuals needs. Specific recommendations for schools are discussed below.

Table 54. A summary of online sexual exploitation victim typologies

Victim category	Common characteristics
Naïve/curious victims	Positive and supportive parenting Positive peer relationships Few victimisation experiences Few psychological difficulties
Chaotic victims	Adverse childhood experiences Neglectful parenting during childhood Poor parental relationships during adolescence Encountered social care / foster placements Poor peer relationships Poly victimisation experiences through infancy, childhood and adolescence Poor psychological functioning Offline problematic behaviours
Situational vulnerability victims	Positive childhood Hostile/problematic relationships with parents Positive social networks Psychological issues Offline problematic behaviours Poly victimisation experiences

The table above provides a summary of the typology developed by this PhD. This typology supported previous typologies reported by Davidson et al. (2016), Palmer (2015) and Webster et al. (2012) which are summarised in table 55 in relation to the categories specified by the typology in this PhD. These studies used samples of young people, child protection professionals and offenders respectively, however, this typology expanded these findings by collating information from different perspectives (e.g., victims, law enforcement and child protection personnel). Thus, providing a holistic understanding of victim characteristics. There are issues relating to the different samples that could result in a biased understanding of the different victim categories (e.g., professionals being more likely to encounter 'chaotic' victims due to their characteristics resulting in referrals to child protection services) (these are outlined in chapter 6). However, the findings align with previous findings. For example, in this PhD study 'chaotic' victims were referenced more by child protection personnel, however, offenders and young people reported similar characteristics (e.g., vulnerable victims) (Webster et al., 2012). Similarly, 'naïve / curious' victims were described more frequently by law enforcement personnel and less by child protection professionals in this study. However, they were also reported by professionals in Palmer (2015) study. These results, therefore, indicate the findings are consistent across studies that used other samples.

Table 55. 'Curious/naïve', 'chaotic' and 'situational' victims in relation to previous typologies

	Davidson et al. (2016)	Webster et al. (2012)	Palmer (2015)
Curious / naïve		'Risk taking victim' (partially similar) (i.e., disinhibited, seek adenture, less in known about the family, feel they have control, open to blackmail)	'No risk' group (i.e., supportive families, positive peer relationships, high achievers at school)
Chaotic		'Vulnerable' victims (i.e., adverse childhood experiences, psychological difficulties, wanting affection)	
Situational	Risk taking aggressive adolescent (i.e., higher risk taking offline and online, anti-social offline behaviours, trauancy, alcohol use)		

Directions for future research

This PhD thesis has provided a better understanding of psychological, developmental and interpersonal risk and resilience factors associated with online grooming and sexual exploitation. It explored constructs that had not previously been empirically investigated (i.e., attachment, emotional regulation), as well as expanded previous typologies that related to victims of online grooming and sexual exploitation (Webster et al., 2012). The PhD research was exploratory and, consequently, highlighted possible explanations that can also contribute towards online sexual victimisation vulnerability and resilience. For example, low self-esteem, self-destructive tendencies, self-control, sexual attitudes, peer norms and attitudes, parenting relationships, social and parental support. The latter involves parental care, quality of the child and parents relationship, connectedness, support and involvement in a victims lives during infancy and adolescence. Future research should empirically investigate these factors in relation to risk and resilience factors. This can ultimately provide a better understanding of the psychological mechanisms that underlie vulnerability. Also, these findings should be considered in relation to the grooming and sexual exploitation processes, as well as offender motivations. This can provide a better understanding of characteristics relating to the different victim pathways as well as the grooming methods that relate to each pathway.

The PhD research has also highlighted a typology that demonstrates different pathways that lead to online grooming and sexual exploitation vulnerability. This typology included victims who were linked with clinical services, law enforcement and participants who never reported their experiences to authority or parents. It is worth noting that this typology is exploratory and is based on a small sample, therefore, it is not possible to formulate firm conclusions. Therefore, it is important for further research to validate this typology by using qualitative methods, quantiative measures and larger sample sizes. These factors should be considered in different samples of victims (i.e., known and unknown victims, clinical and non-clinical samples). There may be some characteristics that may be more prevalent in a clinical sample (e.g., higher emotional dysregulation, attachment issues) that can influence vulnerability. These therefore have practical implications for professionals (highlighted below).

Understanding the characteristics listed above will enable the development of a more comprehensive theoretical model of online sexual exploitation which can provide healthcare professionals, law enforcement personnel, teachers, parents and social workers with further knowledge about these factors and inform strategies for detecting and safeguarding vulnerable

young people. It will also allow professionals to increase resilience and protective factors against online sexual exploitation by informing the development of internet safety education for parents and adolescents.

Practical implications

The PhD programme has enabled a broader understanding of risk and resilience factors among victims known to authorities and does who were not. Thus, these findings have particular practical relevance to stakeholders and organisations that aim to reduce online grooming and sexual exploitation of children and young people. Many organisations in the United Kingdom have developed and implemented initiatives to detect and prevent sexual abuse of children and young people online. Organisations (e.g., Marie Collins Foundation, CEOP's Thinkuknow, Centre of Expertise on Child Sexual Abuse and Lucy Faithful organisation) aim to provide resources to educate professionals and parents, and train and empower staff to detect and protect victims of online sexual exploitation. Additionally, Thinkuknow provides resources for children and young people (aged 5 to 14 and over) to build resilience towards the risk of online child sexual exploitation. The initiatives include clinical professionals (i.e., CAMHS personnel, therapists, school nurses and psychologists), teachers, social care staff (i.e., foster carers, social workers) and law enforcement. This also benefits children and young people as well as parents and carers. The previous chapters have highlighted practical implications, however, this section will report implications for different stakeholders in more depth.

Clinical services. The above findings have reported that particular groups of individuals are at risk of being sexually solicited, groomed and exploited and there are different pathways that lead to vulnerability. It is therefore important that resources and training aimed at detecting vulnerable victims reflects these findings. For example, the results indicate that the 'chaotic' victim profile is related to individuals who encountered social services and/or clinical therapeutic services. These individuals generally experience greater psychological difficulties, abusive histories, poor and neglectful parenting which is usually the reason why these individuals encounter clinical services, are adopted or fostered. The results have indicated these individuals are highly complex, experience offline sexual victimisation and are vulnerable to online and offline sexual victimisation. This highlights that staff who are more likely to encounter these individuals (i.e., social workers, clinicians, psychologists) should be trained specifically on these victims risk and resilience factors.

This type of training for staff currently exists in child protection services. However, previous research highlights that training is inconsistent and staff lack confidence in detecting vulnerable victims (NSPCC, 2014). As these results highlight this is a common group that is vulnerable, it is important these staff members receive specific and specialised training relating to their typology. The PhD results indicate that these individuals have poorer attachment, higher emotional dysregulation and experience more internalised and externalised behaviours. Therefore, these staff should receive consistent training that specialises in risk factors apparent in clinical victims. Also, the results highlighted in chapter 6 indicated that having a supportive staff network for those in clinical services can be a resilience factor. Therefore, it is important to include this in practice to build resilience. However, this finding is based on 1 participants account, therefore, it is worth empirically exploring this aspect in more detail.

Schools. The PhD results are also beneficial for schools. Ofcom (2014) reported that schools are involved in initiates to promote internet safety such as annual talks from NSPCC or police representatives, take home contracts for pupils to share with their parents and showing them videos about e-safety. These are positive steps being taken to reduce online sexual exploitation via schools, however, this PhD thesis can provide recommendations for school staff. Firstly, training for teachers should incorporate the variety of risk factors illustrated in this PhD. This includes children who are exploring their sexuality, are truanting from school, come from poorer and more disruptive family backgrounds as well as those who are bright, perform well academically and show no apparent risk factors offline. Thus, if teachers are able to identify these risk factors then therapeutic work can commence to build skills and resilience within the child.

It may be important for schools to promote positive and supportive relationships between teachers and pupil that can act as a protective factor. It is also important that schools create offline spaces where adolescents can safely discuss relationships and address their psychological needs (i.e., isolation) rather than explore these online. In the UK, Relationships and Sex Education (RSE) is a statutory requirement and as part of the curriculum children and young people will receive education relating to principles and skills involved in positive relationship building. This may be a suitable place for pupils to be educated about the abusive experiences that occur online and healthy relationships. It is also important that prevention and detection initiatives are implemented for younger children in primary schools as there is an increasing number of children and young people being sexually solicited and exploited online.

CONCLUSION

In summary, this PhD has demonstrated that vulnerability to online grooming and sexual exploitation includes multiple risk factors that are interconnected. This PhD thesis has expanded on the literature by exploring factors that occur during the lifespan of an individuals life that can create vulnerability or increase resilience to online grooming and sexual exploitation. These factors include disruption in interpersonal relationships, victimisation experiences, psychological issues and online and offline problematic behaviours that occur during infancy, childhood and adolescence. Importantly, this PhD has highlighted that pathways to vulnerability differ in relation to victim motivations, psychological, interpersonal and behavioural functioning. These findings have contributed significantly towards the literature and have provided a basis for future research to further explore risk and resilience factors.

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APPENDIX

Appendix 1

Screening inclusion criteria

Type of source? E.g. journal, book	
Is it a primary study?	
Is the publication in English?	
Is it related to the following topics: 1) Predictors of adolescents engaging in online risk taking behaviours 2) Risk and/or protective factors of OCSE victims 3) Internet groomers characteristics 4) Adults grooming minors online for sexual purposes	

Decision Include for further examination Exclude

Full inclusion criteria

1) Frequency and predictors of adolescent's engaging in risky online behaviours

Population	• Youth aged between 10 and 19 who use the internet on their mobile phones or computer to engage in any of the following risk taking behaviours: 1) Posting personal information online (personal information defined as displaying online any of the following information at least once such as real name, telephone number, school name, age or year born or pictures of oneself) (Ybarra et al., 2007) 2) Sending personal information online (defined as sending one's real name, telephone number, school name, age or year born, pictures of oneself to someone met online) (Ybarra et al., 2007) 3) Talking with someone met online (Ybarra et al., 2007) 4) Have people in buddy list known only online (Ybarra et al., 2007) 5) Vising chatrooms (Ybarra & Finkelhor., 2007) 6) Meeting strangers offline that they first met online (Whittle at al., 2014)
Issue	• Factors that influence youth engaging in risk taking behaviours online.
Comparators	• No comparators • Youth who do not engage in risky internet behaviours
Outcomes	• Demographics • Internet use • Online and offline risky behaviours • Childhood experiences (e.g. attachment, sexual and physical abuse, maltreatment) • Relationship with others (i.e., family, peers, partners and teachers) • Socio-affective factors (i.e., loneliness, self-esteem)

	• School environment • Psychological environment (personality, cognitive functioning, coping skills, emotion and behaviour regulation, mental health) • Environmental factors • Internet safety (i.e., family/parental awareness, young person's understanding, school internet safety education, internet restrictions)
Language	• Studies published in English language only
Type of study	• Randomized controlled clinical trials, controlled clinical trials, non-randomized clinical trials, longitudinal studies, prospective and retrospective cohort studies, cross sectional studies, case series, case control studies, observational and qualitative research.

2) Vulnerability and protective factors

Population	• Children and/or youth (under the age of 18 of both sexes) who have experienced online sexual solicitation, grooming and/or sexual exploitation
Issue	• Online sexual exploitation (unwanted sexual solicitation, grooming and/or sexual exploitation) of participants under the age of 18
Comparators	• No comparators • Participants who were not abused online
Outcomes	• Demographics • Internet use • Online and offline risky behaviour • Childhood experiences (e.g. attachment, sexual and physical abuse, maltreatment) • Relationship with others (i.e., family, peers, partners and teachers) • Socio-affective factors (i.e., loneliness, self-esteem) • School environment • Psychological environment (personality, cognitive functioning, coping skills, emotion and behaviour regulation, mental health) • Environmental factors • Internet safety (i.e., family/parental awareness, young person's understanding, school internet safety education, internet restrictions)
Language	• Studies published in English language only
Type of study	• Randomized controlled clinical trials, controlled clinical trials, non-randomized clinical trials, longitudinal studies, prospective and retrospective cohort studies, cross sectional studies, case series, case control studies, observational and qualitative research.

3) OCSE perpetration studies

Population	• Internet sex offenders who sexually solicited, groomed and/or sexually abused a minor on the internet that resulted in online or physical sexual abuse
Issue	• Adult sex offenders who groom and exploit under 18's via the internet
Comparators	• No comparators • IIOC offenders

	• Contact offenders
Outcomes	• Demographics • Internet use • Childhood experiences (e.g. attachment, sexual and physical abuse, maltreatment) • Relationship with others (i.e., family, peers, partners and teachers) • Socio-affective factors (i.e., loneliness, self-esteem, victim empathy, intimacy deficits) • Cognitive distortions • Sexual deviancy • Psychological factors (i.e., personality traits/disorder, mental health, coping skills, emotion and behaviour regulation) • Environmental factors • Substance/alcohol use • Prior criminal history • Social factor
Language	• Studies published in English language only
Type of study	• Randomized controlled clinical trials, controlled clinical trials, non-randomized clinical trials, longitudinal studies, prospective and retrospective cohort studies, cross sectional studies, case series, case control studies, observational and qualitative research.

4) Grooming offence process

Population	• Adult sex offenders who sexually solicited, groomed and/or sexually abused (either online of physically) a young person on the internet
Issue	• The process involved in an offender grooming a young person (aged under 18) online.
Outcomes	• Context of the internet (i.e., SNS, chat rooms) • Techniques used to groom a minor • Grooming stages
Language	• Studies published in English language only
Type of study	• Qualitative and qualitative studies

Overall decision Include Exclude

Appendix 2

Searches for adolescent risk taking behaviours

Search A
risky internet behaviour*

Search B

1) internet OR cyber OR online OR social network* OR social media OR sexting OR Facebook OR Twitter OR myspace OR chat room* OR mobile device* OR sexting OR websex

AND

2) adolescen* OR minor* OR youth* OR teen* OR young person OR victim* OR child*

AND

3) risk tak* OR "thrill seek*" OR "sensation seek*"

Search C
1 AND 2 AND 3 AND

4) risk factor* OR protective factor* OR vulnerab* OR trait* OR attribute* OR character* OR resistan* OR modus operandi

Searches for OCSE victimisation
Search D
1 AND 2

5) groom* OR abuse* OR exploit* OR solicit* OR indecent image* OR porn* OR "sex* abuse"

Search E
1 AND 2 AND 4 AND 5

Searches for the grooming offence process
Search F
1 AND 5

Searches for OCSE perpetration
Search G
1
AND

6) "Sex* offender* OR "sex* perpetrator*" OR indecent image* OR "indecent image* of child*" OR paedophil* OR hebephil* OR paraphili* OR child porn*

Search H
1 AND 2 AND 6

The following keywords were used for Zetoc and Ethos:
Online groom*
Sexual abuse
Sexual exploitation

Internet sex* victim*
Internet sex* offender*
Sexual solicit*
risky internet behaviour*

Appendix 3

Data extraction for OCSE victim vulnerability and resistance

General information	
Date form completed	
Publication type e.g. journal, conference paper	

Study characteristics

		Source
Study name		
Authors		
Year of study		
Country of publication		
Country of publication		
Study aim(s)		
Type of study		
Type of offence endured (e.g. sexual solicitation, online or offline sexual exploitation)		
Internet context (e.g. chat rooms, SNSs)		

No. of participants All participants No. of OCSE victims only		
Sample (e.g. clinical, student)		
Sampling (e.g. opportunity, stratified)		
Weight in analysis		
Frequency of sexual abuse		
When was data collected?		
Data collection technique (interviews, psychometrics, self-reports) If data is secondary then note where the data was obtained		
When was secondary data collected?		

Scales used and what did these scales measure? Report reliability and validity scores		
Type of analysis used		

Participant characteristics (only those that have endured online sexual solicitation, grooming and, subsequently online or offline sexual abuse)

		Source
Age At the time of offence At the time of the study		
Gender		
Sexuality		
Ethnicity		
Nationality		
Employment status		
Relationship status		
Socio-economic status		

Study results

	Risk factors	Protective factors	Source
Demographics Age Gender Other			
Internet use Frequency Where is internet used? Problematic internet use Other			
Risky behaviours Online Offline			

Developmental factors (i.e. childhood experiences, attachment, sexual or physical abuse)			
Interpersonal factors Relationship with family Relationship with peers Relationship with others (e.g. teachers, partners)			
Socio-affective factors (i.e. loneliness, self-esteem)			

Social factors School			
Psychological factors Personality Cognitive functioning Coping skills Emotional and behavioural regulation Mental health Other			

Delinquency Self Family			
Substance/alcohol use			
Negative experiences			
Positive experiences			
Environmental factors			

Internet safety Family/parental awareness Own understanding School internet safety education Internet restrictions			

Author(s) reflexivity Strengths Limitations	
Author(s) recommendations for practice	

Data extraction form for predictors of adolescent online risk taking

General information	
Date form completed	
Publication type e.g. journal, conference paper	

Study characteristics

	Risk factors/predictors	Source
Study name		
Authors		
Year of study		
Country of publication		
Country of study		
Study aim(s)		
Type of study		
No. of all participants No. of participants who engaged in risky behaviour		
Sample (e.g. clinical, student, youth)		
Sampling (e.g. opportunity, stratified)		
Weight in analysis		
When was data collected?		

Data collection technique (interviews, psychometrics, self-reports) If data is secondary then note where the data was obtained		
When was secondary data collected?		
Scales used and what did these scales measure? Report reliability and validity scores		
Type of analysis used		

Participant characteristics

	All participants	Those participants who engage in the internet risk taking behaviours	Source
Age			
Gender			
Sexuality			
Ethnicity			
Nationality			
Employment status			

Relationship status			
Socio-economic status			
What risky behaviour(s) were encountered? How were these risky behaviours measured?			

Study results

	Significant findings	Non-significant findings	Source
Demographics Age Gender Other			
Internet use Frequency			

Where was internet used? Problematic internet use Other			
Risky behaviours Online Offline			
Developmental factors (i.e. childhood experiences, attachment, sexual or physical abuse)			

Interpersonal factors relationship with family Relationship with peers Relationship with others (e.g. teachers, partners)			
Family background (e.g. family demographics)			
Socio-affective factors (i.e. loneliness, self-esteem)			

Social factors (e.g. school)			
Psychological factors Personality Cognitive functioning Coping skills Emotional and behavioural regulation Mental health Other			

Delinquency Self Family			
Substance/ Alcohol use			
Environmental factors			
Internet safety Family/parental awareness Own understanding of online risk			

School internet safety education Internet restrictions			
Authors reflexivity Strengths Limitations			
Author's recommendations for practice			

Data extraction form for the grooming offence process

General information	
Date form completed	
Publication type e.g. journal, conference paper	

Study characteristics

		Source
Study name		
Authors		
Year of study		
Country of publication		
Country where the offence took place		
Study aim(s)		
Type of study		
Number of participants/transcripts		
How was data collected?(interviews, psychometrics, self-reports)		
Type of analysis used		
Length of grooming		
What did the offence lead to? (e.g. online sexual abuse, physical meeting etc.)		

Perpetrator characteristics Age Gender Other		
Victim characteristics Was a decoy used? Age Gender Other		

Study results

		Source
Context of the internet (i.e., chat rooms, SNSs)		
Identification of potential victims		
Grooming stages		

Author(s) reflexivity Strengths Limitations	
Author(s) recommendations for practice	

Data extraction form for internet sex offender characteristics

General information	
Date form completed	
Publication type e.g. journal, conference paper	

Study characteristics

		Source
Study name		
Authors		
Year of study		
Country of publication		
Country where the offence took place		
Study aim(s)		
Type of study		
No. of all participants		

No. of participants who committed internet initiated sex offences		
Comparison groups (if used) No. of participants for each group Did this study divide the internet sex offenders into subgroups? If so, which groups? No. of participants for each group		
Sample (e.g. clinical, student, convicted)		
Sampling (e.g. opportunity, stratified)		
Weight in analysis		
Type of analysis used		
When was data collected? Was this pre or post offence/arrest?		
Data collection technique (interviews, psychometrics, transcripts) If data is secondary then note where the data was obtained		

When was secondary data collected?		
Scales used and what did these scales measure? Report reliability and validity scores		

Participant characteristics

Perpetrator characteristics	IIOC offenders/groomers (specify if this study determines both or just one type of offender. If separate report results for each group separately)	Other categories (e.g. fantasy driven/contact driven)	Mixed offenders	Contact only	Source
Age At the time offence At the time of study					

Gender					
Sexuality					
Ethnicity					
Nationality					
Employment status					
Relationship status					
Socio-economic status					
Previous convictions					

Type of offence committed Provide description of offence					
Internet context (e.g. chat room, SNSs)					

Victim characteristics	(at the time of the offence)	Source
Was a decoy used?		
Age		
Gender		
Other characteristics		

Study results (Internet sex offenders only)

	Both IIOC offenders and groomers Significant and non-significant results	IIOC only offenders Significant and non-significant results	Groomers only Significant and non-significant results	Source
Demographics Age Gender Relationship status Employment Other				

Internet use Frequency (is it excessive?) Where was the internet used? Problematic use Other				
Developmental factors (i.e. childhood experiences, attachment, sexual or physical abuse)				

Interpersonal factors Relationship with peers Relationship with family Relationship with partners Relationship with others				

Socio-affective factors (i.e. loneliness, self-esteem, victim empathy, intimacy deficits)				
Cognitive distortions				
Sexual deviancy				

Psychological factors (personality types/disorder, impulsivity, risky behaviours, mental health, coping skills, emotional and behavioural regulation)				

Environmental factors				
Substance/alcohol use				
Negative experiences				
Previous criminal history				
Social factors				

Study results (fill in the boxes below with comparators and/or subgroups used e.g. mixed offenders, contact only, fantasy driven, contact driven)

	Significant and non-significant results	Significant and non-significant results	Significant and non-significant results	Source
Demographics Age Gender Relationship status Employment Other				
Internet use Frequency (is it excessive?)				

Where was the internet used? Problematic use Other				
Developmental factors (i.e. childhood experiences, attachment, sexual or physical abuse)				

Interpersonal factors Relationship with peers Relationship with family Relationship with partners Relationship with others				

Socio-affective factors (i.e. loneliness, self-esteem, victim empathy, intimacy deficits)				
Cognitive distortions				
Sexual deviancy				

Psychological factors (personality types/disorder, impulsivity, risky behaviours, mental health, coping skills, emotional and behavioural regulation)				

Environmental factors				
Substance/alcohol use				
Previous criminal history				
Negative experiences				

Author(s) reflexivity Strengths Limitations	
Author(s) recommendations for practice	

Appendix 4

A study investigating internet use, emotions, interpersonal relationships and online sexual experiences

Participant information page

My name is Saqba Batool and I am a Psychology PhD researcher at the University of Central Lancashire. I am currently conducting a research project under the supervision of Dr Jo Bryce that aims to investigate internet use, childhood experiences, emotional regulation, relationships with others and online sexual experiences during adolescence (i.e., when you were under the age of 16).

Participants must be aged between 18 and 30, and have been active users of the internet when aged under 16.

If you agree to participate, you will be required to complete a questionnaire that will take approximately 20 minutes to complete.

Some questions relate to your own online and offline sexual experiences (e.g., sexual approaches online, abusive childhood experiences) which may cause participants distress. If you feel that this is a sensitive topic, please do not participate. If any distress or concerns arise as a result of participating, details of sources of support and information will be provided in the debrief. You can access the debrief sheet after submitting the completed questionnaire or, if you do not wish to complete the full questionnaire, by clicking on a link at the bottom of pages 4, 5, 8 and 9.

Participation in this study is completely voluntary, and all responses are completely confidential and anonymous. The data will be held in a secure, password protected file on the researcher's computer / university network. Only the researcher (Saqba Batool), supervisor (Dr Jo Bryce) and those with legitimate academic need will have access to it. The results from this study will be used for my thesis and, potentially, conferences and journal publications.

You can withdraw from this study until the point of submitting the completed questionnaire by closing the browser window or not clicking 'submit'. However, once you have submitted your responses, you will not be able to withdraw as all data is anonymous and individual responses cannot be identified.

By completing the questionnaire and submitting your data, you are giving consent to take part in the study.

As the questionnaire contains sensitive information, please refresh the website page and delete your history (through internet options) after you have submitted the questionnaire. If you are not sure how to find the internet options tab, please search 'history' on your computer.

If you have any questions or require further information, then please do not hesitate to email me or my supervisor using the details below.

I would like to take this opportunity to thank you for your participation in this study.

PhD researcher
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Supervisor
Dr Jo Bryce
School of Psychology
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If you have concerns about the research and you wish to raise them with somebody who is independent of the research team, please contact the University Officer for Ethics (OfficerForEthics@uclan.ac.uk).

Demographics

1. Age

2. Gender

- ◯ Male
- ◯ Female
- ◯ Transgender
- ◯ Prefer not to say

3. Sexuality

- ◯ Heterosexual
- ◯ Homosexual
- ◯ Bisexual
- ◯ Transgender / Gender minority
- ◯ Prefer not to say

4. Ethnicity

- ◯ Black or Black British
- ◯ White
- ◯ Asian or Asian British
- ◯ Other (please specify)

5. Religion

- ◯ Christian
- ◯ Muslim
- ◯ Jewish
- ◯ Hindu
- ◯ Buddist
- ◯ No religion
- ◯ Other (please specify)

Back Next

Internet use

Please answer the following questions relating to internet use when you were **aged under 16.**

6. How often did you use the internet?

More than once a day	Everyday	Once a day	Once a month	Less than once a month
○	○	○	○	○

7. On average, how many hours per day did you spend on the internet?

None	1-2 hours	2-3 hours	3-4 hours	more than 4 hours day
○	○	○	○	○

8. How often did you meet people online that you did not know in the offline environment through the following?

	Never	Not very often	Sometimes	A lot	All the time
Chatrooms	○	○	○	○	○
Gaming sites	○	○	○	○	○
Sharing contact lists	○	○	○	○	○
Friends of friends on contact lists	○	○	○	○	○
Voice over IP (Skype)	○	○	○	○	○
Instant messaging	○	○	○	○	○
Blogs	○	○	○	○	○
Social networking sites	○	○	○	○	○
Enter another option	○	○	○	○	○
Enter another option	○	○	○	○	○

9. **When you were aged under 16**, how often did you post information about:

	Never	Not very often	Sometimes	A lot	All the time
Your interests, likes and dislikes?	○	○	○	○	○
Your everyday activities?	○	○	○	○	○
How you were feeling?	○	○	○	○	○
Your relationships?	○	○	○	○	○
Any psychological or physical problems you were having ?	○	○	○	○	○

10. **When you were aged under 16**, how often did you:

	Never	Not very often	Sometimes	A lot	All the time
Accept friend requests from people you didn't know offline?	○	○	○	○	○
Make friends online with someone you didn't know offline?	○	○	○	○	○
Have a public social media profile?	○	○	○	○	○
Pretend to be someone different online?	○	○	○	○	○
View sexually explicit material online?	○	○	○	○	○
Seek comfort or support from someone you met online?	○	○	○	○	○
Upload an image of yourself to a website/profile page?	○	○	○	○	○

11. **When you were aged under 16**, how often did someone aged over 18, who you met online:

	Never	Not very often	Sometimes	A lot	All the time
Use information you posted online to initiate a conversation or befriend you?	○	○	○	○	○
Use information that you posted about your feelings to initiate a conversation or befriend you?	○	○	○	○	○

Back Next

Online behaviours

12. **When you were aged under 16,** how often did you:

	Never	Not very often	Sometimes	A lot	All the time	In the box, type the age of the person you communicated with and their gender (male or female)
Give someone you met online your personal details (i.e., phone number, address, school etc.)?	○	○	○	○	○	
Send someone you met online pictures of yourself?	○	○	○	○	○	
Engage in sexually explicit conversation with someone you met online?	○	○	○	○	○	
Send sexual messages or images of yourself to someone you met online?	○	○	○	○	○	
Receive sexual messages or images from people you met online?	○	○	○	○	○	
Use a webcam to communicate with someone you met online?	○	○	○	○	○	

13. If you had one of the last three experiences:

How often did you comply?

- ◯ Never
- ◯ Not very often
- ◯ Sometimes
- ◯ A lot
- ◯ All the time

What age(s) were you?

Who asked you to do this? If it was more than one person, then tick all that apply.

- ☐ Friend
- ☐ Family member or relative
- ☐ Girlfriend/Boyfriend
- ☐ Person met online
- ☐ Stranger
- ☐ Other (please specify)

Who did you tell about the above experience? Tick all that apply.

- ☐ No one
- ☐ Friend
- ☐ Parents
- ☐ Siblings
- ☐ Police
- ☐ Teachers
- ☐ Other (please specify)

In the box below, describe your experience. For example, how you were approached, the conversation you had with the person, how it made you feel.

If you wish to withdraw from the study or are experiencing distress click here to be directed to the debrief sheet.

Back Next

14. **When you were aged under 16**, how often did you experience:

	Never	Not very often	Sometimes	A lot	All the time
Depression/low mood	○	○	○	○	○
Loneliness	○	○	○	○	○
Anxiety	○	○	○	○	○
Low self-esteem	○	○	○	○	○
Low confidence	○	○	○	○	○
Self harm	○	○	○	○	○
Eating problems	○	○	○	○	○
Conflict with parents/siblings	○	○	○	○	○
Stressful situations	○	○	○	○	○

15. Please indicate how often the following statements applied to you **when you were an adolescent (aged under 16):**

	Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Always (91-100%)
1 I was clear about my feelings	○	○	○	○	○
2 I paid attention to how I felt	○	○	○	○	○
3 I experienced my emotions as overwhelming and out of control	○	○	○	○	○
4 I had no idea how I was feeling	○	○	○	○	○
5 I had difficulty making sense out of my feelings	○	○	○	○	○
6 I was attentive to my feelings	○	○	○	○	○
7 I knew exactly how I was feeling	○	○	○	○	○
8 I cared about what I was feeling	○	○	○	○	○
9 I was confused about how I felt	○	○	○	○	○
10 When I was upset, I acknowledged my emotions	○	○	○	○	○
11 When I was upset, I became angry with myself for feeling that way	○	○	○	○	○
12 When I was upset, I became embarrassed for feeling that way	○	○	○	○	○
13 When I was upset, I had difficulty getting work done	○	○	○	○	○
14 When I was upset, I became out of control	○	○	○	○	○
15 When I was upset, I believed that I would remain that way for a long time	○	○	○	○	○
16 When I was upset, I believed that I would end up feeling very depressed	○	○	○	○	○
17 When I was upset, I believed that my feelings were valid and important	○	○	○	○	○
18 When I was upset, I had difficulty focusing on other things	○	○	○	○	○

If you wish to withdraw from the study or are experiencing distress click here to be directed to the debrief sheet.

16. Please indicate how often the following statements applied to you **when you were an adolescent (aged under 16):**

	Almost never (0-10%)	Sometimes (11-35%)	About half the time (36-65%)	Most of the time (66-90%)	Always (91-100%)
19 When I was upset, I felt out of control	◉	○	○	○	○
20 When I was upset, I could still get things done	○	○	○	○	○
21 When I was upset, I felt ashamed with myself for feeling that way	○	○	○	○	○
22 When I was upset, I knew that I could find a way to eventually feel better	○	○	○	○	○
23 When I was upset, I felt like I was weak	○	○	○	○	○
24 When I was upset, I felt like I could remain in control of my behaviours	○	○	○	○	○
25 When I was upset, I felt guilty for feeling that way	○	○	○	○	○
26 When I was upset, I had difficulty concentrating	○	○	○	○	○
27 When I was upset, I had difficulty controlling my behaviours	○	○	○	○	○
28 When I was upset, I believed that there was nothing I could do to make myself feel better	○	○	○	○	○
29 When I was upset, I became irritated with myself for feeling that way	○	○	○	○	○
30 When I was upset, I started to feel very bad about myself	○	○	○	○	○
31 When I was upset, I believed that wallowing in it was all I could do	○	○	○	○	○
32 When I was upset, I lost control over my behaviours	○	○	○	○	○
33 When I was upset, I had difficulty thinking about anything else	○	○	○	○	○
34 When I was upset, I took time to figure out what I was really feeling	○	○	○	○	○
35 When I was upset, it took me a long time to feel better	○	○	○	○	○
36 When I was upset, my emotions felt overwhelming	○	○	○	○	○

Back Next

17. Please read each of the following statements and rate the extent to which you believe each statement best describes your feelings about close relationships **when you were an adolescent (aged under 16):**

	Not at all like me	Rarely like me	Somewhat like me	Mostly like me	Very much like me
1 I found it difficult to depend on other people.	○	○	○	○	○
2 It was very important to me to feel independent.	○	○	○	○	○
3 I found it easy to get emotionally close to others.	○	○	○	○	○
4 I wanted to merge completely with another person.	○	○	○	○	○
5 I worried that I would be hurt if I allowed myself to become too close to others.	○	○	○	○	○
6 I was comfortable without close emotional relationships.	○	○	○	○	○
7 I was not sure that I could always depend on others to be there when I needed them.	○	○	○	○	○
8 I wanted to be completely emotionally intimate with others.	○	○	○	○	○
9 I worried about being alone.	○	○	○	○	○
10 I was comfortable depending on other people.	○	○	○	○	○
11 I often worried that romantic partners don't really love me.	○	○	○	○	○
12 I found it difficult to trust others completely.	○	○	○	○	○
13 I worried about others getting too close to me.	○	○	○	○	○
14 I wanted emotionally close relationships.	○	○	○	○	○
15 I was comfortable having other people depend on me.	○	○	○	○	○
16 I worried that others did not value me as much as I valued them.	○	○	○	○	○
17 People were never there when you needed them.	○	○	○	○	○
18 My desire to merge completely sometimes scared people away.	○	○	○	○	○
19 It was very important to me to feel self-sufficient.	○	○	○	○	○
20 I was nervous when anyone got too close to me.	○	○	○	○	○
21 I often worried that romantic partners would not want to stay with me.	○	○	○	○	○

22 I preferred not to have other people depend on me.	○	○	○	○	○
23 I worried about being abandoned.	○	○	○	○	○
24 I was somewhat uncomfortable being close to others.	○	○	○	○	○
25 I found that others were reluctant to get as close as I would like.	○	○	○	○	○
26 I preferred not to depend on others.	○	○	○	○	○
27 I knew that others would be there when I needed them.	○	○	○	○	○
28 I worried about others not accepting me.	○	○	○	○	○
29 Romantic partners often wanted me to be closer than I felt comfortable being.	○	○	○	○	○
30 I found it relatively easy to get close to others.	○	○	○	○	○

Back Next

This questionnaire seeks to determine the general atmosphere of your home when you were a child and teenager, as well as how you felt you were treated by your parents or principal caretaker. (If you were not raised by one or both of your biological parents, please respond to the questions below in terms of the person or persons who had the primary responsibility for your upbringing as a child.)

Where a question asks about the behaviour of both of your parents and your parents differed in their behaviour, please respond in terms of the parent whose behaviour was the more severe or worse.

In responding to these questions, simply click the appropriate number according to the following definitions: 0 = never 1 = rarely 2 = sometimes 3 = very often 4 = always

To illustrate, here is a hypothetical question: Did your parents criticize you when you were young? If you were rarely criticized, you should click number 1.

---

18. Please answer all the questions.

	0 (never)	1 (rarely)	2 (sometimes)	3 (very often)	4 (always)
1. Did your parents ridicule you?	○	○	○	○	○
2. Did you ever seek outside help or guidance because of problems in your home?	○	○	○	○	○
3. Did your parents verbally abuse each other?	○	○	○	○	○
4. Were you expected to follow a strict code of behaviour in your home?	○	○	○	○	○
5. When you were punished as a child or teenager, did you understand the reason you were punished?	○	○	○	○	○
6. When you didn't follow the rules of the house, how often were you severely punished?	○	○	○	○	○

7. As a child did you feel unwanted or emotionally neglected?	○	○	○	○	○
8. Did your parents insult you or call you names?	○	○	○	○	○
9. Before you were 14, did you engage in any sexual activity with an adult?	○	○	○	○	○
10. Were your parents unhappy with each other?	○	○	○	○	○
11. Were your parents unwilling to attend any of your school-related activities?	○	○	○	○	○
12. As a child were you punished in unusual ways (e.g., being locked in a closet for a long time or being tied up)?	○	○	○	○	○
13. Were there traumatic or upsetting sexual experiences when you were a child or teenager that you couldn't speak to adults about?	○	○	○	○	○
14. Did you every think you wanted to leave your family and live with another family?	○	○	○	○	○

15. Did you ever witness the sexual mistreatment of another family member?	○	○	○	○	○
16. Did you ever think seriously about running away from home?	○	○	○	○	○
17. Did you witness the physical mistreatment of another family member?	○	○	○	○	○
18. When you were punished as a child or teenager, did you feel the punishment was deserved?	○	○	○	○	○
19. As a child or teenager, did you feel disliked by either of your parents?	○	○	○	○	○

If you wish to withdraw from the study or are experiencing distress click here to be directed to the debrief sheet.

Back Next

19. Please answer all the questions.

	O (never)	1 (rarely)	2 (sometimes)	3 (very often)	4 (always)
20. How often did your parents get really angry with you?	○	○	○	○	○
21. As a child did you feel that your home was charged with the possibility of unpredictable physical violence?	○	○	○	○	○
22. Did you feel comfortable bringing friends home to visit?	○	○	○	○	○
23. Did you feel safe living at home?	○	○	○	○	○
24. When you were punished as a child or teenager, did you feel "the punishment fit the crime"?	○	○	○	○	○
25. Did your parents ever verbally lash out at you when you did not expect it?	○	○	○	○	○
26. Did you have traumatic sexual experiences as a child or teenager?	○	○	○	○	○
27. Were you lonely as a child?	○	○	○	○	○
28. Did your parents yell at you?	○	○	○	○	○
29. When either of your parents was intoxicated, were you ever afraid of being sexually mistreated?	○	○	○	○	○
30. Did you every wish for a friend to share your life?	○	○	○	○	○
31. How often were you left at home alone as a child?	○	○	○	○	○
32. Did your parents blame you for things you didn't do?	○	○	○	○	○
33. To what extent did either of your parents drink heavily or abuse drugs?	○	○	○	○	○
34. Did your parents ever hit or beat you when you did not expect it?	○	○	○	○	○
35. Did your relationship with your parents ever involve a sexual experience?	○	○	○	○	○
36. As a child, did you have to take care of yourself before you were old enough?	○	○	○	○	○
37. Were you physically mistreated as a child or teenager?	○	○	○	○	○
38. Was your childhood stressful?	○	○	○	○	○

If you wish to withdraw from the study or are experiencing distress click here to be directed to the debrief sheet.

Back Submit

Debrief sheet

Thank You!

Thank you for taking the time to participate in this study.

The aim of this research is to determine if internet use, emotional regulation, childhood experiences and relationships with others significantly predict online sexual experiences during adolescence. This study is important as the results will provide practitioners with recommendations to identify and protect vulnerable teenagers who are highly likely to experience negative sexual experiences online.

Please be assured that the information you have provided will be strictly confidential and anonymous.

I would also like to take this opportunity to remind you that now you have submitted your answers, you will be unable to withdraw your data from the study.

As the questionnaire contains sensitive information, please refresh the website page and delete your history (through internet options) after you have submitted the questionnaire. If you are not sure how to find the internet options tab, please search 'history' on your computer.

If you are interested in potentially participating in a follow up study that will involve interviewing participants about their online sexual experiences when they were aged under 16, please click here to provide your contact details. **Please note that these contact details cannot be linked to your questionnaire responses as they are stored in separate database files.**

Sources of support and information
If you have been affected by any of the issues raised in this study and would like confidential support or advice, the following services may be of interest to you:

UCLan Counselling Service
This service offers free counselling to **all UCLan students**
Telephone: 01772892572
Email: CoRecep@uclan.ac.uk

Samaritans
This organisation provides confidential and emotional support 24/7
Telephone: 0845 790 9090
Website: www.samaritans.org

Get safe online
The service provides practical advice on how to protect yourself online
Website: www.getsafeonline.org

Victim support
This service offers support to anyone who has been affected by a crime regardless of when it happened and if it was reported.
Telephone: 0808 168 9111
Website: www.victimsupport.org.uk

If you would like any further information regarding this study then please do not hesitate to contact me, Saqba Batool, or my supervisor Dr Jo Bryce using the contact details below.

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If you have concerns about the research and you wish to raise them with somebody who is independent of the research team, please contact the University Officer for Ethics (OfficerForEthics@uclan.ac.uk).

Appendix 5

Student messages advert

If you are 18-30 years old, was an active user of the internet when under the age of 16 and interested in participating in a study investigating the relationship between internet use, emotions, interpersonal relationships and your own online and offline sexual experiences then click this link - www.surveygizmo.com/s3/2664730/Online-and-offline-experiences

If you have any questions please email Saqba Batool (SBatool1@uclan.ac.uk)

Twitter advert

Aged 18-30 & interested in participating in a study exploring online & offline experiences? Click for more details www.surveygizmo.com/s3/2664730/Online-and-offline-experiences

Flyer

If you are 18-30 years old, was an active user of the internet when under the age of 16 and interested in participating in a study investigating internet use, emotions, interpersonal relationships and your own online and offline sexual experiences then type this link into an address bar.

www.surveygizmo.com/s3/2664730/Online-and-offline-experiences

Appendix 6

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
InternetFrequency	238	1.63	.745	0	.0	0	5
InternetFrequencyPerDay	238	3.83	1.173	0	.0	0	0
RBChatroom	236	1.99	1.169	2	.8	0	0
RBGamingSite	238	2.05	1.257	0	.0	0	0
RBSharingContactLists	233	1.53	.836	5	2.1	0	7
RBFriendsofFriendsOnContactLists	235	2.33	1.155	3	1.3	0	0
RBSkype	233	1.62	.989	5	2.1	0	14
RBInstantMessaging	237	2.35	1.369	1	.4	0	0
RBBlogs	235	1.42	.875	3	1.3	.	.
RBSocialNetworkingSites	237	2.82	1.380	1	.4	0	0
PostingInfoInterests	238	2.99	1.140	0	.0	0	0
PostingInfoActvities	238	2.60	1.146	0	.0	0	14
PostingInfoFeelings	238	2.52	1.218	0	.0	0	0
PostingInfoRelationships	238	2.11	1.209	0	.0	0	0
PostingInfoPsychologicalPhysicalProblems	238	1.60	.907	0	.0	0	11

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
RB1	237	2.78	1.212	1	.4	0	0
RB2	237	2.79	1.237	1	.4	0	0
RB3	236	3.11	1.432	2	.8	0	0
RB4	236	1.64	1.029	2	.8	0	16
RB5	236	2.33	1.302	2	.8	0	0
RB6	237	2.08	1.248	1	.4	0	0
RB7	237	3.00	1.277	1	.4	0	0
RB8	238	1.70	.910	0	.0	0	7
RB9	238	1.61	.974	0	.0	0	14
RB18	238	1.44	.843	0	.0	0	11
RB19	237	1.58	1.061	1	.4	0	24
RB10	237	1.54	.918	1	.4	0	13
RB11	237	1.34	.762	1	.4	.	.
RB12	237	1.76	1.096	1	.4	0	26
RB13	237	1.66	1.019	1	.4	0	18

RB14	237	1.42	.807	1	.4	0	8
RB15	237	1.42	.906	1	.4	.	.
RB16	237	1.52	.909	1	.4	0	12
RB17	238	1.62	1.075	0	.0	0	23

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Univariate Statistics

				Missing		No. of Extremes[a]	
	N	Mean	Std. Deviation	Count	Percent	Low	High
DepressionLowMood	238	2.83	1.183	0	.0	0	0
Loneliness	238	2.87	1.187	0	.0	0	0
Anxiety	236	2.63	1.222	2	.8	0	0
LowSelfEsteem	237	3.21	1.288	1	.4	0	0
LowConfidence	237	3.25	1.253	1	.4	0	0
Selfharm	238	1.62	1.035	0	.0	0	17
EatingProblems	237	1.86	1.162	1	.4	0	29
ConflictParentsSiblings	237	2.87	1.257	1	.4	0	0
StressfulSituations	237	2.98	1.153	1	.4	0	0

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Univariate Statistics

				Missing		No. of Extremes[a]	
	N	Mean	Std. Deviation	Count	Percent	Low	High
ER1	237	2.81	1.129	1	.4	0	0
ER2	235	2.89	1.179	3	1.3	0	0
ER3	236	2.35	1.247	2	.8	0	0
ER4	234	2.23	1.102	4	1.7	0	0
ER5	235	2.34	1.144	3	1.3	0	0
ER6	233	2.58	1.115	5	2.1	0	12
ER7	234	2.77	1.126	4	1.7	0	0
ER8	233	2.99	1.225	5	2.1	0	0
ER9	234	2.44	1.157	4	1.7	0	12
ER10	233	2.85	1.192	5	2.1	0	0
ER11	233	2.61	1.299	5	2.1	0	0
ER12	234	2.49	1.240	4	1.7	0	0
ER13	233	3.07	1.259	5	2.1	0	0
ER14	234	2.05	1.242	4	1.7	0	0
ER15	233	2.63	1.352	5	2.1	0	0
ER16	234	2.48	1.418	4	1.7	0	0
ER17	234	2.52	1.202	4	1.7	0	13

ER18	234	3.12	1.234	4	1.7	0	0
ER19	232	2.01	1.151	6	2.5	0	0
ER20	231	2.50	1.091	7	2.9	0	7
ER21	231	2.28	1.221	7	2.9	0	0
ER22	231	2.80	1.149	7	2.9	0	0
ER23	229	2.72	1.287	9	3.8	0	0
ER24	230	2.95	1.183	8	3.4	0	0
ER25	230	2.28	1.146	8	3.4	0	0
ER26	230	2.93	1.246	8	3.4	0	0
ER27	229	2.27	1.198	9	3.8	0	0
ER28	228	2.39	1.267	10	4.2	0	0
ER29	230	2.53	1.259	8	3.4	0	20
ER30	231	2.65	1.332	7	2.9	0	0
ER31	231	2.45	1.314	7	2.9	0	0
ER32	229	2.04	1.176	9	3.8	0	0
ER33	230	2.73	1.297	8	3.4	0	0
ER34	231	2.29	1.066	7	2.9	0	0
ER35	230	2.64	1.231	8	3.4	0	0
ER36	228	2.69	1.325	10	4.2	0	0

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Univariate Statistics

				Missing		No. of Extremes[a]	
	N	Mean	Std. Deviation	Count	Percent	Low	High
AS1	228	2.96	1.209	10	4.2	0	0
AS2	228	3.50	1.193	10	4.2	0	0
AS3	226	2.88	1.219	12	5.0	0	0
AS4	225	2.45	1.224	13	5.5	0	0
AS5	226	2.81	1.328	12	5.0	0	0
AS6	238	-1.33	20.535	0	.0	10	0
AS7	228	3.18	1.221	10	4.2	0	0
AS8	226	2.63	1.160	12	5.0	0	18
AS9	225	3.03	1.423	13	5.5	0	0
AS10	225	2.64	1.110	13	5.5	0	0
AS11	223	2.71	1.430	15	6.3	0	0
AS12	224	3.18	1.237	14	5.9	0	0
AS13	223	2.64	1.255	15	6.3	0	0
AS14	223	3.16	1.222	15	6.3	0	0
AS15	223	3.32	1.108	15	6.3	13	0
AS16	225	3.38	1.311	13	5.5	0	0
AS17	225	2.82	1.312	13	5.5	0	0
AS18	225	1.94	1.120	13	5.5	0	0

AS19	221	3.25	1.187	17	7.1	0	0
AS20	222	2.61	1.260	16	6.7	0	0
AS21	225	2.84	1.492	13	5.5	0	0
AS22	225	2.42	1.136	13	5.5	0	11
AS23	225	2.60	1.415	13	5.5	0	0
AS24	225	2.40	1.191	13	5.5	0	0
AS25	225	2.36	1.217	13	5.5	0	0
AS26	223	3.10	1.246	15	6.3	0	0
AS27	223	2.80	1.034	15	6.3	0	0
AS28	225	3.07	1.389	13	5.5	0	0
AS29	222	2.25	1.240	16	6.7	0	0
AS30	225	2.91	1.158	13	5.5	0	0

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Univariate Statistics

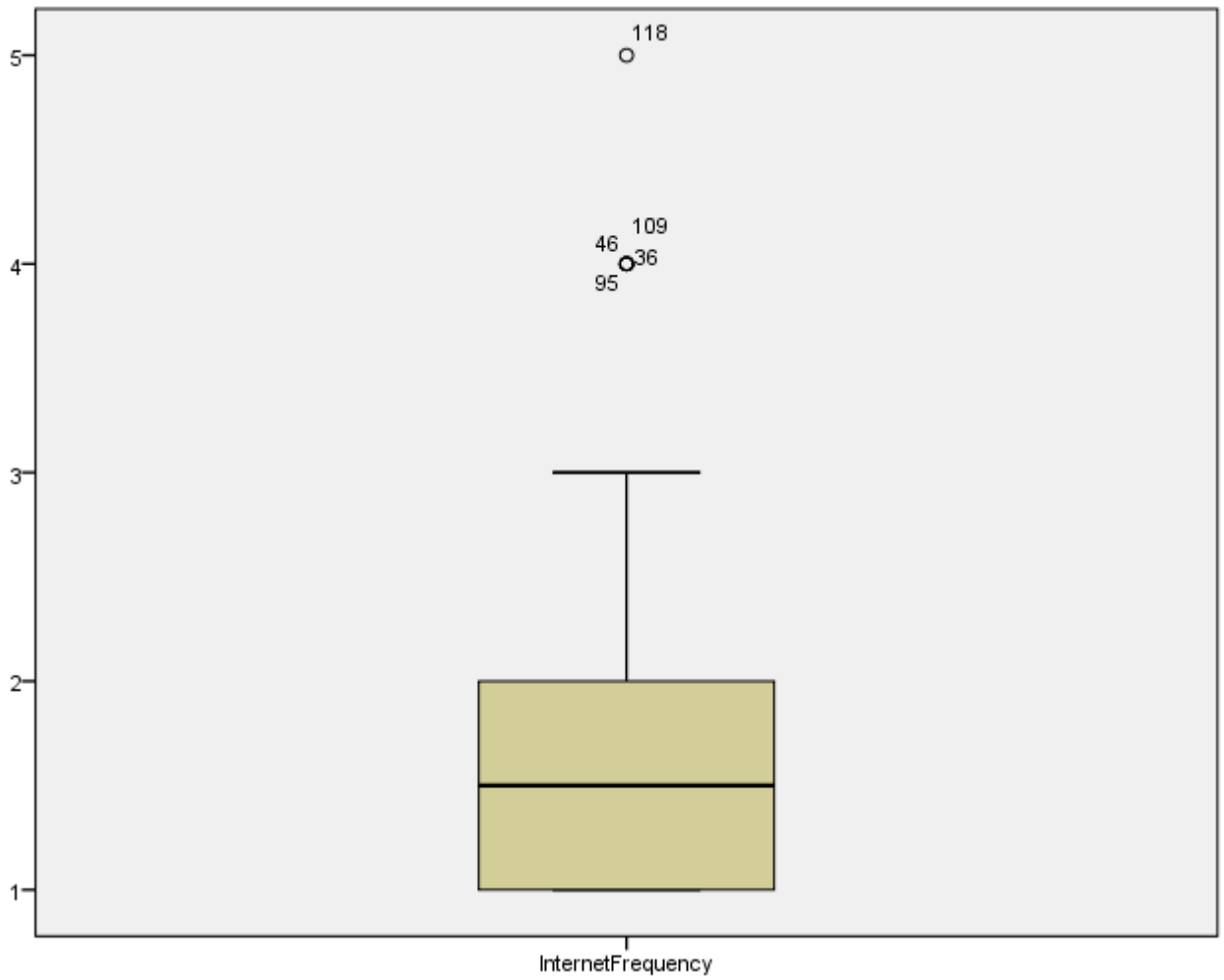
				Missing		No. of Extremes[a]	
	N	Mean	Std. Deviation	Count	Percent	Low	High
CAT1	230	2.10	1.078	8	3.4	0	0
CAT2	230	1.66	.975	8	3.4	0	14
CAT3	229	2.13	1.243	9	3.8	0	0
CAT4	228	2.63	1.289	10	4.2	0	0
CAT5	229	3.49	1.245	9	3.8	26	0
CAT6	229	2.57	1.124	9	3.8	0	14
CAT7	228	2.05	1.260	10	4.2	0	0
CAT8	229	1.99	1.205	9	3.8	0	0
CAT9	229	1.20	.631	9	3.8	.	.
CAT10	228	2.36	1.338	10	4.2	0	0
CAT11	228	1.69	1.030	10	4.2	0	14
CAT12	229	1.34	.871	9	3.8	.	.
CAT13	228	1.42	.848	10	4.2	.	.
CAT14	229	1.99	1.253	9	3.8	0	0
CAT15	227	1.16	.568	11	4.6	.	.
CAT16	229	2.00	1.216	9	3.8	0	0
CAT17	227	1.55	1.009	11	4.6	0	16
CAT18	230	2.82	1.160	8	3.4	0	0
CAT19	230	1.95	1.314	8	3.4	0	0
CAT20	229	2.61	.947	9	3.8	0	10
CAT21	227	1.71	1.150	11	4.6	0	26
CAT22	228	3.35	1.457	10	4.2	0	0
CAT23	229	4.27	1.095	9	3.8	18	0
CAT24	226	3.32	1.238	12	5.0	0	0
CAT25	229	2.16	1.193	9	3.8	0	0

CAT26	227	1.39	.902	11	4.6	.	.
CAT27	227	2.37	1.332	11	4.6	0	0
CAT28	229	2.82	1.064	9	3.8	0	19
CAT29	228	1.13	.520	10	4.2	.	.
CAT30	228	1.99	1.159	10	4.2	0	0
CAT31	227	2.14	1.111	11	4.6	0	0
CAT32	229	2.00	1.114	9	3.8	0	0
CAT33	229	1.58	1.068	9	3.8	0	18
CAT34	229	1.49	.930	9	3.8	0	11
CAT35	228	1.11	.543	10	4.2	.	.
CAT36	228	1.76	1.130	10	4.2	0	0
CAT37	229	1.40	.905	9	3.8	.	.
CAT38	226	2.36	1.289	12	5.0	0	0

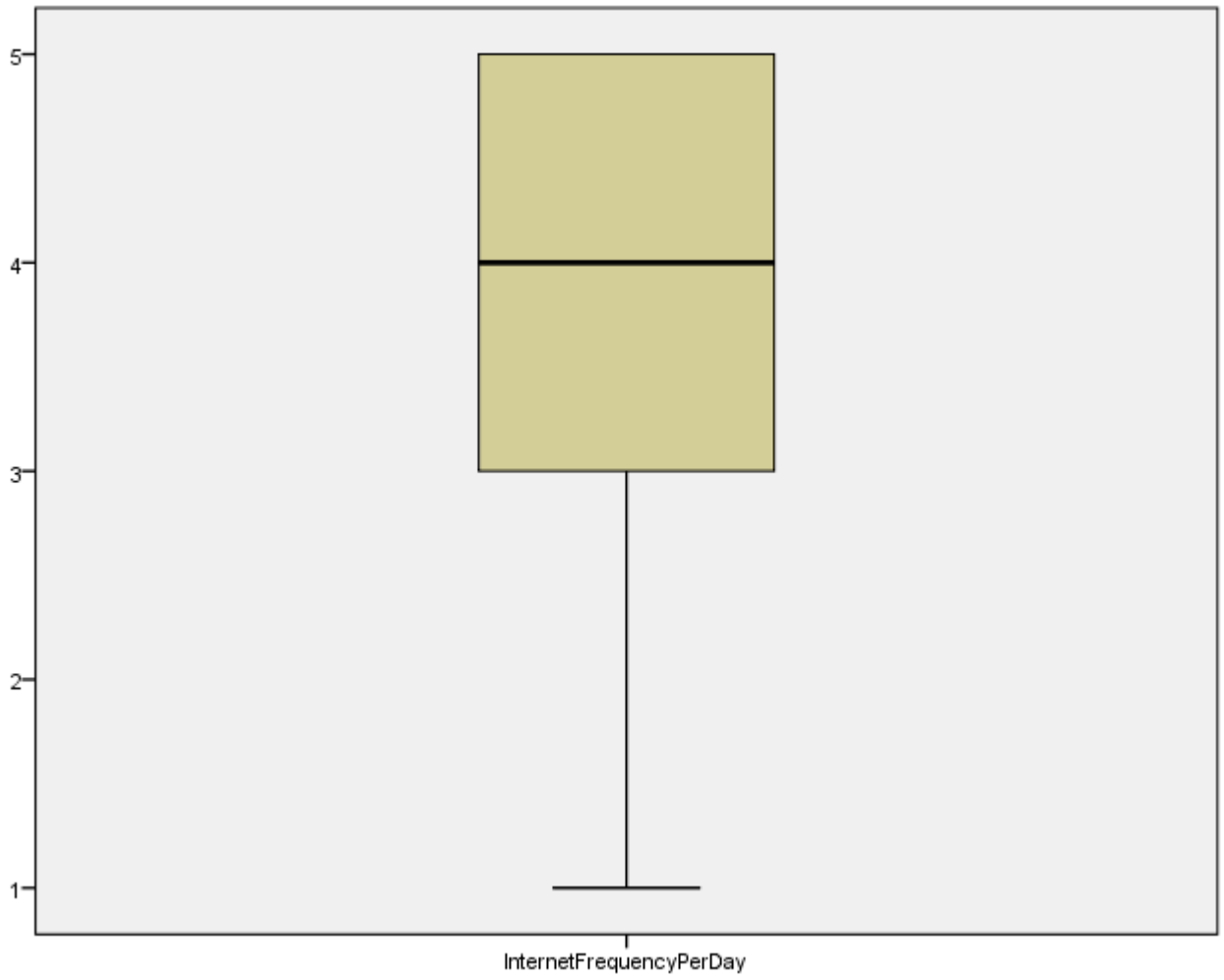
a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

Appendix 7

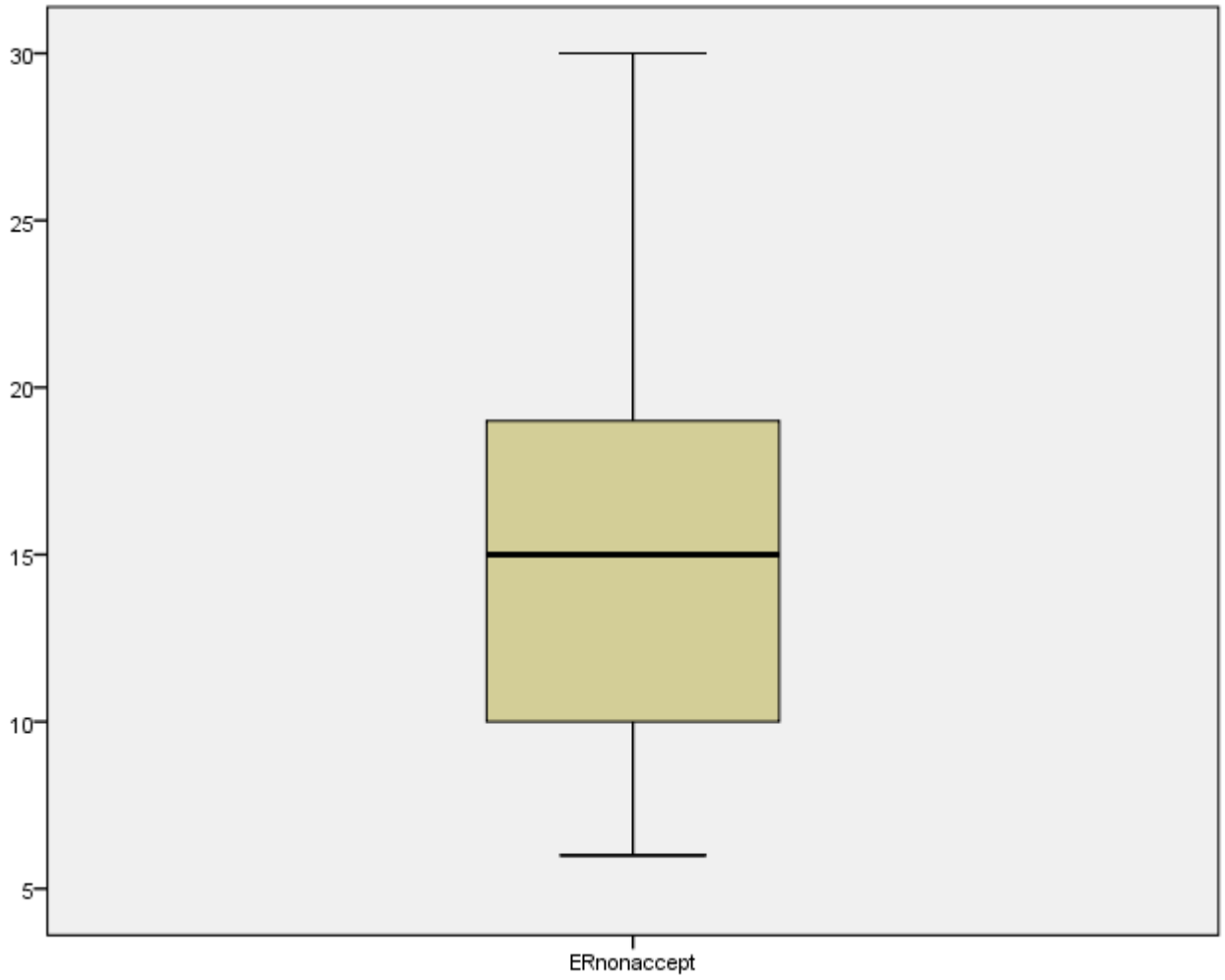
InternetFrequency



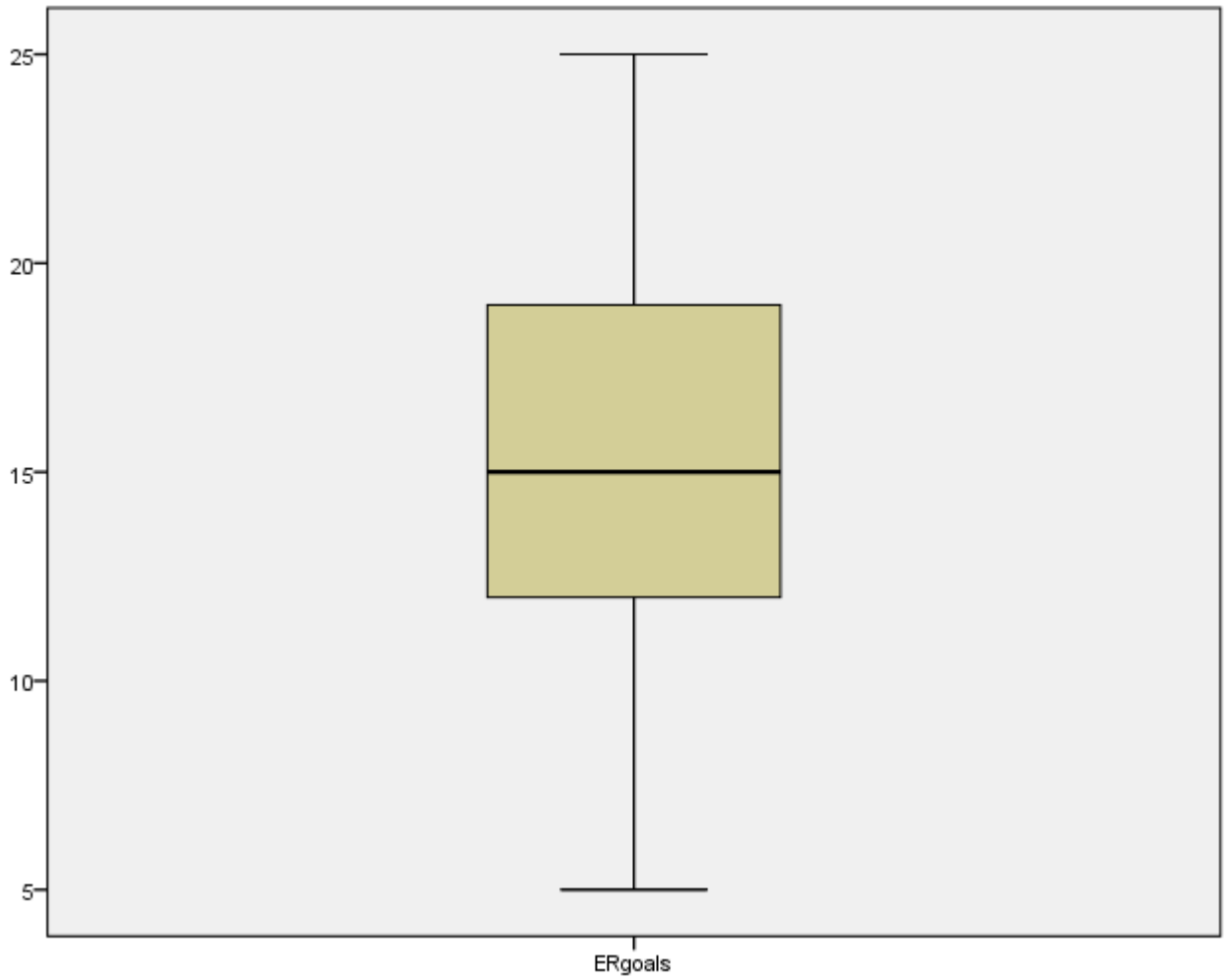
InternetFrequencyPerDay



ERnonaccept

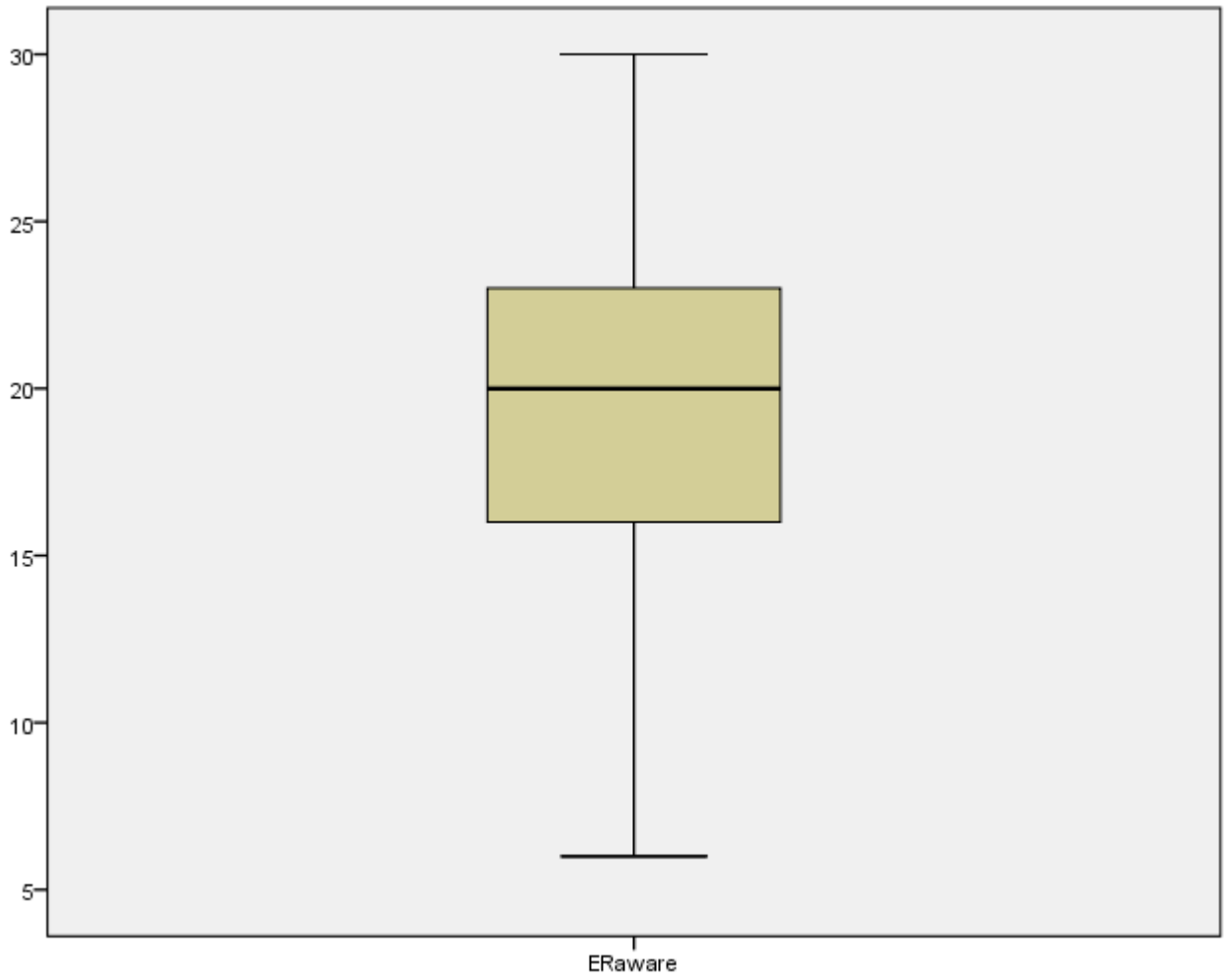


ERgoals

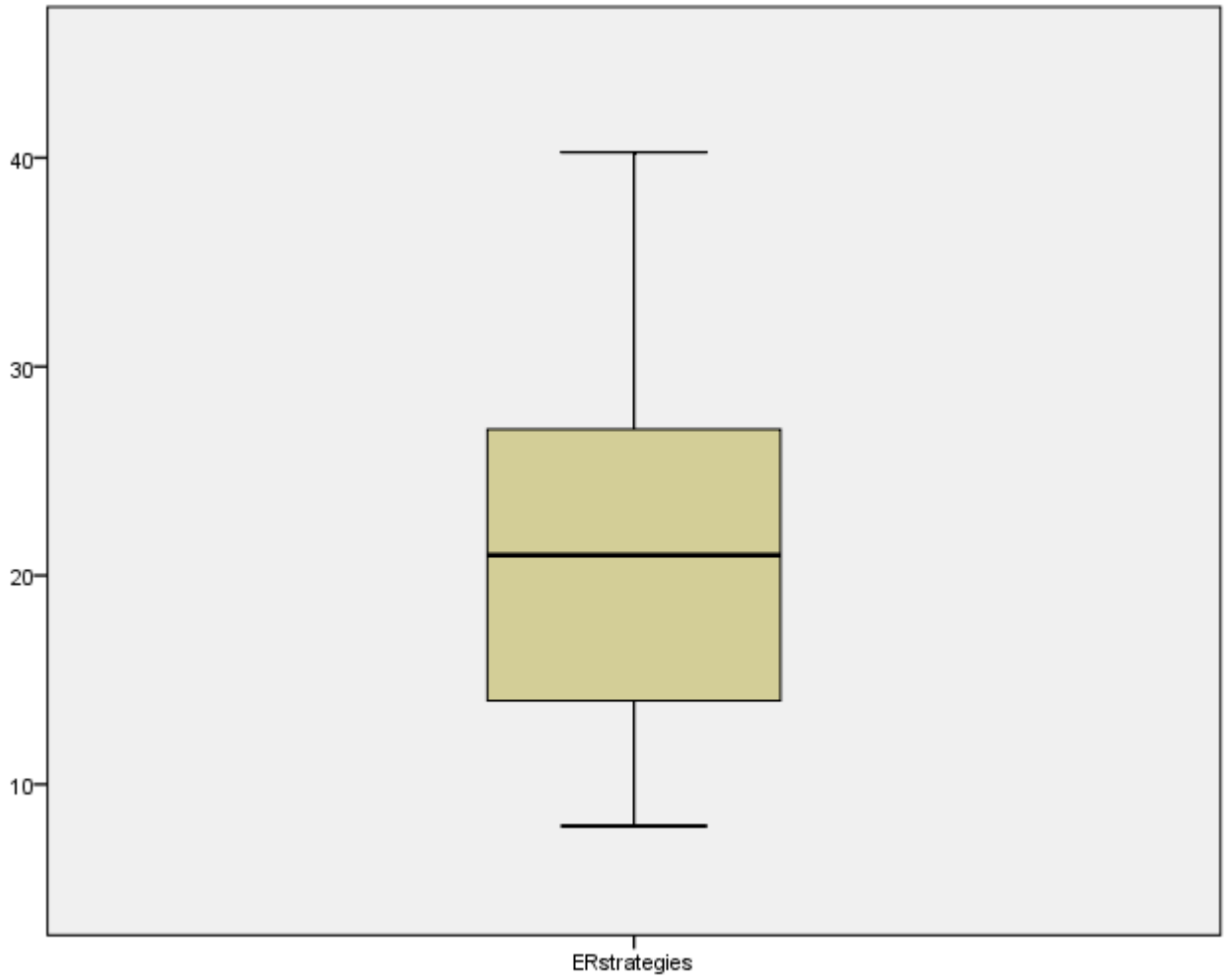


ERimpulse

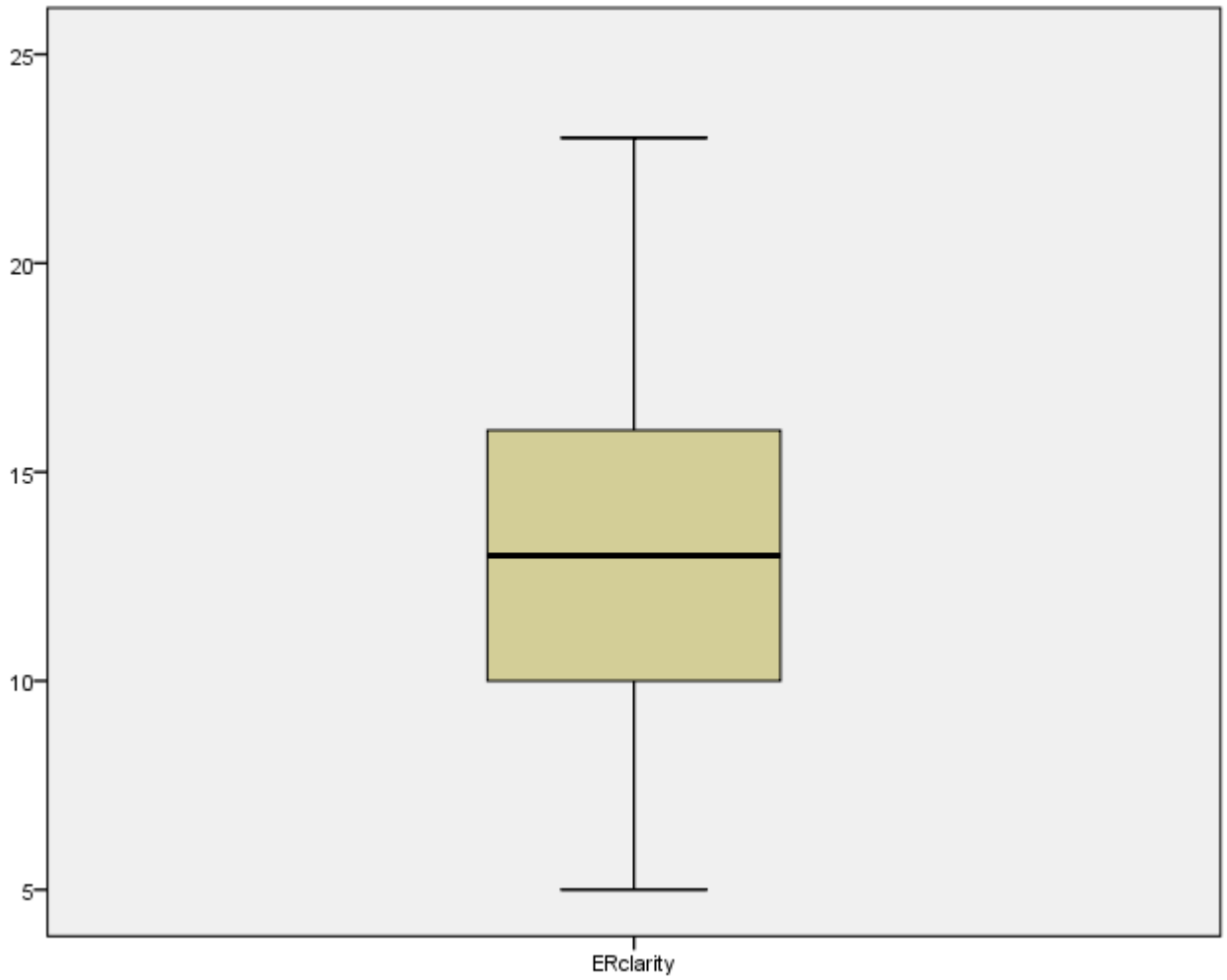
ERaware



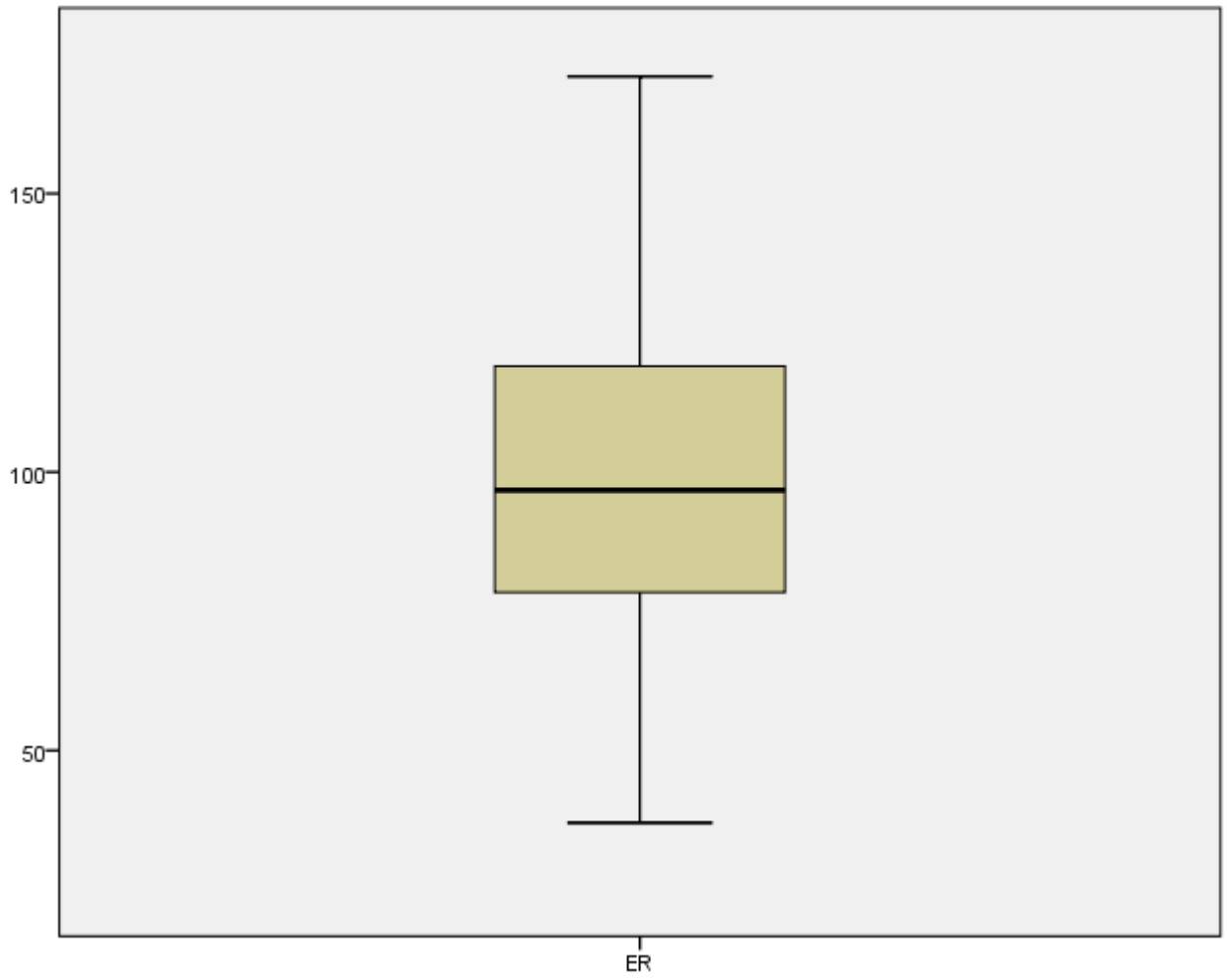
ERstrategies



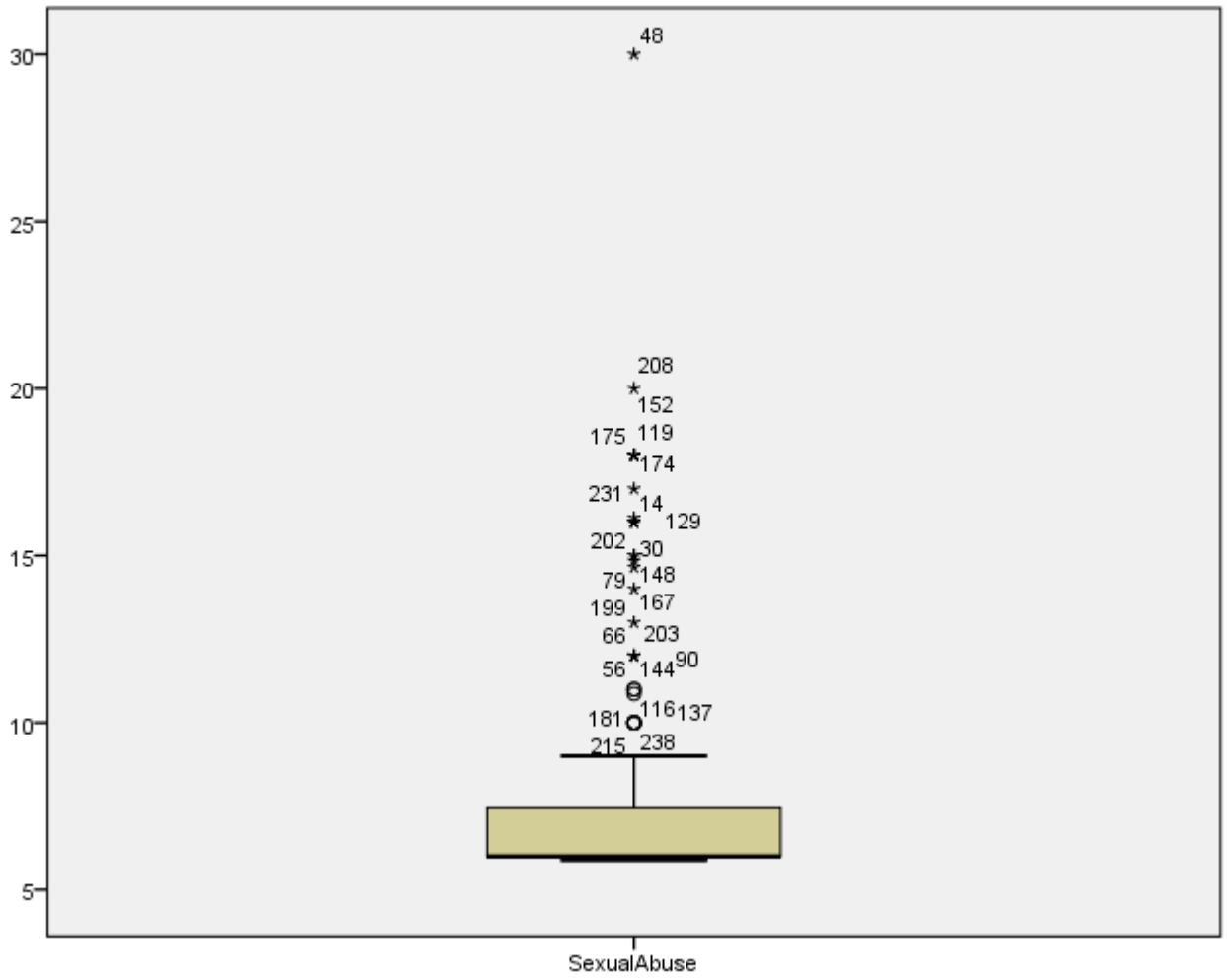
ERclarity



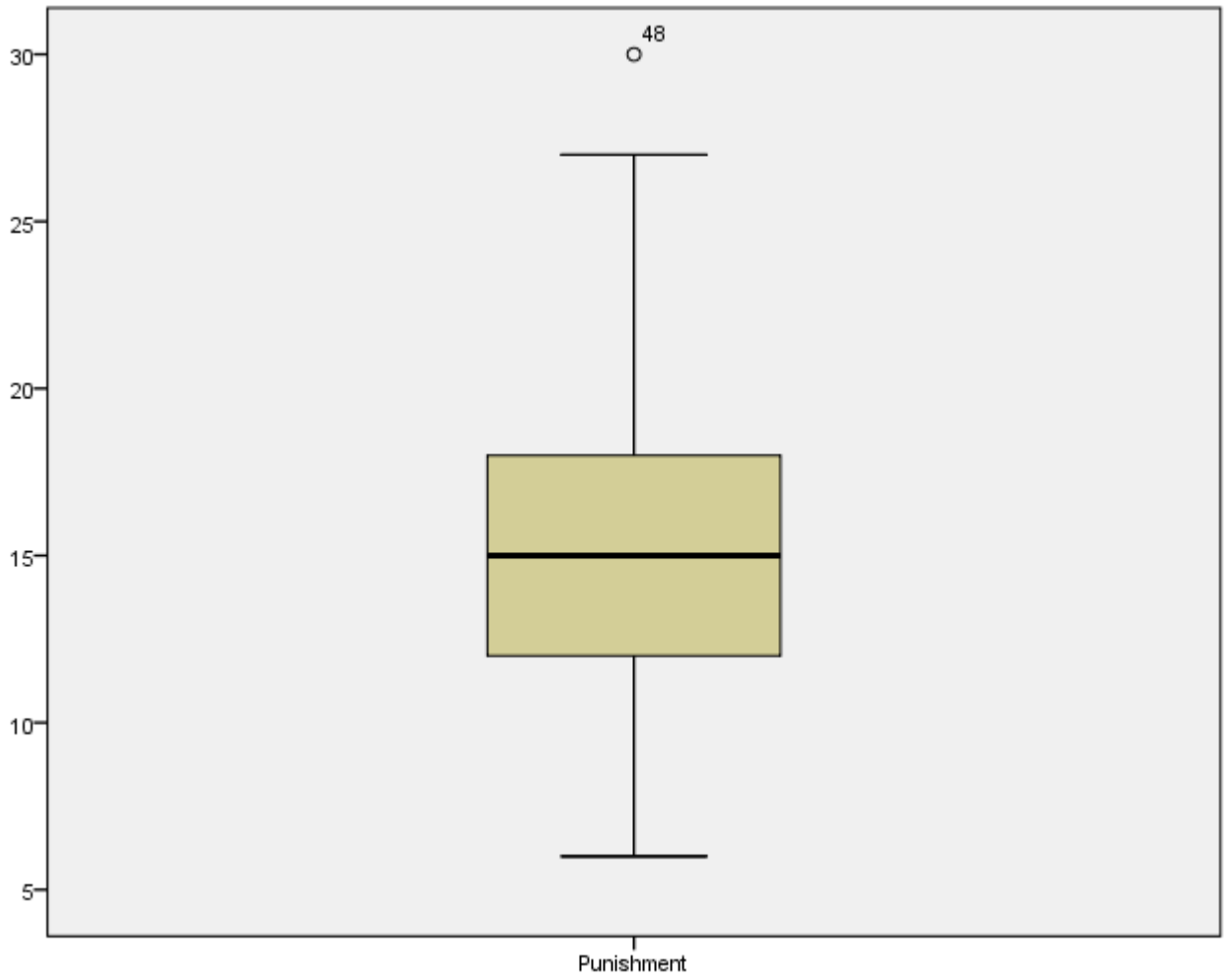
ER



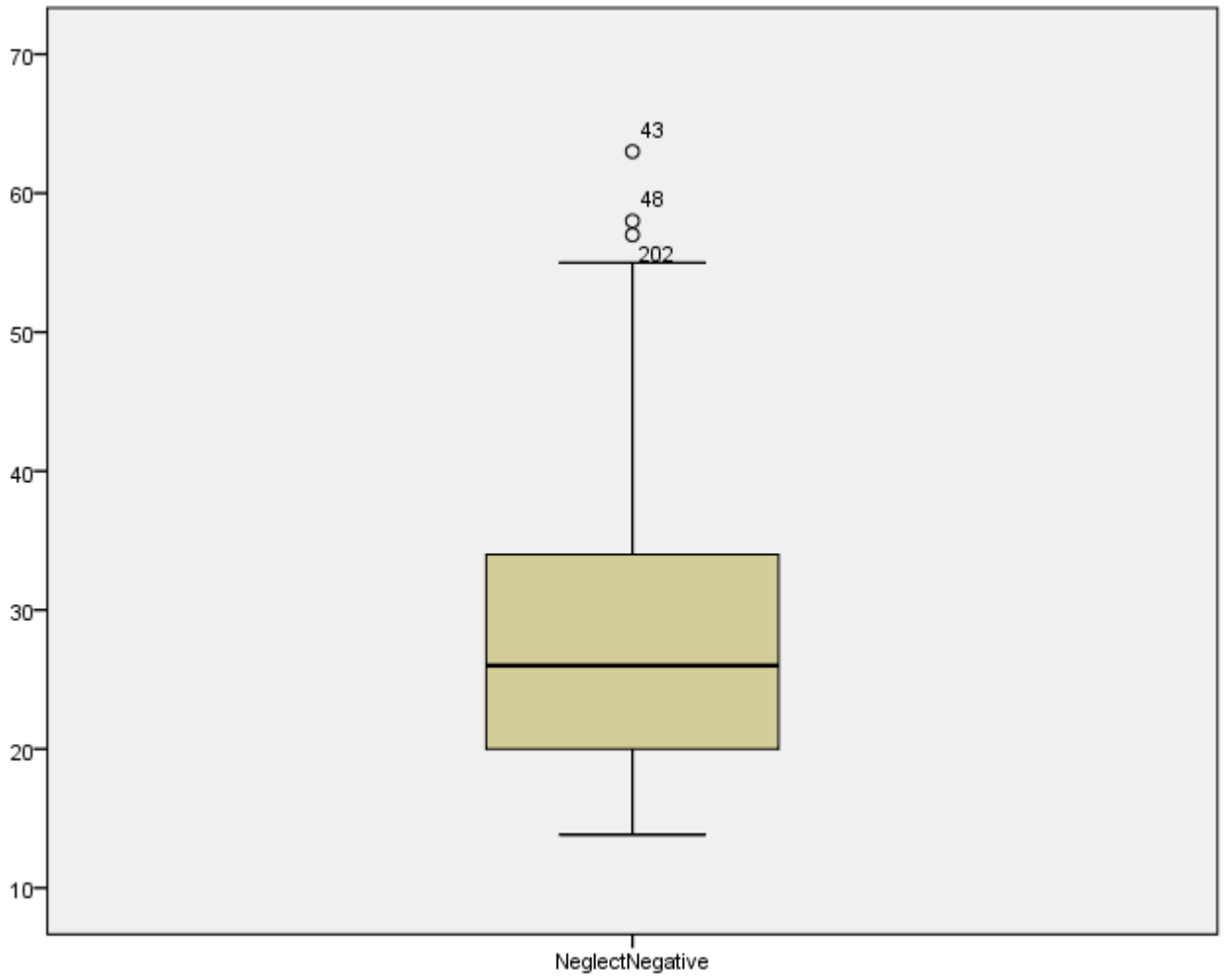
SexualAbuse



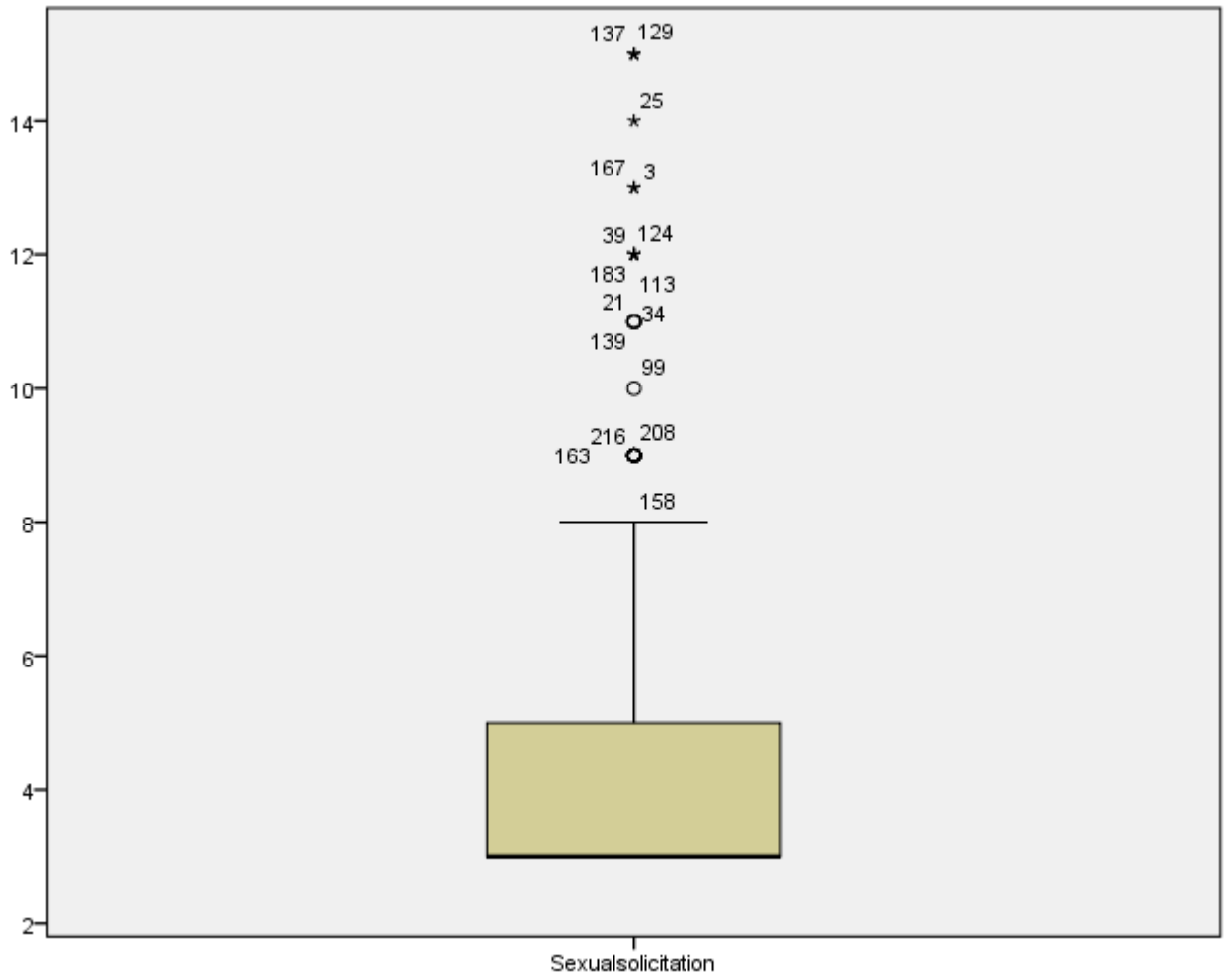
Punishment



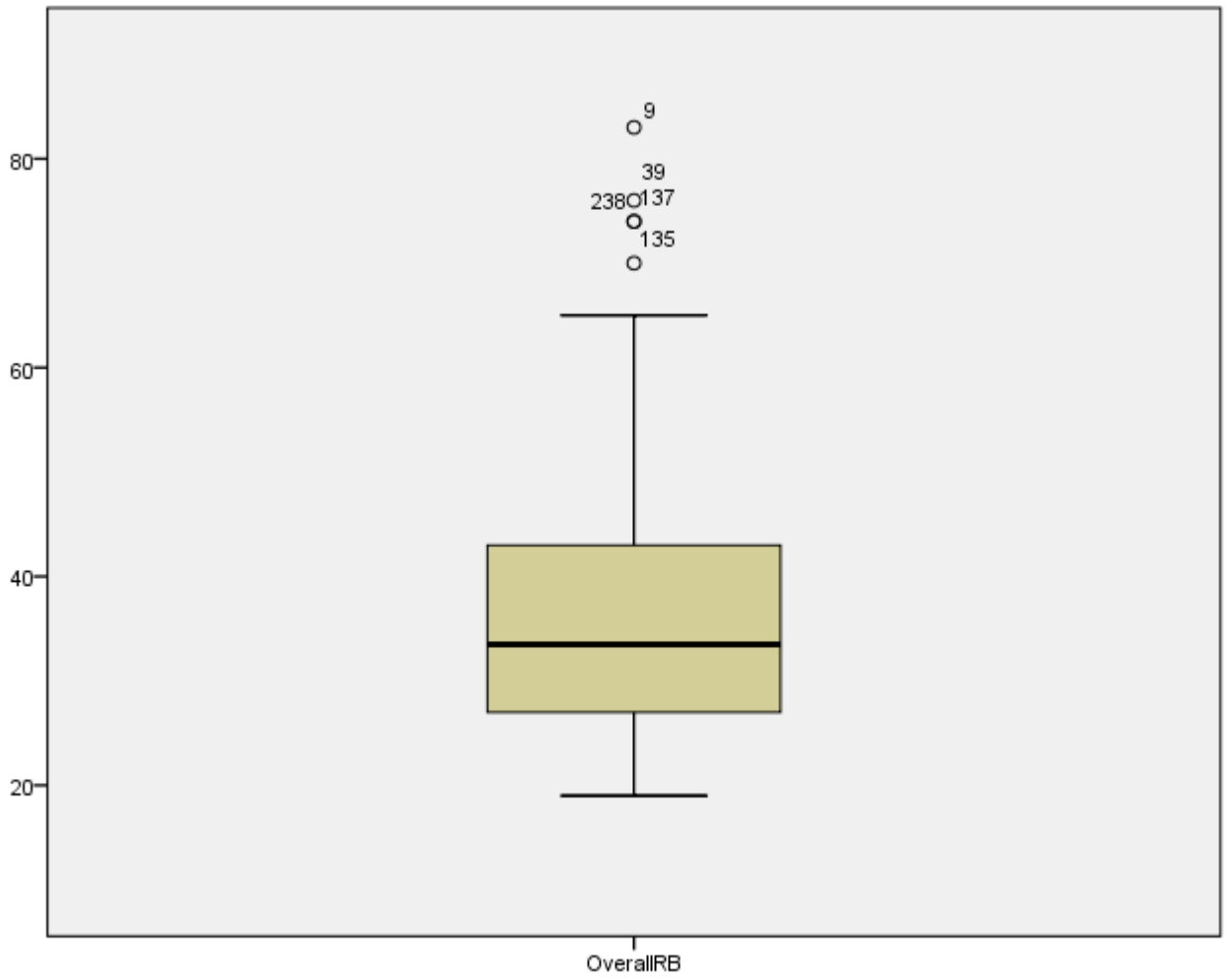
NeglectNegative



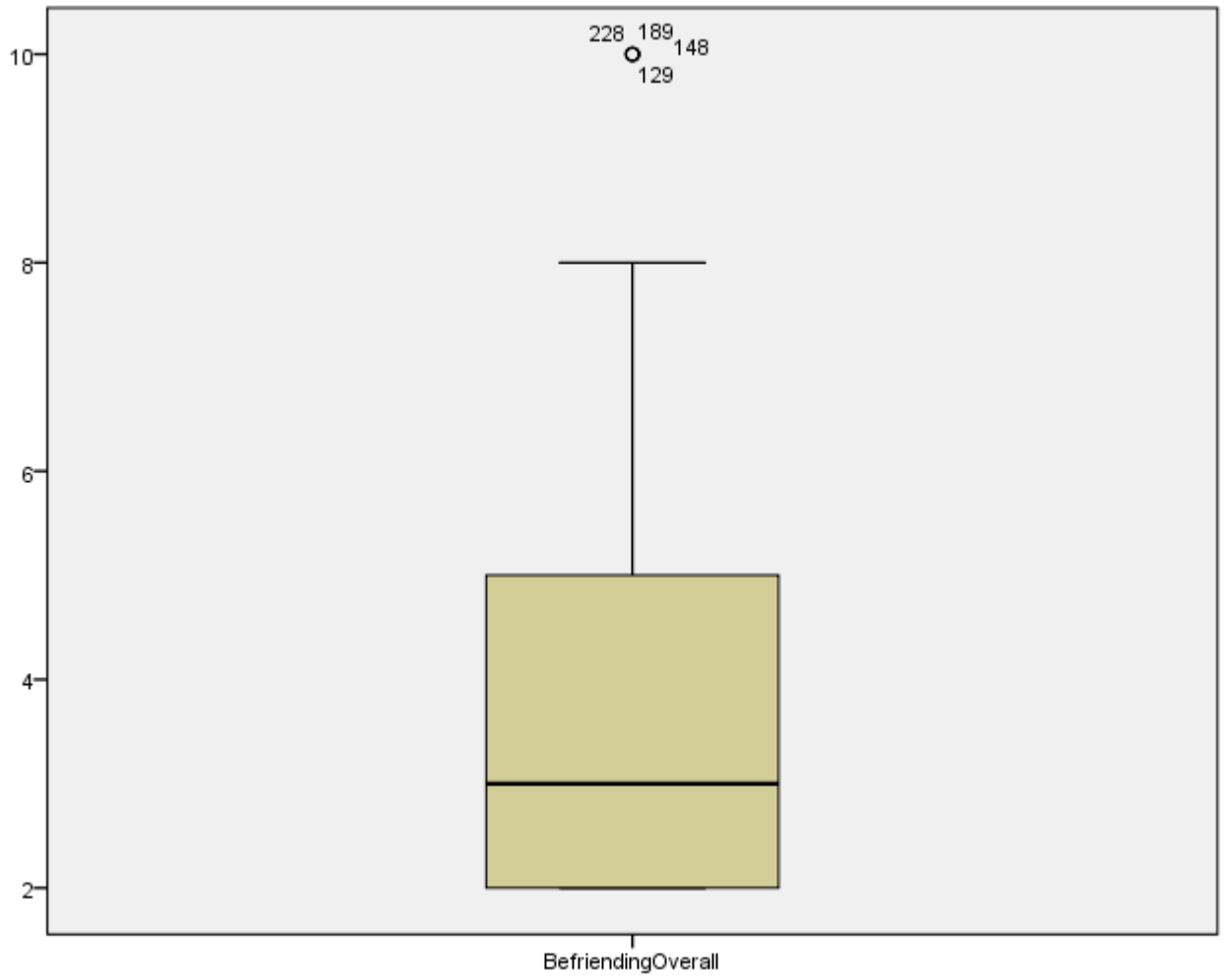
Sexualsolicitation



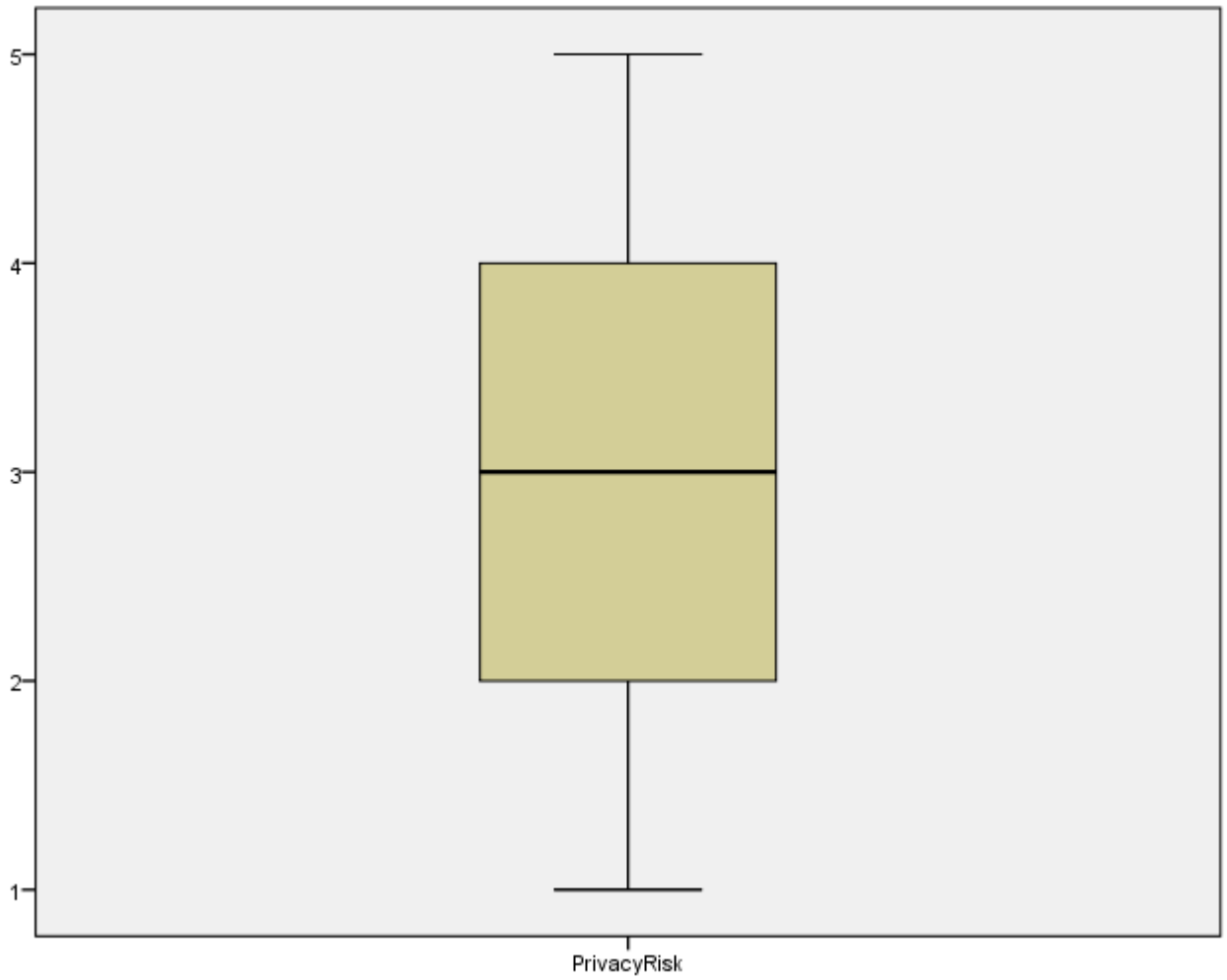
OverallRB



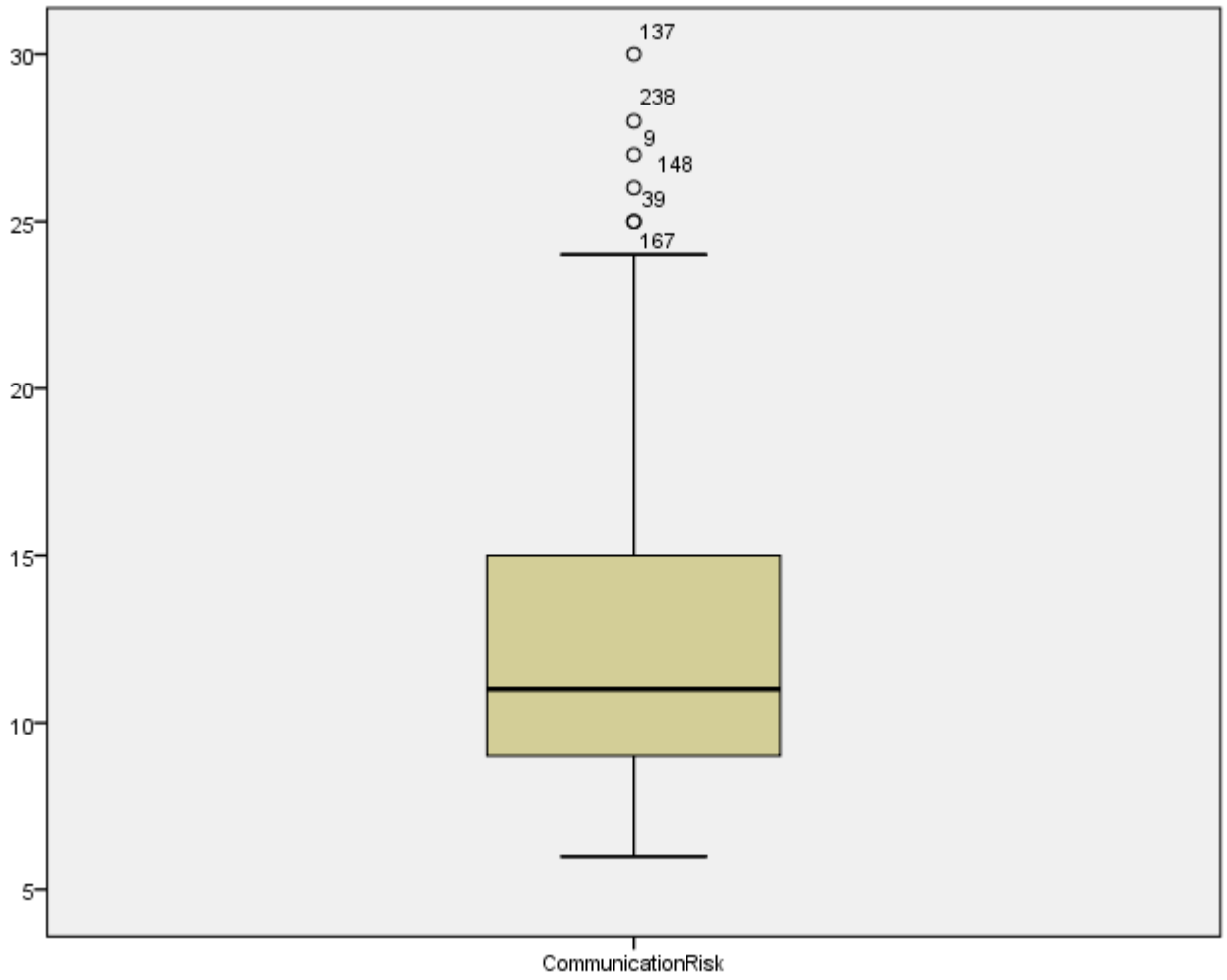
BefriendingOverall



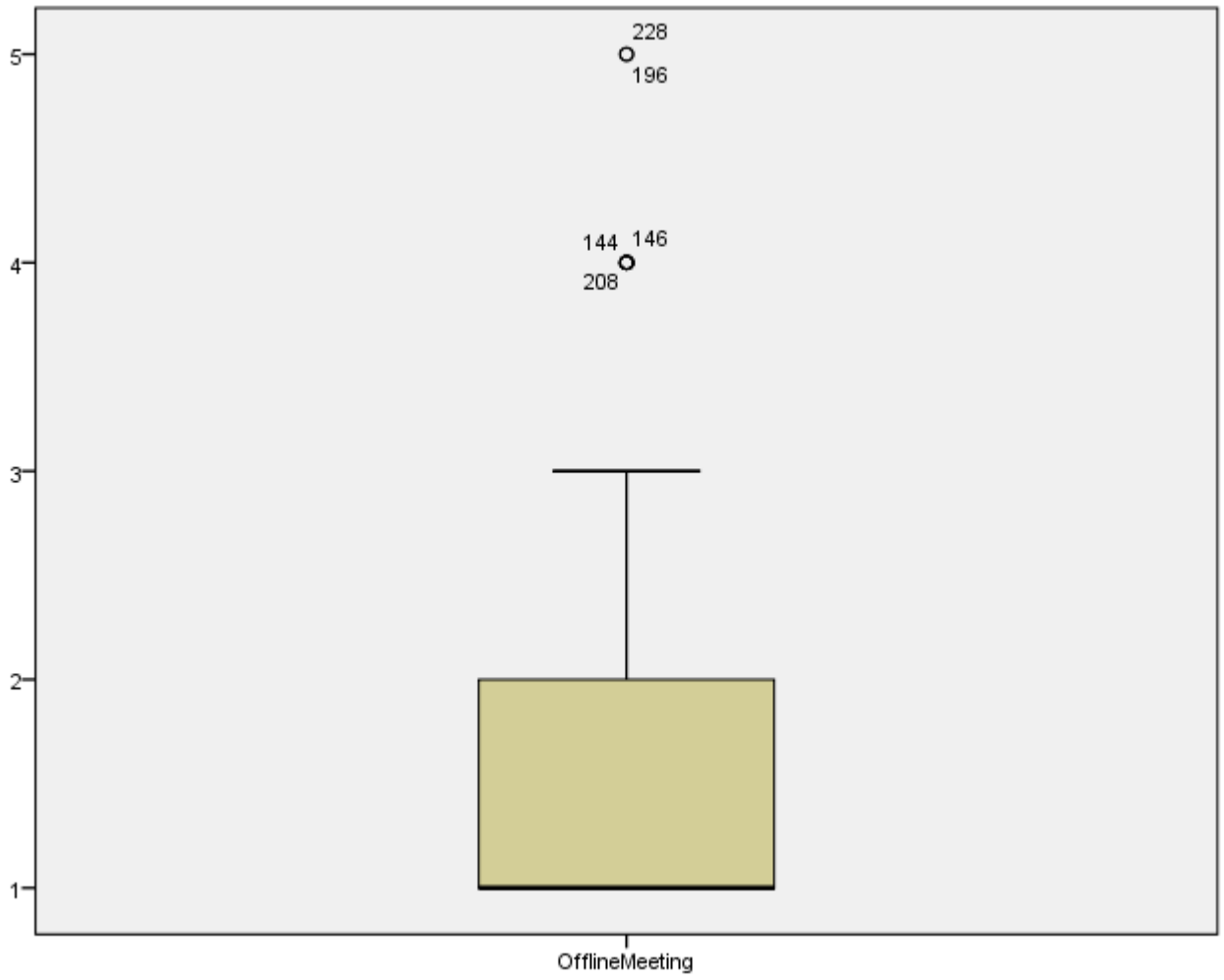
PrivacyRisk



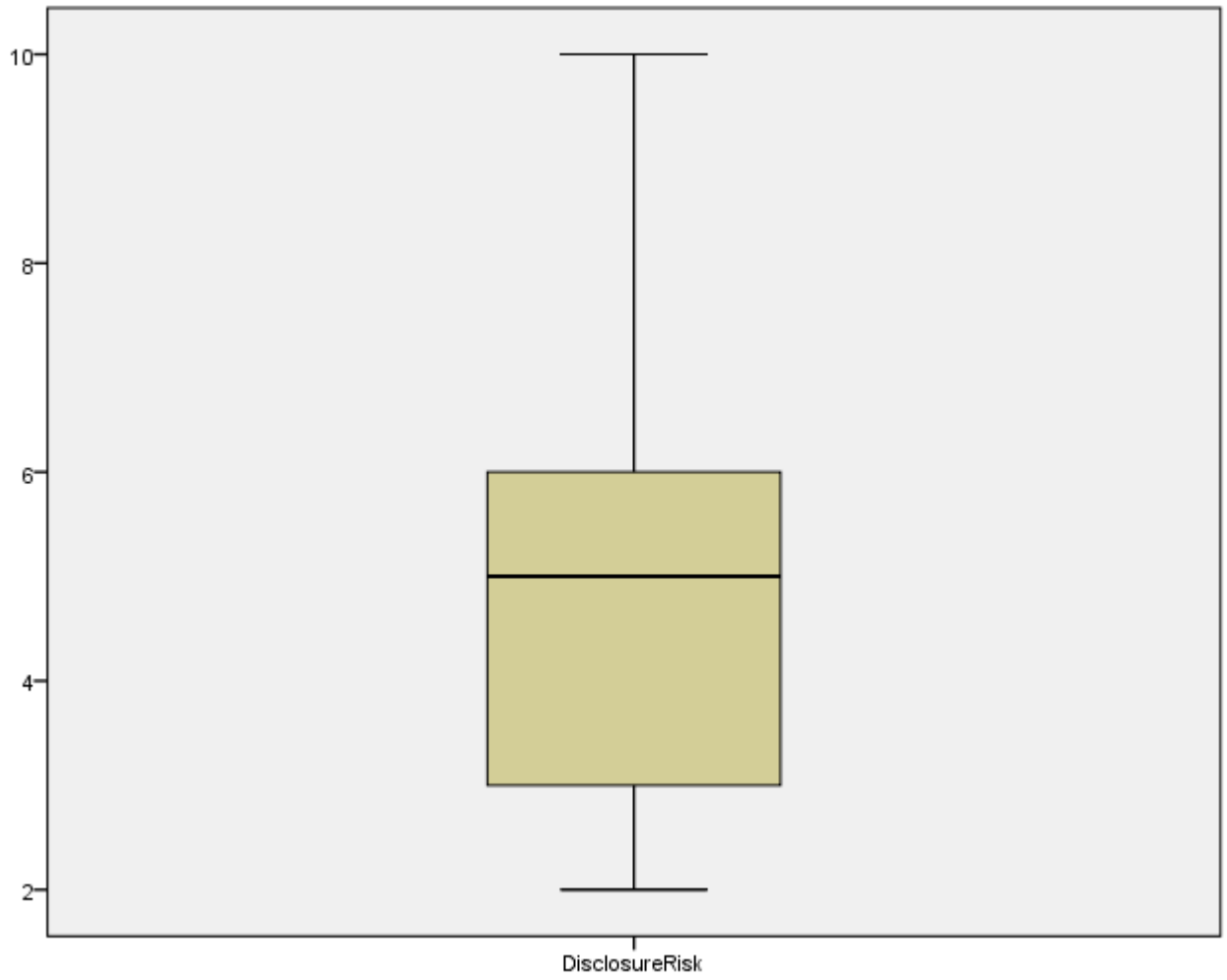
CommunicationRisk



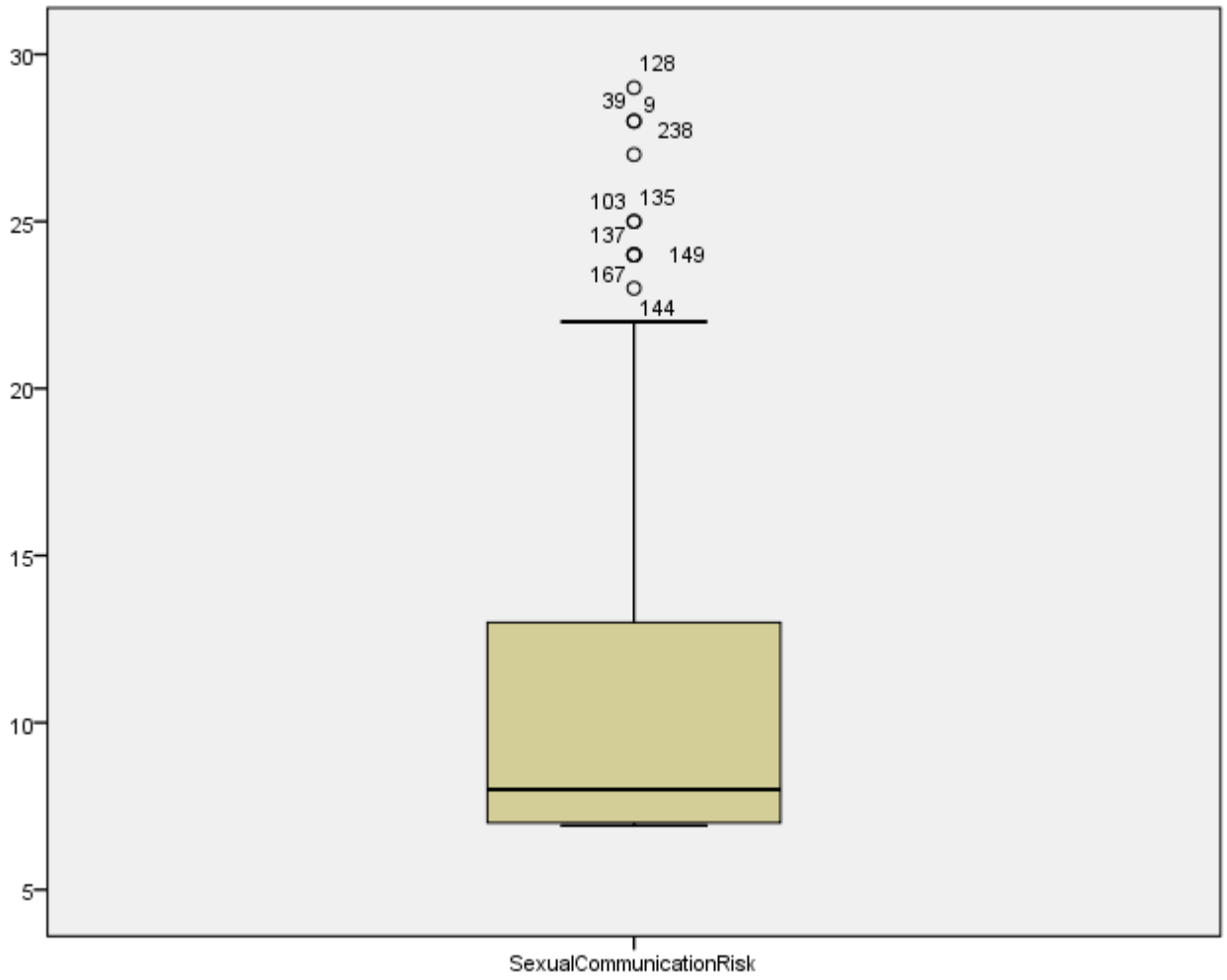
OfflineMeeting



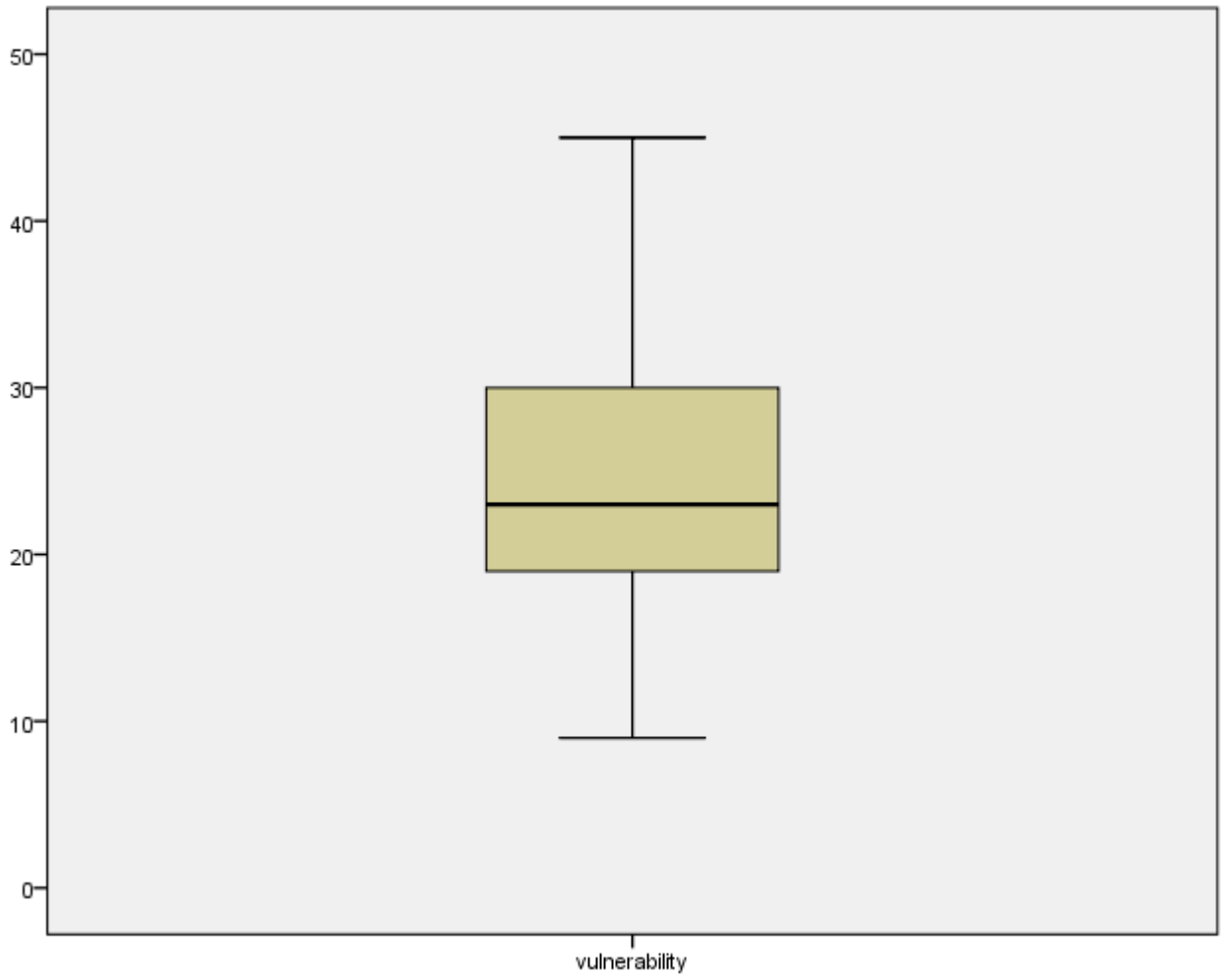
DisclosureRisk



SexualCommunicationRisk



Vulnerability



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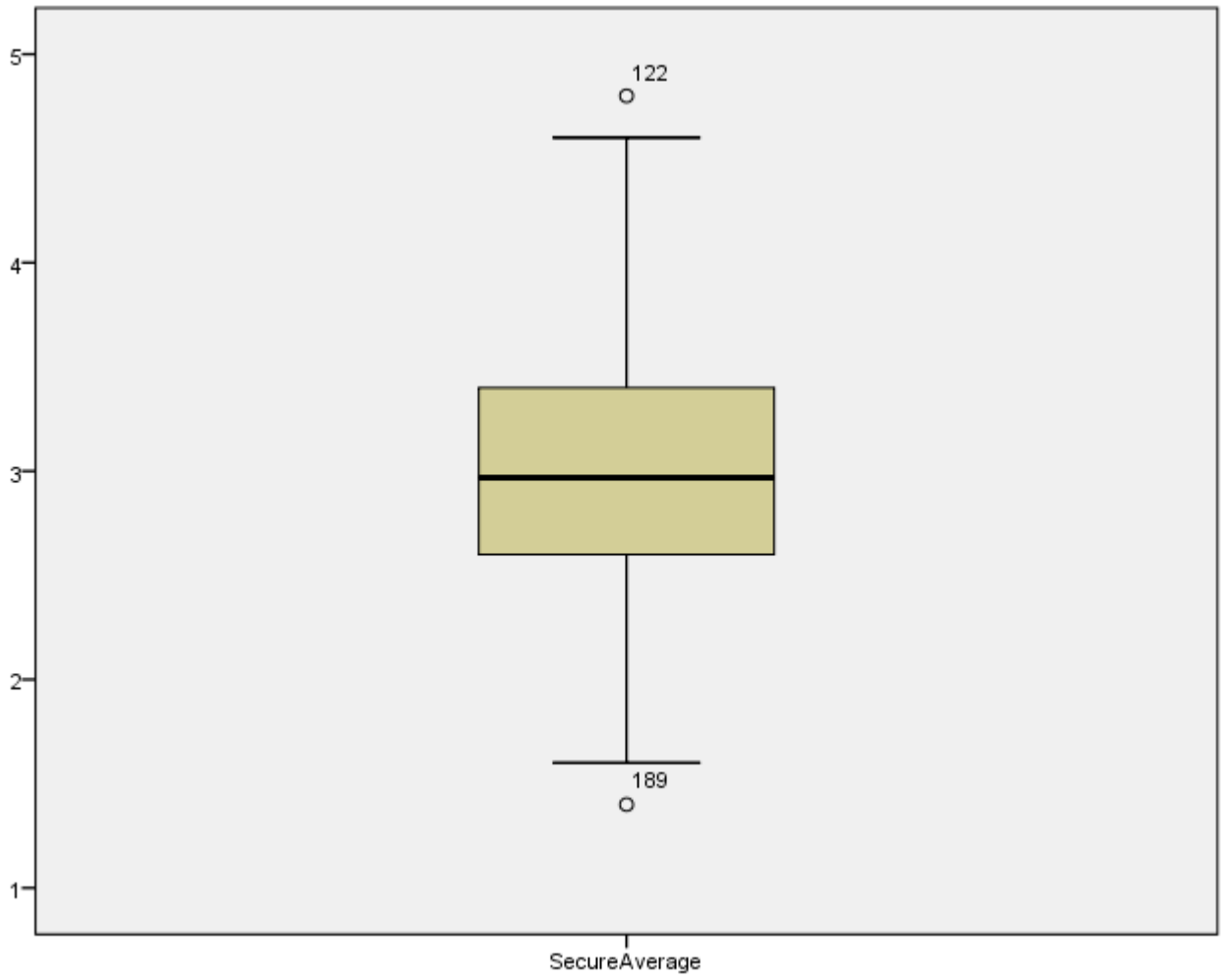

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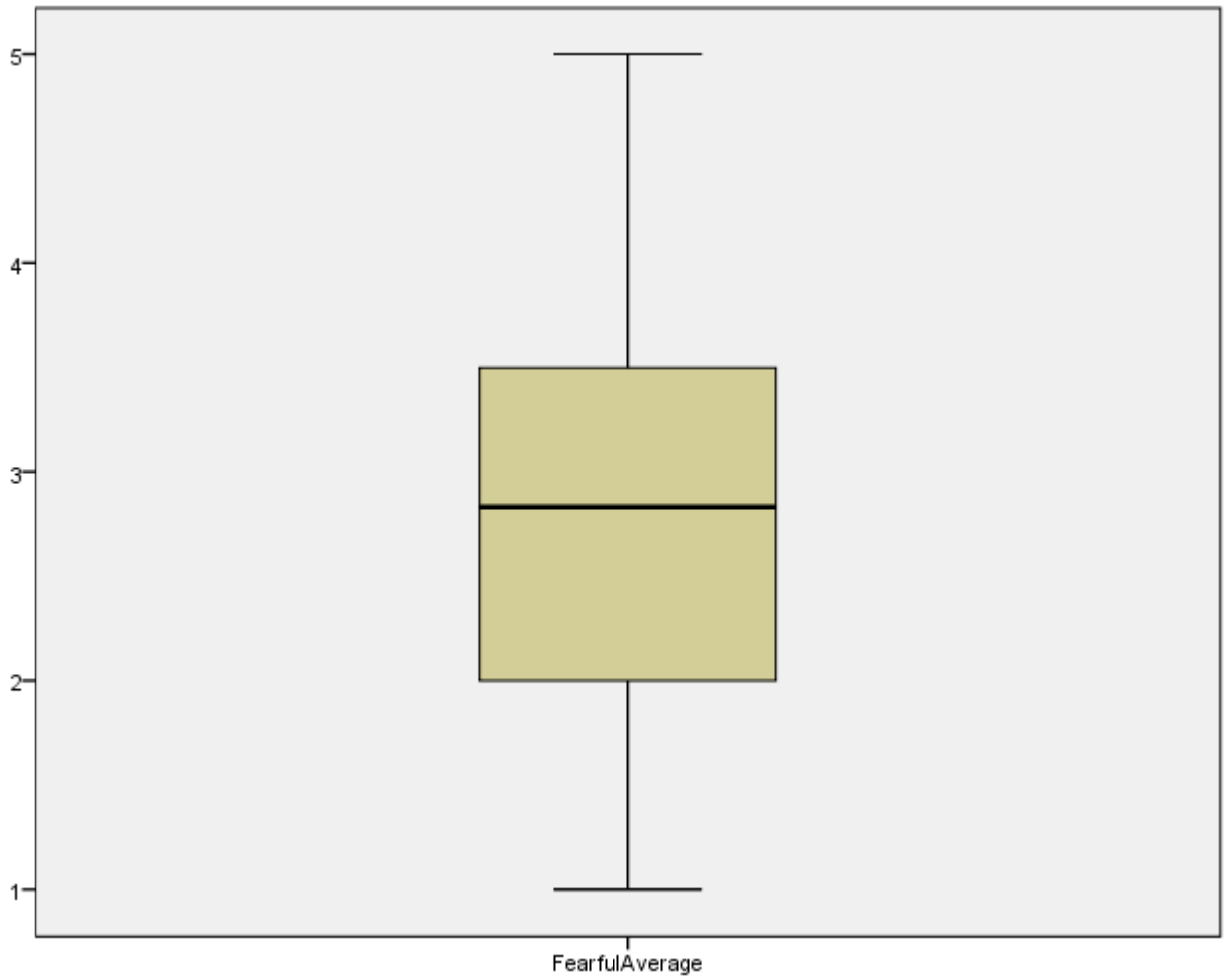
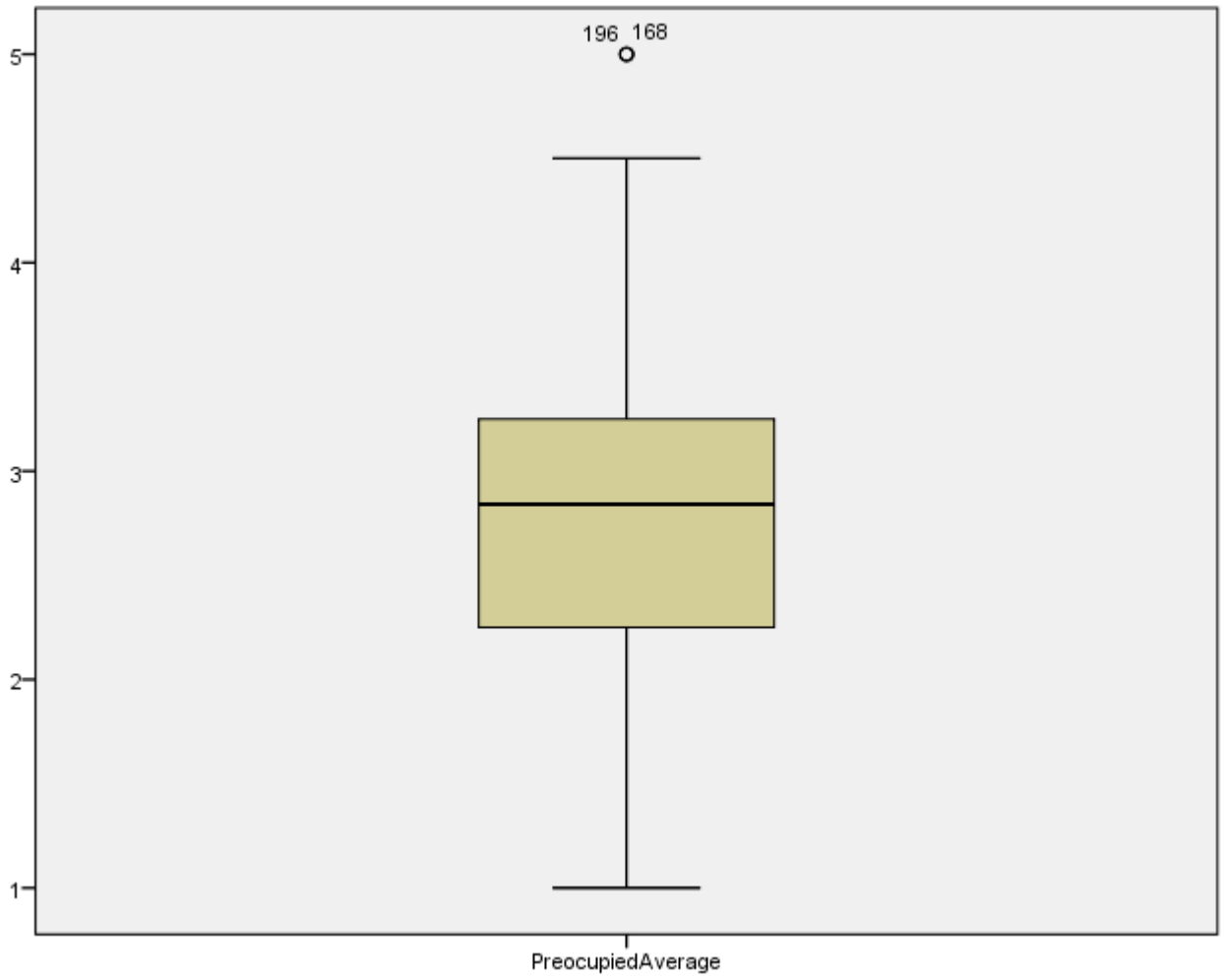


PreocupiedAverage



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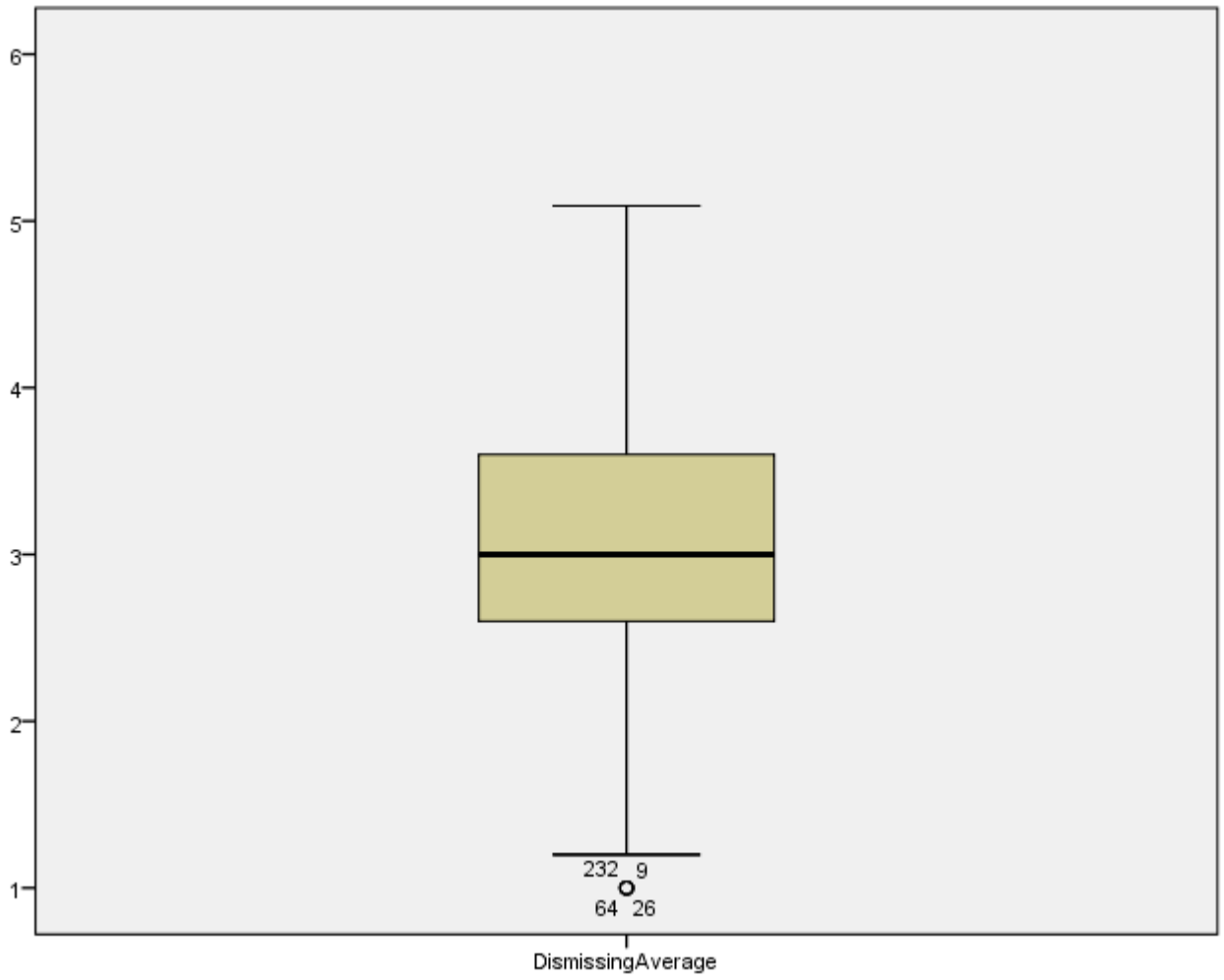
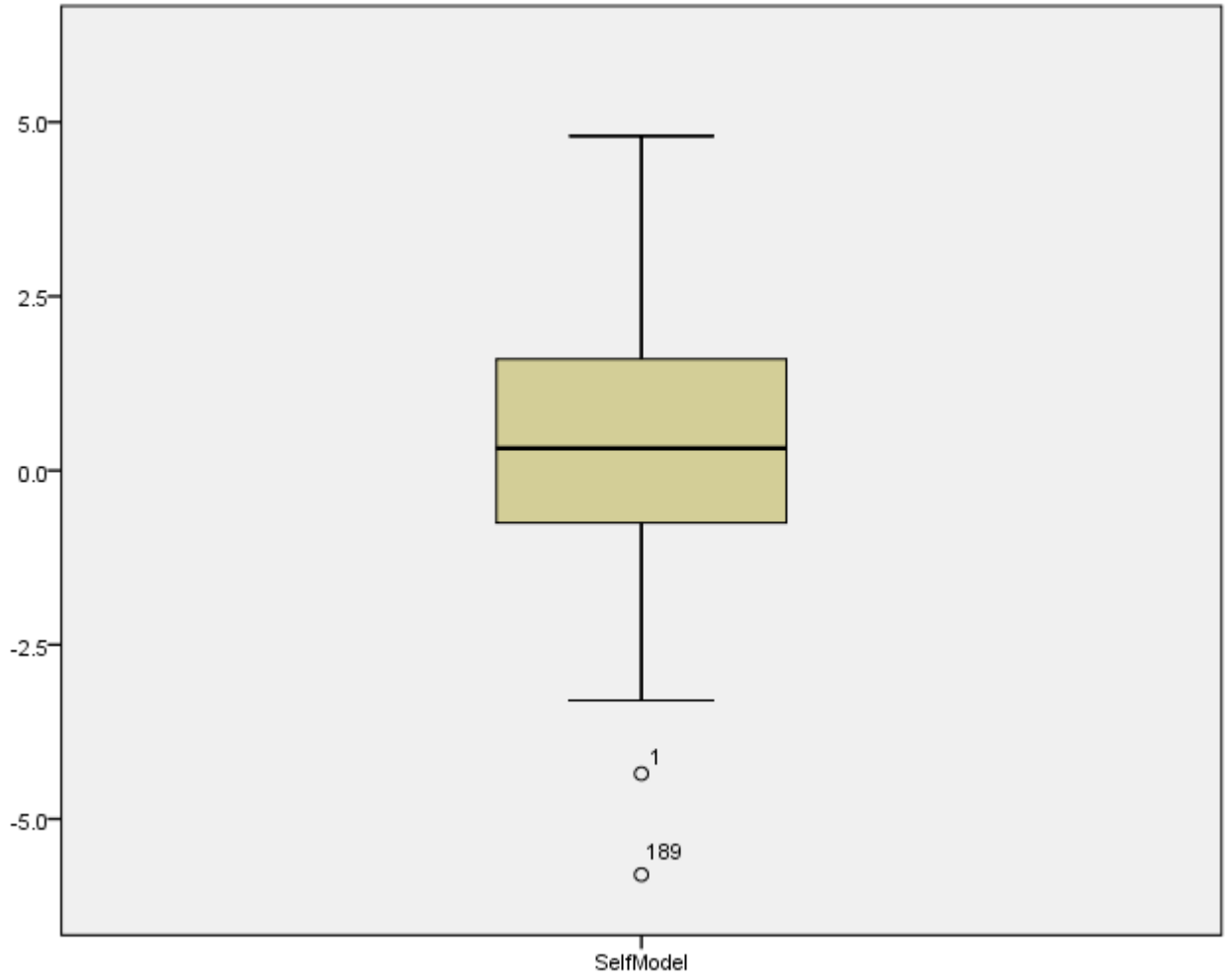
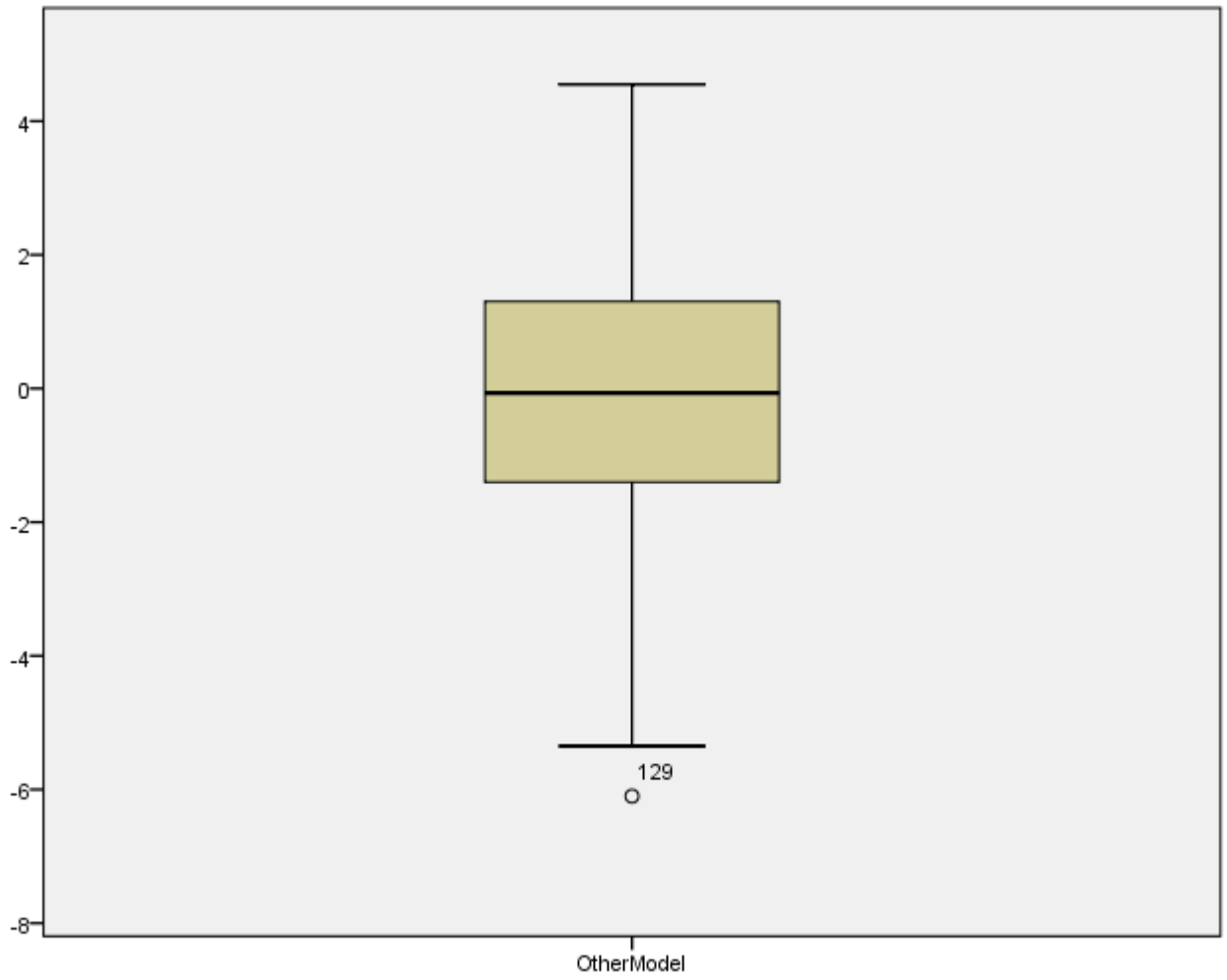


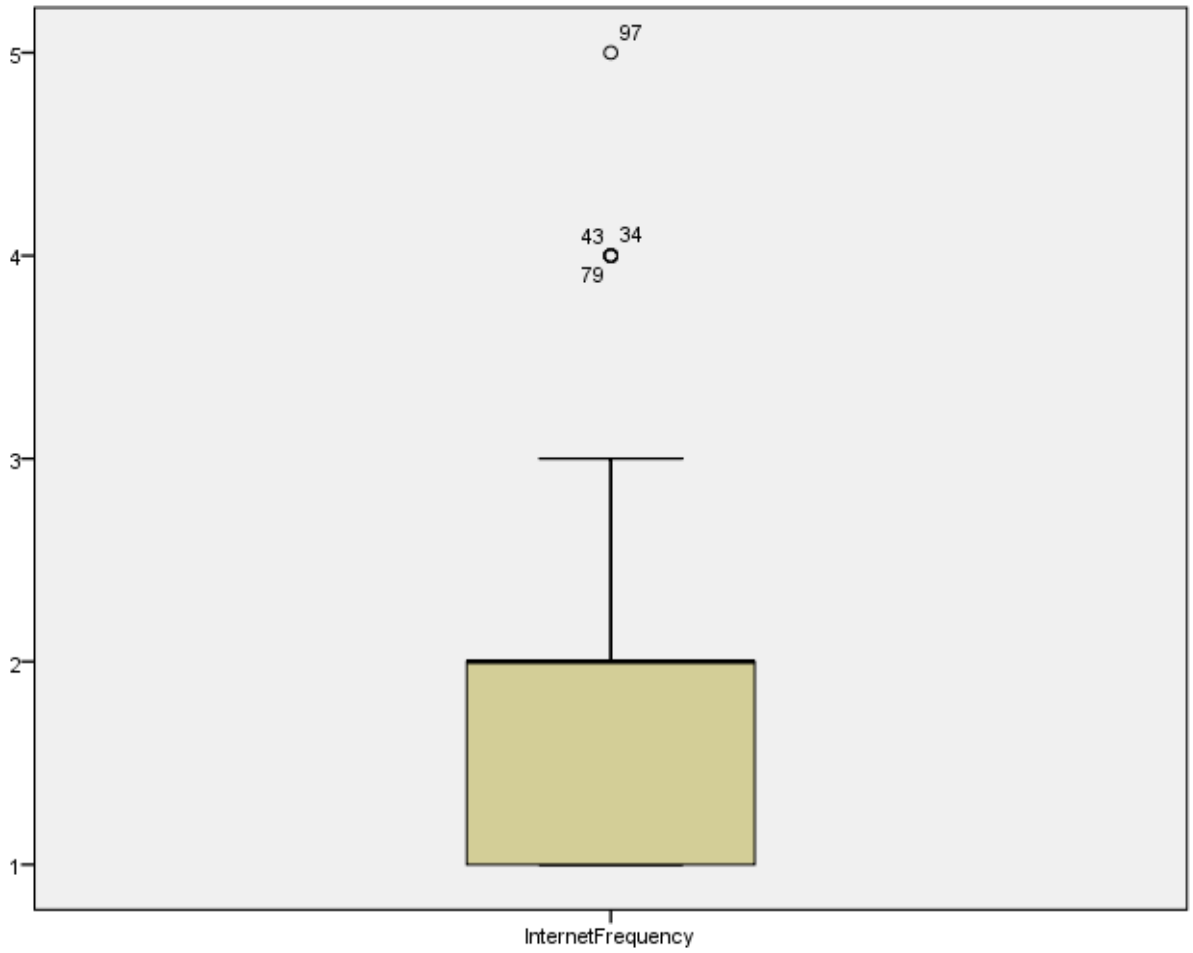
SelfModel



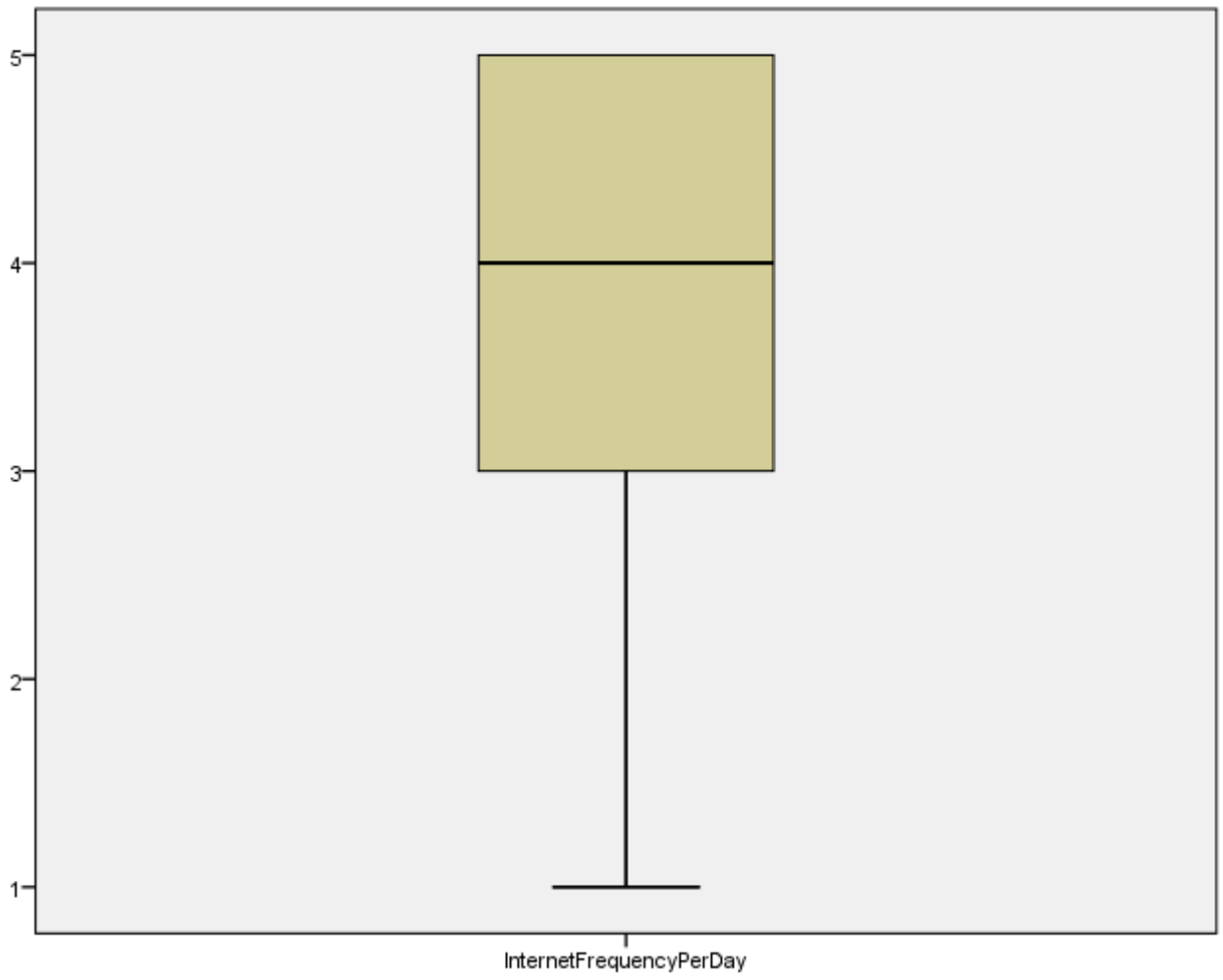
OtherModel



InternetFrequency



InternetFrequencyPerDay



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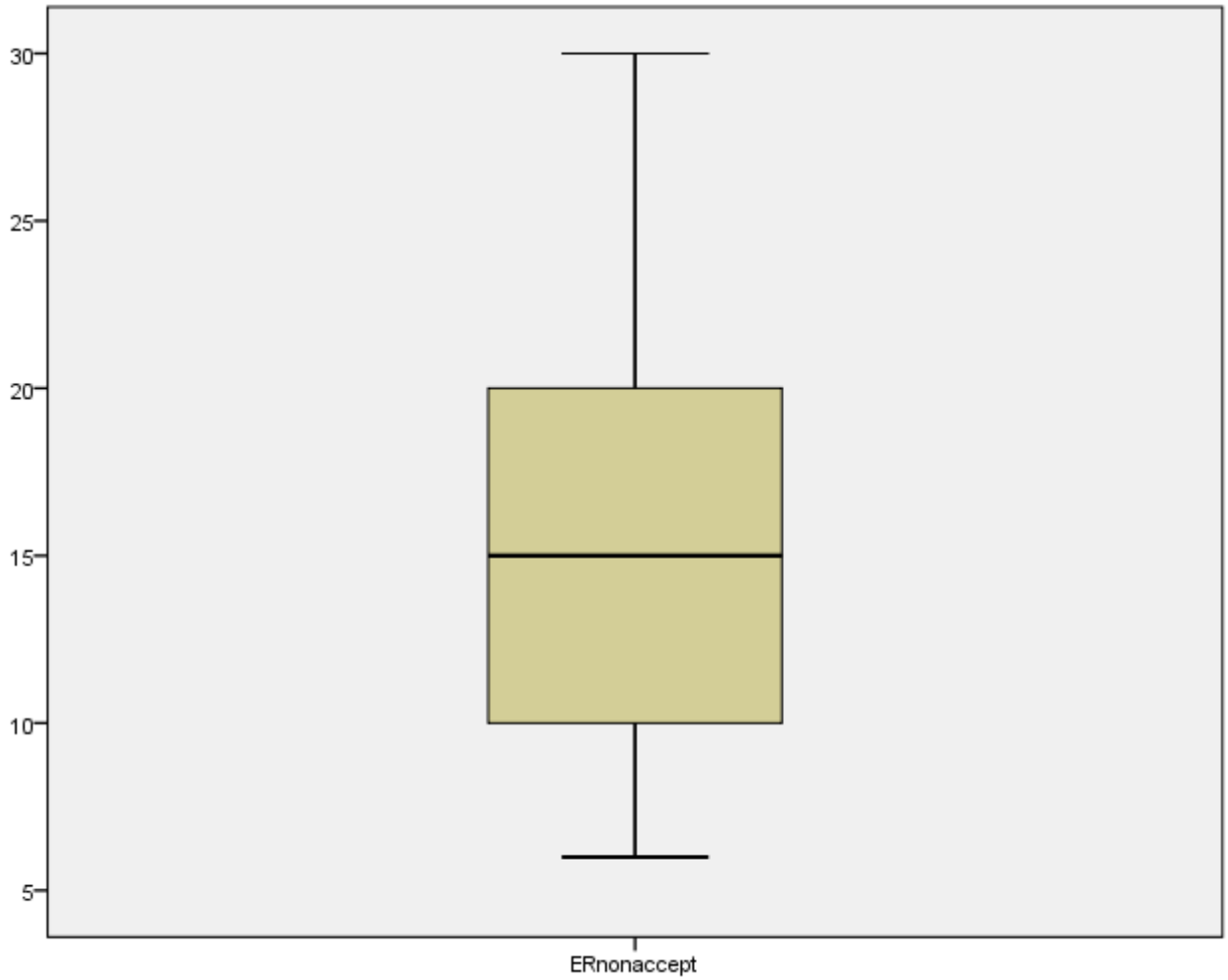
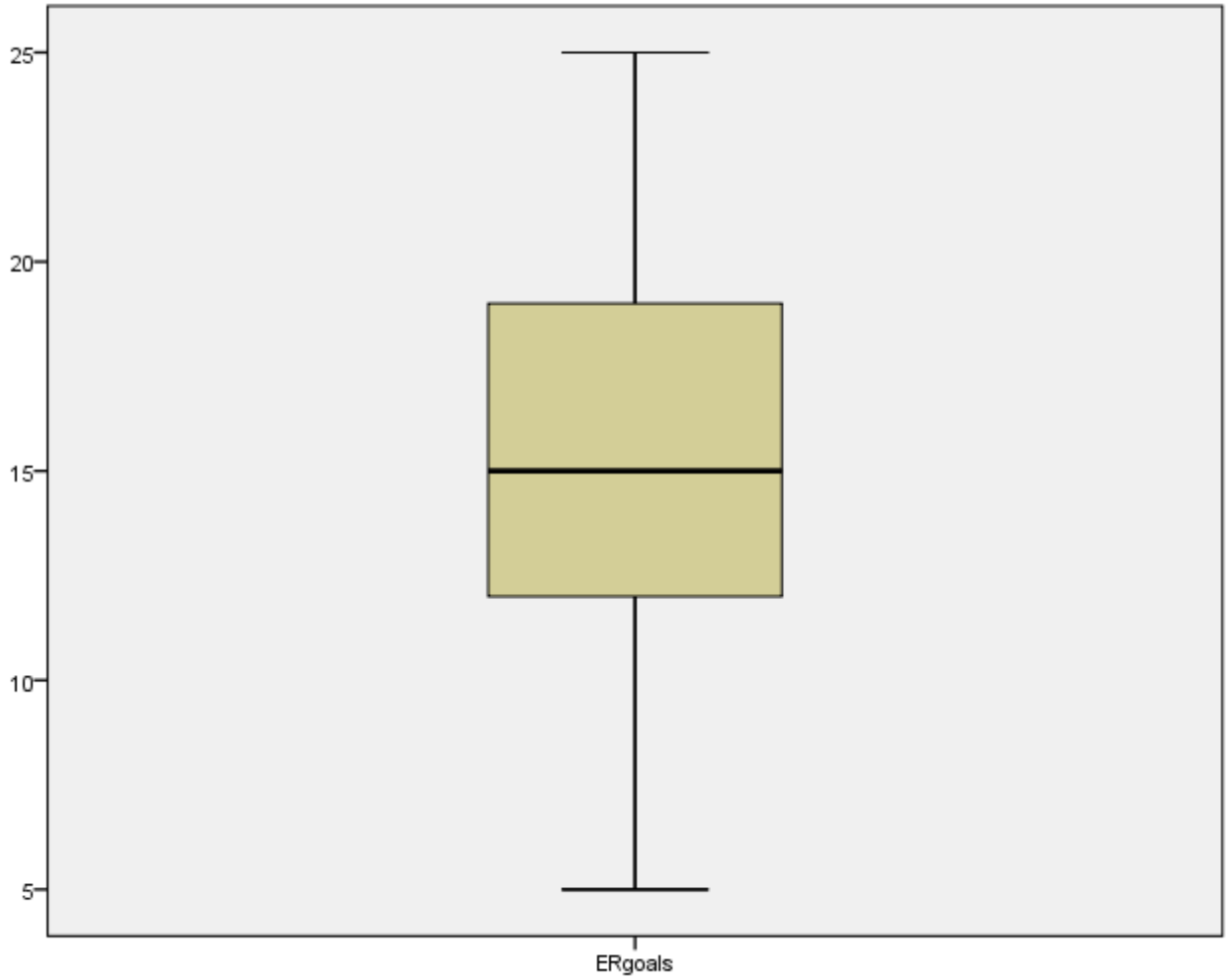


ERgoals



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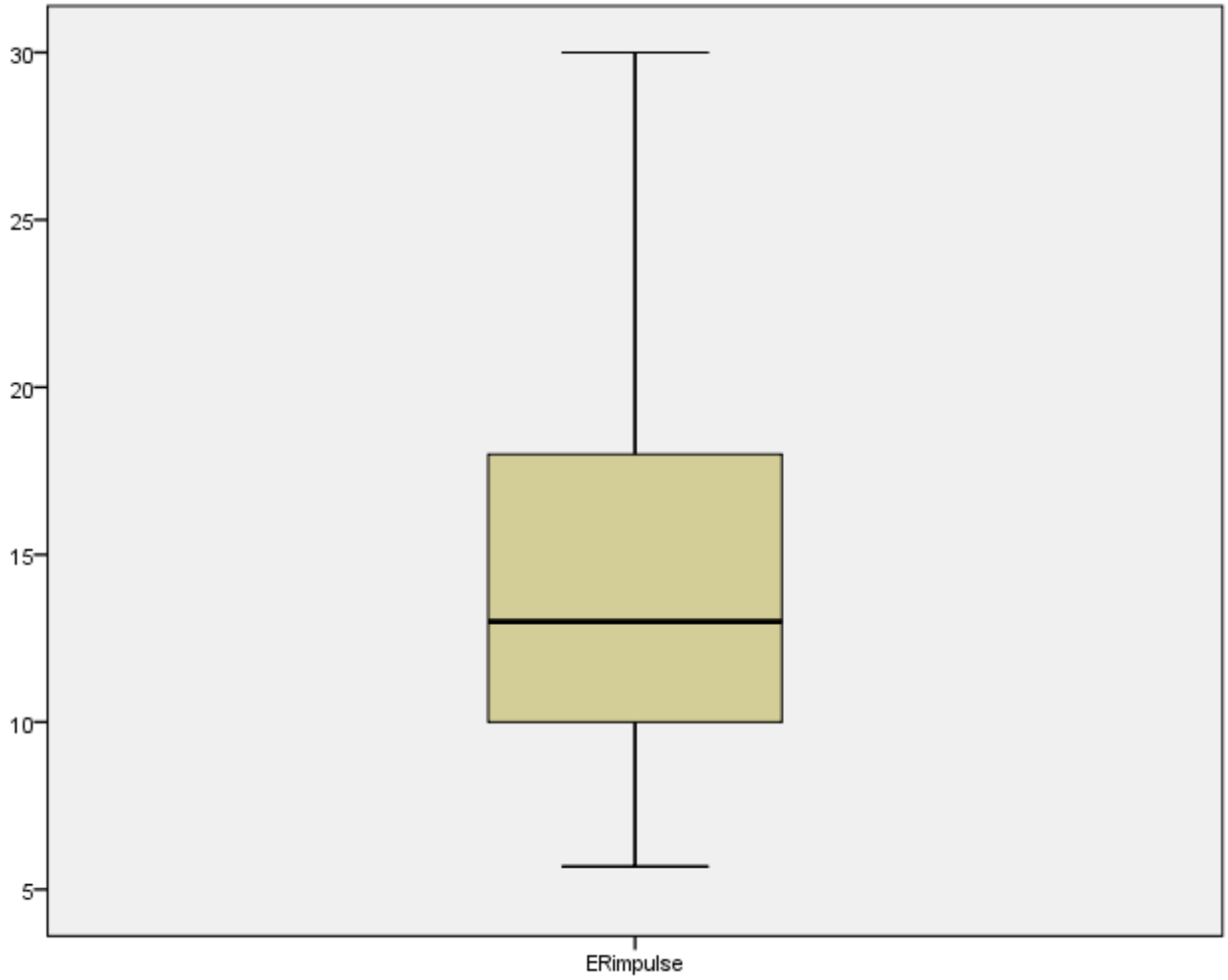
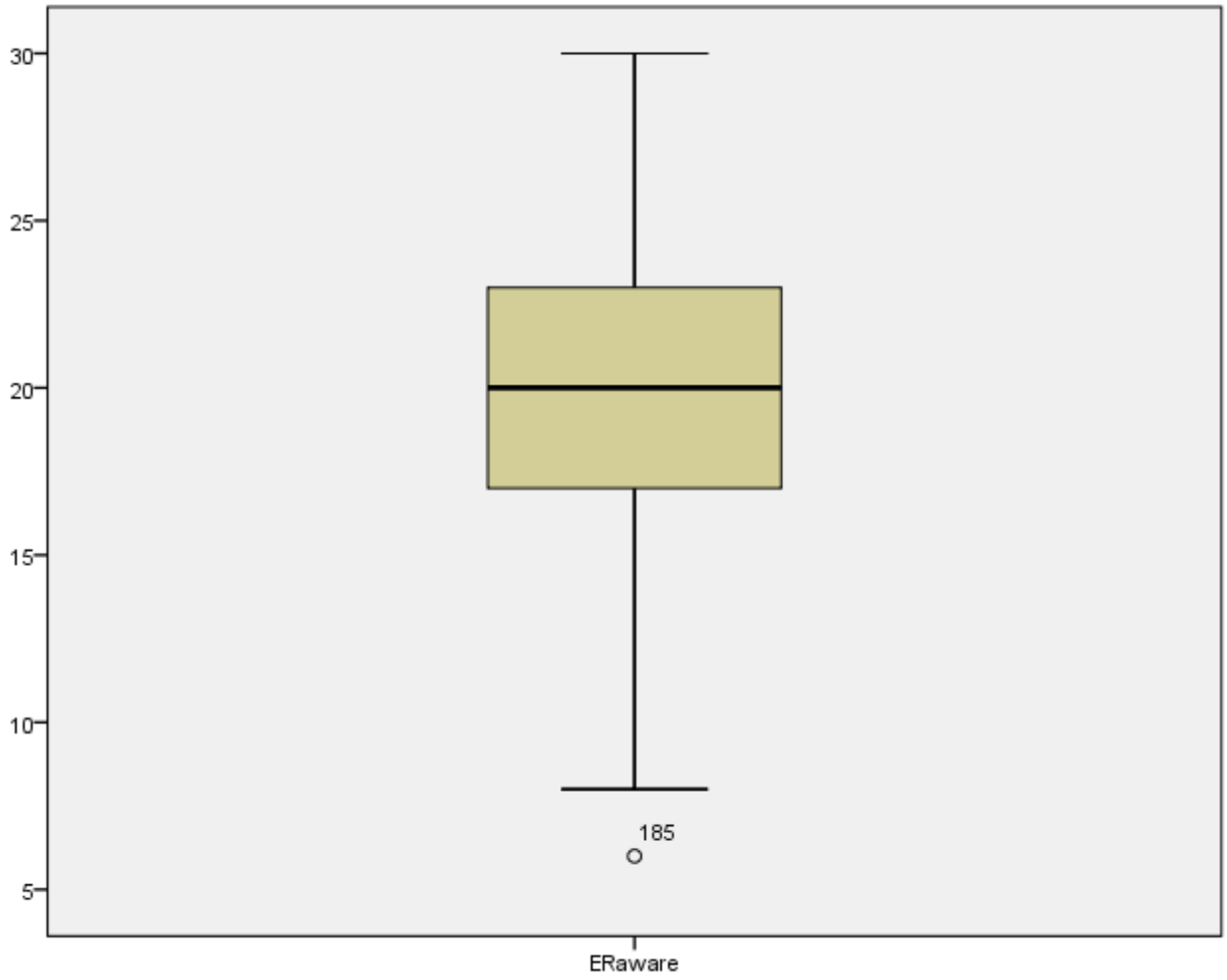


ERaware



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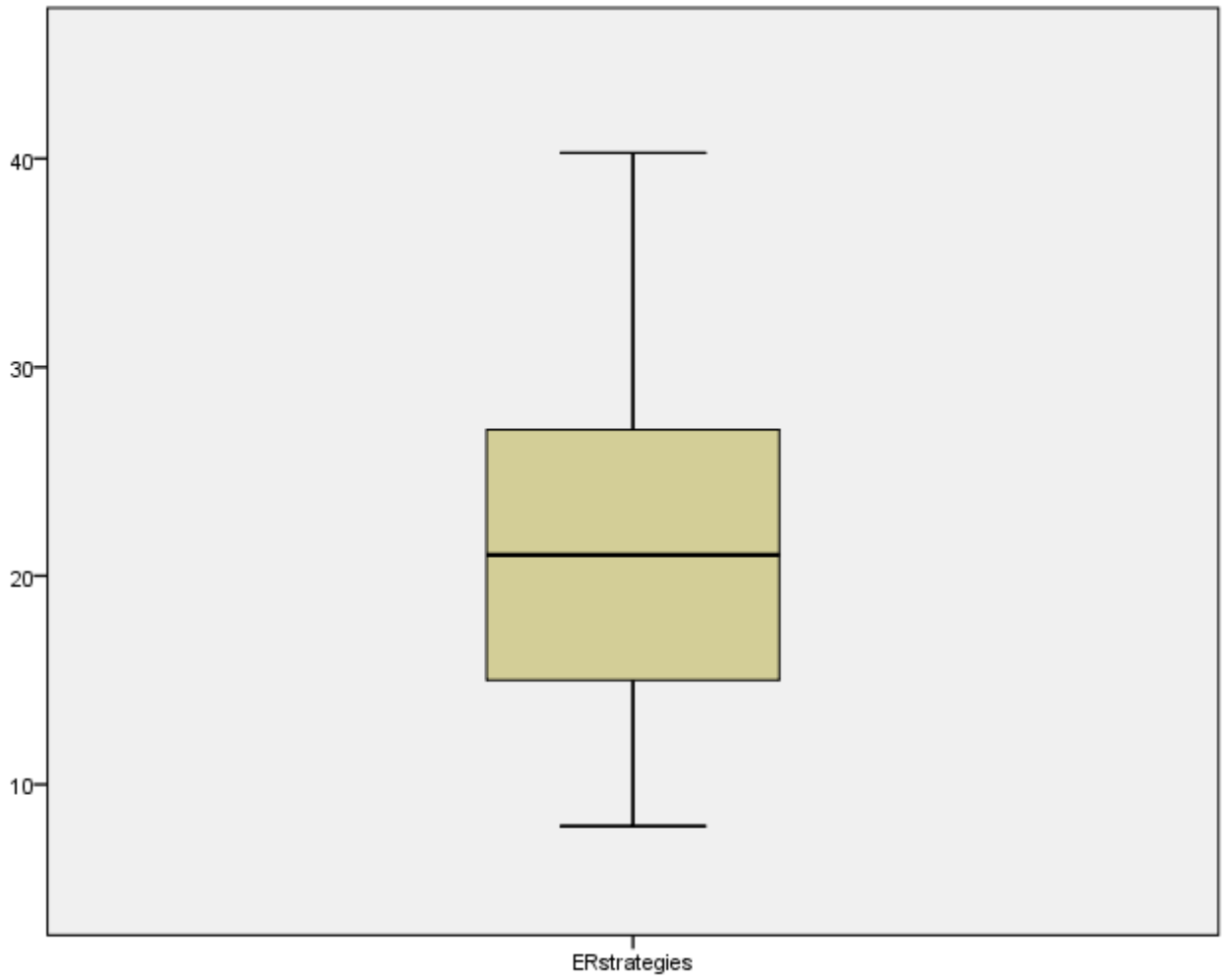
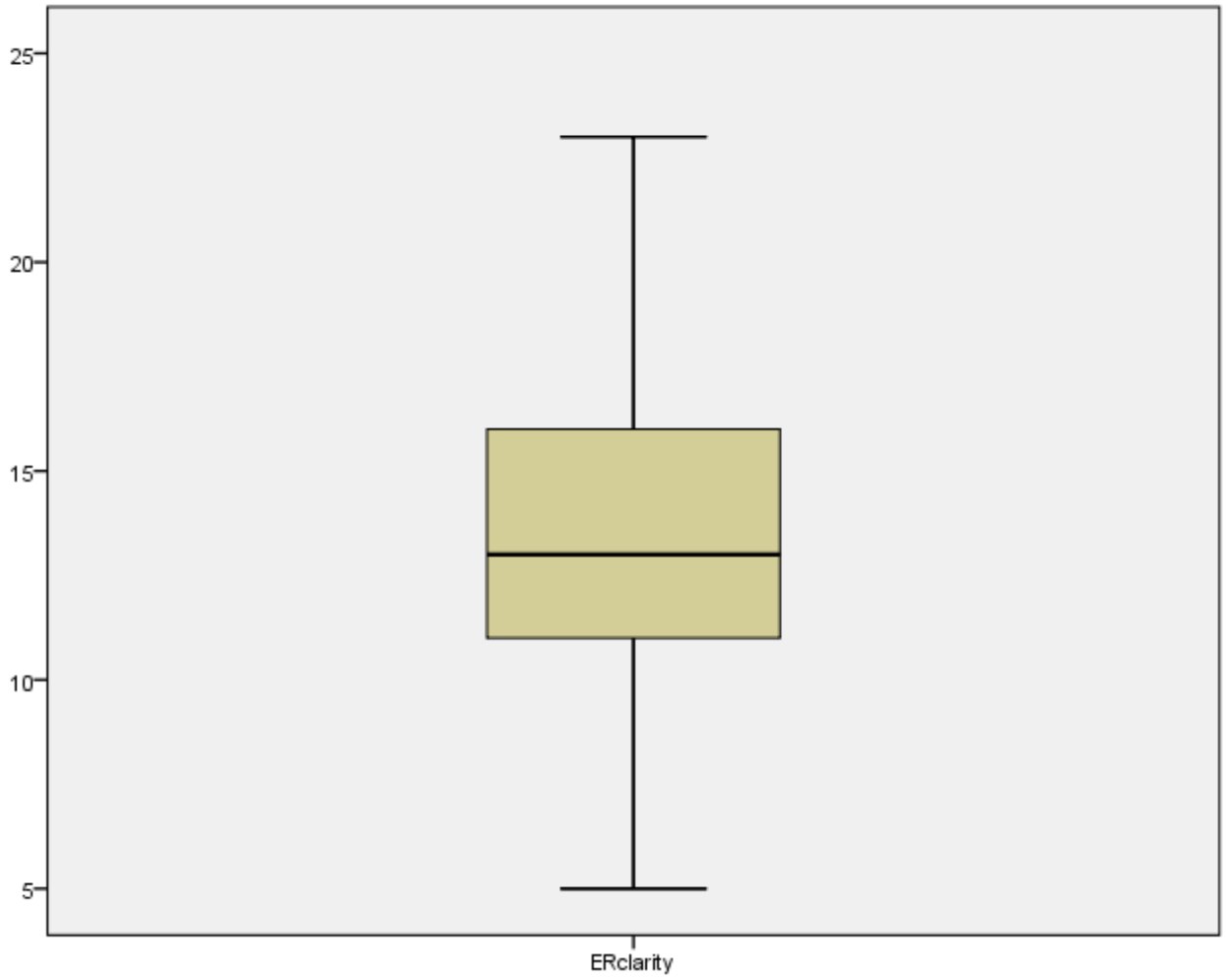


ERclarity



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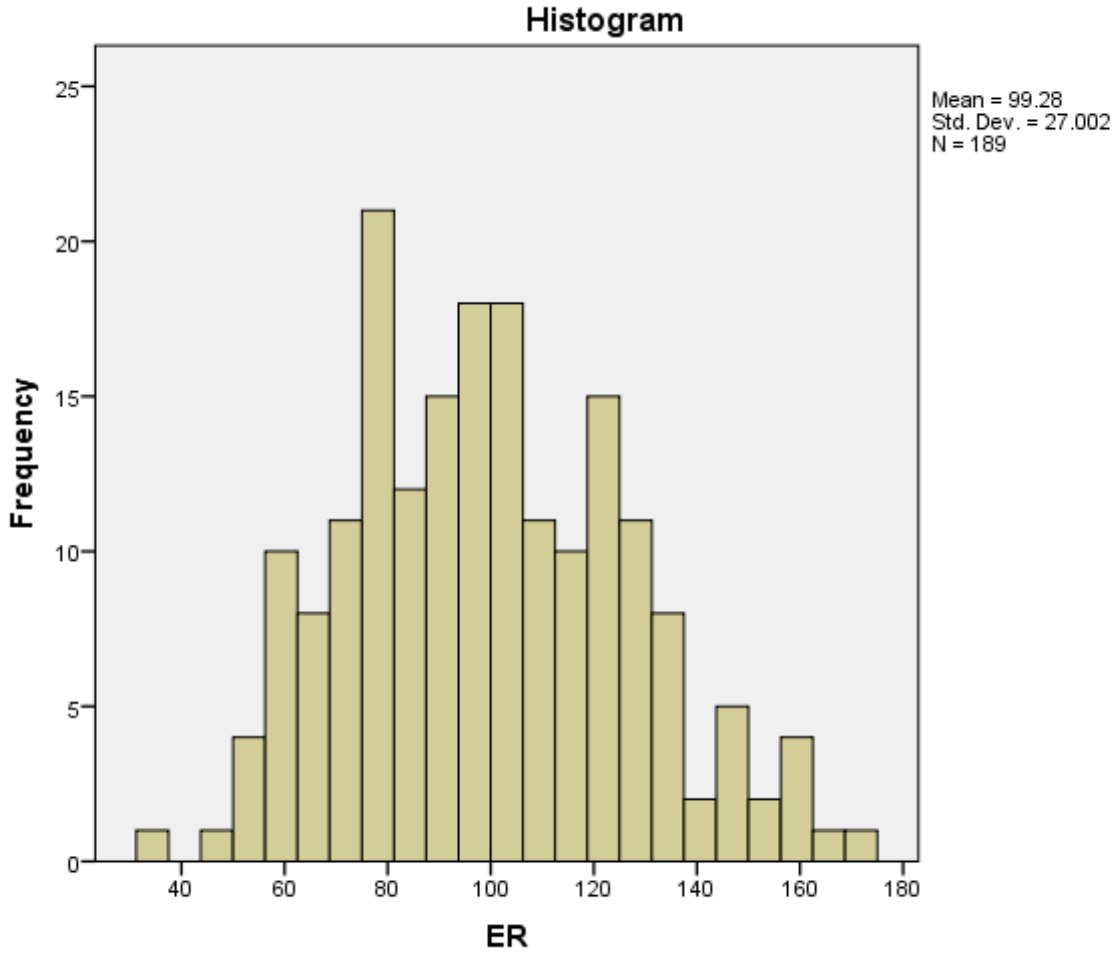
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60
80
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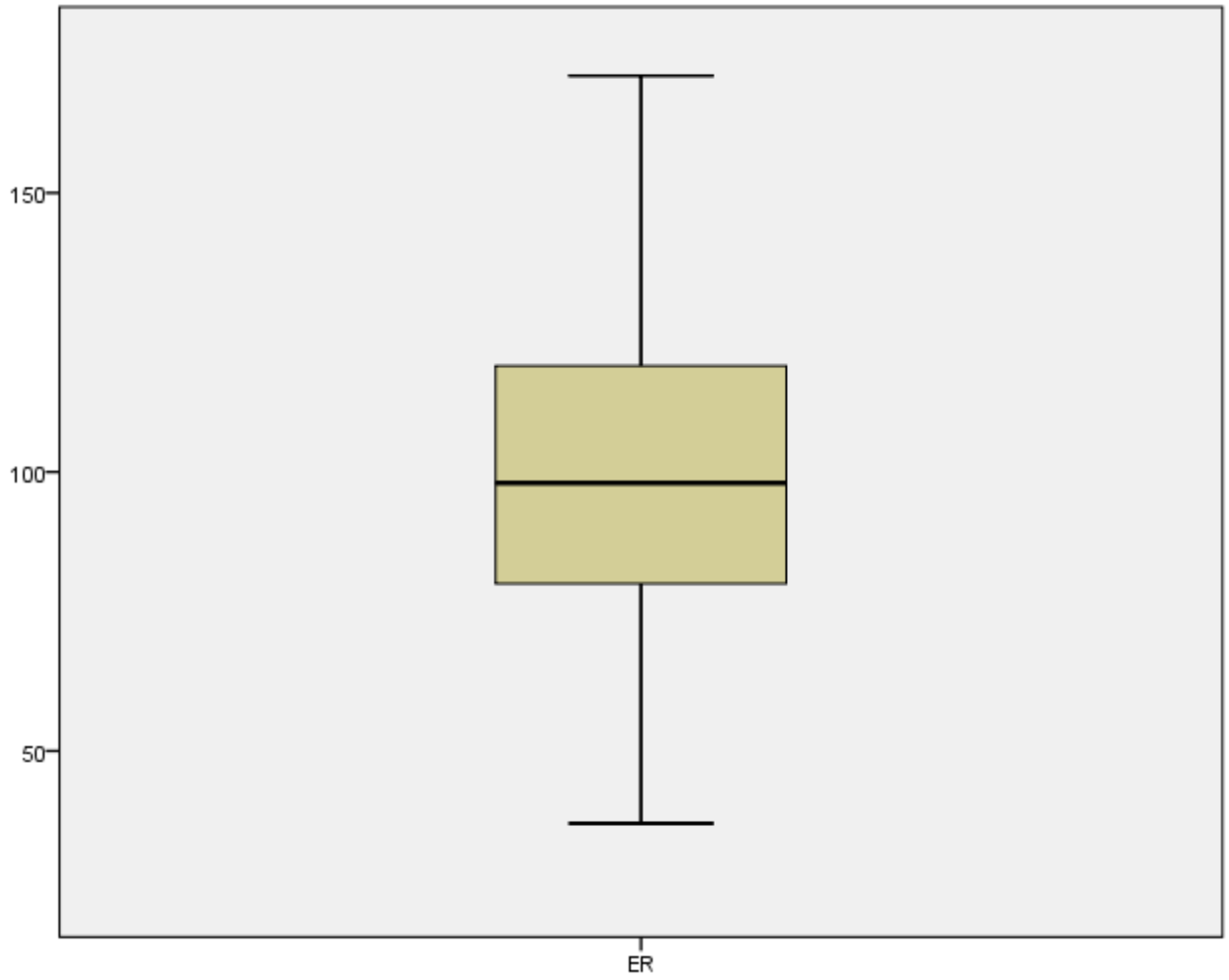
140
160
180
ER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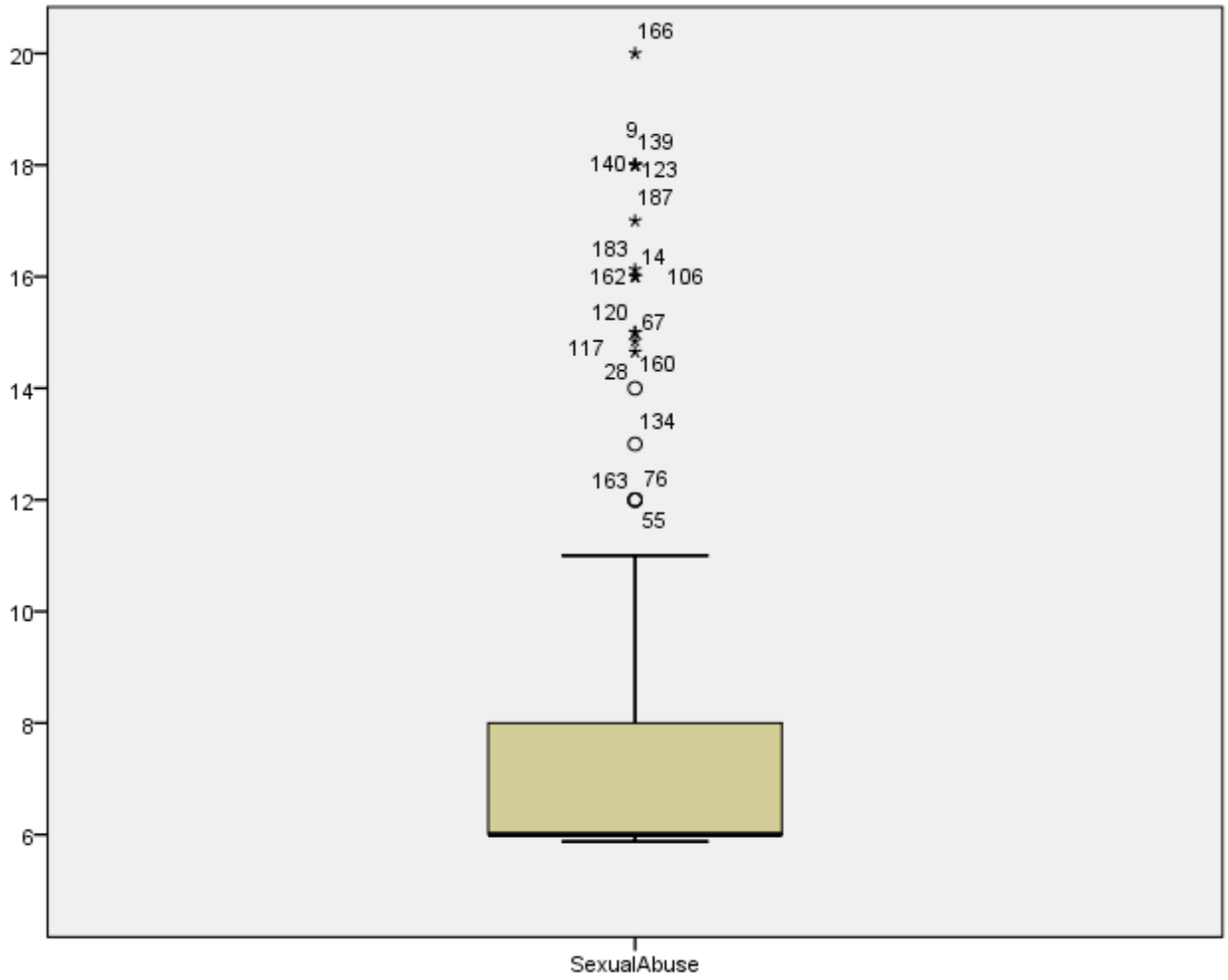
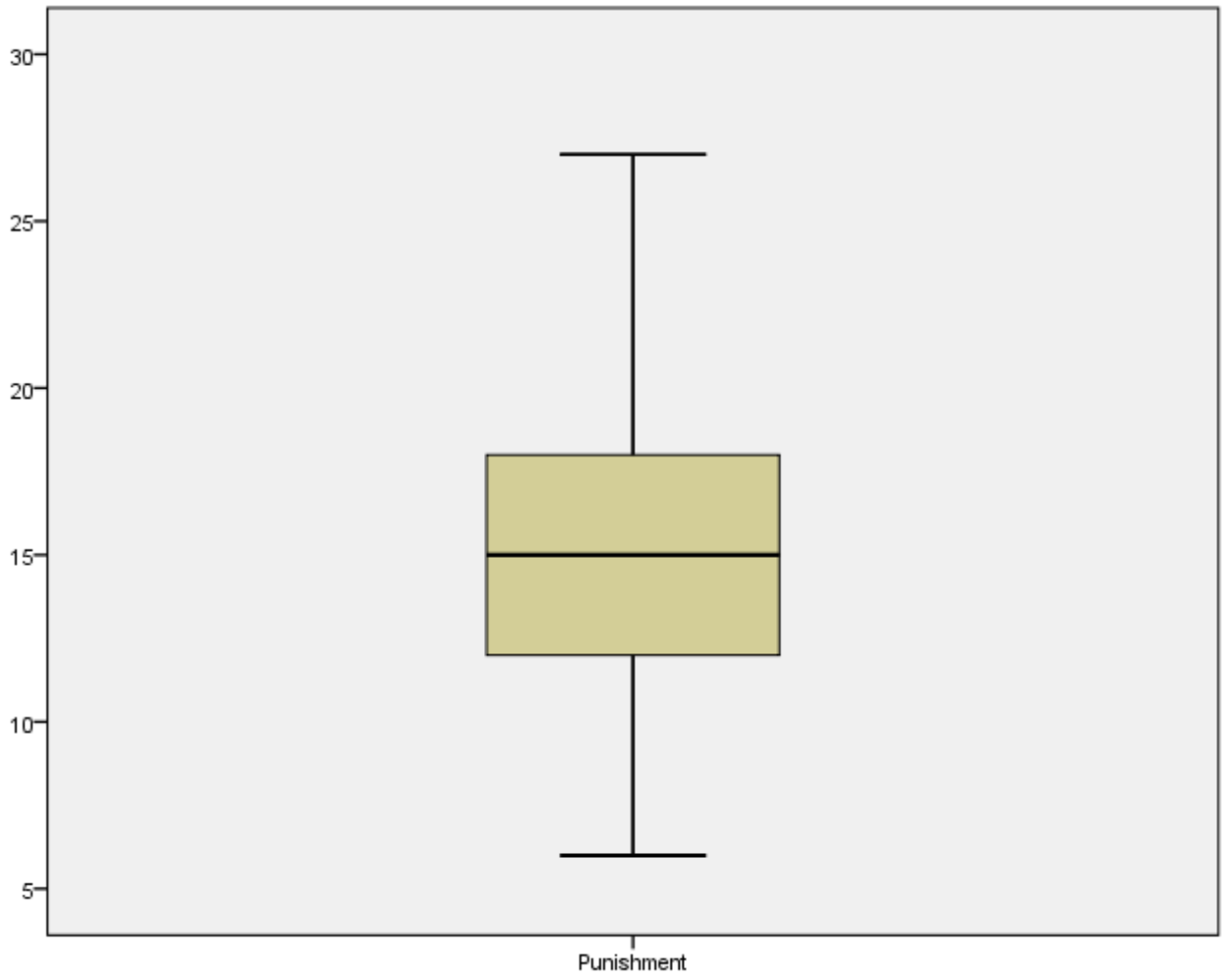
100
50
ER

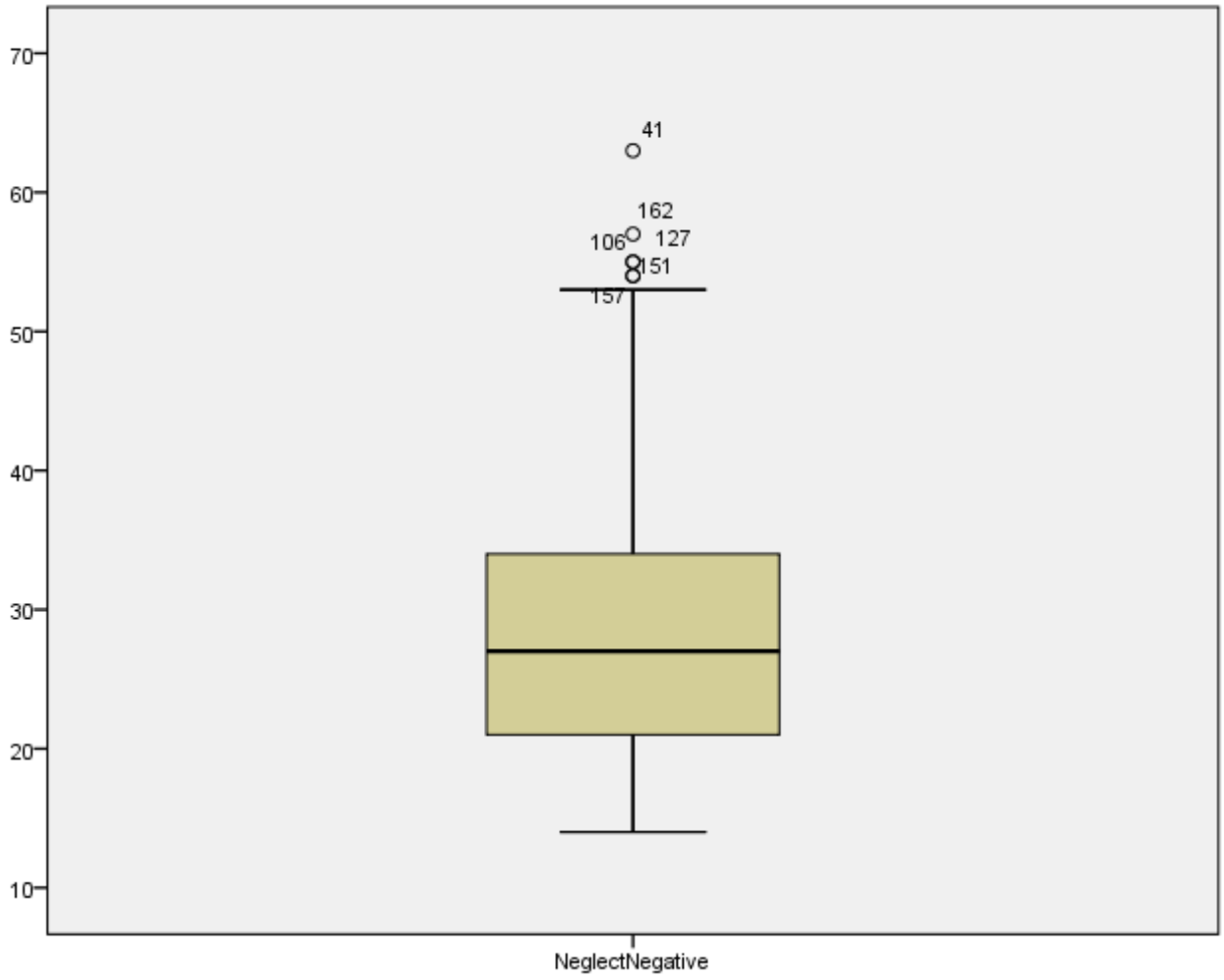
SexualAbuse



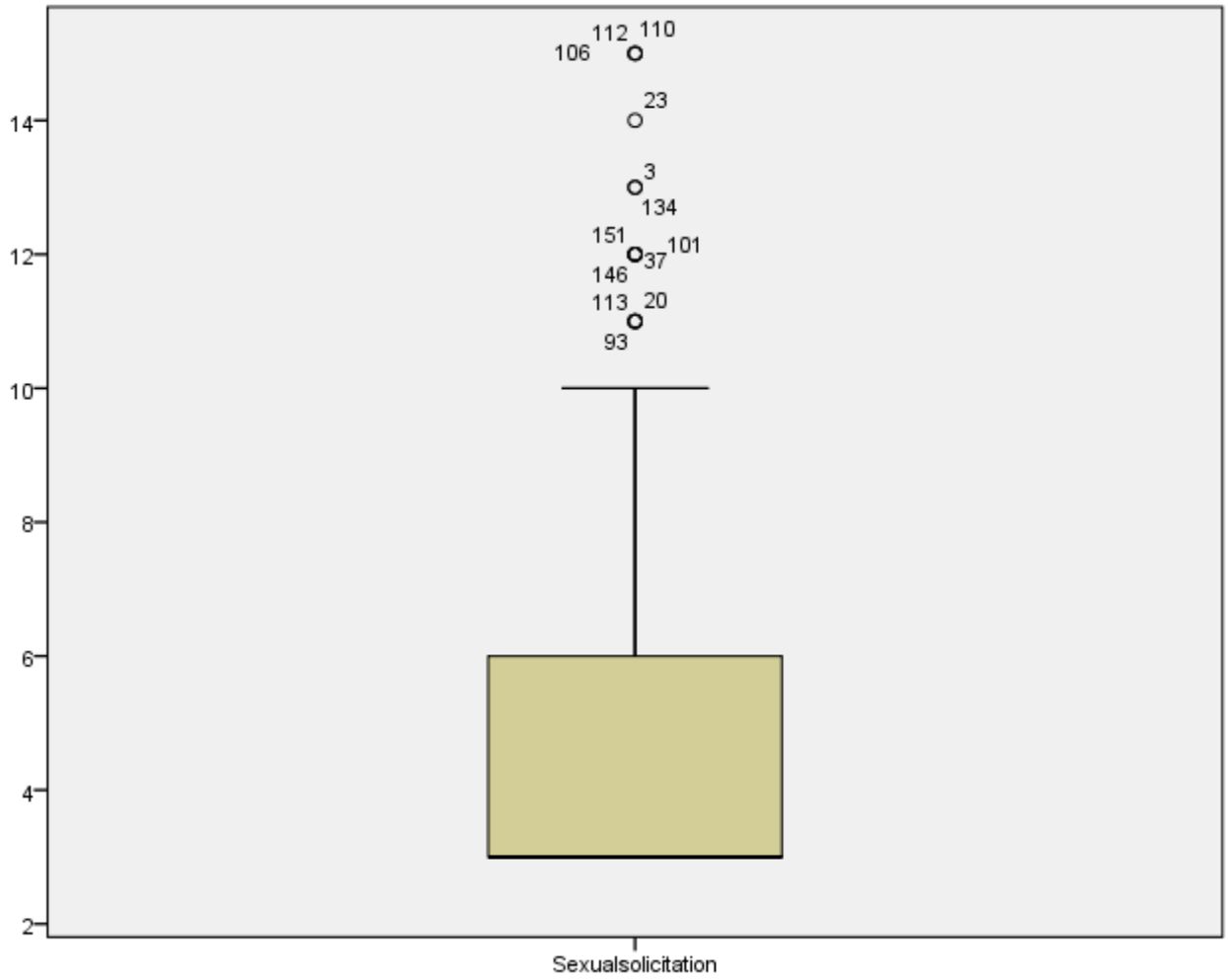
Punishment



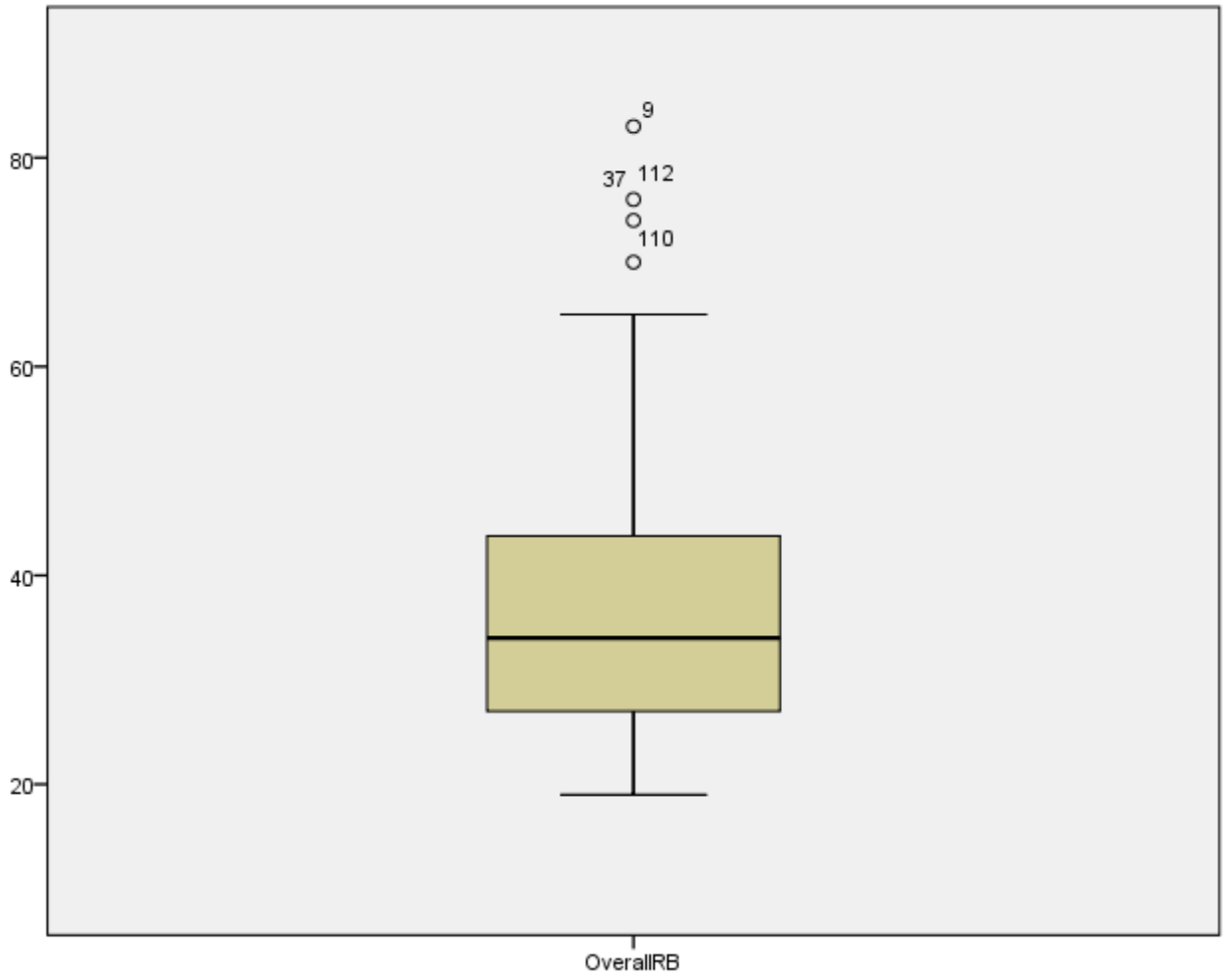
NeglectNegative



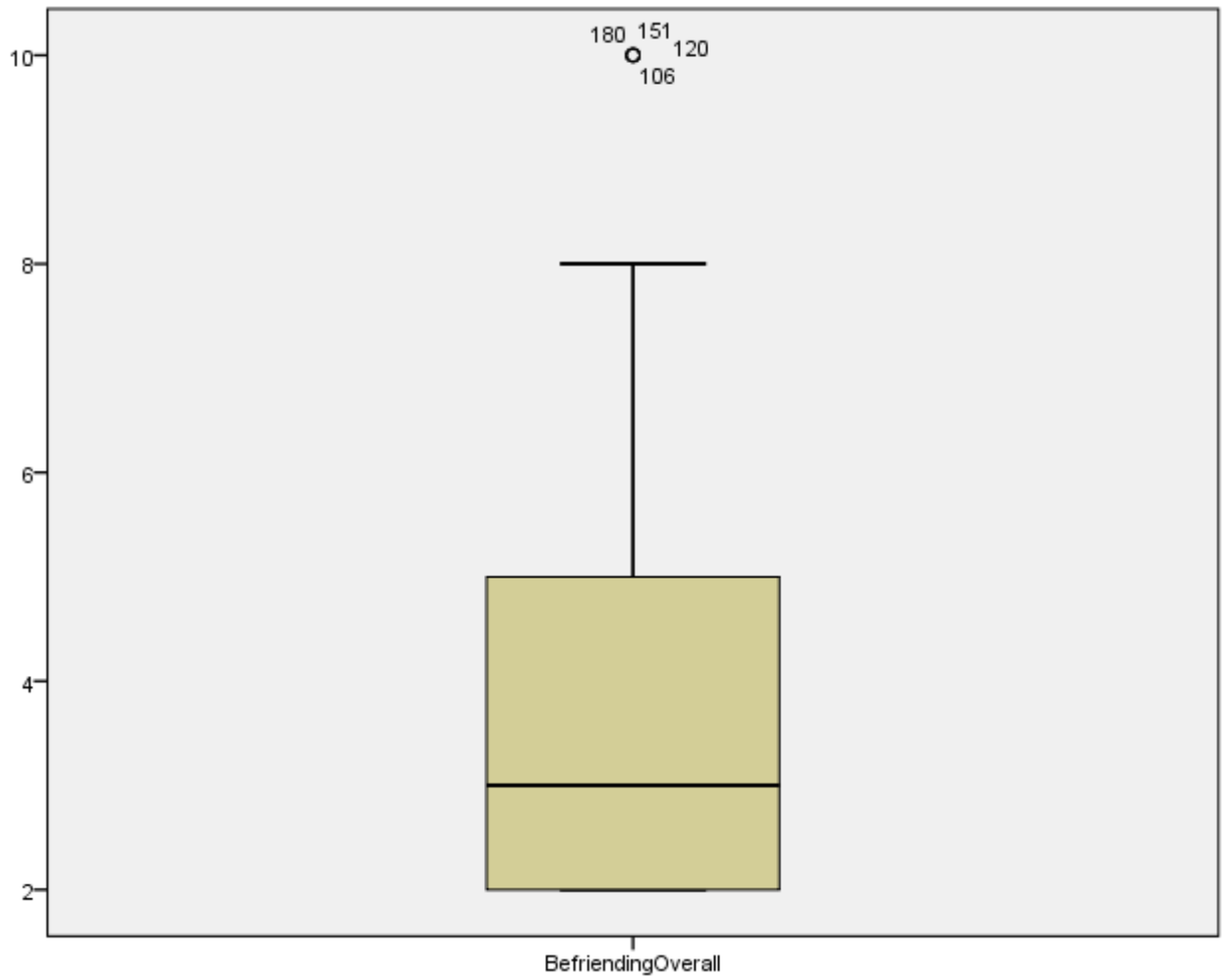
Sexualsolicitation



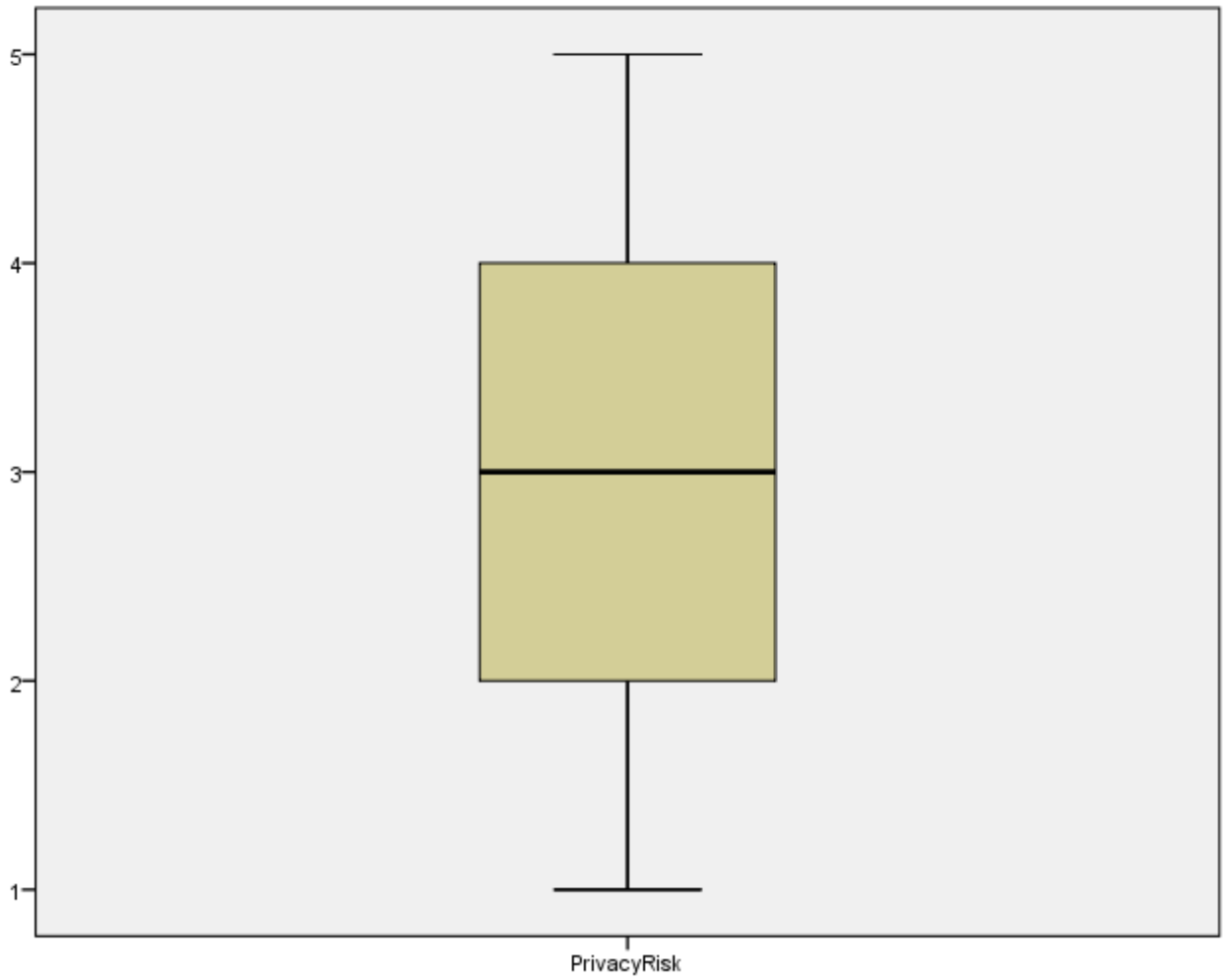
OverallRB



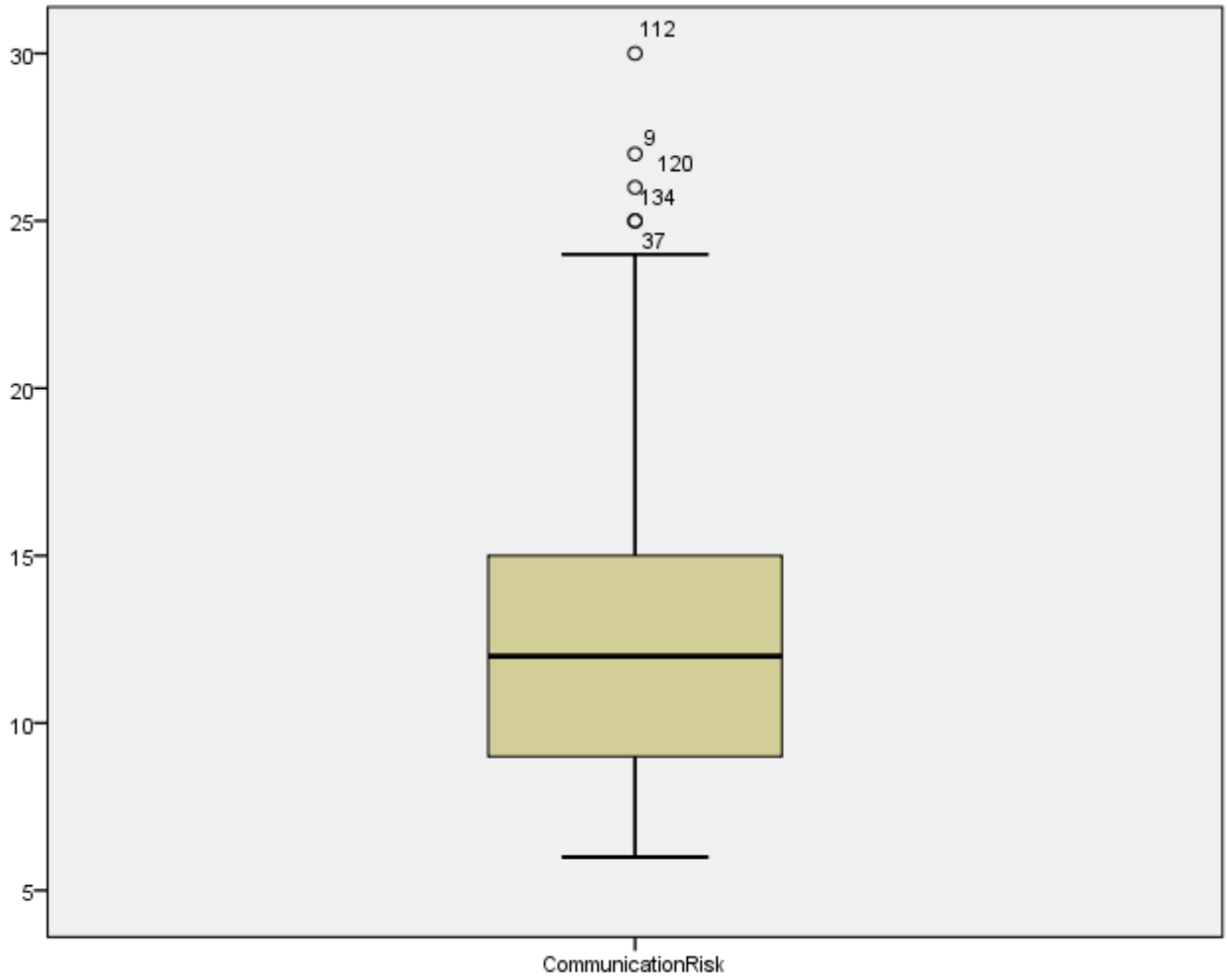
BefriendingOverall



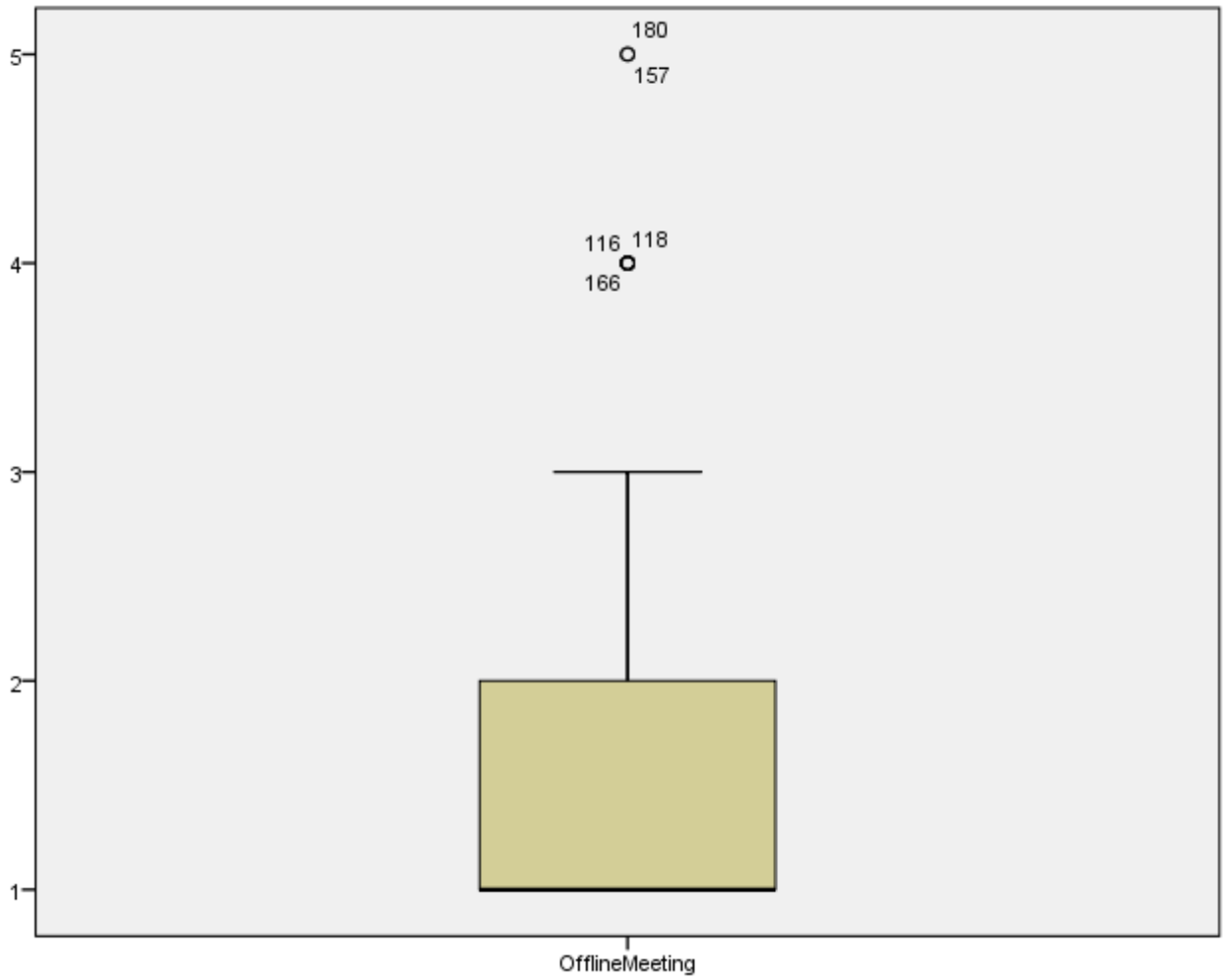
PrivacyRisk



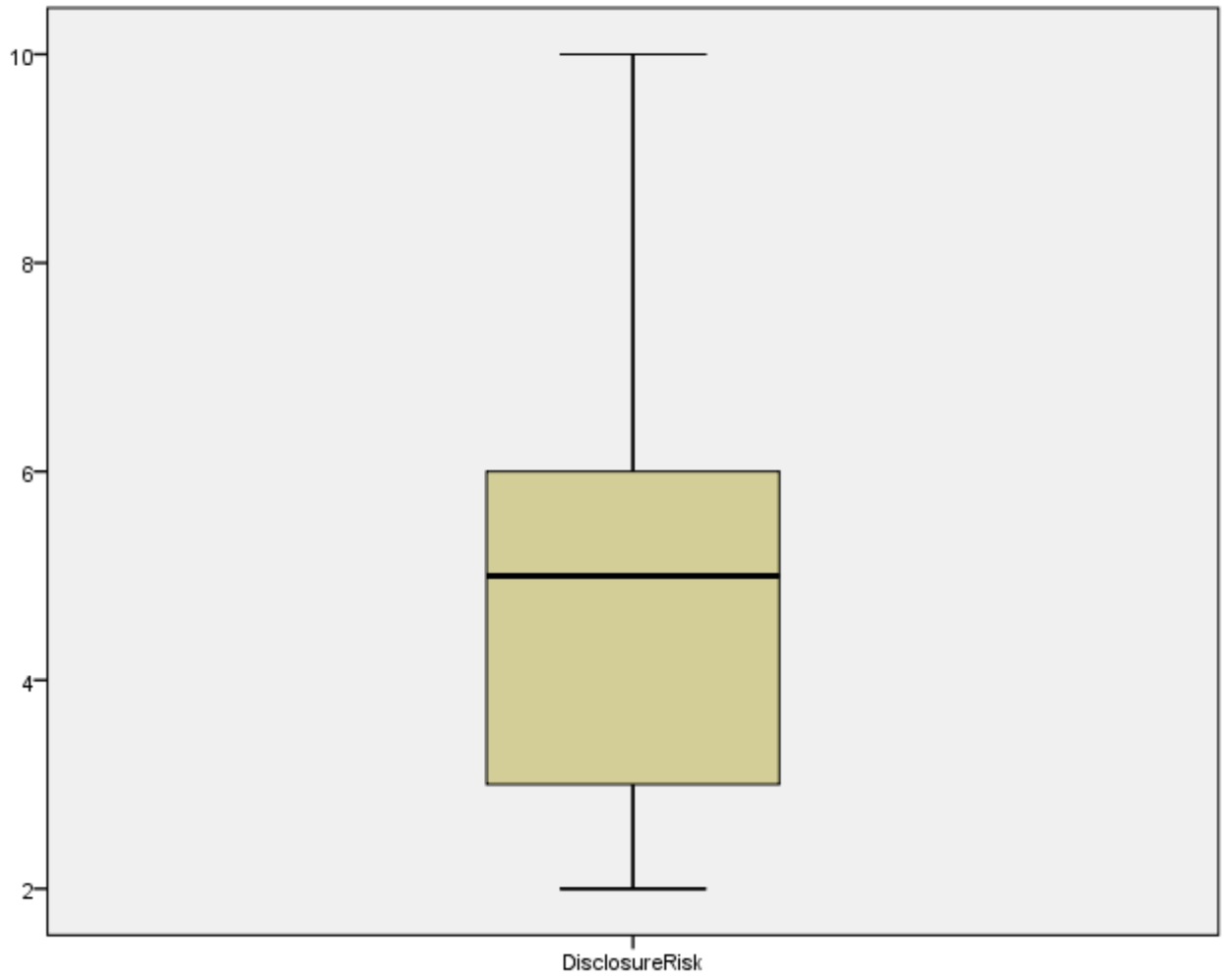
CommunicationRisk



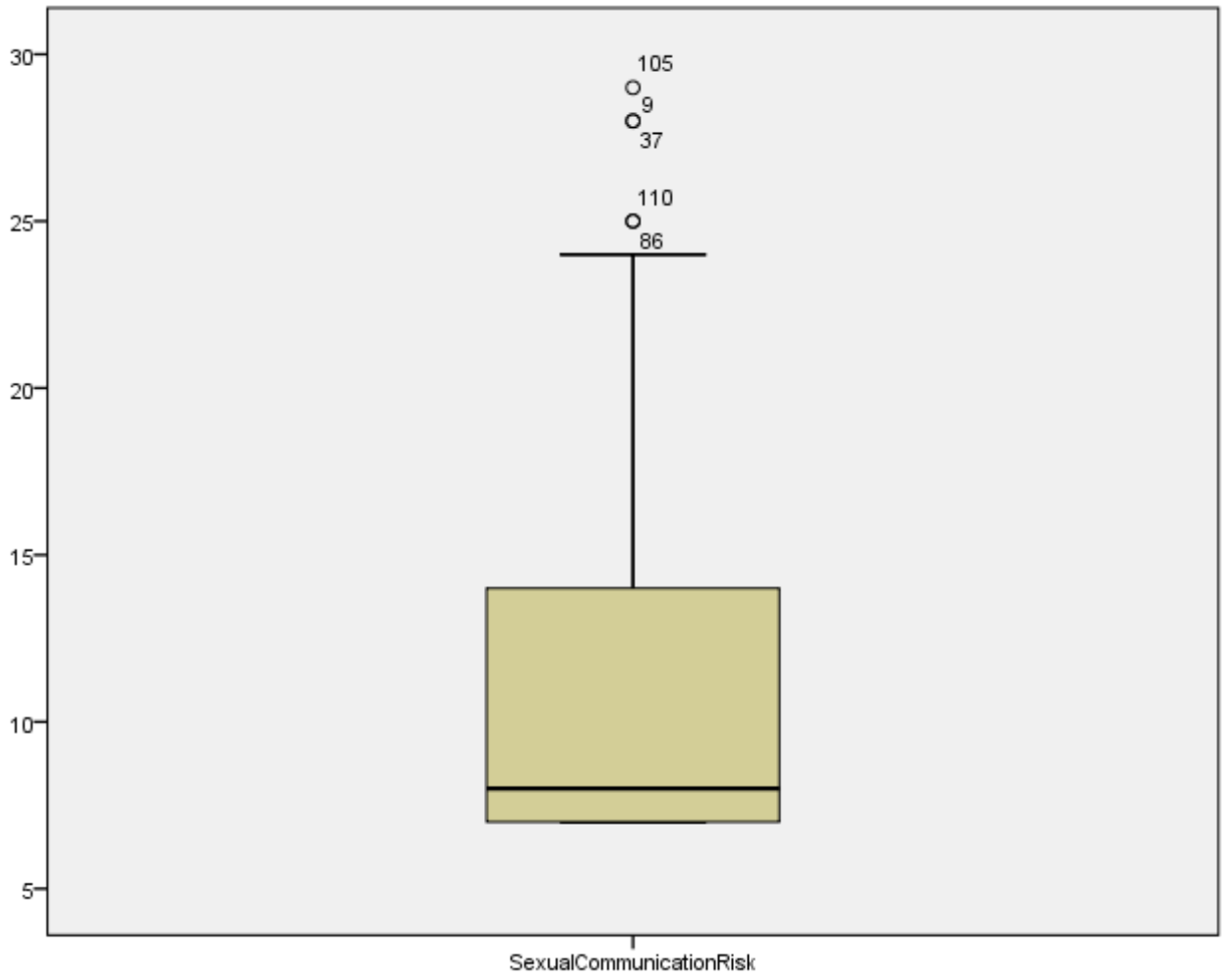
OfflineMeeting



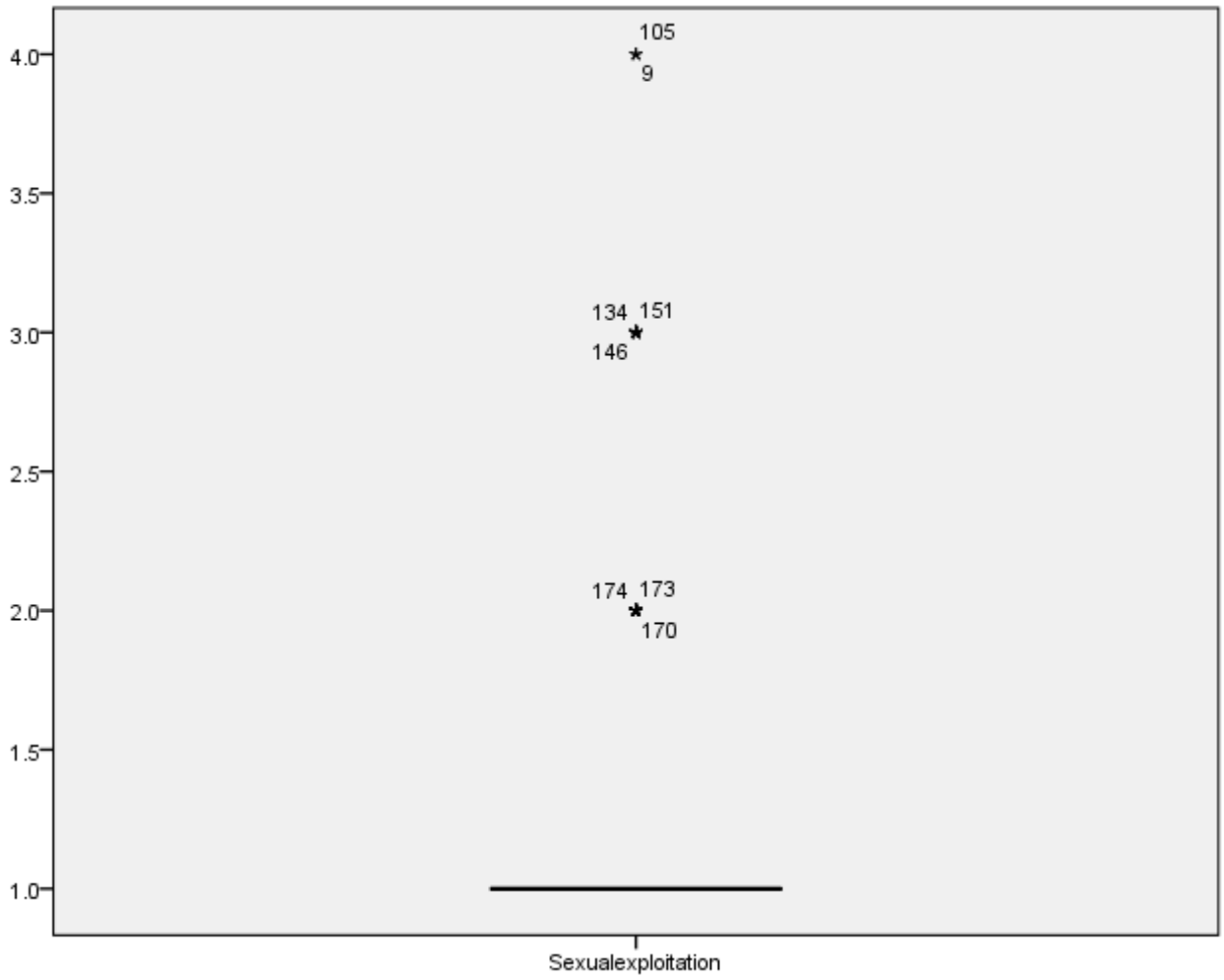
DisclosureRisk



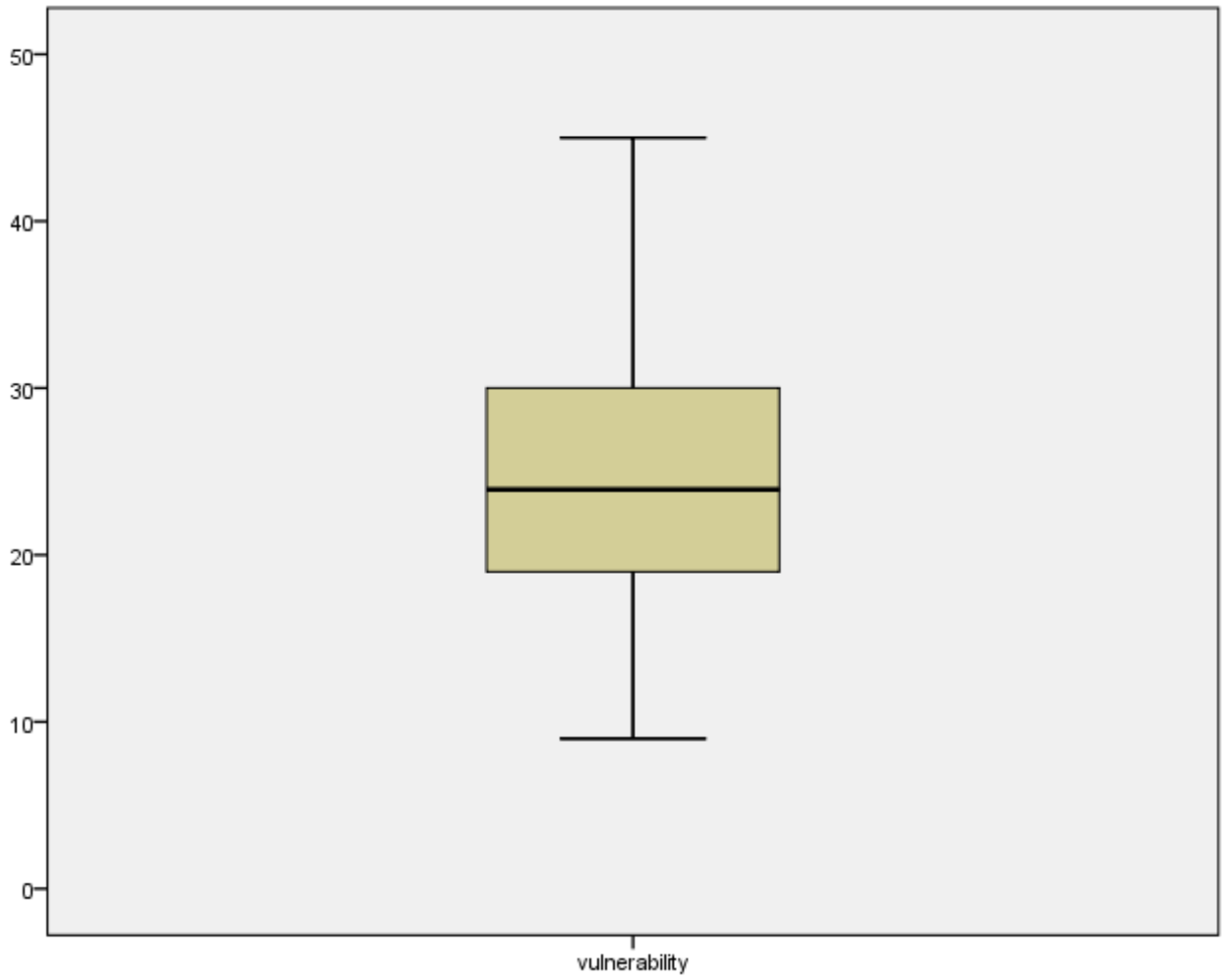
SexualCommunicationRisk



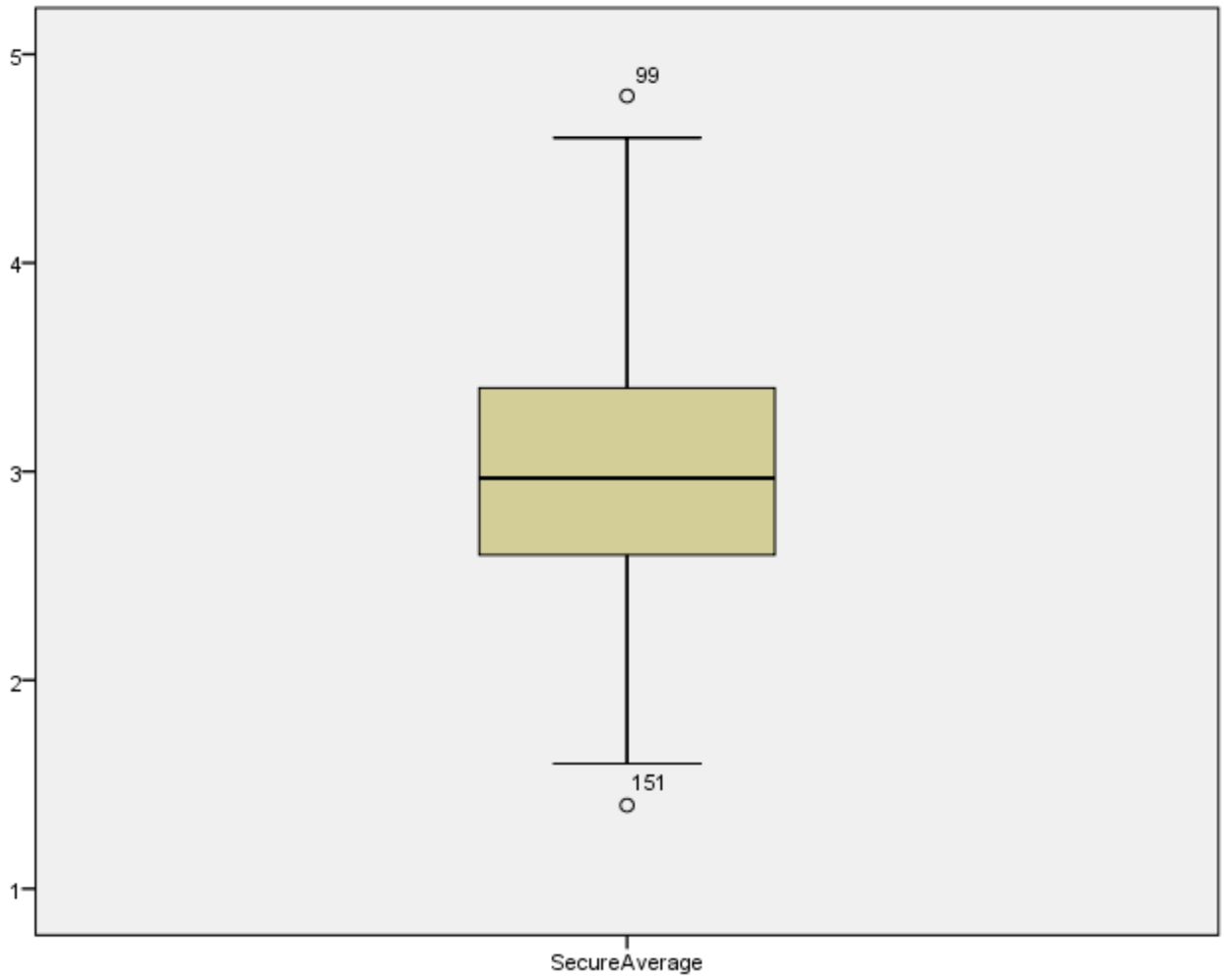
Sexualexploitation



Vulnerability



SecureAverage



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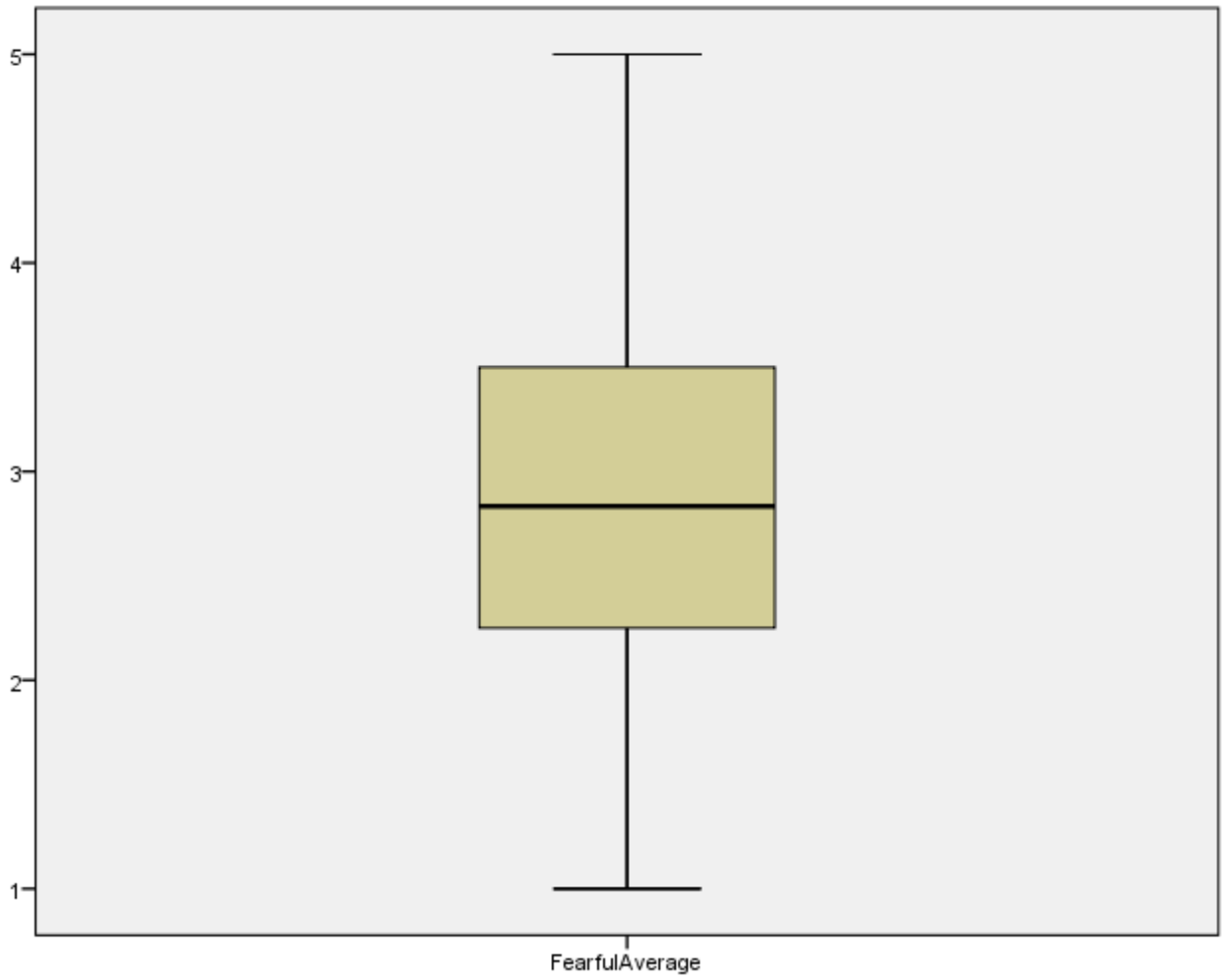

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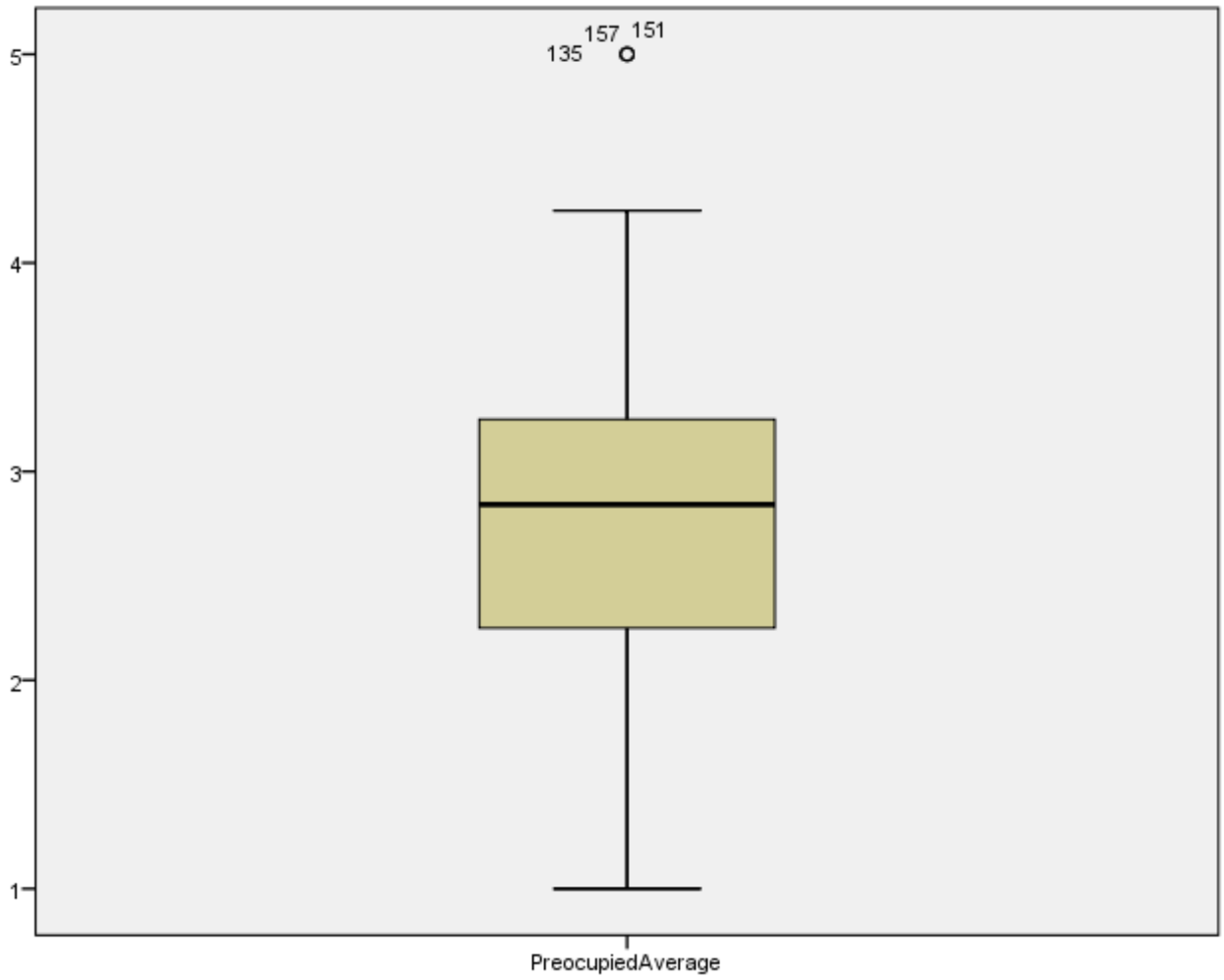

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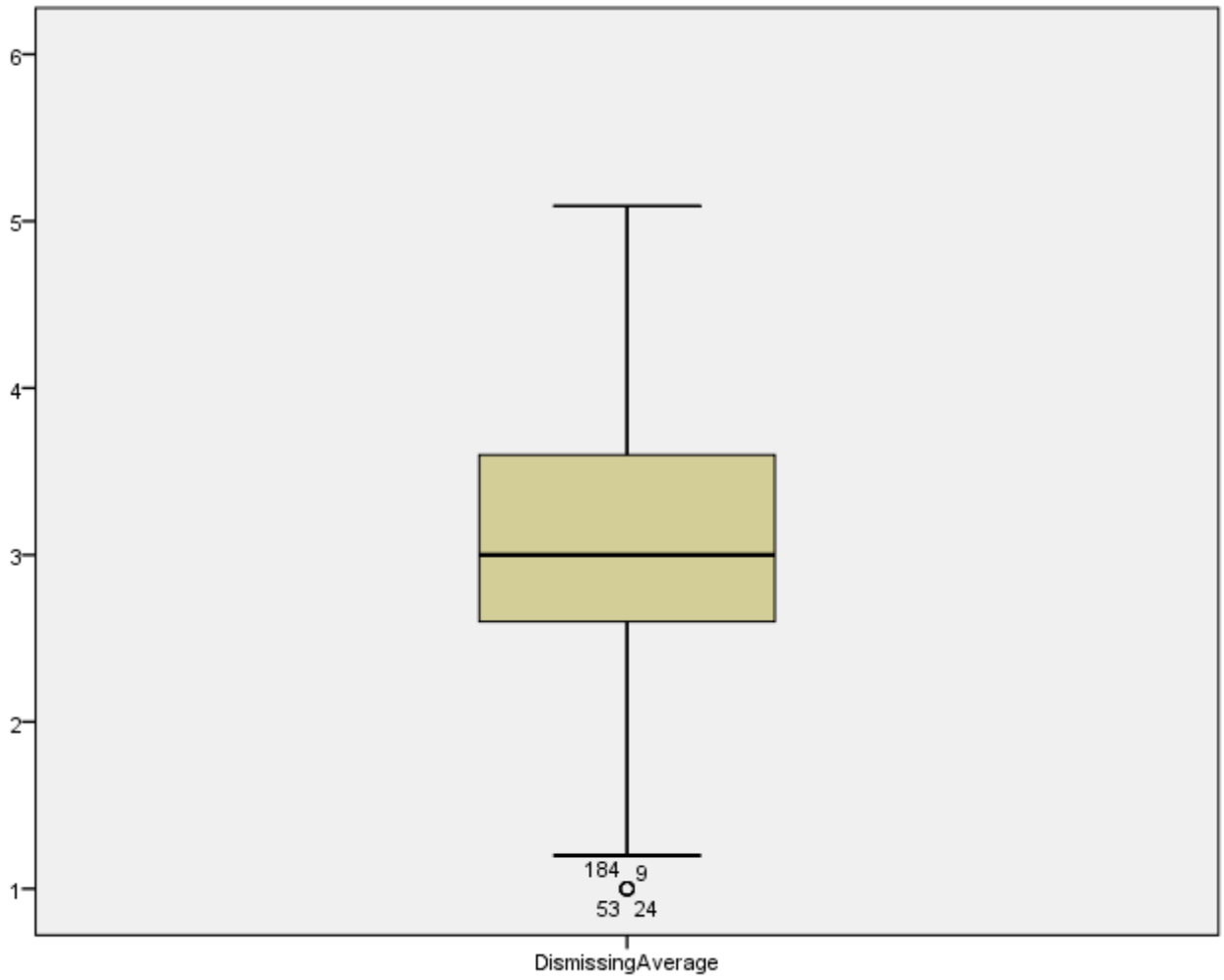

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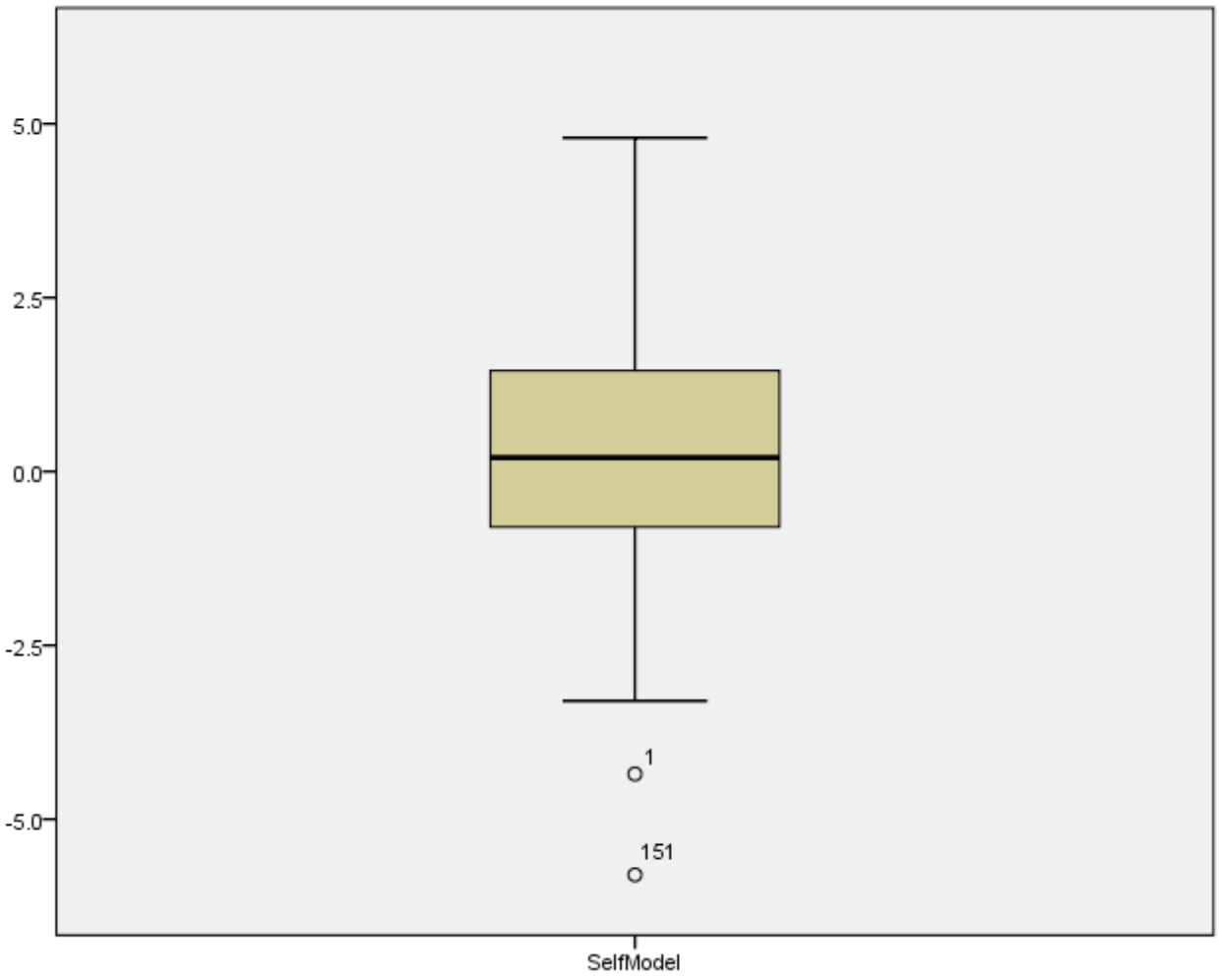
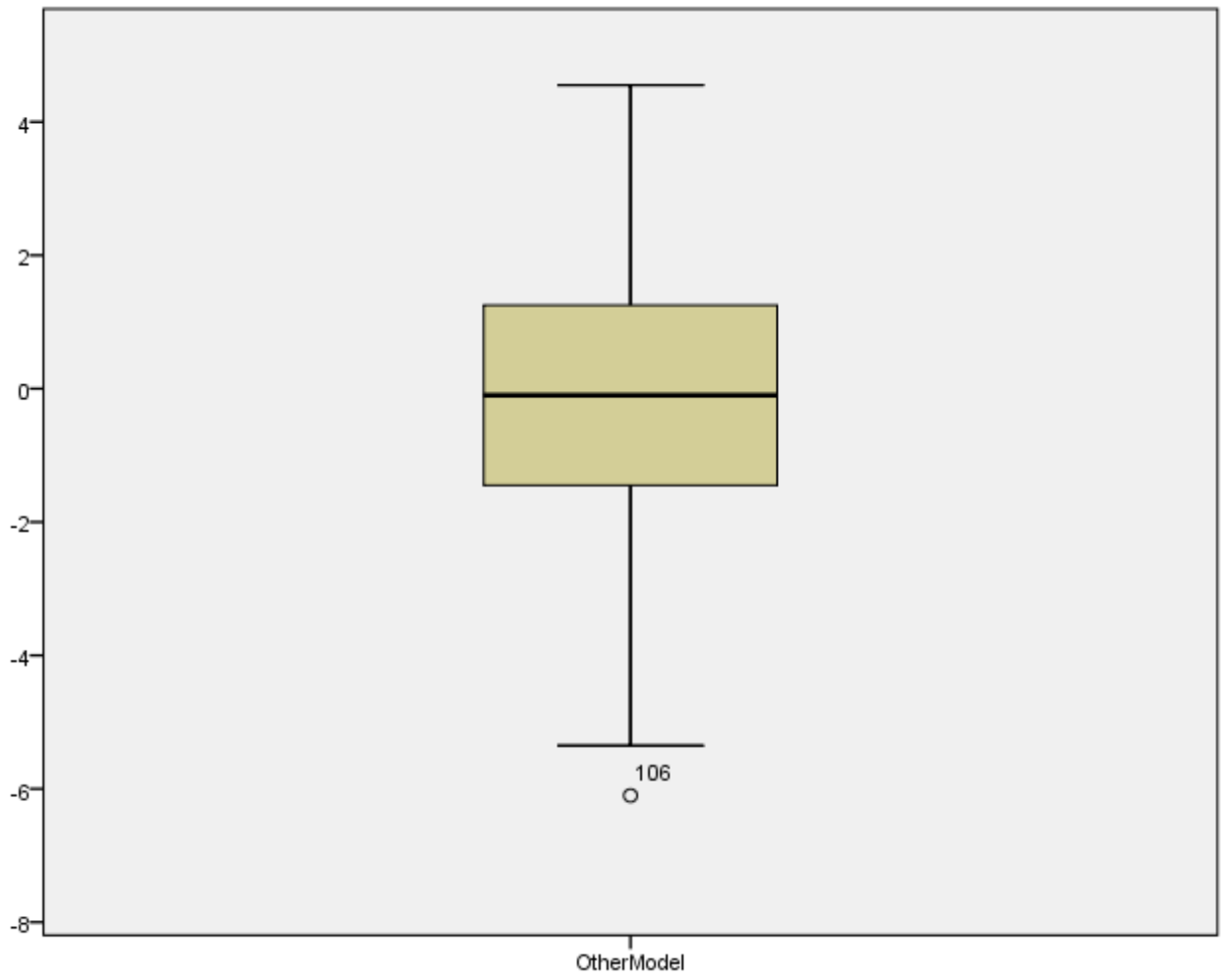


OtherModel



Appendix 8 (interview schedules for the victim, practitioner and law enforcement officer samples)

Interview schedule for victims

1) *Introduction/ice breaker*

Can you describe your internet use when you were under the age of 16?

When you were under the age of 16, what kind of negative experiences did you encounter online?

2) *The grooming process*

When you were aged under 16, how often were you approached online by someone you perceived to be over 18?

If participants talk about one experience the rest of the questions will refer to that person. If they talk about more than one experience then they will be asked about the people they were interacting with.

Can you describe who these people were / this person was?
Prompts - their relationship to you? How old do you think they were when they started interacting with you / stopped interacting with you? How old are you now?

Can you describe how he / she / they approached you?
Prompts - what did they say? What online environment was it?

Describe the interaction between you and this person / these people?
Prompts - How did the interaction start? Did the conversation involve sexual content?

Did you meet this person / these people offline? If yes, what did you do when you met offline?
Prompt - How often did this happen? Where did it happen? What do the adult say? How did you respond? What did it lead to?

Did you tell anyone about these experience?

What motivated you to speak to this person / these people?

How did this person / these people make you feel?

3) *Victim vulnerability*

The next set of questions will ask you about things that were happening in your life around the time you experienced the online sexual encounter(s).

Describe what was happening in your life around the time you experienced the online encounter(s)?

Were you experiencing any stressful situations at the time? If so, what kind of stressful situations?

What was your relationship like with others?
Prompts - relationship with parents, siblings or peers?

Were you experiencing any psychological difficulties at the time? If so, what kind of psychological difficulties?
Prompts - issues with self-esteem, confidence, self-harm, depression, emotional issues

The next couple of questions will ask you about your childhood experiences.

Can you describe your infancy?
Prompts - relationships with caregivers/siblings, adverse/traumatic experiences, family life,

Can you describe your childhood?
Prompts - relationships with caregivers/siblings, adverse/traumatic experiences, family life,

4) *Impact*

How has this experience impacted on you?

How do you feel about it now?

5) *Closing the interview*

Before the interview ends, is there anything you would like to cover that you think is important?

Thank you for participating in this interview.

Interview schedule for practitioners

1) *Introduction/ice breaker*

Describe how you got into this job?

2) *General victimology*

What kind of referrals does the service typically receive?

In general, how many cases of online grooming and sexual exploitation that involved a person aged under the age of 16 at the time of the offence and an adult were referred to the service in the past year?

How many were referred to you?

What type of information is generally provided to the service or you at referral?

How are online grooming and sexual exploitation cases recorded in the system?

What type of victim characteristics are typically seen in these cases?

3) *The grooming process and a specific victim case*

For the next part of the interview, I'd like you to focus on one particular case of online grooming and sexual exploitation. Choose one victim that you most recently encountered and know most information about. To ensure anonymity and confidentiality, try not to mention any personally identifiable information about the victim. However, if you do, this will be removed during transcription.

Referring to this case, give a description of what happened?
Prompts - How did the grooming start? How did the offender prepare to groom and sexually exploit the victim? What did it lead to?

If the victim was sexually exploited more than once, how did the offender continue to sexually exploit the victim?
Prompt - How did it escalate?

How did the case come to the attention of the authorities?

What was the relationship between the offender and victim?

Give a description of the victim?
Prompts - Victim's gender and age at the time of the grooming

Can you describe the victim's infancy?

Can you describe the victim's childhood?
Prompts - relationships with caregivers/siblings, adverse experiences, family life

Describe what was happening in the victim's life around the time of the offence?

Was the victim experiencing any stressful situations at the time of the offence? If so, what kind of stressful situations?

What was the victim's relationship like with others at the time of the offence?
Prompts - relationship difficulties with parents, siblings or peers?

Was the victim experiencing any psychological difficulties at the time of the offence? If so, what kind of psychological difficulties?
Prompts - issues with self-esteem, confidence, self-harm, depression, emotional issues

Referring to this case, where did you get the information from?
Prompts - reports, from the victim, assessments

4) Training and support

What kind of training have you received in identifying or helping victims who have been groomed and sexually exploited online?

Was the training beneficial?

What kind of support/training do you feel would be helpful?

5) Closing the interview

Before the interview ends, is there anything you would like to cover that you think is important?

Thank you for participating in this interview.

Interview schedule for police personnel

6) *Introduction/ice breaker*

Describe how you got into this job?

7) *General victimology*

What kind of referrals does the service typically receive?

In general, how many cases of online grooming and sexual exploitation that involved a person aged under the age of 16 at the time of the offence and an adult were investigated by the police service you work for in the past year?

How many have you investigated?

How are they reported to the police?

How are online grooming and sexual exploitation cases recorded in the system?

In general, what type of victim characteristics are typically seen in these cases?

8) *The grooming process and a specific victim case*

For the next part of the interview, I'd like you to focus on one particular case of online grooming and sexual exploitation. Choose one case that you most recently encountered and know most information about. To ensure anonymity and confidentiality, try not to mention any personally identifiable information about the victim or perpetrator. However, if you do, then it will be removed during transcription.

Referring to this case, give a description of what happened?
Prompts - How did the grooming start? How did the offender prepare to groom and sexually exploit the victim? What did it lead to?

If the victim was sexually exploited more than once, how did the offender continue to sexually exploit the victim?
Prompt - How did it escalate?

How did the case come to the attention of the authorities?

What was the relationship between the offender and victim?

Can you describe the victim's infancy?
Can you describe the victim's childhood?
Prompts - relationships with caregivers/siblings, adverse experiences, family life

Describe what was happening in the victim's life around the time of the offence?

Was the victim experiencing any stressful situations at the time of the offence? If so, what kind of stressful situations?

What was the victim's relationship like with others at the time of the offence?
Prompts - relationship difficulties with parents, siblings or peers?

Was the victim experiencing any psychological difficulties at the time of the offence? If so, what kind of psychological difficulties?
Prompts - issues with self-esteem, confidence, self-harm, depression, emotional issues

Referring to this case, where did you get the information from?
Prompts - victims, perpetrators, evidence

9) Training and support

What kind of training have you received in identifying or supporting victims who have been groomed and sexually exploited online?

Was the training beneficial?

What kind of support/training do you feel would be helpful?

10) Closing the interview

Before the interview ends, is there anything you would like to cover that you think is important?

Thank you for participating in this interview.

Appendix 9 (email that was sent to participants who provided their details after completing the online questionnaire)

Dear (participant's name),

Thank you for expressing an interest in participating in the follow up study.

My name is Saqba Batool and I am a Psychology PhD researcher at the University of Central Lancashire. I am currently conducting a research project under the supervision of Dr Jo Bryce that aims to investigate online sexual experiences during adolescence, childhood experiences, psychological and interpersonal factors.

To be eligible to participate, you must have experienced an online sexual experience (e.g., talking sexually or interacting sexually via webcam) with someone you perceived to be over the age of 18 when you were under the age of 16.

During the interview, **you will be asked questions about your internet use, childhood experiences, psychological and interpersonal characteristics. You will also be asked to talk about a particular online sexual experience such as talking sexually or interacting sexually via webcam with someone you perceived to be over 18 when you were under the age of 16. If you feel that these topics will cause distress, then please do not participate.**

Please note that the researcher conducting the interview will be female. If you would feel uncomfortable talking about the above topics to a female researcher, please do not participate.

If you agree to participate, you will be required to engage in a face-to-face interview that will last approximately 45 minutes to 1 hour. Participation in this study is completely voluntary, and all data is completely confidential and anonymous. The interview will be recorded using an audio recording device. Your personal details will not be linked to the transcripts as they will be numbered. If you mention any personally identifiable information during the interview then this will be removed during transcription. The data will be held on a secure password protected database. Only myself (Saqba Batool), my project supervisor (Dr Jo Bryce) and others with legitimate academic need will have access to the data. This may include sharing your responses with others doing similar research, but only if their request to access it is approved by the University. You will not be able to be identified should this happen as all answers are anonymous.

If any illegal activity or safeguarding related information is disclosed during the interview, I will be obliged to inform my supervisor and refer you to appropriate support agencies. This would include organisations such as Victim Support, the Samaritans or support services at UCLan if you are a student. These services offer emotional support, and can also advise about practical issues such as reporting a crime to the police. Any safeguarding concerns may need to be reported to the police, and will also be reported to the Principal Safeguarding Lead as required by the institutional safeguarding policy.

If any distress or concerns arise as a result of participating, you can withdraw at any point during the interview by asking the researcher to stop. If you appear distressed or upset the

researcher will stop the interview and refer you to appropriate support services and provide details of sources of support in the debrief. You can also withdraw up to one week after the interview by emailing the researcher (Saqba Batool) who will remove the data from the data set and delete the audio recording and transcript.

The results from this study will be used for my thesis and, potentially, conferences and journal publications.

If you are interested in participating, then please email me using the email address below and we can arrange a time and place that is suitable for both parties.

If you have any questions or require further information, then please do not hesitate to email me or my supervisor using the details below.

PhD researcher
Saqba Batool
School of Psychology
University of Central Lancashire
Darwin Building, Room DB120
Email: sbatool1@uclan.ac.uk

Supervisor
Dr Jo Bryce
School of Psychology
University of Central Lancashire
Darwin Building, Room DB208
Email: jbryce@uclan.ac.uk

If you have concerns about the research and you wish to raise them with somebody who is independent of the research team, please contact the University Officer for Ethics (OfficerForEthics@uclan.ac.uk**).**

Appendix 10 (poster that was be posted around university campus)

Participants required

My name is Saqba Batool and I am a Psychology PhD researcher at the University of Central Lancashire. I am currently conducting a research project under the supervision of Dr Jo Bryce that aims to investigate online sexual experiences during adolescence, childhood experiences, psychological and interpersonal factors.

To be eligible to participate, you must have experienced an online sexual experience (e.g., talking sexually or interacting sexually via webcam) with someone you perceived to be over the age of 18 when you were under the age of 16.

During the interview, **you will be asked questions about your internet use, childhood experiences, psychological and interpersonal characteristics. You will also be asked to talk about a particular online sexual experience such as talking sexually or interacting sexually via webcam with someone you perceived to be over 18 when you were under the age of 16. These topics can be sensitive for participants. So, if you feel that these topics are too intrusive or will cause distress, then you may not want to participate.**

If you meet the inclusion criteria and are interested in participating then please email me using the details below. I will send you a detailed information sheet that contains more information about the study.

This study is important as the results will provide practitioners with recommendations to identify and protect vulnerable teenagers who are highly likely to experience negative sexual experiences online.

Also, if you require further information or have any questions then please email me using the details below.

PhD researcher: Saqba Batool
Email: SBatool1@uclan.uk

PhD researcher: Saqba Batool
Email: SBatool1@uclan.uk

PhD researcher: Saqba Batool
Email: SBatool1@uclan.uk

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PhD researcher: Saqba Batool
Email: SBatool1@uclan.uk

PhD researcher: Saqba Batool
Email: SBatool1@uclan.uk

(Advert that the student union disseminated via the monthly student messages)

Did you experience an online sexual experience (e.g., talking sexually or interacting sexually via webcam) with someone you perceived to be over the age of 18 when you were under the age of 16?

If you did, and are interested in participating in an interview that will explore internet use, childhood experiences, psychological and interpersonal characteristics then please contact me using the email address below. Also, if you have any questions about the study, please email me.

PhD researcher: Saqba Batool Email: SBatool1@uclan.ac.uk

Appendix 11

Participant information sheet (emailed to the professionals or the victim prior to the interview)

Dear practitioner/law enforcement personnel,

Thank you for expressing an interest in participating in this study.

My name is Saqba Batool and I am a Psychology PhD researcher at the University of Central Lancashire. I am currently conducting a research project under the supervision of Dr Jo Bryce that aims to investigate risk factors associated with children and young people being sexually victimised online from practitioners' perspectives.

To participate in this study you must:

- **Be a practitioner/law enforcement officer who has encountered at least one case that involved a victim being groomed online and consequently sexually exploited either online or offline by an adult in the past year. The victim must have been aged 16 or under at the time of the offence.**

If you agree to participate, you will be required to engage in a face-to-face interview that will last approximately 45 minutes to 1 hour. During the interview, you will be asked to discuss general victimology, the grooming process and a specific victim's childhood experiences, their situation around the time of the offence, relationships with others, social and psychological factors. You will be asked to talk about one victim that you recently encountered and know most information about. To ensure victim confidentiality and anonymity, any personally identifiable information about them will be removed during transcription.

If you feel that the above topics will cause distress, then please do not participate. If any distress or concerns arise as a result of participating, details of sources of support and information will be provided in the debrief.

Participation in this study is completely voluntary, and all data is completely confidential and anonymous. The interview will be recorded on a dictaphone and transcribed. Your personal details will not be linked to the transcripts as they will be numbered. The data will be held on a secure password protected database. Only myself (Saqba Batool), my project supervisor (Dr Jo Bryce) and others with legitimate academic need will have access to the data. This may include sharing your responses with others doing similar research, but only if their request to access it is approved by the University. You will not be able to be identified should this happen as all answers are anonymous.

The results from this study and quotations from the interview will be used for my thesis and, potentially, conferences and journal publications. The quotations will be anonymized so that you and any individuals discussed in the interview cannot be not identified. Consenting to this study means that you agree for me to use the quotations in this way.

You can withdraw at any moment during the interview by asking the researcher to stop and up to a week after the interview. To withdraw after the interview, email the researcher (Saqba Batool) who will remove the data from the data set and delete the audio recording and transcript.

If you are interested in participating, then please click here to leave your name and contact details. Prior to the interview, the researcher will contact you via telephone or email to arrange a date, time and location that is suitable for both parties.

If you have any questions or require further information, then please do not hesitate to email me or my supervisor using the details below.

PhD researcher
Saqba Batool
School of Psychology
University of Central Lancashire
Darwin Building, Room DB120
Email: sbatool1@uclan.ac.uk

Supervisor
Dr Jo Bryce
School of Psychology
University of Central Lancashire
Darwin Building, Room DB208
Email: jbryce@uclan.ac.uk

If you have concerns about the research and you wish to raise them with somebody who is independent of the research team, please contact the University Officer for Ethics (OfficerForEthics@uclan.ac.uk**).**

Debrief sheet (debriefs sheets were given immediately after the interview to victims or professionals)

Thank you for taking the time to participate in this study.

The aim of this research is to determine a link between early childhood experiences, social, psychological, interpersonal factors and online grooming and sexual exploitation during adolescence. This study is important as the results will provide professionals with recommendations to identify and protect vulnerable teenagers who are highly likely to experience negative sexual experiences online.

Please be assured that the information you have provided will be strictly confidential and anonymous. You are still able to withdraw a week from now by contacting the researcher (Saqba Batool) using the email below. Your data will then be removed from the dataset and the audio recording and transcript will be destroyed.

Sources of support and information
If you have been affected by any of the issues raised in this study and would like confidential support or advice, the following services may be of interest to you:

(Support services specific to practitioners or law enforcement personnel – these were determined in discussion with specific organisations providing agreement to assist in participant recruitment (e.g., occupational health, other staff welfare services).

If you would like any further information regarding this study then please do not hesitate to contact me, Saqba Batool, or my supervisor Dr Jo Bryce using the contact details below.

PhD researcher
Saqba Batool
School of Psychology
University of Central Lancashire
Darwin Building, Room DB120
Email: sbatool1@uclan.ac.uk

Supervisor
Dr Jo Bryce
School of Psychology
University of Central Lancashire
Darwin Building, Room DB208
Email: jbryce@uclan.ac.uk

If you have concerns about the research and you wish to raise them with somebody who is independent of the research team, please contact the University Officer for Ethics (OfficerForEthics@uclan.ac.uk**).**

Thank you for taking the time to participate in this study.

The aim of this research is to determine psychological, behavioural and interpersonal risk factors that are associated with online sexual experiences during adolescence. This study is important as the results will provide practitioners with recommendations to identify and protect vulnerable teenagers who are highly likely to experience negative sexual experiences online

Please be assured that the information you have provided will be strictly confidential and anonymous. You are still able to withdraw a week from now by contacting the researcher (Saqba Batool) using the email below. Your data will then be removed from the dataset and the audio recording and transcript will be destroyed.

Sources of support and information
If you have been affected by any of the issues raised in this study and would like confidential support or advice, the following services may be of interest to you:

UCLan Counselling Service
This service offers free counselling to **all UCLan students**
Telephone: 01772892572
Email: CoRecep@uclan.ac.uk

Samaritans
This organisation provides confidential and emotional support 24/7
Telephone: 0845 790 9090
Website: www.samaritans.org

Get safe online
The service provides practical advice on how to protect yourself online
Website: www.getsafeonline.org

Victim support
This service offers emotional and practical support (i.e., reporting a crime to the police) to anyone who has been affected by a crime regardless of when it happened and if it was reported.
Telephone: 0808 168 9111
Website: www.victimsupport.org.uk

If you would like any further information regarding this study then please do not hesitate to contact me, Saqba Batool, or my supervisor Dr Jo Bryce using the contact details below.

PhD researcher

Saqba Batool
School of Psychology
University of Central Lancashire
Darwin Building, Room DB120
Email: sbatool1@uclan.ac.uk

Supervisor
Dr Jo Bryce
School of Psychology
University of Central Lancashire
Darwin Building, Room DB208
Email: jbryce@uclan.ac.uk

If you have concerns about the research and you wish to raise them with somebody who is independent of the research team, please contact the University Officer for Ethics (OfficerForEthics@uclan.ac.uk**).**

Appendix 12 (email that was sent to managers/senior members of an organisation)

Dear (name of manager/senior member),

My name is Saqba Batool and I am a Psychology PhD researcher at the University of Central Lancashire. I am currently conducting a research project under the supervision of Dr Jo Bryce that aims to investigate risk factors associated with children and young people being sexually victimised online from professionals' perspectives.

I wonder if you will be willing to help me with my research by forwarding an email containing information about the study to practitioners.

Participants will be required to engage in an interview that will ask them about general victimology and the grooming process, as well as a specific case of online grooming and sexual exploitation they have dealt with recently. This is in order to develop greater understanding of the dynamics of victimisation, and all information will be confidential and anonymised. The participant information sheet and interview schedule is attached to this email.

The eligibility criteria for the study is that practitioners must have encountered at least one case that involved a victim being groomed online and consequently sexually exploited either online or offline by an adult in the past year. The victim must have been aged 16 or under at the time of the offence.

I understand that you and your staff are very busy, but I believe that their experiences are valuable and will provide useful information that can inform practitioner's knowledge about identifying vulnerable victims. If there is a private room at the practitioner's workplace, the researcher can travel to conduct the interview there at a time that is most convenient for them. Alternatively, participants can come to the University of Central Lancashire to be interviewed.

After the study, I can offer reports / recommendations for training. These outcomes will be of particular relevance for your organisation.

If you agree, I can send you the email that can be forwarded to participants.

If you have any questions or would like to know more then please email me using the details below.

PhD researcher
Saqba Batool
School of Psychology
University of Central Lancashire
Darwin Building, Room DB120
Email: sbatool1@uclan.ac.uk

Appendix 13

Table 1: A summary of a victim of online grooming and sexual exploitation

Participant	• Victim of online grooming and sexual exploitation • Aged 24 at the time of interview
Type of offence	• Online sexual exploitation (engaged in sexually explicit conversations, exchanged naked pictures)
Victim characteristics	• Male • Homosexual • Approximately 15 years old at the time of the offence
Perpetrator characteristics	• Multiple perpetrators started inappropriate conversations with the victim • All male • Ages ranged from 18 to over 50 • One male was aged 20 (who he engaged in online sexual activity with and met offline although no sexual activity took place offline
Grooming characteristics	• Online initiated contact • Interactions with perpetrators varied from hours to days • Offline meetings occurred however sexual abuse did not occur in the offline environment • The interaction between one offender (aged 20) and the victim lasted over a year before meeting offline (no sexual contact occurred offline)
Relationship between the offender and victim	• Known online
Reporting experiences	• The victim told friends about his online experiences

Table 2: A summary of a victim of online grooming and sexual exploitation

Participant	• Victim of online grooming and sexual exploitation • Aged 25 at the time of interview
Type of offence	• Online sexual exploitation (engaged in sexually explicit conversations, exchanged sexual pictures and offenders sent sexual images of themselves as well as expose themselves via webcam)
Victim characteristics	• Female • Heterosexual • 14 years old at the time of the offence
Perpetrator characteristics	• Multiple perpetrators started inappropriate conversations with the victim • Some used deceptive identities • All male • Ages ranged from in their 20s to 45
Grooming characteristics	• Online initiated contact • Interactions with perpetrators varied from 10 minutes to a few days • No offline meetings occurred
Relationship between the offender and victim	• Known online

Reporting experiences	• Told friends about her online experiences

Table 3: A summary of a victim(s) that a Consultant Forensic Psychologist encountered

Participant	• Consultant Forensic Psychologist • Female
Type of offence	• Online and offline sexual exploitation (offenders sent the victim sexual images of themselves online and raped her)
Victim characteristics	• Female • 13 years old
Perpetrator characteristics	• Two perpetrators • Both males • Both in their late twenties • Convicted
Grooming characteristics	• Offenders knew the victim in the offline environment however initiated conversation and sent sexual images via texts and Snapchat
Relationship between the offender and victim	• Associates in the offline environment
Reporting experiences	• The victim told her parents immediately after the offline sexual abuse who then reported to the police
Information obtained	• Psychological assessments • Directly from the victim

Table 4: A summary of a victim(s) that a children's home manager encountered

Participant	• Children's home manager • Male
Type of offence	• Grooming • Initiated offline and facilitated online • This offence did not lead to a sexual offence because care home staff and the police intervened
Victim characteristics	• Female • 15 years old
Perpetrator characteristics	• Four perpetrators were involved in the offence • All males • One perpetrator was in his 20s and the other was 30 years old
Grooming characteristics	• Offenders knew the victim in the offline environment however used technology to facilitate the grooming
Relationship between the offender and victim	• Strangers in the offline environment
Reporting experiences	• Reported to the police
Information obtained	• Manager of another children's home • Social worker • Directly from the victim

Table 5: A summary of a victim(s) that a Foster carer encountered

Participant	• Foster carer • Female
Type of offence	• Online sexual exploitation (the victim sent the offender naked pictures of herself) • The victim and offender had arranged to meet however police intervened.
Victim characteristics	• Female • 14 years old
Perpetrator characteristics	• Male • Perpetrator was in his twenties • Convicted
Grooming characteristics	• Contact initiated on a poetry website
Relationship between the offender and victim	• Known online
Reporting experiences	• Unknown
Information obtained	• Social services • Found online (the participant had created a fake profile) • Directly from the victim • From the victim's younger brother • School

Table 6: A summary of a victim(s) that a Detective Inspector encountered

Participant	• Detective Inspector • Male
Type of offence	• Online sexual solicitation
Victim(s) characteristics	• Females aged between 12 and 13
Perpetrator(s) characteristics	• Male • Aged 22 or 23 • Convicted
Grooming characteristics	• Contact was initiated online
Relationship between the offender and victim	• Known online
Reporting experiences	• The victim reported the experience to the care staff who then reported it to the police
Information obtained	• Directly from the victim

Table 7: A summary of a victim(s) that a Detective Sergeant encountered

Participant	• Detective Sergeant • Male
Type of offence	• Online sexual solicitation (victim sent the offender naked pictures of herself)
Victim characteristics	• Two females • One was aged 11 or 12 and the other was 13 years old
Perpetrator characteristics	• Male • Convicted
Grooming characteristics	• Contact was initiated online • Perpetrator used a deceptive identity by pretended to be a 14 year old boy
Relationship between the offender and victim	• Known online
Reporting experiences	• The victim did not report her experience to anyone. The police identified the offender and then located the victim.
Information obtained	• Directly from the victim