An Investigation of the Effects of Trauma, Attachment Styles, and Resilience, on Intimate Partner Violence

By

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Intimate Partner Violence (IPV) is a global problem affecting men and women and therefore, there is interest in research that explores factors that increase the risks of perpetration and victimisation. The purpose of this investigation was to explore whether traumatic experiences and attachment predict IPV and to examine the role of resilience on IPV. In addition, sex-differences were explored. For the purpose of these studies, traumatic experiences included crime-related events, general disasters, unwanted sexual experiences and unwanted physical experiences. Study 1 explored the impact of traumatic experiences on IPV perpetration and victimisation, for both and women. Study 2 examined attachment security/insecurity on IPV perpetration and victimisation, and the role of resilience. Attachment elements included avoidant and anxious attachment style, with mother, father, and partner. Participants from the University of Central Lancashire were recruited on campus, and the general public were recruited using online questionnaires. Both studies recruited a sample of 246 participants each and data was analysed using correlational and regression analyses. Study 1 found some associations between trauma and IPV, and that some trauma types also predicted IPV perpetration and victimisation. Also, no sex-differences were found for perpetration or victimisation. Study 2 found some associations between attachment security/insecurity and IPV, and that attachment types predicted some forms of IPV perpetration and victimisation. Also, results showed that resilience was negatively significantly associated with physical IPV perpetration and sexual coercion victimisation. The implication of these findings are that identifying and addressing history of trauma experiences and insecure attachment styles, may prevent the risk of IPV perpetration and victimisation.

Keywords: Traumatic experiences; Attachment; Resilience; Intimate Partner Violence

Chapter 1 – Literature Review

Prevalence

The Crime Survey for England and Wales (CSEW) reported an estimated 1.9 million adults aged 16 to 59 experienced domestic abuse in the last year, of which 1.2 million were female victims and 713,000 male victims for the year ending 2017 (The Office for National Statistics, ONS, 2017). Specific to physical violence perpetration among partners, a literature review exploring published research between 2000 and 2010 gathered data from 111 articles that reported 272 prevalence rates of physical IPV perpetration. More than 1 in 4 women (24.8%) and 1 in 5 men (21.6%) reported perpetrating physical violence in an intimate relationship. Similarly, 249 articles reported 543 prevalence rates of physical IPV victimisation and approximately 1 in 4 women (23.1%) and 1 in 5 men (19.3%) reported experiencing physical IPV victimisation (Desmarais, Reeves, Nicholls, Telford & Fiebert, 2012).

Definitions

Despite the differences in terms within the literature, such as 'domestic violence,' 'partner violence,' and 'intimate partner violence (IPV)' there is an overlap in definitions. In acknowledging that domestic violence is a broad term including violence between many types of relationships such as sibling violence, parent to child violence and between friends, the term IPV may be advisable when describing violence between intimate partners. IPV may be defined as "physical violence, sexual violence, stalking and psychological aggression (including coercive tactics) by a current or former intimate partner (i.e., spouse, boyfriend/girlfriend, dating partner, or ongoing sexual partner)" (Breiding et al., 2015, p.11). Acts can include but are not limited to, psychological, physical, sexual, financial or emotional

abuse. IPV can occur between same-sex or heterosexual couples and varies in frequency and severity. In the current research, the term 'IPV' will be used when describing physically aggressive behaviours amongst partners.

Within this thesis, acts that are not physically aggressive, but instead may be used to control a partner, such as psychological/emotional, sexual and financial control will be termed controlling behaviours. Psychological aggression is defined as the 'use of verbal and non-verbal communication with the intent to: a) harm another person mentally or emotionally, and/or b) exert control over another person' (Breiding et al., 2015, p. 15). Examples can include expressive aggression, such as, name-calling, humiliating, degrading and coercive control. Prevalence rates of psychological or emotional abuse vary with samples and gender. For example, Coker et al., (2002) investigated a large population sample using data from the National Violence Against Women Survey (NVSAW) and concluded that 12.1% of women and 17.3% of men had been victims of psychological abuse, including the abuse of power, control and verbal abuse. Looking at a university sample, Hines and Saudino (2003) reported 82% of males and 86% of females reported that they had perpetrated some type of psychological abuse.

Sexual violence is defined as 'a sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse' (Breiding et al., 2015, p. 11). In accordance with the Conflict Tactics Scale (CTS) (Straus, 1979), these acts may include unwanted penetration, intentional sexual touching and non-contact acts of sexual nature. Looking at an example of a national sample, findings from the NISVS found that approximately 19 million women (1 in 6) reported

experiencing sexual coercion and approximately 9 million men (1 in 12) reported being made to penetrate an intimate partner (Black et al., 2011).

Lastly, financial control undertaken within the context of IPV is defined as "behaviours that control a woman's ability to acquire, use and maintain financial resources" (Adams et al., 2008, p. 564). Although this definition suggests that only women experience victimisation via financial control, research has shown that men can also be victims of this type of abuse. For example, informed by a comprehensive review of the financial abuse literature (Sharp-Jeffs, 2015), a nationally representative survey delivered by Opinium showed that from a sample of 730 individuals who reported experiencing financial abuse in either a current or former relationship, 294 of these individuals were men. Therefore, the definition can also be applied to male victims.

Health Impacts

IPV can have a range of negative physical and mental health outcomes for both men (Hines & Douglas, 2016; Randle & Graham, 2011), and women (WHO, 2013). Symptoms of PTSD, depression, suicidal ideation, psychosomatic symptom, high blood pressure, and general psychological distress have all been associated with impacts of IPV for men. For women, similar negative health impacts included but are not limited to, physical injuries, mental health problems, sexual and reproductive health and maternal health (WHO, 2013). Although dated, one of the studies that investigated health impacts of IPV for both men and women was Coker, Davis, Arias, Desai, Sanderson, Brandt, & Smith (2002). Data from the National Violence Against Women Survey (NVAWS) of women and men aged 18 to 65 was analysed and findings revealed that 28.9% from a total of 6790 women and 22.9% of 7122

men reported experiencing physical, sexual, or psychological IPV sometime during the lifetime. The health consequences revealed that physical and psychological IPV victimisation were associated with an increased risk of depressive symptoms, substance use, developing a chronic disease such as mental illness, and injuries. In relation to severity, prolonged exposure to IPV has found to be associated with the onset, duration and recurrence of mental disorders (Howard et al., 2010; Arkins et al., 2016), although it can also be preceded by it.

Background to the Catalyst Model (Ferguson et al., 2008).

Organising frameworks for understanding IPV are largely absent in the IPV literature, which instead tends to work from theoretical positions, for example, patriarchal theory (Dobash & Dobash, 2004), with little regard to the empirical literature, or group factors in terms of subtypes (e.g. three subtypes of Holtzworth-Munroe & Stuart, 1994). However, there is little exploration on how these factors fit together. Evidence suggests that violent behaviours may co-occur within relationships (Overstreet et al 2015; Sullivan et al., 2012) and previous research has not collectively examined these four forms of abusive behaviours, physical, psychological, sexual and financial abuse, within an organising framework. Additionally, although previous research has identified a number of factors that contribute to the risk of IPV perpetration and victimisation, these have tended to be presented without an overarching model.

Thus, Ferguson et al., (2008) proposed a 'Catalyst Model' (see Figure 1), which incorporated both genetic and environmental factors (i.e., family violence and media violence exposure), child temperament, aggressive personality, cognitions and motivations, and media/peer violence exposure. The authors of the model state that an aggressive personality is

influenced by genetic predisposition (and male gender), family violence exposure, and child temperament. Environmental strain and violent cognitions increase the motivation to engage in violence. In addition, while the environment does not directly cause violent behaviour, stressful situations may act as stimulants for violence, for a violence-prone individual. Consequently, such individuals need less environmental stress to perpetrate violence.

Although the model was derived from the study of media violence, arguably the components and pathways can be applied to IPV perpetration. For example, witnessing or experiencing childhood abuse leading to IPV perpetration can be explained via modelling behaviour or normalising of violence, consistent with Social Learning Theory (SLT, Bandura, 1977). Subsequently, this thesis aims to explore four components of the Catalyst Model; Genetic Predisposition (& male gender), Family Violence Exposure, Child Temperament (attachment), Environmental Strain.

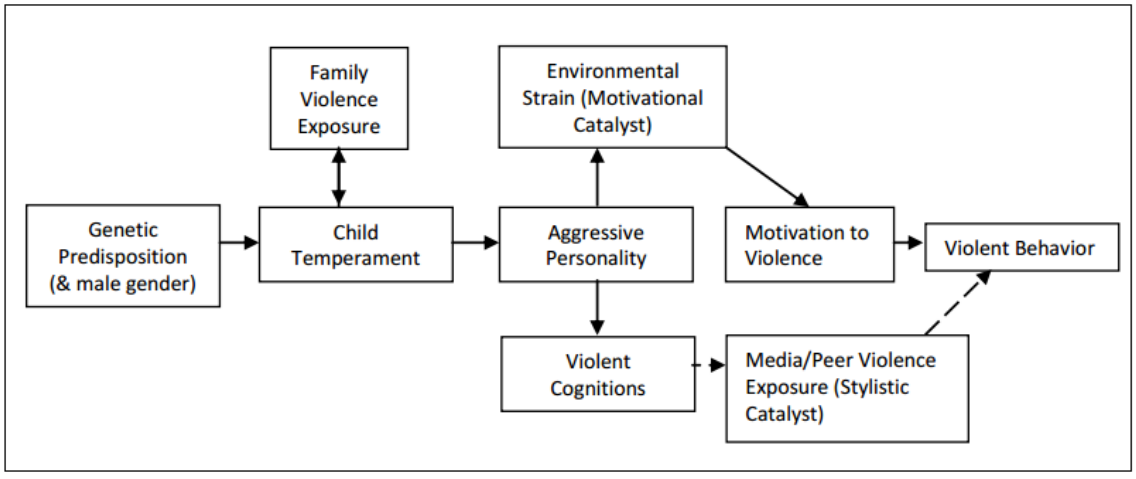

Figure 1. The Catalyst Model of Violent Crime (Ferguson et al., 2008)

Genetic Predisposition (& male gender) and IPV Typologies

Ferguson et al., (2008) proposed that aggression is influenced by genetic predisposition (and male gender), although there are other contributors, individuals who are predisposed to violence, need less environmental strain and violent cognitions to perpetrate violence. This is consistent with a body of research that has explored 'types' of IPV perpetrators. Researchers have developed various IPV typologies based on characteristics of the perpetrator, the form of violence, and a combination of both.

For example, Holtzworth-Munroe's and Stuart's (1994) typology proposed three subtypes; family-only, dysphoric-borderline, and generally violent and antisocial men. In 2000, a further subtype was added, low level anti-social perpetrators (Holtzworth-Munroe, Meehan, Rehman, & Stuart, 2000). The authors proposed these categories based on deductive and inductive studies where three dimensions were used to distinguish between the subtypes, the severity of marital physical violence (e.g. frequency and psychological and sexual abuse), the generality of the violence (i.e. family-only or violence outside the family), and the perpetrators psychopathology or personality disorders. Table 1 below gives some information regarding each subtype.

Table 1. Information on Holtzworth-Munroe et al.,'s (1994/2000) typology

Family-only	Dysphoric/borderline	Generally violent/antisocial	Low level anti-social (2000)
• Least likely to exert severe and frequent violence • Least likely to engage in criminal behaviour • Least likely to use violence outside the home • Least likely to display pathological traits • More likely to perpetrate psychological and sexual means of violence in order to resolve conflict	• Mainly perpetrate severe psychological and sexual violent behaviour towards their partner • Motivation derived from anger and frustration due to psychological distress as a result of jealousy, substance abuse problems and fear of separation • Experience of child abuse	• Most violent subtype • Involved in partner and general violence • Use of weapons to inflict injury • Experience of child abuse	• Combination of family-only and generally violent and anti-social • Use violence in and out the family • Unlikely to display traits of psychopathological or personality disordered symptoms

Holtzworth-Munroe's and Stuart's typology has been supported empirically (Babcock et al., 2000; Dixon and Browne, 2003; Hamberger et al., 1996) and this typology appears to be robust when classifying different client groups (Graham-Kevan, 2007). In Petersson's and Strand's (2018) systematic review, studies have consistently demonstrated that family-only perpetrators use low levels of physical IPV and psychological IPA (Babcock et al., 2008; Cunha & Goncalves, 2013), low levels of sexual coercion and rarely inflict injury (Grana et al., 2014) and use low levels of general violence (Babcock et al., 2008; Johnson & Goodlin-Fahncke, 2015). Another systematic review (Jackson et al., 2015) examined the association between borderline personality disorder and IPV and supported the Holtzworth-Munroe's and Stuart's hypothesis of the behaviours in the dysphoric/borderline group. For example, those who used alcohol or drugs were more likely to show traits of borderline personality and perpetrate more severe violence (Thomas, Bennet, & Stoops, 2013). The generally violent/antisocial subtype describes being the most violent subtype. Babcock et al., (2003) found that generally violent women used more instrumental violence, reported using more physical and psychological aggression and inflicted more injuries. Similar findings were shown with men (Holtzworth-Munroe & Stuart, 1994).

Looking at typologies of female perpetrators, research has explored the motivations and impact of IPV. For example, from the feminist perspective, women perpetrate violence due to self-defence, retaliation, or for the protection of children (Dobash & Dobash, 2004; Swan & Snow, 2006). Swan and Snow's typology (2003) is an example of a feminist informed typology and consisted of three subtypes based on women's experience of victimisation and perpetration of IPV (victims, aggressor, and mixed relationships). The victim type referred to women who were violent, but their partners were much more abusive and used more severe violence against them, according to the women. The aggressor type

referred to women who were more violent than their male partners but with both using physical and coercive control, and the mixed relationships type referred to those who were equally or more violent than their male partners. It was decided that if the male partner committed more acts of severe violence and coercive control against her, she would be classified as a Victim and if the woman committed more acts of severe violence and coercive control against her male partner then she would be classified as an Aggressor. If the woman committed more severe violence, but the partner committed more coercion, or vice-versa, the relationship was classified as Mixed. Their sample consisted of 95 women who had been arrested for a domestic violence offense, of which 34% of the sample were grouped as Victims, 12% were Aggressors, 32% were Mixed-Male Coercive and 185 were Mixed-Female Coercive.

Miller and Meloy's typology (2006) examined the context of IPV and also identified three subtypes. The first, generalised violent behaviour referred to those who were violent outside the family but did not display control towards their intimate partner. Second, women categorised in the frustration response subtype, perpetrated violent behaviour as a response to abuse by their partners. Lastly, women in the category of defensive behaviour were those who reported that they used violence as a form of self-defence (or to protect their children). This sample consisted of 95 women from a female offender treatment group and found that 5% of the population comprised of generalised violent behaviour, 30% of the sample comprised of frustration response subtype, and 65% of women were categorised in the defensive behaviour subtype. Similarly, Babcock et al., (2003) used the Holtzworth-Munroe and Stuart (1994) typology and examined 52 women and identified two groups, generally violent and partner only. The proportion of the subtypes of female perpetrator typologies

indicate heterogeneity in characteristics of women and men involved in domestic violence (Capaldi & Kim, 2007).

Regarding type of violence, Kelly and Johnson (2008) explain that different types of IPV occur in different contexts, samples and methodologies rather than existing in a uniform manner. Influential in practise literature, Johnson's (1995) typology classified IPV as a type of violence incorporating both the feminist perspective and family research. The feminist perspective ascertains that violence is a control tactic used by men against women to dominate the relationship. Whereas the family research perspective explains that IPV is a result of couple conflict present in both heterosexual and same-sex relationships. After expanding on Johnson's two initial forms, patriarchal terrorism, otherwise known as intimate terrorism (IT) and common couple violence. (Abbot et al., 1995; Kelly and Johnson, 2008) IPV was further classified into five distinct types; Coercive Controlling Violence (CCV), Violent Resistance, Situational Couple Violence (SCV), Mutual Violent Control Violence, and Separation-Instigated Violence (Beck et al., 2013).

Briefly, CCV refers to one or both partners perpetrating violence, but with no levels of control. Violent Resistance refers to having one violent and controlling partner who is involved with a violent but not controlling partner. SCV is described as physical violence but with a low risk of injury without the use of controlling behaviours and is said to usually occur in response to conflicts and arguments and is less likely to escalate. Mutual Violent Control is defined as two similarly violent and controlling partners, and Johnson (2006c) indicated 5-10% of empirical data regarding its frequency, features or consequences. Lastly, Separation-Instigated Violence is defined as violence that occurs for the first time in a relationship at the time of separation (Kelly & Johnson, 2008), perpetrated by men and women.

Exploring the physical violence aspect, Johnson (2006) argued that there were two distinct types of relationships where physical aggression played a part. First, CCV where aggression arises from a context of a specific argument and one or both partners use physical violence, and the second, IT, where violence is motivated to exert control over a partner. One of the first to test Johnson's (2006) typology was Graham-Kevan and Archer (2003) who attempted to replicate and extend the findings. Their sample consisted of 86 women residing at Women's Aid shelters and their partners, 208 male and female students, 8 males attending domestic violence treatment programs and their partners and 192 male prisoners and their partners. Results showed that IT individuals used significantly more acts of physical aggression than CCV individuals, similar to Johnson's findings and summarised that controlling behaviours were central to classifying physically abusive relationships.

In relation to sexual control, Ward and Hudson's (2000) self-regulation model identified four distinct pathways to offending associated with the goals of offending and the self-regulation style of offending. In brief, 'the avoidance-passive' characterised by those who lack coping skills and self-awareness of not offending and the 'avoidant-active' describing those who use ineffective strategies to manage their risk are both pathways of those who wish to refrain from offending. In contrast, the 'approach-automatic' describes an impulsive and poorly planned behaviour and the 'approach-explicit' describes effective self-regulation to create opportunities and perpetrate sexually offending behaviour. Although based on sexual violence, Day and Bowen (2015) stated that the self-regulation model may potentially be used to understand the different types of violence identified in the Johnson's (1995) and Holtzworth-Munroe and Stuart's (1994) typology. For instance, perpetrators in the family-only couple violence may follow an 'avoidant' pathway as characteristics of this group include anti-violence attitudes and they are least likely to use violence outside of the

home. Whereas, generally those who are violent/antisocial may follow the 'approach-explicit' pathway to control and dominate their relationships using different control tactics including violence to achieve their goals (Ross & Babcock, 2009).

In terms of gender roles, the feminist theory has been used to specifically explain the link between male-to-female IPV perpetration. Predominantly, that the patriarchal system employs/encourages the use of men's domination, power, and control tactics over women which results in IPV. The feminist theory heavily relies on and argues that the concept of social context is key when understanding IPV. Heise, (2012) states "power and control in relationships, social norms condoning wife beating, and structural and economic forces keep women trapped in abusive relationships," (p. 47). Research revolving around the feminist theory has controlled for socioeconomic factors (Goodman et al., 2009), rather than investigating them, based on the argument that IPV is a societal problem. Nevertheless, gender inequality is only one of many factors of IPV (Dutton, 2006), and therefore, researchers have proposed a theory of family conflict, arguing that factors such as age, status, income and employment also play a role in explaining IPV. As a consequence, the theory of family conflict posits that IPV perpetration is a reaction to 'socially structured stress,' such as low income, unemployment and poor health (Gelles, 1985). Subsequently, it can be argued that IPV may be due to an individual's socioeconomic status. In contrast, theories such as patriarchal theories (Dobash & Dobash, 2004), resource theory (Goode, 1971), and gender resource theory (Atkinson et al., 2005), provide the need to organise a framework using empirical literature to understand IPV.

To summarise, although there is a foundation of research to suggest that IPV is more likely to be perpetrated by males, as research has shown that men and women can perpetrate

and experience IPV, it is important to move beyond patriarchy theories, and instead consider the risk factors of IPV, using the social learning literature.

Family Violence Exposure

This thesis explores family violence exposure by investigating the effects of traumatic childhood experiences on adult IPV. Existing literature has used terms such as childhood traumatic experiences, adverse childhood experiences, or childhood trauma interchangeably. The 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines trauma as " actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways: directly experiencing the traumatic event(s); witnessing, in person, the traumatic event(s) as it occurred to others; learning that the traumatic event(s) occurred to a close family member or close friend (in case of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental); or experiencing repeated or extreme exposure to aversive details of the traumatic event(s)." (p271). To be regarded as trauma, the person's response to the event must involve intense fear, helplessness or horror (American Psychiatric Association, 2000).

Direct or indirect exposure to traumatic experiences have been well documented for several years, with evidence suggesting negative developmental progression, in childhood and adulthood as a result. During the late 1990's and early 2000's, studies showed an increased risk of general aggression, IPV, post-traumatic stress disorder (PTSD), and anxiety disorder, as a result of exposure to traumatic childhood experiences (Anda et al., 1999; Dietz et al., 1999; Dube et al., 2001). Putnam (2006) found that child abuse and neglect impacted neurodevelopment (physical and biological growth of the brain, nervous, and endocrine

systems) and psychosocial development (personality development including morals, values, social conducts, interpersonal relationships and intrapersonal functioning). To further understand the relationship between childhood experiences and adult health, the Centers for Disease Control and Prevention (CDC) conducted the Adverse Childhood Experience (ACE) study and found a significant association between ACE's and negative physical and mental health outcomes in adulthood (Dube et al., 2002). More specifically, relational outcomes such as IPV, have found to be associated with adverse childhood experiences (Alexander, 2009; Parks et al., 2011).

Trauma and IPV perpetration (and its theoretical explanations)

ACEs have often been identified as predictors of IPV perpetration (Machisa, Chrisofides and Jewkes, 2016; Roberts et al, 2010; Watt, 2011; Whitfield et al., 2003; Widom et al., 2014), emphasising the importance of understanding the relationship between traumatic experiences and IPV. Watt and Scrandis (2013) conducted interviews with nine men with a history of IPV perpetration towards females over a 5-month period and explored whether childhood exposure to traumatic violent experiences influenced violent behaviour. Qualitative findings revealed four themes that influenced IPV perpetration which were childhood and family issues, school and mental health issues, substance use, and legal issues. The study highlighted that all nine men had experienced some type of childhood trauma which fell into three subtypes. First, abandonment, where participants described physical abandonment of mother and/or father, or emotional abandonment, in examples of parents' alcoholism. Second was witnessing IPV in the family. Participants stated witnessing violence between caregivers including both physical and verbal abuse. And thirdly, participants reported experiencing violence in forms of physical punishment, and three men disclosed experiencing child sexual

abuse. These findings highlight the importance of identifying traumatic childhood experiences as risk factors of IPV, however, only for men as the sample was limited to male perpetrators.

Another study described the relationship and pathways between the history of childhood traumatic exposure and male-perpetrated IPV while exploring mediating effects of poor mental health using a survey conducted by 416 men in South Africa (Machisa, Chrisofides and Jewkes, 2016). A high proportion of men were physically, emotionally, sexually abused, and neglected. Results revealed a direct path between history of childhood trauma and IPV perpetration using the mediating effects of PTSD, other trauma and gender attitudes. The authors state that findings from this study underline the importance of the need to develop more positive parenting interventions to prevent the risk of violence in later adult life. In turn, although these findings show consistent associations between trauma and IPV perpetration, it is again limited to male-to-female IPV perpetration.

Furthermore, a recent systematic review looked at the association between child exposure, specific to IPV, and perpetration of IPV in adulthood (Kimber, Adham, Gill, McTavish, and MacMillan, 2018). Of 19 studies that matched the inclusion criteria, 16 found that exposure to IPV as a child was significantly and positively associated with IPV perpetration as an adult. It was noted that child exposure to IPV included the direct observation of violence, an awareness of violent behaviour, or abuse between adults who are, or have been intimate partners or family members (Wathen & MacMillan, 2013). This highlights the relevance of understanding the relationship between traumatic exposure and adult IPV perpetration. However, although the review was inclusive of approximately 12 studies with both male and female samples, there were still a number of limitations. For

example, the literature dominantly focused on relationships between child exposure to physical IPV and physical IPV perpetration only, inconsistency of measures, unclear IPV perpetration classification and lack of theoretical frameworks. Also, none of the identified studies examined child exposure to sexual or financial IPV.

On the other hand, a sample of men and women aged between 18 and 49 were interviewed in different countries within Asia and the Pacific using standardised population-based household surveys. The survey included questions regarding their perpetration or victimisation experience of IPV or non-partner sexual violence, childhood trauma, and harsh parenting. The IPV experiences included physical violence, sexual violence, emotional violence and economic violence. The statements regarding economic abuse were in line with items referring to financial control from the Measure of Control and Abusive Tactics scale (Hamel et al., 2015), but worded accordingly. Structural equation modelling analyses revealed that in men, all forms of childhood trauma (childhood emotional abuse or neglect, physical abuse, sexual abuse, or witnessing abuse of mother) were associated with all forms of IPV perpetration. In women, all forms of childhood trauma were associated with physical IPV only, and a combination of physical and sexual violence. (Fulu, Miedema, Roselli, McCook, Chan, Haardörfer, and Jewkes, 2017). This study can be seen as very beneficial in a sense that it explores all forms of trauma and IPV behaviours rather than focusing on one or two specific types.

An extensive body of theoretical approaches, using different disciplines, attempt to explain the causes and risk factors of IPV. For instance, psychological theories include, but are not limited to, frustration-aggression theory (Dollard et al., 1939), SLT (Bandura, 1977), cognitive behavioural theory (CBT), GAM (Anderson & Bushman, 2002), and the Theory of

Intergenerational Transmission (IGT) of violence (Kalmuss, 1984). Other explanations include biobehavioural (e.g. neurochemical mechanisms), criminological, economic and sociological perspectives (Heise, 2012), including feminist theory, conflict theory (Marx, 1818-83), resource theory/gendered resource theory (Blood & Wolfe, 1960) and dependency theory (Prebisch, 1962). These theories suggest that when men lack control over resources, such as employment or are financially unstable, they resort to using violence within intimate relationships to establish control. It is important however, to explore how these different theoretical explanations may be integrated into a model to explain the link between traumatic childhood experiences and IPV perpetration. However, as evidence suggests that men may also experience abuse such as financial control (Sharp-Jeffs, 2015) these theories can therefore also explain why some women use control in relationships.

The relationship between trauma and mental illness was first investigated by Jean Charcot (1825-1893) who worked with traumatised women in the late 19th century, developing the Trauma Theory. It proposes that traumatic life experiences in any situation have the potential to lead to negative psychological/mental health effects, especially PTSD, and this theory argues for similarities in response to traumatic experiences and the development of PTSD. A majority of this theory's validation has developed from military veterans and so lacked in general, non-clinical samples, and female perpetrator samples. In an attempt to challenge sample representation, Machisa, Christofides, and Jewkes (2016) confirmed IPV perpetration was a result of child trauma using a sample of South African men. This was consistent with previous findings that men who experienced physical abuse or witnessed parental violence were at an increased risk of perpetration. Yet, the findings could not be generalised to a female sample. This direct path from childhood trauma to IPV perpetration is said to be coherent with the IGT of violence theory, discussed below.

The IGT of violence can be used to examine the link between exposure to or witnessing violence within the family and violence in adult intimate relationships (Kalmuss, 1984). Based on the SLT inspired aggression literature, arguably, violence may be transmitted through generations via observational learning and modelling processes. A foundation of evidence over a period of time has supported the belief that individuals who experience physical punishment as a child, are more likely to use violence in their adult relationships, than those who have never been physically abused (Afifi et al., 2017; Widom et al., 2014; Gilchrist et al., 2017). Consistent with SLT, physical and sexual abuse related trauma experiences are found to increase the likelihood of IPV perpetration (Widom et al., 2014). Fleming et al., (2015) found similar results with men across eight different countries while reporting that witnessing parental violence was the strongest IPV perpetration risk factor, again, comparable with the IGT of violence.

According to the IGT of violence, a specific type of trauma such as witnessing IPV should predict the same type of behaviour (e.g. IPV perpetration) if violence is said to be transmitted through generations via observational learning (Kalmuss, 1984). Similarly, according to the SLT, an individual who has experienced a specific type of trauma, should respectively be at an increased risk of perpetrating that same form of violence in adulthood. From these conclusions, it is important to explore this link further and whether the type of childhood trauma experienced is predictive of IPV perpetrated towards the partner, or conversely whether traumatic exposure has a more complex relationship with later IPV that require additional factors to explain this association.

A different approach to understanding the association between childhood traumatic experiences and IPV perpetration can be demonstrated by the Stress Sensitisation Model (Hammen, Henry, and Daley, 2000). The model proposed that traumatic events experienced in childhood, sensitise the individual to later exposures, therefore, adverse situations may stimulate a sensitised person to more intense negative reactions, in this case resulting in IPV perpetration. This approach has often been discussed in the neurobiological literature, for example, Mitchell and Beech (2011) imply that an individual who experiences trauma, is subject to a modified amygdala, orbitofrontal cortex and anterior cingulate cortex. Due to these changes, individuals may face difficulties in construing social cues, forming attachments, and interacting with others, all which are important factors for healthy relationship functioning. In association with the Catalyst Model, these factors could be linked to the 'genetic predisposition' component, suggesting that biological factors also influence social factors and as individually or combined, play an important role in adult behaviour.

To conclude, childhood trauma is a risk factor for IPV perpetration, as suggested by both theoretical explanations and empirical evidence. Evidence has demonstrated direct pathways from childhood trauma to IPV perpetration, or through mediation effects such as PTSD. However, as mentioned previously, the majority of the existing research focuses on child exposure to physical IPV and adult physical IPV perpetration, therefore overlooking other forms of traumatic experiences and other forms of coercive relationship behaviours. The research has shown some disparity when measuring IPV and when classifying IPV. Finally, the current imbalanced gender sampling in such studies remains apparent and therefore, it is important to consider these factors.

Trauma and IPV victimisation (and its theoretical explanations)

The impact of trauma has also been frequently found to be a risk factor for IPV victimisation (Parks et al, 2011; Valdez, Lim, & Lilly, 2012; Widom et al., 2014), and therefore, it is just as important to understand the relationship between childhood traumatic experiences and victimisation. However, the majority of IPV perpetration literature has focused on male-to-female perpetration, similarly, a majority of the global IPV victimisation literature has been limited to female victims of male perpetrated IPV (Aakvaag et al., 2017; Parks et al., 2011; Valdez et al., 2013).

For example, examining the mechanisms by which childhood maltreatment led to IPV victimisation, Valdez, Lim, & Lilly (2012) interviewed 23 American women who were IPV victims and explored their childhood histories. The authors proposed two trajectories; childhood emotional trauma and childhood physical trauma which led to IPV victimisation in adulthood. The two trajectories differed in terms of consequence of IPV victimisation. The emotional trauma trajectory was associated with problematic interpersonal relationships, where women remained with their abusive partner due to fear of loneliness and interpersonal schemas. The physical trauma trajectory was associated with desensitisation and normalisation of violence, where women believed that violence was normal, and so tolerated IPV. Despite that these outcomes have not been applied to a male sample, these qualitative findings show the importance of childhood traumatic experiences when examining risk factors of IPV victimisation. Another study found that childhood maltreatment increased the risk of experiencing sexual assault and physical assault with or without a weapon for women, (Parks et al., 2011). However, the study did not sufficiently clarify whether this type of violent victimisation occurred between intimate partners, and again did not examine men's victimisation risk factors.

Widom, Czaja, & Dutton (2014) explored the extent to which abused and neglected children reported IPV perpetration and victimisation when followed up into middle adulthood. A group of children aged between 0 and 11 were matched with children without trauma histories and were again assessed in adulthood. The findings revealed that children who had experienced childhood abuse, neglect, and physical abuse reported an increased risk of physical injury resulting from IPV victimisation. The study also discovered that although females with history of abuse were more likely to report being injured by their partners, males with a history of abuse did not, which highlighted that difference in gender when reporting IPV victimisation. Note that the study was limited to physical IPV victimisation, disregarding other forms, which has also previously been identified as problematic (Kimber et al., 2018).

Further, substantial research has looked specifically at the effects of childhood maltreatment on IPV victimisation. For example, childhood maltreatment including sexual, emotional and physical abuse, physical and emotional neglect, and exposure to IPV was associated with increased risk of IPV victimisation in adulthood (Afifi, Mota, Sareen, & MacMillan, 2016). Similarly, McMahon et al., (2015) established that most types of childhood maltreatment increased the risk of IPV victimisation, with additional effects of sexual abuse on IPV victimisation. However, both these studies did not examine sex-differences when studying the effects of childhood maltreatment on IPV victimisation, nor did the studies clarify which type of IPV victimisation was experienced. Hence, overall findings suggest that the association between adverse childhood experiences and IPV victimisation should be carefully considered, covering individual factors. Also, it is important

to understand this relationship using theoretical foundations to provide potential explanations of these complex associations.

In relation to IPV perpetration, subsequent theoretical approaches have also attempted to explain risk factors of IPV victimisation. A majority of IPV victimisation studies have explored male-to-female partner violence from a feminist framework (e.g., Dobash & Dobash, 2004), where men have been identified as the main perpetrators of IPV. The feminist theory has been successful in claiming that female gender is associated with IPV victimisation, where victimisation exists as part of patriarchal social structures. It adds that these intentional behaviours maintain power and control over women by men using control tactics. However, this viewpoint does not adequately explain men's IPV victimisation, but has instead concentrated on the importance of social context.

From a social context perception, theories such as family conflict, resource theory and dependency theory can also be used to explain victimisation. Women with lower education and status than their partners are hypothesised to be an in increased risk of IPV victimisation (Fox et al., 2002). In addition, using the dependency theory and the feminist perspective, Rodriguez-Menes and Safranoff, (2012) stated that "low opportunities and multiple constraints stemming from women's positions in the economic structure affect women's control over their lives, making them dependent on their male partners, and raising the probability of experiencing violence" (p.586). Therefore, women's socioeconomic status, lack of education, and a decreased possibility of financial stability may increase the likelihood of vulnerability to IPV victimisation. Again, these theories do not explain why men can also experience IPV victimisation, and therefore, other theoretical perspectives have to be considered.

According to the IGT of violence, individuals who experience violence within the family may be more likely to normalise violent behaviours within interpersonal relationships, and in turn may accept violence within later adult relationships. The causal processes of IGT of violence often share consistent elements with the SLT, such as learning processes, whereby, children witnessing interpersonal violence within the household, later imitate this behaviour in adulthood. Both these theories signify that concepts such as beliefs, values, and norms conducive to IPV, are transmitted through generations. Powers, Cochran, Maskaly and Sellers (2017) argue that SLT is unable to clearly provide explanations of IPV victimisations as it does with perpetration, whereas, IGT can provide explanations for both and suggests that the learning processes may be gendered.

For example, Stith et al., (2000) hypothesised that a violent family environment would increase the risk of perpetration for men and victimisation for women, based on the assumptions of patriarchal theory. As the theory suggests that men are socialised to be aggressive and use violence to resolve conflict, whereas women are socialised to value interdependence and be nurturing. Their results accorded with this as it was found that men and women reacted differently to violence within the family, where family violence exposure was more strongly related to becoming a victim of spouse abuse for women than for men, and therefore, it is necessary to consider a gendered application of IGT of violence when looking at IPV victimisation. This is consistent with the IGT perspective on IPV perpetration (Cochran et al., 2011; Silverman et al., 2008).

Conversely, studies that have used advanced statistical methods have suggested that when other ACE's are taken into account, the relationship between exposure to childhood abuse on later IPV may not be so important (Jennings et al., 2014; Widom et al., 2015). In support of this conflict, Stith et al's., (2000) meta-analytic review proposed 'weak-to-

moderate' effects of the relationship between child abuse and witnessing interparental violence on later IPV victimisation. In turn, it can be questioned whether it is theories such as IGT of violence or SLT that can explain the link between childhood abuse and IPV victimisation, or whether it is factors such as PTSD that mediate this relationship (Messing et al., 2012) or the role of attitudes, beliefs and values that shape the risk of IPV victimisation. Drawing from this, arguably, the theoretical underpinnings remain unclear and therefore, it is important to consider other factors.

Focusing on adverse childhood experiences, some theories have addressed the 'interpersonal' nature of trauma revictimisation. For example, DePrince (2005) proposed a betrayal trauma theory, and explained that repeated dissociation resulting from childhood maltreatment from parents may lead to difficulties in detecting violation of social contracts. In regard to IPV, individuals may find it problematic to distinguish 'normal' relationships behaviours and so accept violence within relationships as a form of dealing with conflict. In support of this, the SLT also suggests that violence exposure or witnessing of violence within the family may teach individuals that using aggression to deal with interpersonal conflict may be viable (Karakurt et al., 2013). Debatably, the link between childhood maltreatment and adult IPV victimisation may be due to a disrupted information processing strategy regarding intimate relationships, which may contribute to the risk of IPV victimisation. Drawing from these findings, it can be said that the attachment factor may play a significant role in in describing interpersonal relationship functioning, which is discussed next.

Child Temperament (Attachment)

Attachment styles are referred to as the "ability to create emotional bonds with other people" (Bowlby, 1977, as cited in Langhinrichsen-Rohling, Palarea, Cohen, & Rohling,

2000, p.76). Attachment theory has been said to be one of the leading developmental models to describe the dynamics of interpersonal functioning and emphasises the role of early life experiences in determining a child's beliefs, values and attributions regarding significant others. According to this theory, the development of working models (e.g., expectation that others will be available and supportive when needed) derives from the receiving of care in a stable and responsive manner. In turn, the type of attachment style that a person may develop can be influenced by their childhood temperament and their caregivers' parental style. Linking this back to the Catalyst Model, attachment can therefore be related to the 'child temperament' component.

In the attachment literature, two distinctive methods have been used to assess attachment styles of individuals. One from a developmental perspective, and the other from a social and personality psychology approach to adult romantic relationships perspective (Shi, Wampler, & Wampler, 2014). In accordance to the developmental perspective, methods such as the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1996) are techniques to retrieve descriptive information regarding childhood experiences in order to evaluate the dynamic internal working model. The social and personality psychology approach interprets romantic relationships as an outgrowth of previous attachment experiences. Bartholomew and Shaver (1998) conducted a comparison between the Attachment Style Prototype (ASP), a three-category attachment measure, and the Experiences in Close Relationships (ECR; Brennan et al., 1998), a two-dimensional measure, generating four attachment styles. These were consistent with Bartholomew and Horowitz's (1991) attachment patterns. Based on dimensions of anxiety and avoidance, the four attachment styles are secure (low anxiety and low avoidance), fearful (high anxiety and high avoidance), dismissive (low anxiety and high avoidance), and preoccupied (high anxiety and low avoidance).

A supporting body of research around the adult attachment debate has revolved around whether individual differences are effectively assessed using categorical or continuous models. Fraley, Hudson, Heffernan, and Segal (2015) carefully explored this issue using an exploratory sample of approximately 2,400 adults and the second sample consisted of 2,300 individuals of a confirmatory sample. In other words, the first sample had no exclusion criteria for data collection, and the second sample was formal and evaluated the types versus dimension debate. The findings were consistent across both samples and indicated that individual differences appeared more reliable with a dimensional model compared to a categorical model, and that the former better represented both general attachment and attachments in specific relationships.

Following from this, there has been an increase in theoretical developments in adult attachment literature where authors question researchers that measure attachment style categorically or focus on the ways people relate to others in general rather than the ways they relate to specific individuals (Fraley et al., 2011; Fraley & Heffernan, 2015). The importance of differences in attachments across different types of relationship (e.g., intimate partner or parental) has been emphasised and has led to questioning the adequacy of common methods of measuring self-reported attachments styles. Consequently, Fraley, Heffernan, & Brumbaugh (2011) devised the Experiences in Close Relationships-Relationship Structures Questionnaire to assess attachment dimensions in multiple contexts. The authors demonstrated that the ECR-RS measures of romantic attachment are associated with basic relationship functioning (e.g. satisfaction, commitment, and investment), and this accounts for contextual factors and reliable subscales.

Successively, the ECR-RS has been found to be a reliable and valid method of assessing adult attachment styles and has highlighted the importance of assessing attachment styles in an individual manner as these impact adult behaviours. For example, research has shown that people who have relatively secure attachment styles are more likely to have well-functioning relationships (Holland, Fraley, & Roisman, 2012). In turn, it can be argued that people who have insecure attachment styles, whether as children with parents, or within intimate relationships with their partners, may have an increased risk of IPV perpetration or victimisation.

The theory of attachment has often been used as a theoretical framework to understand IPV, and some researchers have suggested a continuity in attachment styles from childhood to adulthood (McClellan & Killeen, 2000; Wallin, 2007). In accordance with the dimensional approach to attachment, Fournier, Brassard, & Shaver (2011) suggested that anxiety 'reflects a fear of rejection and abandonment combined with doubts about one's social value and lovability,' whereas, avoidance 'includes a strong emphasis on independence, self-sufficiency, and ability to cope with threats alone,' and 'emotional suppression of thoughts about vulnerability and personal weakness or inadequacy,' (p. 1985). As previous findings have suggested that both these attachment traits can be related to IPV perpetration with men (Godbout et al., 2009), and women (Belanger, Mathieu, Dugal, & Courchesne, 2015), it is important to recognise that as well as traumatic experiences, attachment insecurity may also increase the risk of IPV perpetration and victimisation

Attachment and IPV perpetration

Despite methodological and sex-differences, numerous findings have shown the relationship between insecure attachment and IPV perpetration (Allison et al., 2008; Henderson et al., 2005; Mackay et al., 2018). Consequently, researchers have argued that violence between partners may occur when attachment needs are not fulfilled. Shaver and Mikulincer (2011) claimed that people with an anxious attachment style may want to have control of the relationship in order to manage their own anxiety around rejection but may also fear that such control may act as provocation to the partner, in turn threatening the stability of the relationship. Conversely, people with an avoidant attachment style may manage their own need for distance and independence by being distant and maintaining a negative view of others. These conflicts may lead intimate partners to an increased risk of IPV perpetration, and therefore, attachment plays an influential role in intimate relationships.

There is a considerable amount of research that has explored the impact of insecure attachment types on negotiation. Bear and Segel-Karpas (2015) described that negotiation is distinct from more general forms of social interaction as it involves interdependence and control over values resources. It was explained that negotiation evoke previous social learning about interpersonal relationships (Gelfand, Major, Raver, Nishii, & O'Brien, 2006), which helps to understand why individual differences, including attachment styles, may influence negotiation behaviours in relationships. relating to control over valued resources, negotiation may elicit anxiety due to potential loss of resources and undesirable outcomes. Therefore, negotiation may pose a threat on both instrumental and personal levels. For example, when individuals are in threatening situation with their partner, the attachment style influences subsequent behaviour (Bowlby, 1969/1982), or reaction to subsequent behaviour. In relation to the context of intimate partner relationships, insecure attachment has been

shown to negatively impact on conflict management (Mikulincer & Shaver, 2008, 2010), therefore, individuals who are insecurely attached are less likely to use or respond to positive negotiation behaviours to resolve conflicts in relationships.

Johnson (2008) stated that attachment anxiety relates to aggressive responses in relationships, where partners use control tactics and abuse to regulate their insecure attachment needs. In support of this, Belanger et al., (2015) investigated the relationship between IPV perpetrated by women and the attachment style of each partner among 20 couples in which the male partner was in therapy for abusive men. It was established that women with an anxious attachment style reported perpetrating more injuries and were less likely to use negotiation during conflict.

Another study applied the attachment perspective to psychological abuse perpetration in close relationships with a sample of college students and found that the avoidant attachment style among men and women was associated with increased levels of psychological abuse perpetration with high stress levels (Gormley & Lopez, 2010). It was noted that severe stressors such as separation or loss, which can be parallel to traumatic experiences, may shape adult attachment orientations, which may impact on relationship behaviours. Therefore, traumatic experiences may result in forming insecure attachment as children, which may subsequently manifest in negative behaviours in adult relationships.

Recently, Velotti, Zobel, Rogier, and Tambelli (2018) conducted a systematic review of IPV and attachment to further enhance the knowledge of the involvement of attachment and how this theory could be used to explain the process that leads to IPV. In regard to the association between anxious attachment styles and IPV perpetration, it was concluded that perpetrators of physical, psychological and sexual abuse, tend to have an anxious attachment style towards their partners. This supports the theoretical basis that an

anxious attachment style may result in a person using violence to meet attachment needs. Also, this theory can explain individuals who are generally nonviolent but who are violent in family relationships only (Holzworth-Munroe et al., 2000), as violence is used to ensure that attachment needs are met (e.g. using violence to maintain proximity) in a relationship context. In terms of avoidant attachment, the review discussed studies showing associations between avoidant attachment and IPV perpetration, with other studies finding contrasting findings. It was emphasised that the antisocial and highly violent subtype are often avoidant and explained that violence is used a means of control and manipulation. Additionally, the review found more studies with significant relationships between avoidant attachment and sexual and psychological IPV, compared to physical IPV, yet regarding sexual IPV, avoidant attachment was found only in males.

Attachment and IPV victimisation

Empirical evidence suggests an association between attachment and IPV victimisation in men (Belanger et al., 2015) and women (Kujipers et al., 2012; Sandberg et al., 2016). Returning to Velotti et al.,'s (2018) systematic review, attachment anxiety and avoidance has been linked to IPV victimisation. An individual with an anxious attachment style usually has a fear of abandonment and high levels of separation anxiety. Therefore, the risk of victimisation and/or revictimisation may increase, as attachment anxiety may make it more difficult to leave an abusive relationship (Allison et al., 2008). In Belanger et al.,'s (2015) study, men with an avoidant attachment style reported higher physical abuse victimisation. Research also indicates that victims of IPV also tend to be anxiously attached to their partners (Allison et al., 2008; Finkel & Slotter, 2006; Henderson et al., 2005). Therefore, using the attachment theory to explain the association between attachment

insecurity and IPV victimisation can be valuable and may operate differently for different styles.

Mikuliner and Shaver (2005) stated that an anxious person may also suffer from low self-esteem and negative view of self which again may make it more difficult to leave their abusive partner. This can also be related to resource theory and dependency theory that is used to explain IPV victimisation where low economic status may increase the probability of IPV victimisation (Rodriguez-Menes & Safranoff, 2012). It is noteworthy that few studies have included other potential variables such as self-esteem, emotional regulation and perception of social support which could also influence victimisation factors.

In terms of attachment playing a role in IPV perpetration and victimisation, there have been mixed findings. For example, although anxious attachment was found to significantly predict physical IPV victimisation even after controlling for trauma (Sandberg et al., 2016), another study found that after controlling for trauma, insecure attachment did not predict IPV victimisation (Karakoc et al., 2015). Focusing on childhood maltreatment, Smith and Stover (2016) found that high scores on anxious attachment measures predicted IPV victimisation, yet Gay et al., (2013) found otherwise. As a result of inconsistent findings, whether trauma/attachment or both predict IPV perpetration and/or victimisation is unclear. Therefore, other factors also need to be considered.

Environmental Strain

Considering theoretical perspectives, many studies have investigated the impact of trauma involving childhood physical and sexual abuse, family violence and childhood neglect on IPV. However, relatively few studies have examined the effects of other types of ACE's (Rezaeian, 2013), such as, naturally caused events, acute traumatic events, essentially, the 'environmental strain' component of the Catalyst Model. Substance Abuse and Mental Health Services Administration (SAMHSA) identified two categories of trauma, naturally caused events and events caused by people. This fits in with the 'Environmental Strain' component of the Catalyst Model suggesting that environmental strain leads to motivation to violence resulting in violent behaviour.

In relation to naturally caused events, result from a systematic review found that few studies explored the association between natural disasters, such as a tsunami, hurricane, earthquake, and/or flood and interpersonal violence (Razaeian, 2013). These results measured only victimisation in females and indicated that exposure to these natural disasters increased violence against women and girls, e.g., rape and sexual abuse, perpetrated by the 'rescuer' (Fisher, 2010) and by intimate partners (Picardo et al., 2010), and IPV (Larrance, Anastario, and Lawry, 2007; Anastario, Shehab, and Lawry, 2009; Schumacher et al., 2010; Harville et al., 2011).

In contrast, Fagen et al., (2011) found no significant differences in women's sexual violence victimisation reports before or after a natural disaster in a sample of female university students. However, the authors identified several factors accounting for the null results. For example, there was a sense of community at the university which promoted social

cohesion, the university kept in contact with the students after the hurricane and provided extra support, and some students were offered accommodation at other universities in order to help them. Ganapati and Ganapati (2009) argued that social networks based on "beliefs, values and customs," (p43) structure the way people may act after a natural disaster. The university's extra support may have helped these students positively which may have accounted for why there was no significant difference in reports of sexual violence victimisation before or after the hurricane. On the other hand, it is worth noting that these studies are limited to a female sample, and therefore it is important to consider the impact of these traumatic experiences on men too.

Looking at the environmental strain component and its impact on IPV, Schumacher (2010) demonstrated that there was a significant increase in the percentage of psychological victimisation report rates, for men and women, after Hurricane Katrina. Significant increases in rates of physical victimisation for women were also observed after the hurricane, but not for men. Understandably, this shows that natural disasters can also be classed as risk factors for IPV victimisation. The reason for this may lie in understanding the mechanism by which but these are related. For example, reports of IPV were also associated with depression and PTSD. It can therefore be questioned whether depression or PTSD, or any other stress related outcomes, may play a mediating role while associating natural disasters as risk factors of IPV victimisation.

Linking economic (or financial) abuse to events caused by people, Miller (1995), described economic abuse as creating economic dependency on the perpetrator. This form of abuse has been the least researched, and often overlapped with emotional or psychological abuse (Stylianou, 2018). Economic abuse involves creating situations to control what the

victim can and cannot do financially, and the abuse occurs when the perpetrator gains complete control over the victim's financial resources (Fawole, 2008). However, Postmus, Plummer, and Stylianou (2015) reported three forms of economic abuse, economic control, economic sabotage, and economic exploitation. Economic control occurs when the perpetrator prevents the victim from accessing or having the knowledge of finances as well as preventing them to make any financial decisions. Brewster (2003) found that a perpetrator may keep records of victim's use of money, withhold money, prevent victim from having access to bank accounts, or lie about shared assets. Economic sabotage refers to when the perpetrator prevents the victim from obtaining or maintaining employment. Lastly, employment exploitation has been described when a perpetrator engages in behaviours to purposefully destroy the victim's financial resources.

Although the literature has discussed abuse tactics that perpetrators have used against victims of IPV, majority of the research has subsumed this with abuse such as psychological and emotional (Stylianou, 2018). As discussed previously, nonphysical forms of abuse have been found to have major impacts on victims, and therefore, it is important to explore the use of economic abuse and understand its uses by perpetrators and the impact on victims of IPV.

Subsequently, theories such as resource theory/gendered resource theory (Blood & Wolfe, 1960) and dependency theory (Prebisch, 1962) suggest that when men lack control over resources, such as employment, or are financially unstable, they resort to violence within their intimate relationships to establish control. Therefore, a perpetrator may use economic abuse to control, sabotage, or exploit their intimate partner. Additionally, research has suggested that men may also experience financial control (Sharp-Jeffs, 2015), and these theories can be used to explain why some women may use this form of abuse in their relationship.

It is important however, to explore how these different theoretical explanations may be integrated into a model to explain the link between traumatic childhood experiences and IPV. Schrag, Edmond, Tlapek, and Auslander (2016) investigated the impact of being exposed to economic abuse tactics in 105 adolescent females aged 12 to 19, and found that nearly half of the sample had witnessed moderate or high levels of exposure to economic abuse. It was reported that increased exposure to economic abuse was significantly related to increased rates of depression and PTSD symptoms. Also, a decreased rate of financial self-efficacy was reported. These findings suggest that exposure to this form of abuse had a significant adverse impact on the female adolescents, and could be argued that a decreased rate of financial self-efficacy may hinder the ability to financially succeed in the future, in turn, increasing the risk of financial dependency on the partner in an intimate relationship, and increasing the risk of victimisation. Considering that these results are based on a female sample, it is crucial to explore this form of abuse with a male and female sample, and whether both males and female can perpetrate and experience economic abuse.

Resilience/protective factors

Much of the research has looked at how ACE's or attachment insecurity can contribute to the risk of IPV perpetration and victimisation, and there is sufficient evidence suggesting 'low-to-moderate' associations (Capaldi et al., 2012) or 'weak-to-moderate,' effect sizes of the relationship (Stith et al., 2000). It can be argued that within the trauma literature, the majority of the research has focused on the negative outcomes of adverse experiences, resulting in a dearth of research into the positive or mitigating factors of that create resilience. Resilience has been described in multiple ways, from the ability to bounce

back and recover from stressful situations (Smith et al., 2008) to positive growth after a traumatic event (Tedeschi & Calhoun, 2004).

The social-ecological model (Ungar, 2013), a prominent framework, has been used to conceptualise resilience, where resilience is viewed as the extent to which individuals are capable and able to navigate their way to psychological, social, and cultural resources to sustain their well-being after facing adversity. Ungar, Ghazinour, and Richter (2013) conducted a review that interpreted Bronfenbrenner's model, first introduced in the 1970's, and Ungar's social-ecological model, which highlighted three principles informing a bio-social-ecological interpretation of resilience. Firstly, equifinality, which suggests many proximal processes may lead to different, yet viable expressions of human development of well-being. Secondly, differential impact, reflecting on the nature of the risks children may face, their perceptions of available resources to lessen the risks, and the quality of accessible resources that make proximal processes more or less influential to the development. Thirdly, contextual and cultural factors which may provide access to different processes associated with resilience. In similarity with the conclusions of the review, it can be implied that using this social-ecological theory of resilience to understand the processes that may contribute to positive development or growth after adverse experiences.

A number of interrelated factors have been identified in support with positive outcomes subsequent stressful situations, including relationships, social justice, power and control, and a sense of belonging (Ungar et al., 2007). In line with this, researchers have adapted his framework when examining resilience and have understood the importance of acknowledging these different factors (Sanders & Munford, 2014). Findings have shown that traumatic experiences, or more specifically, exposure to IPV in childhood, predicted higher

resilience among women (Howell et al., 2017). The authors examined individual, relational, communal, and cultural factors and how these were associated with resilience in women who were exposed to IPV and found that spirituality and social support played an important role in enhancing resilience. Consistent with this finding is Martinez-Torteya et al., (2009) suggestion that it is possible to develop a secure attachment style and healthy intimate partner relationship, irrespective of childhood trauma.

People who experience childhood trauma or develop insecure attachment styles with their partners may not experience IPV perpetration or victimisation, and this phenomenon can be explained through resilience. Therefore, it is useful to explore this aspect and how it may play a role in overcoming adversities. In turn, researchers have developed different constructs to measure individual's resilience including the Resilience Scale (RS). The scale was developed from a qualitative study of 24 women who had adapted successfully after experiencing major adverse life events but was also intended to be used with a male population (Wagnild & Young, 1993).

The RS has a number of factors. First, equanimity, in other words, the ability to consider a wide range of experience and to face each day as it comes, thus, moderating extreme responses to adversity. Second, perseverance, relating to the willingness to continue despite the struggle, and remain involved in and utilise self-discipline. Third, self-reliance, relating to the belief in an individual's capabilities, depending on oneself, and recognising personal strengths and limitations. Fourth, meaningfulness, realising the purpose of life and one's own values. And fifth, existential aloneness, meaning the important of realising that one's life is unique, different to other people. The authors concluded the strengths of the scale, including internal consistency and reliability, and at the same time recognised that

although the scale was intended to be used with men too, it was developed based interviews with women.

Summary

To conclude, evidence strongly suggests that ACE's may have a negative impact on relationship behaviours within intimate partners, where individuals with a history of traumatic experiences, regardless of the nature, are more likely to be at risk of IPV perpetration and victimisation, than individuals with no history of traumatic experiences. Further, research has also clearly suggested that attachment styles play an influential role in intimate partners, where individuals with attachment insecurity are more susceptible to IPV perpetration and victimisation than individuals with secure attachment styles.

In terms of perpetration, there is a body of research providing theoretical support for the different processes that explain the underlying causes of using violence towards an intimate partner, such as the GAM and SLT. However, Ferguson (2010) criticised the GAM and proposed a Catalyst Model (Ferguson et al., 2008) which sought to explain the impact of media violence and suggested that this was more effective in explaining violent behaviour. Although the model was developed to explain media violence, the current research will explore how the components of 'family violence exposure,' 'environmental strain,' and 'child temperament' facets of the model can be used to explain IPV. This model was chosen as it effectively illustrates the importance of considering multiple contributions from different developmental stages to later violent behaviour. For this reason, it was chosen to act as a framework to explore IPV perpetration. Currently there is a general lack of psychologically informed models explaining IPV victimisation, therefore this research will explore how this model may help explain the individuals of IPV victimisation.

It is important to understand why some individuals, despite being subjected to negative events, whether in childhood or adulthood, may still enjoy non-violent relationships with their intimate partners. As such, the current research explores how protective factors, in the current research can contribute to explaining overcoming of ACE's, and instead suggest a positive growth after adversity. Therefore, this research looks at whether high resilience may decrease the probability of IPV perpetration and victimisation in individuals who have experienced traumatic events, or individuals with an insecure attachment style. Finally, and in relation to the 'genetic predisposition (& male gender)' component of the Catalyst Model, the research considers the differences in gender when reporting IPV perpetration and victimisation, and more importantly, whether the impact of trauma and attachment may influence IPV.

The overall aims of the thesis were to explore the impact of the 'Family Violence Exposure', Child Temperament,' and 'Environmental Strain' component of the Catalyst Model on IPV perpetration and victimisation. Also, the thesis aimed to explore resilience. Firstly, based on the literature, and in line with the components, 'family violence exposure,' and 'environmental strain,' from the Catalyst Model, it was hypothesised that traumatic experiences would predict IPV perpetration and victimisation, for both males and females, explored by Study 1. Secondly, it was hypothesised that traumatic experiences would be associated with insecure attachment styles, and insecure attachment styles will be associated with and predict IPV perpetration and victimisation. This was explored in Study 2, along with resilience. It was also hypothesised that high resilience will be negatively correlated with IPV, and positively associated with negotiation behaviours to resolve conflicts.

Chapter 2 – Methodology – samples and measures

Design

This research employed a questionnaire-based approach, using hard copies and an online questionnaire to collect quantitative date using an opportunity sampling method. In Study 1, the experiment used a between-subjects design to explore the effects of different types of trauma on IPV perpetration and victimisation. Study 2 also used a between-subjects design to explore the effects of trauma, attachment, and resilience on IPV.

Participants

Study 1 recruited 246 participants (137 men, 109 females) via opportunity sampling. Participants included students from the University of Central Lancashire (UCLan), Preston Campus and the general public, who were recruited using online questionnaires. Participants' age ranged from 18 to 53 years (M = 22.35, SD = 4.74). Over half of the participants were White (61.4%), followed by Asian or Asian British (24.0%). A small amount of the sample was Black (6.5%), Chinese (2.4%) or another ethnicity (4%). Most of the participants reported being heterosexual (94.3%), with a few reported being gay/lesbian (1.6%) and a few were bisexual (3.3%). Furthermore, 156 respondents were single (56.7%), 89 were dating (32.4%), 23 were either cohabiting or married (8.4%) and 6 reported being either separated or divorced (2.2%).

Study 2 also recruited 246 participants (125 men, 121 females), again using an opportunity sampling method, from UCLan Preston Campus and the general public (via online questionnaires). Participants' age ranged from 18 to 64 (M = 24.66, SD = 7.75).

Similar to the first sample, over half of the participants were White (60.9%), followed by Asian or Asian British (19.4%). A small amount of the sample was Black (8.9%), Chinese (5.3%), or another ethnicity (2.6%). Most of the sample reported being heterosexual (91.1%), a few reported being gay/lesbian (4.4%), bisexual (4.1%), and 0.4% reported 'Other.' Less than half of the participants were single (42.3%), 35.8% reported 'Dating,' 0.8% were 'Divorced, 0.4% reported being in a civil partnership, and the rest were either cohabiting or married (20.8%). For full demographic information, see Table 2.

Table 2. ***Frequencies relating to participants' demographic details***

Study 1		Study 2	
Percentage of participants (Number of participants)			
Age		**Age**	
18 years old	2.9% (8)	18 years old	2.8% (7)
19 years old	13.1% (36)	19 years old	8.5% (21)
20 years old	18.5% (51)	20 years old	18.3% (45)
21 years old	20.7% (57)	21 years old	17.5% (43)
22 years old	14.2% (39)	22 years old	13.0% (32)
23 – 25 years old	15.2% (42)	23 – 25 years old	14.7% (36)
26 – 30 years old	6.6% (18)	26 – 30 years old	9.3% (23)
31 – 35 years old	3.3% (9)	31 – 35 years old	6.4% (16)
36 – 40 years old	2.2% (6)	36 – 40 years old	3.6% (9)
41 + years old	1.5% (4)	41 + years old	5.2% (13)
Gender		**Gender**	
Male	55.7% (137)	Male	50.8% (125)
Female	44.3 (109)	Female	49.2% (121)
Ethnicity		**Ethnicity**	
White-British	55.3 (136)	White-British	52% (128)
White-Irish	0.4 (1)	White-Irish	1.6% (4)
White-Other	5.7 (14)	White-Other	7.3% (18)
Black-African	5.7 (14)	Black-African	5.3% (13)
Black-Caribbean	0.8 (2)	Black-Caribbean	1.6% (4)
Chinese	2.4 (6)	Black-Other	2.0% (5)
Other	1.6 (4)	Chinese	5.3% (13)
Asian-Bangladeshi	0.8 (2)	Other	2.4% (6)
Asian-Indian	10.2 (25)	Asian-Bangladeshi	0.8% (2)
Asian-Pakistani	9.8 (24)	Asian-Indian	9.3% (23)
Asian-Other	4.1 (10)	Asian-Pakistani	7.3% (18)
Mixed-White&Black African	0.4 (1)	Asian-Other	2.0% (5)
Mixed-White&Asian	0.4 (1)	Mixed-White&Black African	0.8% (2)
Mixed-White&Black Caribbean	0.8 (2)	White&Black Caribbean	0.4% (1)
Mixed-Other	0.8 (2)	Mixed-Other	1.6% (4)
Sexuality		**Sexuality**	
Heterosexual	94.3% (232)	Heterosexual	91.1% (224)
Gay	1.2% (3)	Gay	2.4% (6)
Lesbian	0.4% (1)	Lesbian	2.0% (5)
Bisexual	3.3% (8)	Bisexual	4.1% (10)
Other	0.4% (1)	Other	0.4% (1)
Relationship Status		**Relationship Status**	

Single	56.7% (156)	Single	42.3% (104)
Dating	32.4% (89)	Dating	35.8% (88)
Cohabiting	4.4% (12)	Cohabiting	10.2% (25)
Married	4.0% (11)	Married	10.6% (26)
Separated	1.1% (3)	Divorced	0.8% (2)
Divorced	1.1% (3)	Civil Partnership	0.4% (1)
Current or ex-partner		**Current or ex-partner**	
Current relationship	39.3% 108)	Current relationship	56.5% (139)
Ex-partner relationship	56.7% (156)	Ex-partner relationship	42.3% (104)

Instruments

The questionnaire used standardised measures to in order to collect participant information, such as demographics, adverse (childhood) experiences, attachment styles, resilience and relationship behaviours including financial control. Further details about the measures are followed below.

Adverse (childhood) experiences

To measure the frequency of adverse (childhood) experiences, the Trauma History Questionnaire (THQ, Green, 1996) was chosen. The scale contained 24 items ($\alpha = .73$ for the first sample and $\alpha = .65$ for the second sample set), conventionally, both considered as 'adequate' scales (Green et al., 1977; Spector, 1992; Vaske, 2008), each item answered either 'yes' or 'no.' If responded with a 'yes' then asked to specify the number of times and the approximate age at which the event occurred. Some items also asked to specify brief details of the event. For example, 'have you ever seen someone seriously injured or killed? If yes, please specify who.' (See Appendix 1). For study 2, in addition to the specification of details, age and the number of times, participants were also required to state their perception of

severity of the event, rated on a scale of 1 to 5, 1 being ‘not severe’ and 5 being ‘very severe.’ (See Appendix 2)

This scale covered a broad range of potentially traumatic events including crime-related events, general disasters and unwanted physical and sexual experiences. Example items include ‘Has anyone ever attempted to or succeeded in breaking into your home while you were there?’ (crime-related) and ‘Have you ever experienced a natural disaster such as a tornado, hurricane, flood, major earthquake, etc., where you felt you or your loved ones were in danger of death or injury?’ (general disaster and trauma). Example unwanted sexual and unwanted physical experiences were ‘Has anyone ever made you have intercourse, oral or anal sex against your will?’ and ‘Has anyone, including family members, or friends, ever attacked you without a weapon and seriously injured you?’ respectively. Among the 24 items, there is one ‘‘other’’ question (‘‘Have you experienced any other extraordinary stressful situation or event that is not covered? If yes, please specify.’’).

For the present analysis, data was analysed using the types of trauma that a person had experienced in the past and/or traumatic childhood experiences, rather than the number of times it was experienced as this study looks at the different types of traumatic experiences and the impact on IPV perpetration and victimisation. The first subscale (crime-related events) was computed using a sum of items 1-4, the second (general disasters) was a sum of items 5-17, the third (unwanted sexual experiences) was a sum of items 18-20, and the fourth (unwanted physical experiences) was a sum of items 21-23. The THQ follows a model of dimensions of trauma developed by Green (1993) covering a broad range of events which could potentially be considered as traumatic and meeting Criterion A1 (occurrence of a stressor) for PTSD. Also, over 60 published studies have used this questionnaire, including populations of battered women’s shelters (Humphreys et al., 1999), substance abuse clinic

users (Farley et al., 2004), police officers (Lilly et al., 2009), and adult survivors of childhood trauma and abuse (Bonne et al., 2001).

Attachment

To measure participants' attachment styles, The Experiences in Close Relationships – Relationships Structures scale (ECR-RS) devised by Fraley et al. (2011) was chosen (See Appendix 3). The scale consisted of 9 items ($\alpha = .87$) where participants answered all items in relation to their mother, father and their partner. The items are designed to be used for a variety of close relationships (not just romantic relationships) and for different age groups. Participants rated items on a scale of 1 to 7, 1 being 'strongly disagree' and 7 being 'strongly agree.' The scale made up two subscales, attachment-related avoidance and attachment-related anxiety, which was computed separately for each relationship target (mother, father and partner). For the present analysis, the attachment type with mother and father determined previous attachment, whereas the attachment type with (potential) romantic partner determined current attachment style. Studies indicated Cronbach's alpha coefficient between .75 and .91 for the anxious attachment scale and between .87 and .92 for the avoidant attachment scale, both suggesting appropriate reliability and internal consistency (Fraley et al., 2011; Moreira et al., 2015).

The avoidance score was computed by averaging items 1 to 6 (while reverse keying 1, 2, 3 and 4) and the anxiety score was computed by averaging items 7 to 9. High scores on both avoidance and anxiety indicated an insecure attachment and low scores indicated a secure attachment with the target relationship. Example items for attachment-related avoidance include 'It helps to turn to this person in times of need,' and 'I talk things over with this person.' Example items for attachment-related anxiety include 'I often worry that this person doesn't really care for me,' and 'I'm afraid that this person may abandon me.'

Although this scale allowed computation of two types of attachment scores, relationship-specific attachment and general attachment. For this research, both types were computed to allow analysis of participant's attachment style with each relationship, and their general attachment style.

Resilience

The Resilience Scale (Wagnild & Young, 1993) was used to measure participants' resilience. Previous studies have used this scale with a variety of individuals including different age, different socioeconomic and educational backgrounds (Oladipo & Idemudia, 2015; Nishi et al., 2010). It consisted of 25 items (α = .91 for both samples) and participants were instructed to circle a number between 1 and 7 where 1 is rated as 'strongly disagree,' 7 as 'strongly agree' and 4 as 'neutral' which best indicted their feelings about the statement. Examples of items were 'I usually manage one way or another,' and 'I can be on my own if I have to.' (See Appendix 4). Possible scores ranged from 25 to 175 with higher scores reflecting a higher level of resilience.

Relationship behaviours

To measure relationship behaviours within an intimate partner relationship, the Conflict Tactics Scales 2 was implemented (Straus et al, 1996) (See Appendix 5). The scale comprised five subscales including negotiation (6 items) (α = .86) psychological aggression (8 items) (α =.72), physical assault (12 items) (α =.79), sexual coercion (7 items) (α = .61) and injuries (6 items) (α = .83), perpetrated by the participant against their partner (perpetration), along with these behaviours perpetrated by their partner against the respondent (victimisation). Each item within the subscale was totalled to obtain a score for that variable where a higher number indicated more acts of that particular behaviour. The questionnaire contained 78 items (α = .93 for both samples) and participants were required to use a rating

scale of 0 to 7. 0 referred to ‘this never happened,’ 1 referred to ‘once in the past year,’ 2 referred to ‘twice in the past year,’ 3 referred to ‘3-5 times in the past year,’ 4 referred to ‘6-10 times in the past year,’ 5 referred to ’11-20 times in the past year,’ 6 referred to ‘more than 20 times in the past year,’ and 7 referred to ‘not in the past year, but it did happen before.’ The participants were instructed to circle the number of times a behaviour occurred, perpetrated by the respondent and the respondent’s partner.

If the respondent circled ‘0,’ then 0 was entered into SPSS, indicating that this act was not perpetrated by the respondent or the respondent’s partner. If the respondent circled ‘1,’ then 1 was entered into SPSS, indicating that this behaviour occurred once in the past. If the respondent circled ‘2,’ then 2 was entered into SPSS, indicating that this behaviour occurred twice in the past. If ‘3,’ was circled, then 4 was entered into SPSS as this was the average of 3-5 times, indicating that this behaviour occurred 4 times in the past. If ‘4’ was circled then the number 8 was entered into SPSS, the average of 6 and 10 times. If ‘5’ was circled then a value of 15 was entered into SPSS, an average of 11 and 20. If the respondent circled ‘6,’ then a value of 25 was entered into SPSS as this was more than 20 times. Lastly, if the respondent circled ‘7,’ then 1 was entered in SPSS, indicating that although this behaviour did occur, it did not occur in the past year, but the exact number of occurrence of this behaviour was unknown. A total of each items was calculated, and a high number indicated more acts of perpetration or victimisation. For the present analyses, the behaviours recorded by participants were presumed to have occurred in the past year, as instructed on the questionnaire, or in the past, recorded by circling ‘7,’ therefore, validating these behaviours as past experiences.

Examples of psychological aggression items were, ‘I insulted or swore at my partner,’ and ‘my partner called me fat or ugly.’ Examples of physical assault items were, ‘I beat up my partner’ and ‘I slapped my partner.’ Examples of sexual coercion items were ‘I

made my partner have sex without a condom' and 'I insisted on sex when my partner did not want to (but did not use physical force).' Examples of injuries items were, 'I passed out from being hit on the head by my partner,' and 'I had a sprain, bruise, or small cut because of a fight with my partner.'

Financial control

To measure financial control perpetration and victimisation, 6 items ($\alpha = .76$ for the first sample and $\alpha = .66$ for the second sample) concerning this type of abuse was extracted from the Measure of Control and Abusive Tactics scale (Hamel et al., 2015) (See Appendix 6) Participants were asked to rate on a scale of 0 to 4 how often the respondent or the respondent's partner engaged in such behaviours. 0 referred to 'never,' 1 referred to 'rare,' 2 referred to 'occasional,' 3 referred to 'common,' and 4 referred to 'frequent.' This scale consisted of two subscales, a general form of financial control and a form that was specifically child related financial control. Items 1, 2, 3 and 6 referred to the general form of financial control and 4 and 5 referred to child specific financial control. Examples of the general form items were 'refuses to work or contribute financially,' and 'spends money excessively or lies about expenses.' Examples of child related financial control items were 'withholds child support,' and 'demands unreasonable child support or lies to get more of it.'

To compute totals 4 items of the general form of financial control were totalled and 2 items of the child specific form. Possible scores ranged from 0 to 16 on the general form and 0 to 8 on child related financial control. Higher scores on both subscales indicated more acts of financial control with a current, or most recent ex-partner, on both perpetration and victimisation scales.

Procedure

The researcher obtained ethical approval from UCLan to approach individuals from the campus to consent for participation in the study. The participant was advised to read the briefing sheet (See Appendix A) which included information on what was requirements and whether the person was eligible to participate. Following this, instructions were given to note down age and gender and then requested to fill out the questionnaire to the best of their ability. No time limit was given so the participant was able to fill out the questionnaire in his/her own time and kindly asked to return the questionnaire to the researcher or in the location specified on the brief sheet. At the end of the questionnaire, a de-briefing sheet was provided with further information (See Appendix B).

A replica of the questionnaire was also created as an online version, and participants were informed about this when approached so they had a choice to complete either the hard copy, or an online questionnaire. If the participant chose to do this online, a copy of the link was provided. Also, to enhance data collection, flyers were made which included information about the research and were advertised around UCLan Preston Campus and shared on social media, such as Facebook, LinkedIn, Instagram and Twitter.

Data Screening

For both studies, an inclusion criterion was applied which consisted of cases who had completed all questionnaires in the booklet, regardless of any missing items. Those participants who had completed the trauma scale and the relationships behaviours scale but not the financial control or resilience scale were also included as all tests were conducted separately accordingly. Following appropriate data screening, a total of 246 participants remained for analysis in both study 1 and 2. For full details on data screening, please refer to Appendix C.

Chapter 3 – Analysis 1: Trauma and its effects on physical IPV perpetration/victimisation and controlling behaviours.

Traumatic experiences or adverse childhood experiences (ACEs) have often been associated with Intimate Partner Violence (IPV) perpetration and victimisation. The purpose of study 1 was to explore the effects of the different types of trauma experiences on physical IPV perpetration and victimisation, and controlling behaviours, in men and women. A total of 246 participants were recruited from a British University. Results found that there were some associations between trauma and IPV, and that some trauma types also predicted IPV perpetration and victimisation. These findings suggest that as part of risk assessments for IPV in adults and treatment interventions for victims of IPV, it is important to screen for a history of traumatic experiences.

The effect of direct or indirect exposure to traumatic experiences on IPV has been investigated within the psychological literature for many decades and research has found associations between the two (Alexander, 2009; Bernardi, Day, & Bowen, 2015; Parks et al., 2011; Watt & Scrandis, 2013). It is important therefore, from a social and public health perspective to understand that ACEs can increase the risk of IPV in adulthood. What has not been explored is the impact of a broad range of ACEs where different types of traumatic experiences are explored in relation to how these effect perpetration and victimisation. Using the components of 'family violence exposure' and 'environmental stressors' from the Catalyst Model (Ferguson et al., 2008) can also provide a theoretical basis to demonstrate the effects of traumatic experiences on IPV.

Previous research has attempted to determine the extent to which victims of trauma experience IPV perpetration and victimisation. For example, Widom, Czaja, and Dutton (2014) investigated the extent to which abused and neglected children reported IPV perpetration and victimisation in adulthood. They did this by comparing adults experience of IPV by comparing a cohort who had experienced trauma before the age of 12 years with a cohort with no known trauma experiences in adulthood. Their findings suggested that trauma in the form of neglect predicted a greater likelihood of physically injuring a partner, and childhood abuse and neglect predicted an increased risk of victimisation by a partner via physical injury.

The Intergenerational Transmission (IGT) of violence theory (Kalmuss, 1984), based on the Social Learning Theory (SLT) literature, has been frequently used to explain the link between exposure to violence within the family (as a victim or witness) and IPV perpetration and victimisation (Kalmuss, 1984). Based on key assumptions that violence may be transmitted through generations via observational learning and modelling processes, it is argued that physical and sexual abuse trauma experiences increase the likelihood of IPV perpetration (Widom et al., 2014) and victimisation (Powers, Cochran, Maskaly & Sellers, 2017). However, Widom et al., (2014) suggested no sex-differences in risk of IPV perpetration and victimisation, based on the comparison of childhood abuse and neglect and control groups, yet, Powers et al., (2017) argued the importance of a gendered pathway for IPV. In other words, the underlying processes that lead to perpetration and victimisation may differ for men and women.

In attempt to test theoretical foundations, many studies have investigated the impact of childhood physical and sexual abuse, family violence and childhood neglect on IPV perpetration (Bernardi et al., 2017; Kimber et al., 2018; Machisa et al., 2016; Wathen & MacMillen, 2013; Watt, 2011) and victimisation (Afifi et al, 2016; McMahon et al., 2015;

Valdez et al, 2012; Widom et al., 2014). Theories such as the IGT of violence, SLT, feminist theory, and feminist, conflict and dependency theories have been used to explain how traumatic experiences impact IPV. These theoretical perspectives however, have resulted in a somewhat narrow focus on specific types of traumatic experiences rather than exploring a broad range such as naturally caused events or acute traumatic events. The Catalyst model presents benefits compared to other theories in that it encourages a more inclusive definition of trauma and hence encourages researchers to explore different types of difficult experiences.

Rezaeian (2013) conducted a systematic review and found that few studies focused on the association between natural disaster such as tsunami, hurricane, earthquake, and flood, and interpersonal violence. The results from these findings highlighted that exposure to natural disasters increased violence against women and girls, for example, rape and sexual abuse perpetrated by the 'rescuer' (Fisher, 2010) and by intimate partners (Picardo et al., 2010), and IPV (Anastario, Shehab, and Lawry, 2009; Schumacher et al., 2010; Harville et al., 2011). However, because these studies were limited to a female sample, the researchers were not able to consider the impact of these traumatic events on men. Therefore, it is important to investigate general disasters (relating to 'environmental stressors') (The Substance Abuse and Mental Health Services Administration; SAMHSA, 2016) as well as other traumatic events such as criminal victimisation (Graham-Kevan et al., 2017) should be investigated alongside unwanted sexual and unwanted physical experiences, relating to the 'family violence exposure' component of the Catalyst Model.

Breiding (2015) states that IPV acts can include but are not limited to, psychological, physical, sexual, financial or emotional violence (p.4). Although research has explored different forms of IPV including physical, sexual and psychological/emotional IPV (Richards et al., 2017), financial control has often been overlooked or investigated in relation

to male perpetrators and female victims only. However, research has shown that men can also be victims of this type of abuse (Sharp-Jeffs, 2015). Evidence further suggests that violent behaviour may co-occur within relationships (Overstreet et al., 2015; Sullivan et al., 2012), as can coercive behaviours (Graham-Kevan & Archer, 2009) and previous research has not collectively examined these four forms of abusive behaviours, hence, examining physical, psychological, sexual and financial abuse within an organising framework is important.

The overall aim of the current study is firstly, to investigate sex-differences in physical IPV and the use of controlling behaviours (psychological, sexual and financial control). Second, the study investigates whether those who experience trauma will report more acts of physical IPV perpetration and victimisation and controlling behaviour in accordance with the 'family violence exposure' and 'environmental stressors' components of the Catalyst Model. Third, the study aims to explore whether experiencing sexual or physical trauma is associated with physical IPV (or injuries) perpetration or victimisation, and sexual coercion perpetration or victimisation. Fourth, it aims to assess which trauma experiences significantly predict which form of IPV perpetration and victimisation.

Hypothesis 1

Based on previous findings related to sex differences in IPV, it was hypothesised that there will be no difference in reports of perpetration and victimisation between men and women who have experienced trauma.

Hypothesis 2

Based on the ‘family violence exposure’ and environmental strain’ component of the Catalyst Model, it was hypothesised that of those participants who experienced trauma, will report more acta of physical IPV perpetration and victimisation, and controlling behaviours.

Hypothesis 3

Based on the IGT of violence theory, it was hypothesised that there will be some associations between physical and sexual related trauma experiences and physical IPV and sexual coercion perpetration/victimisation.

Hypothesis 4

Based on previous literature, it was hypothesised that some trauma types will predict physical IPV perpetration and victimisation and controlling behaviours.

(Please refer to Chapter 2 for information on the methodology)

Results

The data was screened for data entry errors, missing data, univariate and multivariate outliers, and normality of distribution (See Appendix C for details on data screening). Due to incompletion of single and multiple scales within the questionnaire booklet, 29 cases were removed, and 246 participants remained for analysis (men = 137, women = 109). Table 7 shows descriptive (means and standard deviations) information on the different types of trauma experienced, resilience, physical IPV perpetration and victimisation, and the use of controlling behaviours (psychological, sexual and financial control) (See Table 7). Following the descriptive statistics, the results are presented in two separate sections, using same analyses for perpetration and victimisation.

Table 7. ***Mean and standard deviations of the different types of trauma experiences, resilience, physical IPV and the use of controlling behaviours (psychological, sexual and financial control)***

Trauma variables	*M*	*SD*			
Total Number of Trauma	3.50	2.89			
Crime-Related Event	.73	.97			
General Disaster and Trauma	2.01	1.57			
Unwanted Sexual Experiences	.24	.60			
Unwanted Physical Experiences	.37	.76			
Other Trauma	.15	.35			
Resilience	131.16	25.64			
	Perpetration			*Victimisation*		
	Whole sample	Men	Women	Whole sample	Men	Women
IPV variables	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
PSYA	14.33 (22.06)	12.59 (20.92)	16.51 (23.33)	16.81 (27.92)	15.75 (26.68)	17.89 (29.50)
PA	5.68 (17.46)	4.69 (16.09)	6.92 (16.04)	9.73 (30.17)	7.56 (26.15)	11.69 (33.71)
SC	4.44 (12/24)	4.25 (11.88)	4.69 (12.73)	6.26 (14.77)	4.76 (12.10)	7.62 (16.76)
I	2.23 (10.17)	2.30 (9.83)	2.20 (10.64)	1.53 (8.04)	1.05 (6.75)	1.87 (9.07)
FCG	1.20 (2.15)	1.41 (2.38)	0.93 (1.78)	1.35 (2.34)	1.16 (2.03)	1.58 (2.66)
FCC	.11 (.81)	.12 (0.83)	.09 (0.79)	.14 (.82)	.09 (.52)	.15 (.93)

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child), CRE = Crime-Related event, GDAT = General Disaster and Trauma, USE = Unwanted Sexual Experiences, UPE = Unwanted Physical Experiences, OT = Other Trauma

Perpetration

Hypothesis 1

To explore sex-differences in acts of physical IPV perpetration and the use of controlling behaviours (psychological, sexual and financial control), a one-way between subjects Multivariate Analysis of Variance (MANOVA) was used. There was no significant difference between men and women on the combined dependent perpetration variables ($F(6,239) = 1.60$, $p=.15$, Wilks' Lambda = .96, partial eta squared = .04), or as separate variables. This finding confirms that men and women report IPV perpetration, supporting previous literature which has also showed no sex differences (Widom et al., 2014). Table 8 shows the means and standard deviations for IPV perpetration, and *F*, *p* and *d* values for the sex differences.

Table 8. ***Means and standard deviations for physical IPV and the use of controlling behaviours (psychological, sexual and financial control, and F and d values for sex differences.***

	Men	Women			
Variables	*M (SD)*	*M (SD)*	*F (df)*	*P value*	*d*
PSYA	12.59 (20.92)	16.51 (23.33)	1.93 (1,244)	.17	.18
PA	4.69 (16.09)	6.92 (16.04)	.99 (1,244)	.32	.14
SC	4.25 (11.88)	4.69 (12.73)	.08 (1,244)	.78	.04
I	2.30 (9.83)	2.20 (10.64)	.01 (1,244)	.94	.01
FCG	1.41 (2.38)	0.93 (1.78)	3.08 (1,244)	.08	.23
FCC	.12 (0.83)	.09 (0.79)	.06 (1,244)	.81	.04

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child)

Hypothesis 2

To test hypothesis 2, independent samples t-tests were conducted to investigate whether those who experienced trauma reported more acts of physical IPV and the use of controlling behaviours (psychological, sexual and financial control) than those who did not experience trauma. First, participants were grouped into two categories, those who had experiences at least one or more traumatic event and those who had no history of trauma. Results showed that there was a significant difference in reports of financial control (general) between those who reported trauma (*MD*=1.27) than those who did not experience trauma (*MD*=.52), $t(243) = 2.57$, $p<.05$. These findings partially confirm the second hypothesis that participants who have experienced trauma, will report significantly more IPV perpetration. Although results did not find a significant difference in reports of physical IPV, there was a significant difference in reports of financial control between those participants who had experienced trauma and those who had not.

Hypothesis 3

To test the third hypothesis, Pearson's correlations were conducted. Table 9 illustrates the associations between trauma variables and physical IPV perpetration and the use of controlling behaviours (psychological, sexual and financial control (See Table 9). These findings confirm the third hypothesis that there will be some associations between trauma and IPV perpetration, and also that, physical and sexual trauma will be associated physical and sexual IPV, based on the IGT of violence theory.

Table 9. Pearson's correlations between trauma variables and physical IPV and the use of controlling behaviours (psychological, sexual, and financial control).

	Variables	CRE	GDAT	USE	UPE	OT
Overall	PSYA	.03	.04	.11	.12	.08
	PA	-.07	-.03	.00	.01	.03
	SC	.00	-.01	.01	-.01	.08
	I	-.04	.09	.02	.12	.14*
	FCG	.17**	.13*	.01	.16*	.13*
	FCC	.13*	.11	.08	.12	.09
Men	PSYA	.06	.05	.12	.04	.003
	PA	-.04	-.04	-.04	-.01	.07
	SC	.03	-.01	.14	-.04	.12
	I	-.06	.003	-.05	-.03	.12
	FCG	.09	.18*	.12	.21*	.12
	FCC	-.05	.12	-.04	.22**	.14
Women	PSYA	.03	.08	.09	.27**	.19
	PA	-.10	.01	-.01	.05	.02
	SC	-.05	-.01	-.07	.04	.04
	I	-.03	.22*	.07	.34**	.29**
	FCG	.31**	-.04	-.004	.02	.14
	FCC	.12**	.10	.18	-.05	.02

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child), CRE = Crime-Related event, GDAT = General Disaster and Trauma, USE = Unwanted Sexual Experiences, UPE = Unwanted Physical Experiences, OT = Other Trauma

*Correlations are significant at the .05 level (2-tailed), **Correlations are significant at the .01 level (2-tailed)

Results presented in Table 9 show that for the overall sample, experiencing a crime-related event was significantly positively correlated with the two subtypes of financial control and experiencing general disaster and trauma was found to have a positive significant association with general financial control only. Also, unwanted physical experiences show a positive significant association with general financial control. Lastly, other trauma is found to have a positive significant association with injuries perpetration and general financial control. These results show financial control to be significantly associated with all types of trauma besides unwanted sexual experiences, and as previous research has mainly focused on male perpetrators of financial control, Table 9 also shows correlations between trauma and physical IPV perpetration and controlling behaviours for men and women.

General disaster and trauma was positively significantly correlated with financial control (general) in men, $r(137) = .18$, $p<.05$, but not in women, $r(109) = -.04$. There was no significant difference between these correlations, $Z = 1.71$, $p=.09$. Unwanted physical experiences was found to have a positive significant correlation with financial control (general), $r(137) = .21$, $p<.05$, but not in women $r(109) = .02$. There was no significant difference between these correlations, $Z = 1.49$, $p=.14$. Unwanted physical experiences was also positively significantly correlated with financial control (child) in men, $r(137) = .22$, $p<.01$, but not in women, $r(109) = -.05$. The difference between these correlations was statistically significant, $Z = 2.11$, $p<.05$.

For women, crime-related event was positively significant correlated with financial control (general), $r(109) = .31$, $p<.01$, but in men, $r(137) = .09$. There was no statistical difference between the two correlations, $Z = -1.77$, $p=.08$. Crime-related event was also positively significantly correlated with financial control (child), $r(109) = .12$, $p<.05$, but not in men, $r(137) = -.05$. There was no statistical difference between the two correlations, $Z = -$

1.31, p=.19. General disaster and trauma was positively significantly correlated with injuries perpetration in women, $r(109) = .22$, $p<.05$, but not in men, $r(137) = .003$. There was no statistical difference between the two correlations, $Z = -1.70$, p=.09. Unwanted physical experiences was positively significantly correlated with psychological aggression perpetration, $r(109) = .27$, $p<.01$, but not in men, $r(137) = .04$. There was no statistical difference between the two correlations, $Z = -1.82$, p=.07. Unwanted physical experiences was also positively significantly correlated with injuries perpetration in women, $r(109) = .34$, $p<.01$, but not in men, $r(137) = -.03$. The difference between these correlations was statistically significant, $Z = -2.95$, $p<.01$.

Hypothesis 4

To test the fourth hypothesis, negative binomial regression analyses were conducted as the data presented as being non-normally distributed and overly-dispersed (standard deviations are higher than the corresponding means of physical IPV and controlling behaviours, See Table 7). These analyses assessed which type of traumatic event predicted physical IPV and the use of controlling behaviours (psychological, sexual, and financial control). These findings confirm that some trauma types will predict some forms of IPV perpetration. Firstly, Table 10 presents goodness-of-fit information for each of perpetration behaviours, which shows that *goodness-of-fit* for each variable was acceptable as all the deviance values were close to 1 and the p values were significant. Table 11 presents the negative binomial regression analysis.

Table 10. ***Table of goodness-of-fit with deviance and p values***

	Deviance	*p* value
Psychological Aggression	2.29	.04
Physical Assault	3.59	.004
Sexual Coercion	3.40	.05
Injuries	2.83	.001
Financial control (general)	1.35	.001
Financial control (child)	.48	.001

Table 11. ***Negative binomial regression of the types of trauma as predictors of physical IPV and the use of controlling behaviours (psychological, sexual, and financial control)***

		CRE	GDAT	USE	UPE	OT
PSYA	B	-.03	-.01	.20	.20	.18
	SE	.08	.06	.12	.10	.20
	Wald X^2	.11	.02	3.13	3.53	.34
PA	B	-.27	-.08	.03	.28	.20
	SE	.08	.06	.12	.12	.21
	Wald X^2	10.92***	1.84	.05	5.58*	.92
SC	B	-.40	-.02	.06	-.07	.63
	SE	.11	.06	.16	.12	.22
	Wald X^2	.14	.08	.14	.30	8.38**
I	B	-.73	.25	-.13	.27	1.11
	SE	.12	.06	.12	.12	.23
	Wald X^2	37.73***	15.35***	1.04	5.15*	22.87***
FCG	B	.21	.05	-.10	.19	.40
	SE	.09	.06	.15	.12	.24
	Wald X^2	5.35*	.65	.46	2.27	2.80
FCC	B	.43	.23	.35	.36	.93
	SE	.19	.16	.29	.24	.51
	Wald X^2	5.35*	2.13	1.43	2.18	3.40

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child), CRE = Crime-Related event, GDAT = General Disaster and Trauma, USE = Unwanted Sexual Experiences, UPE = Unwanted Physical Experiences, OT = Other Trauma

*Correlations are significant at the .05 level (2-tailed), **Correlations are significant at the .01 level (2-tailed), ***Correlations are significant at the .001 level (2-tailed)

The results show that crime related events significantly predicted physical IPV and injury perpetration, and general and child-related financial control. General disaster and trauma significantly predicted injury perpetration. Unwanted physical experiences predicted physical IPV and injury perpetration. Lastly, other trauma predicted sexual coercion and injury perpetration. To explore sex-differences, the sample was grouped by gender and results of the negative binomial regression analyses for men and women are presented in Table 12.

Table 12. ***Negative binomial regression of trauma variables as predictors of physical IPV and the use of controlling behaviours (psychological, sexual and financial control). for men and women***

	Variables		CRE	GDAT	USE	UPE	OT
Men	PSYA	B	-.03	-.01	.20	.20	.18
		SE	.08	.06	.12	.10	.20
		Wald X^2	.11	.02	3.13	3.53	.34
	PA	B	-.27	-.08	.03	.28	.20
		SE	.08	.06	.12	.12	.21
		Wald X^2	10.92***	1.84	.05	5.58*	.92
	SC	B	-.40	-.02	.06	-.07	.63
		SE	.11	.06	.16	.12	.22
		Wald X^2	.14	.08	.14	.30	8.38**
	I	B	-.73	.25	-.13	.27	1.11
		SE	.12	.06	.12	.12	.23
		Wald X^2	37.73***	15.35***	1.04	5.15*	22.87***
	FCG	B	.21	.05	-.10	.19	.40
		SE	.09	.06	.15	.12	.24
		Wald X^2	5.35*	.65	.46	2.27	2.80
	FCC	B	.43	.23	.35	.36	.93
		SE	.19	.16	.29	.24	.51
		Wald X^2	5.35*	2.13	1.43	2.18	3.40
Women	PSYA	B	.05	-.02	.39	.03	-.13
		SE	.13	.08	.26	.14	.28
		Wald X^2	.16	.06	2.21	.05	.21
	PA	B	-.16	-.04	-.30	.14	.42
		SE	.12	.08	.30	.15	.29
		Wald X^2	1.57	.24	.99	.88	2.11
	SC	B	.01	-.09	.81	-.17	.50
		SE	.14	.08	.30	.15	.29
		Wald X^2	.004	1.12	7.41**	1.34	3.01
	I	B	-.51	.20	-1.16	.19	.78
		SE	.17	.08	.45	.15	.33
		Wald X^2	9.29**	6.15*	6.66**	.64	5.51*
	FCG	B	-.03	.10	.20	.28	.27
		SE	.12	.08	.28	.15	.31
		Wald X^2	.05	1.54	.49	3.42	.78
	FCC	B	-1.34	.28	-30.71	1.59	.22
		SE	.58	.26	-	.45	.96
		Wald X^2	5.33*	1.17	-	12.20***	.05

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child), CRE = Crime-

Related event, GDAT = General Disaster and Trauma, USE = Unwanted Sexual Experiences, UPE = Unwanted Physical Experiences, OT = Other Trauma
*Correlations are significant at the .05 level (2-tailed),**Correlations are significant at the .01 level (2-tailed), ***Correlations are significant at the .001 level (2-tailed)

Table 12 shows that all trauma variables predicted some form of IPV for men and women. Crime related trauma was found to be a significant predictor of injury and financial control (child) for men, and physical IPV, injury perpetration, and financial control (general) for women. General disaster and trauma significantly predicted injury perpetration in men and financial control (general) in women. Unwanted sexual experiences significantly predicted sexual coercion and injury perpetration in men and sexual coercion in women. Unwanted physical experiences significantly predicted financial control (child) in men and psychological aggression and physical IPV in women. Lastly, other trauma predicted injury perpetration in men and women.

Victimisation

Hypothesis 1

To explore sex-differences in acts of physical IPV and the use of controlling behaviours (psychological, sexual and financial control), a one-way between subjects Multivariate Analysis of Variance (MANOVA) was used. There was no significant difference between men and women on the combined dependent variables ($F(6,238) = .65$, $p=.69$, Wilks' Lambda = .98, partial eta squared = .02), or as separate variables (See Table 13). This finding confirms that men and women report IPV victimisation, supporting previous literature which has also showed no sex differences (Widom et al., 2014).

Table 13. ***Means and standard deviations for physical IPV and the use of controlling behaviours (psychological, sexual and financial control), and F and d values for sex differences.***

	Men	Women			
Variables	*M (SD)*	*M (SD)*	*F (df)*	*P value*	*d*
Psychological Aggression	15.75 (26.68)	17.89 (29.50)	.35 (1,243)	.55	.08
Physical Assault	7.56 (26.15)	11.69 (33.71)	1.17 (1,243)	.28	.14
Sexual Coercion	4.76 (12.10)	7.62 (16.76)	2.40 (1,243)	.12	.20
Injuries	1.05 (6.75)	1.87 (9.07)	.66 (1,243)	.42	.10
Financial control (general)	1.16 (2.03)	1.58 (2.66)	1.92 (1,243)	.17	.18

Financial control (child)	.09 (.52)	.15 (.93)	.39 (1,243)	.54	.08

Hypothesis 2

To test hypothesis 2, independent samples t-tests were conducted to investigate whether those who experienced trauma reported more acts of physical IPV victimisation and controlling behaviour than those who did not experience trauma. Those participants who experienced trauma reported significantly more psychological aggression victimisation (M=17.64) than those who did not (M=8.22), $t(243) = 3.05$, $p<.05$. There was also a significant difference in reports of sexual coercion victimisation between those who experienced trauma (MD=6.68) and those who did not experience trauma (MD=2.49), $t(243) = 2.80$, $p<.01$. These findings confirm the second hypothesis that participants who have experienced trauma, will report significantly more IPV victimisation. Although results did not find a significant difference in reports of physical IPV, there was a significant difference in reports of psychological aggression and sexual coercion between those participants who had experienced trauma and those who had not.

Hypothesis 3

To test the hypothesis that participants will report similar IPV victimisation as the trauma experienced in accordance with the IGT of violence theory, Pearson's correlations were conducted. The table also shows Pearson's correlations of trauma variables and physical IPV and the use of controlling behaviours (psychological, sexual and financial control) in

men and women to explore sex-differences. These findings confirm the third hypothesis that there will be some associations between trauma and victimisation, and that physical and sexual trauma will be associated with physical and sexual IPV victimisation, based on the IGT theory of violence (See Table 14 below).

Table 14. ***Pearson's correlations between trauma variables and physical IPV and the use of controlling behaviours (psychological, sexual and financial control).***

	Variables	CRE	GDAT	USE	UPE	OT
Overall	PSYA	.00	.11	.11	.15*	.11
	PA	-.01	.10	.01	.17**	.13*
	SC	.04	.00	.14*	.12	.13*
	I	-.07	-.07	-.07	-.02	-.04
	FCG	.00	.04	.07	.08	.20**
	FCC	-.05	.01	-.07	.11	.03
Men	PSYA	.02	.09	.11	.02	-.05
	PA	.02	.05	-.05	.03	.01
	SC	.06	.02	.16	.09	.06
	I	-.06	-.03	-.04	.02	-.02
	FCG	-.00	.06	.18*	-.08	.01
	FCC	-.03	-.04	-.05	.12	.01
Women	PSYA	-.02	.17	.11	.35**	.32**
	PA	-.02	.20*	.02	.38**	.25**
	SC	.03	.02	.10	.20*	.20*
	I	.07	-.11	-.10	-.07	-.06
	FCG	.03	.05	-.01	.29**	.40**
	FCC	-.06	.07	-.09	.12	.05

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child), CRE = Crime-Related event, GDAT = General Disaster and Trauma, USE = Unwanted Sexual Experiences, UPE = Unwanted Physical Experiences, OT = Other Trauma *Correlations are significant at the .05 level (2-tailed), **Correlations are significant at the .01 level (2-tailed)

Gathering from the overall correlations, first, unwanted sexual experiences trauma was significantly positively correlated with sexual coercion victimisation. Second, unwanted physical experiences were significantly positively associated with psychological aggression and physical assault victimisation. Lastly, other trauma was found to have positive significant associations with physical assault, sexual coercion and general financial control victimisation.

Separate correlational analyses on men show that unwanted sexual experiences was positively significantly correlated with financial control (general), $r(137) = .18$, $p<.05$, but not in women, $r(109) = -.01$. There was no significant difference between these correlations, $Z = 1.48$, $p=.14$. General disaster and trauma was positively significantly correlated with physical assault victimisation, $r(109) = .20$, $p<.05$, but not in men, $r(137) = .05$. There was no significant difference between these correlations, $Z = -1.17$, $p=.24$. Unwanted physical experiences was positively significantly correlated with psychological aggression victimisation $r(109) = .35$, $p<.01$, but not in men, $r(137) = .02$. The difference between these correlations was statistically significant, $Z = -2.92$, $p<.01$. Unwanted physical experiences was positively significantly correlated with physical assault victimisation in women, $r(109) = .38$, $p<.01$, but not in men, $r(137) = .03$. The difference between these correlations was statistically significant, $Z = -2.85$, $p<.001$. Unwanted physical experiences was positively significantly correlated with sexual coercion in women, $r(109) = .20$, $p<.05$, but not in men, $r(137) = .09$. There was no significant difference between these correlations, $Z = -.87$, $p=.38$. Unwanted physical experiences was also positively significantly correlated with financial control (general) in women, $r(109) = .29$, $p<.01$, but not in men, $r(137) = -.08$. The difference between these correlations was statistically significant, $Z = -2.91$, $p<.00$

Hypothesis 4

To test the fourth hypothesis, negative binomial regression analyses were conducted as the data presented as being non-normally distributed and overly-dispersed (standard deviations are higher than the corresponding means of physical IPV and controlling behaviours, See Table 7). These analyses assessed which type of traumatic event predicted physical IPV and the use of controlling behaviours (psychological, sexual and financial control). These findings confirm the fourth hypothesis that some forms of trauma will predict some form of IPV victimisation. Firstly, Table 15 presents goodness-of-fit for each variable and shows that the values are acceptable as all the deviance values were close to 1 and *p* values were significant. Table 16 presents the negative binomial regression analysis.

Table 15. ***Table of goodness-of-fit with deviance and p values***

	Deviance	*p* value
Psychological Aggression	2.50	.001
Physical Assault	4.00	.001
Sexual Coercion	3.35	.001
Injuries	2.52	.001
Financial control (general)	1.53	.02
Financial control (child)	.56	.001

Table 16. ***Negative binomial regression of the types of trauma as predictors of physical IPV victimisation and controlling behaviours***

		CRE	GDAT	USE	UPE	OT
PSYA	B	-.23	.13	.17	.22	.21
	SE	.09	.06	.11	.11	.20
	Wald X^2	6.42*	5.65*	2.30	3.83*	1.09
PA	B	-.28	.13	.05	.32	.53
	SE	.09	.05	.11	.10	.20
	Wald X^2	10.97***	5.59*	.19	10.31***	6.69**
SC	B	-.40	-.13	.38	.32	.35
	SE	.10	.07	.13	.10	.21
	Wald X^2	.16	3.80*	8.46**	9.78**	2.87
I	B	-.40	-.29	-1.28	.45	-.57
	SE	.13	.07	.32	.14	.30
	Wald X^2	10.08**	15.21***	16.43***	9.54**	3.49
FCG	B	-.05	-.003	.11	.02	.72
	SE	.10	.06	.14	.13	.24
	Wald X^2	.21	.003	.69	.01	8.98**
FCC	B	-.89	-.06	-29.58	1.01	.14
	SE	.35	.16		.27	.57
	Wald X^2	6.46**	.13		13.81***	.06

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child), CRE = Crime-Related event, GDAT = General Disaster and Trauma, USE = Unwanted Sexual Experiences, UPE = Unwanted Physical Experiences, OT = Other Trauma

*Correlations are significant at the .05 level (2-tailed), **Correlations are significant at the .01 level (2-tailed), ***Correlations are significant at the .001 level (2-tailed)

The analyses show that crime related event significantly predicted psychological aggression, physical assault, injury and child financial control victimisation. General disaster and trauma significantly predicted psychological, physical, sexual and injuries victimisation. Unwanted sexual experiences significantly predicted sexual coercion and injuries victimisation. Unwanted physical experiences significantly predicted psychological aggression, physical assault, sexual coercion, injuries and child financial control victimisation. Lastly, other trauma was found to be a significant predictor of physical assault and general financial control. Previous research has shown sex-differences on the impact of trauma experiences, consequently, to explore sex-differences, the sample was grouped by gender and results of the negative binomial regression analyses for men and women are presented in Table 17.

Table 17. ***Negative binomial regression of trauma variables as predictors of physical IPV and the use of controlling behaviours (psychological, sexual and financial control) for men and women***

	Variables		CRE	GDAT	USE	UPE	OT
Men	PSYA	B	-.09	.08	.39	.07	-.30
		SE	.12	.07	.26	.14	.28
		Wald X^2	.54	1.17	2.15	.26	1.21
	PA	B	-.09	.21	-.96	.07	.60
		SE	.12	.08	.28	.14	.30
		Wald X^2	.33	7.87**	11.60***	.26	3.99*
	SC	B	-.09	-.15	.85	.30	.17
		SE	.16	.09	.28	.14	.29
		Wald X^2	.33	2.65	9.08**	4.82*	.34
	I	B	-.79	-.05	-1.35	.68	-.01
		SE	.21	.09	.77	.18	.40
		Wald X^2	14.24***	.28	3.03	13.23***	.00
	FCG	B	.04	.03	.57	-.36	.08
		SE	.14	.09	.29	.20	.34
		Wald X^2	.09	.11	3.86*	3.32	.06
	FCC	B	-.65	-.24	-30.76	1.09	.22
		SE	.42	.22	-	.35	.72
		Wald X^2	2.37	1.19	-	9.72**	.09
Women	PSYA	B	-.24	.04	.09	.40	.60
		SE	.16	.12	.14	.21	.33
		Wald X^2	.2.24	.14	.41	.3.52	3.25
	PA	B	-.11	-.27	.12	.95	.58
		SE	.14	.15	.14	.27	.43
		Wald X^2	.60	3.14	.67	12.44***	1.81
	SC	B	.05	-.12	.10	.48	.49
		SE	.13	.11	.15	.21	.36
		Wald X^2	.17	1.16	.45	5.17*	1.85
	I	B	-.34	-.68	-1.24	-.49	.33
		SE	.20	.17	.37	.47	.67
		Wald X^2	2.90	15.51***	11.51	1.10	.24
	FCG	B	.15	-.16	-.16	.30	1.22
		SE	.16	.11	.17	.22	.40
		Wald X^2	.93	.2.02	.93	1.80	9.38**
	FCC	B	-1.85	.29	-28.63	.65	.33
		SE	1.03	.26	-	.50	1.32
		Wald X^2	3.19	1.23	-	1.70	.06

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child), CRE = Crime-

Related event, GDAT = General Disaster and Trauma, USE = Unwanted Sexual Experiences, UPE = Unwanted Physical Experiences, OT = Other Trauma
*Correlations are significant at the .05 level (2-tailed), **Correlations are significant at the .01 level (2-tailed), ***Correlations are significant at the .001 level (2-tailed)

Table 17 shows that all trauma variables predict some form of IPV victimisation for men and women. For men, crime related trauma was found to be a significant predictor of injury victimisation. General disaster and trauma was found to significantly predict physical assault. Unwanted sexual experiences was found to significantly predict physical assault, sexual coercion and general financial control. Unwanted physical experiences was found to be a significant predictor of sexual coercion, injury and child financial control victimisation. Lastly, other trauma significantly predicted physical assault. For women, general disaster and trauma was found to be a significant predictor of injury victimisation. Unwanted physical experiences were found to be a significant predictor of physical assault and sexual coercion. Finally, other trauma significantly predicted general financial control victimisation.

Discussion

Study 1 aimed to test a number of hypotheses. First, sex-differences of physical IPV perpetration and victimisation and the use of controlling behaviours (psychological, sexual and financial control) was examined. Second, whether participants who experienced trauma reported more acts of psychological, sexual and physical IPV perpetration and victimisation, and the use of controlling behaviours in accordance with the 'family violence exposure' and 'environmental stressors' components of the Catalyst Model. Third, the study aimed to explore the associations between different trauma types and psychological, sexual and physical IPV perpetration and victimisation, and the use of controlling behaviours. Fourth, which trauma type predicted IPV perpetration and victimisation. The following discussion will be divided into two sections covering perpetration and victimisation.

Perpetration findings

Firstly, the results indicate no significant differences in reports of IPV perpetration between men and women. These frequency rates are consistent with past research indicating that both men and women perpetrate IPV (Archer, 2002; Dutton, 2006), and different types such as physical (Archer, 2002; Hines et al., 2013), coercive control (Archer, 2009; Hines et al., 2013) and sexual violence (Black et al., 2011). However, at the same time, IPV literature has indicated some sex differences in IPV perpetration, especially with sexual coercion. For example, Fernández-Fuertes et al., (2018) found that although both men and women had reported perpetrating and experiencing sexual coercion, it was highlighted that perpetration of sexual coercion was more often reported by males. Similarly, although based in the US, studies show that men perpetrate more sexual coercion and women experience more sexual coercion (Brousseau et al., 2012; Krahé & Berger, 2013; Krahé, 2015). Explanations such as

sociocultural and feminists' approaches can be used to account for men's sexual coercion towards women based on patriarchy, power and dominance, and more so in European countries with more gender equality. Therefore, the current findings that suggest no significant differences in any IPV behaviours may be due to the population, a Western sample. Nonetheless, men perpetrate more sexual coercion than women (Krahé, 2015).

In a sense that European countries are inclined to be more gender equal, Fernández-Fuertes et al., (2018) stated that men's sexual coercion perpetration tend to be lower, whereas women's perpetration tends to be higher. To an extent, the findings are consistent with Bates, Graham-Kevan and Archer (2013) who aimed to test the control theory of IPV and Johnson's typology. They found that women were more physically aggressive towards their partners than men, and no sex differences were reported in controlling behaviours. The current findings were also similar, where no sex differences were found in controlling behaviours, or physical IPV, contrasting the control theory, and supporting the ideology of gender equality in Westernised areas. This may be due to an increased awareness of sexual scripts, gender roles, sex education etc. (Krahé et al., 2014).

Secondly, the analysis in this chapter indicated that those who reported experiencing trauma reported significantly more general financial control perpetration than those who did not experience trauma. This particular finding suggests that traumatic experiences may influence the use of financial control in intimate relationships, which is consistent with Postmus et al's., (2012) findings. Relatively few studies have investigated financial control as a control tactic and therefore, there is little empirical understanding of this form of abuse. Exploring specific trauma types, it was revealed that more exposure to crime-related trauma, general disasters, unwanted physical experiences and other trauma (potentially falling into

any of the other four trauma categories) were related to significantly more general financial control, and crime-related trauma was significantly associated with child related financial control perpetration. There is no obvious connection between these types of adverse experiences and the perpetration of financial control specifically. Therefore, financial control may be evidence of a need to manage resources more generally and be related to general trauma related anxiety being focused on this tangible form of control.

An alternative explanation is that this finding is driven by male participants. Researchers have applied feminist perspectives and patriarchal theories to explain the use of financial control IPV, focusing on male-perpetration against women and female victimisation of financial control. (Bornstein, 2006; Dobash & Dobash, 1979). Hence, sex-differences in the associations between traumatic experiences and financial control perpetration were explored and this revealed that for men, general disaster experiences were significantly associated with general financial control, and unwanted physical experiences was significantly associated with both general and child related financial control perpetration. For women, crime-related events were also associated with general financial control perpetration, but not child-related. Although traumatic experiences have been found to be associated with IPV, sexual coercion and psychological/emotional abuse, financial control has not yet been studied. The current findings suggest that financial control may be symptomatic of a more general need to control the environment. This forces us to look beyond gender or even intimate relationship level explanations, and instead to explore the impact of adversity on adult functioning and interpersonal interactions.

The literature on financial control is mainly driven by patriarchy, hence why men use financial control against women to dominate and control the relationship (Dobash &

Dobash, 1979). For example, Fulu et al's., (2017) found that childhood trauma was associated with all forms of IPV perpetration including financial control in men, in women however, physical and a combination of physical and sexual violence perpetration were associated with trauma. Again, supporting the patriarchy theory, where men are more likely to use financial control as a means to exert power. However, current findings presented no sex-differences in the frequency of financial control perpetration, inconsistent with the control theory, but found that trauma experiences were associated with and predicted financial control for both men and women. Therefore, patriarchy alone may not be able to fully explain why financial control may be used more by men, or the link between trauma experiences and financial control. Although current findings conflict with some previous research, this may reflect women's growing economic independence (Goldin, 2014), and so are less likely to have an economic disadvantage through lower earnings (particularly in student-based samples) or being in relationships where the man is the 'breadwinner' (Bear & Glick, 2016). Financial independence reduces the ease by which one partner can financially control the other. Overall, these findings provide a valuable insight into the importance of financial control and suggest that this form of abuse should be further considered when investigating IPV. These findings may reflect the recruitment of a Western sample, in particular patriarchal viewpoints may be less common and society may be more egalitarian.

One perspective that may be used to explain the link between trauma and financial control may stem from the IGT of violence theory (Kalmuss, 1984). For example, individuals may have witnessed financial control within the family home and believe acceptability of these behaviours, therefore, may use financial control in their own relationships. It may also be more useful to understand this association via sociological theories, as IPV was first widely recognised as a social problem (Dobash & Dobash, 1979). According to Levin and

Rabrenovic (2007), some overarching theories have been used by sociologist to understand violence by means of social structures and systems. These include strain theory, which posits that social structures and relationships produce frustrations, which in turn causes people to react violently, and, benefit theory, which suggests that violence occurs when social costs are low and therefore, the benefits of violence outweigh the costs (Levin & Rabrenovic, 2007). Both can be used to explain the use of financial control perpetration in men and women.

Similar to the patriarchy theory, but more gender neutral, the control theory (Gelles, 1985), may be used to explain the use of financial control. Based on the assumption that conflicts result from an individual's need to obtain and maintain power and control within a relationship, abuser's may use economic abuse to maintain control (Bostock et al., 2002). Additionally, the current study found that crime-related events predicted financial control perpetration in men and women, again, inconsistent with the patriarchy theory. Derived from Bronfenbrenner's (1994) ecological theory, the exo-system factor theory may explain these findings as the theory bases its focus on life stressors which result in violence. This can directly be related to crime-related events and general disasters and it can be argued that individuals who experience these forms of trauma, may use violence as a stress response (Malley-Morrison & Hines, 2004). Overall, these findings provide a valuable insight into the importance of financial control and suggest that this form of abuse should be further considered when investigating IPV.

Based on theoretical perspectives, many studies have investigated the impact of traumatic experiences only involving childhood physical and sexual abuse including neglect and other family violence on IPV. However, these findings show the importance of examining other types of trauma, including crime-related events (outside of the family home)

and general disasters and how these impact on IPV. The association between general disasters and financial control are in line with findings from Rezaeian's (2013) systematic review suggesting that exposure to natural disasters increased violence in different contexts including violence against women and girls, e.g., rape and sexual abuse perpetrated by the 'rescuer' (Fisher, 2010) and IPV (Schumacher et al., 2010; Harville et al., 2011). Also, the finding that crime-related events and general disasters are associated with financial control perpetration supports the component of 'environmental strain' from the Catalyst Model suggesting that this may impact on the perpetration of violent behaviour. This shows that there are other risk factors outside the frame of family violence, which are traditionally the focus of research in this area.

Using IGT of violence theory, it was predicted that participants would engage in similar IPV perpetration behaviours to their traumatic experiences. Correlational analyses showed that in men, general disaster was significantly associated with general financial control and unwanted physical experiences was significantly associated with both forms of financial control. For women, crime related events were found to have a positive significant association with both forms of financial control perpetration. General disaster and trauma, unwanted physical experiences and other trauma had a positive significant association with injuries perpetration, and unwanted physical experiences showed a positive significant association with psychological aggression perpetration.

For women but not men, the current findings support the hypothesis that participants may engage in similar IPV perpetration behaviours to their traumatic experiences. Unwanted physical experiences, whether within or outside of the family, was significantly associated with psychological aggression perpetration and injuries perpetration. To an extent, this

supports the IGT of violence as the more women experienced traumatic events such as physical abuse as a child the more likely to subsequently injure a partner. This suggests the utility of using the IGT of violence theory to examine the link between exposure to or witnessing violence within the family and perpetrating injury in adult intimate relationships (Kalmuss, 1984). These results also support previous findings that have identified similar associations (Stein et al., 2013; Widom et al., 2014).

Trauma types are also significant predictors of the range of IPV perpetration types, supporting previous research (Machisa, Chrisofides & Jewkes, 2016; Roberts et al, 2010; Watt, 2011; Whitfield et al., 2003; Widom et al., 2014) and is also consistent with the IGT of violence theory (Kalmuss, 1984) and the SLT (Bandura, 1977). For example, unwanted physical experiences significantly predicted physical IPV perpetration in women. In addition, unwanted sexual experiences significantly predicted sexual coercion in men and women. Consistent with the SLT inspired aggression literature, these findings suggest that violence may be transmitted through generations using methods of observational learning and modelling behaviours. This may partly explain why the trauma of unwanted physical experiences predicted physical IPV perpetration in women, and the trauma of unwanted sexual experiences predicted sexual coercion perpetration in men and women.

Effects of traumatic childhood experiences on IPV have also contributed to developmental and family violence influences. The influence of ACEs on violence in relationships may be used to explain that IPV involves a pattern of abuse that develops over time and originates in childhood (Day & Bowen, 2015). In this sample, those who experienced physical and sexual violence in childhood and subsequently use sexual coercion in their relationships, may have learnt from their experiences about how victims respond to

coercion, which tactics are most intimidating, cause the most harm and most effective methods of exerting power over their partners. This process supports the SLT in saying that violence is a learnt, and that ACEs heavily influence this learning process. Also, the 'approach-explicit' pathway described in the self-regulation model (Ward & Hudson, 2000) may be used by these perpetrators to control and dominate their partner. For example, for men using the 'approach-explicit' pathway, exposure to ACEs (including IPV and coercion) may lead to the patriarchal beliefs, leading to the need to control and in turn perpetrating coercive controlling behaviours (sexual coercion). As the present study shows that women who experienced ACEs also perpetrated sexual coercion, it may be argued that for women, exposure to IPV may lead to them learning the most effective ways of exerting power and control without using physical violence and avoid detection of abusive behaviour.

Additionally, theory on relationship formation have been derived from findings on family relations and developmental psychology (Ehrensaft et al., 2003) which may help to explain these findings. They theorise that experiencing violence as a child, including maltreatment, parental rejection or other traumatic experiences may lead to the formation of hostile attributions. Hostile attributional bias can be understood as an adaptive response to perceptions of the world being a dangerous place. For those who are exposed to violence in childhood, neurocognitive changes to the threat system may lead to a bias towards interpreting ambiguous stimuli as hostile, with such bias making violence in adult relationships due to misinterpretation of cues from the partner (Roberts et al., 2011).

Another complimentary explanation may be found in applying the Trauma Theory (Charcot, 1825-1893), which suggests that traumatic experiences can lead to a number of adverse effects, especially PTSD. Relating this to the current findings, it can be argued that

the similarity of traumatic experience and IPV perpetration may be due to the development of PTSD, or specific symptoms of PTSD, which adversely effects emotional well-being and cognitive processing, leading to the perpetration of IPV behaviours. Although veterans, where the trauma theory developed, and IPV perpetrators may seem somewhat distinct, they are similar in that both are likely to have involved chronic exposure to violence in situations where the observer feels unable to prevent or escape.

Consistent with the current findings, Machisa, Christofides, and Jewkes (2016) used household surveys in a sample of South African men. Their analysis suggested a direct pathway between childhood trauma and IPV perpetration, which was mediated of PTSD, which is also in line with findings from research exploring the Stress Sensitization Model (Hammen, Henry, & Daley, 2000). This theory would explain the association between exposure to violence and later use of violence through a process of sensitisation whereby men and women that experience any form of traumatic experiences may become sensitised to later exposure, and therefore, adverse situations, in this case, potential conflict in relationships, may stimulate negative reactions, resulting in IPV perpetration. As this interpretation has been discussed in the neurobiological literature, it may also relate to the 'genetic predisposition' component of the Catalyst Model. Therefore, other risk factors such as biological influences may impact behaviour within adult relationships, through the development of conduct disorders (Ehransaft et al., 2003), personality disorders (Holtzworth-Munroe & Stuart, 1994; Thomas, Bennet, & Stoops, 2013) and result in different types of perpetrator IPV classification (e.g., Holtzworth-Munroe & Stuart, 1994).

Victimisation findings

The analysis of victimisation found no significant sex-differences in reports of IPV victimisation. Previous research has also shown similar report rates of IPV victimisation in men and women (Graham-Kevan, 2007; Houry et al., 2008; Lipsky et al., 2004). In spite of some research that finds women to be more likely to be victimised than men (Dempsey, 2013) and official statistics suggesting women are at greater risk than men (ONS, 2016), systematic (Hamel et al., 2012), and meta-analytic reviews (e.g. Archer, 2000, 2006) find that rates are broadly equal in Western nations such as the UK. A review examining gender symmetry in IPV concluded that although men and men may exhibit similar rates of IPV, this alters when motivations, contexts and consequences are considered (Langhinrichsen-Rohling, McCullars, & Misra, 2012), and some implying that men perpetrate violence and women experience victimisation (Chan, 2011). Therefore, it is important to understand that prevalence rates may not always be an accurate means to identify the differences in IPV between men and women.

Further analyses investigated whether those who had experienced trauma, reported more acts physical IPV perpetration and victimisation and the use of controlling behaviours (psychological, sexual and financial control), than those who did not experience trauma. Results showed that participants who experienced trauma reported more psychological aggression and sexual coercion victimisation than those who did not experience any trauma. The findings not only emphasise the importance of trauma on IPV victimisation, but also shows the specific type of IPV victimisation that is influenced by traumatic experiences, unlike some of the previous research that has explored IPV victimisation behaviours holistically rather than individual constructs (Afifi et al., 2016; MacMahon et al., 2015).

Considering that early childhood experiences, including parental upbringing, are important in the development of adequate emotional health in later life (also covered in the attachment literature), it has been argued that individuals who experience childhood neglect may experience greater emotion dysregulation. Supporting this, systematic reviews identifying risk factors of IPV found similar results suggesting prevalence of trauma symptoms, emotion dysregulation, substance misuse, unstable mood, attachment issues and interpersonal dependency as risk factors for female perpetrators of IPV (Laskey, 2016; Mackay et al., 2018). Dysregulated emotions may increase the likelihood of being an IPV victim. Previous literature has suggested that traumatic experiences increase the risk of psychological IPV victimisation, possible be the use of provocative conflict behaviours such as insults and verbal abuse. Alternatively, intense distress during relationship conflict can lead to withdrawal which can increase the likelihood of being physically assaulted by a partner who has a preoccupied attachment style. For example, Dugal et al., (2018) found that the majority of their sample (86%) experienced more than one type of childhood maltreatment and over half of their participants reported sustaining psychological IPV. More importantly path analyses revealed a mediation role of emotion dysregulation in the relationship between maltreatment and psychological IPV.

The current findings that there is an association between trauma and psychological aggression victimisation which is consistent with Widom, Czaja, and Dutton (2014). They demonstrated that participants who reported childhood abuse and neglect, reported IPV victimisation, with psychological abuse being the most common type. In addition, childhood maltreatment increased the risk of experiencing sexual and physical assault (Parks et al., 2011). These authors discussed how emotion dysregulation may contribute to the vulnerability of IPV victimisation. Schumacher (2010) found that there was a significant

increase in psychological victimisation report rates for men and women after Hurricane Katrina, which would fit with an emotion regulation explanation. Further, it was found that reports of IPV were associated with depression and PTSD, formulating the question whether factors of emotional dysregulation may play a mediating role. Therefore, it can be understood that traumatic experiences, whether within the family or natural disasters, may dysregulate an individual's emotions, resulting in an increased risk of victimisation.

From a social learning theory perspective, it can be argued that family of origin violence may teach individuals to use aggression as a way to deal with interpersonal conflict, or model a role of victim (or perpetrator) during interpersonal conflict (Kwong et al., 2003). Hence experiencing trauma may lead to an increased susceptibility of IPV victimisation. In support of this, the betrayal trauma theory (DePrince, 2005), can also be used to explain these findings. For example, an individual who has experienced ACEs may find it difficult to understand social contracts within their relationships, (DePrince, 2005) and so violence may be accepted. Current findings may suggest that participants who experienced traumatic events may have had difficulty in emotional regulation regarding intimate relationships, and hence, were found to report significantly more psychological and sexual IPV victimisation than those who did not experience trauma.

Generally, there has been a lack of clarification in existing literature regarding IPV victimisation experiences as separate constructs (Afifi et al., 2016; MacMahon et al., 2015), it is therefore interesting to explore whether specific types of traumatic experiences are associated with similar types of IPV victimisation. Consequently, analyses were conducted and revealed significant associations between unwanted sexual experiences and sexual coercion victimisation and between unwanted physical experiences and physical assault and

psychological aggression victimisation. These correlational analyses support the IGT of violence that participants will report similar IPV victimisation to their traumatic experiences.

As mentioned previously, the SLT can be applied to these findings as evidence that violence within the family may result in difficulties developing a healthy intimate relationship. This could either be due to dysfunctional emotional regulation processes or the role of PTSD, resulting in the association between these family violence traumatic experiences and IPV victimisation. Indeed, it is difficult to clearly understand how the SLT explains the similarities between the type of trauma experienced and the type of IPV victimisation reported. However, the SLT may suggest that if you witnessed such behaviours being perpetrated against a family member, then you may learn that being a victim of it is 'normal.' It may also be a result of an adaptive response to being assaulted by a family member, whereby the behaviour is considered 'normal' and therefore, the bond with the caregiver can be maintained. As Powers et al., (2017) claimed SLT has yet to provide a clear explanation of IPV victimisation, unlike IPV perpetration, future research would be needed to explore the utility of the suggestions above in applying SLT to victimisation. The IGT of violence theory is able to overcome these difficulties however. The current findings support IGT of violence, and the claim that IGT of violence can be used to explain both perpetration and victimisation, as an association between unwanted sexual experiences and sexual coercion perpetration, and unwanted physical experiences and physical assault and psychological aggression victimisation was supported.

Although the IGT of violence provides an explanation for the similarities between trauma and IPV victimisation, it has also been suggested that the learning processes and the impact of trauma on victimisation may differ between men and women (Powers et al., 2017;

Richards et al., 2017; Stith et al., 2000; Widom et al., 2014). As a result, further analyses were conducted separately for men and women and found that for men, only unwanted sexual experiences was associated with general financial control victimisation. Although no clear similarities between being sexually abused in youth and financially controlled in adulthood are obvious, this relationship may be explained through acceptance of exploitative relationships. For example, sexual violence, unlike neglect or physical abuse, is usually perpetrated for a gain (sexual satisfaction/excitement) and hence the child is exploited for gain. In adult financial control may be at least partly driven by financial gain and result in the victim being financially exploited. So, it may be the acceptance of exploitative relationships that drive these associations, although future research is required to explore this further. Regardless, the findings of the current analysis support findings that have suggested that financial control victimisation can be applied to men (Sharp-Jeffs, 2015), showing that traumatic experiences may increase the risk of victimisation and inconsistent with patriarchy based theories (Dobash & Dobash, 2004).

For women, general disaster exposures were associated with physical assault victimisation, and unwanted physical experiences had significant associations with all forms of IPV victimisation (physical IPV, psychological aggression, sexual coercion, and financial control). Therefore, there were more associations between trauma and IPV victimisation in women than in men. This supports findings suggesting that a violent family environment would increase the risk of perpetration in men and victimisation in women (Stith et al., 2000; Widom et al., 2014). The current results are also consistent with the patriarchy theory that argues women are more likely to value interdependence and be nurturing, which in turn may increase IPV victimisation vulnerability. This may be due to gender roles and social norms (Randle & Graham, 2011).

Next, results revealed trauma predictors of IPV victimisation, supporting previous research (Parks et al, 2011; Valdez, Lim, & Lilly, 2012; Widom et al., 2014), and supporting the IGT of violence theory (Kalmuss, 1984). For example, crime-related events and general disasters both significantly predicted physical IPV victimisation and controlling behaviours. These findings highlight the importance of exploring other factors outside of the family home as predictors of IPV victimisation. The current findings also show support to the systematic review that indicated the link between natural disasters such as tsunami, hurricanes, earthquakes and floods and interpersonal violence (Rezaeian, 2013). Drawing from the review, it was found that exposure to such events increased sexual victimisation (Anastario, Shehab, & Lawry, 2009; Harville et al., 2011; Larrance, Anastario, & Lawry, 2007; Schumacher et al., 2010). As these findings were limited to a female victim sample, it may be questionable whether these results can be applied to men too. However, this study considered this and found that crime-related events significantly predicted injury victimisation, and general disasters significantly predicted physical assault victimisation in men. General disaster also significantly predicted injury victimisation in women. Results indicate that trauma exposure of crime related events and other general disasters can predict IPV victimisation in men and women.

Analyses showed that general disasters did not predict IPV victimisation, contrasting the previous systematic review mentioned earlier (Rezaeian, 2013), although consistent with Fagen et al., (2011) who found no significant differences in women's sexual violence victimisation reports before or after a natural disaster. Inconsistent findings may be due to a number of reasons including methodological issues, inconsistencies in measures, disregard of other factors such as economic status or demographic backgrounds.

Regressions analysis found that unwanted sexual experiences predicted sexual coercion victimisation in men, reflecting the IGT of violence theory that individuals are more likely to experience similar IPV behaviours to their trauma experiences. These findings resolve previous issues regarding the lack of sex-difference examinations and support the IGT of violence in terms of the similarities between type of trauma experienced and IPV victimisation. For example, Afifi et al, (2016) demonstrated that childhood maltreatment increased the risk of IPV victimisation, more so for sexual abuse on victimisation, but did not identify which type of IPV was experienced. Drawing conclusions from current findings can again provide support for the IGT of violence, highlighting the importance of examining male victims of sexual abuse as this may be a key predictor of sexual coercion victimisation in intimate relationships. Also, these findings are shown to be consistent with a recent study that explored childhood maltreatment, including emotional, sexual, and physical abuse and applied it to the risk of IPV victimisation in men and women. Here, sexual abuse was significantly associated with IPV victimisation (Richards et al., 2017). In addition to this, unwanted sexual experiences also predicted physical assault and financial control victimisation, again, emphasising the importance of considering the effects of trauma on men's victimisation experiences.

Similar results were identified with unwanted physical experiences, where this type of trauma significantly predicted physical IPV victimisation and controlling behaviours, with some differences in men and women. In men this type of trauma predicted sexual coercion and child financial control, and in women it predicted physical assault and sexual coercion victimisation. Research has suggested that childhood trauma involving traumatic physical experiences including physical punishment are more likely to have negative outcomes in relationships. This may be related to the assumptions from the GAM proposing that

individuals who experience abusive childhood treatment may unconsciously seek romantic partners with similar negative childhood experiences (Zayas & Shoda, 2007). In turn, this may lead to the risk of victimisation in adult relationships as their partner may be more likely to perpetrate violence as a result of traumatic experiences, or vice versa.

To summarise, current findings found no significant differences in report rates of perpetration and victimisation in men and women, suggesting that both men and women can perpetrate and experience IPV victimisation. Findings support the components of 'environmental strain' and 'family violence exposure' from the Catalyst Model as trauma experiences influenced IPV perpetration. It can be argued that the Catalyst Model can also be applied to IPV victimisation as these trauma factors were associated with IPV victimisation too. Also, participants engaged in similar IPV perpetration and victimisation behaviours to their traumatic experiences, in support of the IGT of violence theory. Although findings added to the previous literature, and traumatic experiences predict IPV perpetration and victimisation, it is important to understand that there are other contributors to the risk of IPV. For example, early childhood experiences including parental upbringing may influence adult relationships, therefore, the next study will not only attempt to replicate findings, but will explore the attachment and resilience components, relating to 'child temperament' from the Catalyst Model and how this impacts IPV.

Chapter 4 – Analysis 2 – An investigation on the effects of trauma on attachment development, and attachment and resilience on physical IPV perpetration/victimisation and controlling behaviours

Attachment security/insecurity and resilience play an important role in Intimate Partner Violence (IPV) perpetration and victimisation. The purpose of study 2 was to investigate the 'child temperament' component of the Catalyst Model and its effects on IPV, as well as effects of resilience on physical IPV perpetration and victimisation, and controlling behaviours (psychological, sexual, and financial control). A total of 246 participants were recruited from a British University. Results found that there were some associations between attachment security/insecurity and IPV, and that attachment types predicted some forms of IPV perpetration and victimisation. Also, results showed that resilience was negatively significantly associated with physical IPV perpetration and sexual coercion victimisation. Overall, findings suggest that as part of risk assessments for IPV in adults, it may be important to examine the role of attachment in the context of parent and partner relationships. It is also worth considering the role of resilience as these positive factors may lower the risk of IPV perpetration and victimisation.

Bowlby (1977) described attachment styles as the ability to create emotional bonds with other people. The attachment theory suggests that adverse childhood experienced (ACEs) may determine a child's belief, values, and attributions regarding significant others. In other words, the development of an attachment style may be influenced by the child's temperament and their caregiver's parental style. The effects of traumatic experiences on the development of attachment security and insecurity have been documented in the literature, suggesting that ACEs may lead to the development of unhealthy attachment. These attachment patterns impact, not only on childhood development, but also adolescent development, personality and relationships, including romantic relationships and choice of

partner (Hazen & Shaver, 1994). Therefore, experiencing trauma may lead to the development of an insecure attachment style, with both parents and within adult romantic relationships (Gormley & Lopez, 2010). Within the Catalyst Model (Ferguson et al., 2008) attachment would been located within the 'child temperament' component and be used to show that this component can influence IPV perpetration and victimisation.

Recent attachment literature has emphasised that adult attachment should be assessed using continuous dimensions rather than a categorical approach (Fraley, Hudson, Hefferman, & Segal, 2015). Fraley et al. (2015) used an exploratory sample of approximately 2,400 adults and a confirmatory sample of 2,300 adults and concluded that a dimensional method appeared more reliable. A dimensional approach also accounted for individual differences when representing both general attachment and attachment in specific relationships. Fraley, Hefferman, and Brumbaugh (2011) considered the importance of differences in attachment styles across different types of relationships and subsequently developed the Experiences in Close Relationships-Relationship Structures (ECR-RS) Questionnaire to assess attachment dimensions in multiple contexts. This consisted of an avoidant or an anxious attachment style, where high scores on each of the subscales represented an insecure attachment style, and low scores represented a secure attachment style. Fournier, Brassard, and Shaver (2011) stated that anxiety "reflects a fear of rejection and abandonment combined with doubts about one's social value and lovability," whereas, avoidance "includes a strong emphasis on independence, self-sufficiency, and ability to cope with threats alone," and "emotional suppression of thoughts about vulnerability and personal weakness or inadequacy," (p. 1985).

Attachment theory can be used to understand a number of issues, including attachment characteristics, which abusive behaviours may be related to which attachment styles, and why a person's attachment style may influence people to behave violently.

Research has demonstrated a relationship between an insecure attachment and IPV perpetration (Henderson et al., 2005) and victimisation (Belanger et al., 2015; Velotti et al., 2018) in men (Godbout et al., 2009) and women (Belanger et al., 2015). Using a theoretical framework, researchers have claimed that when attachment needs are not fulfilled, the risk of violence in relationships may increase (Shaver & Mikulincer, 2011). The authors explained that individuals with an anxious attachment may use violence towards their partners to control their own anxiety, or due to the fear of separation. An avoidant attachment may lead an individual to becoming distant within the relationship or having a negative view of the partner, in turn, increasing the likelihood of IPV.

Some researchers have attempted to use the Intergenerational Transmission (IGT) of Violence to understand IPV. McVay (2012) explained that attachment theory provides an ethnological, biological, and psychoanalytical framework to describe how an infant's attachment to their caregiver is related to their attachment styles in adult relationships. The theory suggests that inadequate or non-existent attachment patterns between the child and parent may provide attachment templates for future intimate relationships, via generational transmission.

A recent systematic review conducted by Velotti et al., (2018) found that perpetrators of physical, psychological, and sexual abuse were more likely to have an anxious attachment style towards their partner. This supports the theoretical foundation that an anxious attachment may result in using violence to meet attachment needs and explains why individuals who are generally non-violent may use violence within their relationships (Holzworth-Munroe et al., 2000). With regard to avoidance, the review suggested that avoidantly attached individuals use violence as a means to control and manipulate. Indeed, the review identified significant associations between an avoidant attachment style and psychological and sexual IPV (controlling behaviours) but not physical IPV.

McDermott and Lopez (2013) focused their research on masculine gender role stress (MGRS), which refers to the experience of distress in situations that a man considers to be a threat to his masculinity (Copenhaver, Lash, & Eisler, 2000). MGRS was used to explain why some men may use violence against women and the same two dysfunctional attachment styles emerged, avoidant and anxious attachment. An avoidant individual avoids intimacy and an anxiously attached individual has a strong desire for intimacy, whilst also having a fear of rejection and abandonment. The findings revealed that men with insecure attachment reported higher MGRS scores than men with a secure attachment. Although this is useful in explaining why some men's attachment style may increase the risk of IPV perpetration, it does not acknowledge nor explain the reason why some insecurely attached women may use violence in relationships.

In terms of victimisation, research has also highlighted an association between an insecure attachment and the risk of experiencing IPV victimisation (Belanger et al., 2015; Kujipers et al., 2012; Sandberg et al., 2016; Velotti et al., 2018). Velotti et al.,'s (2018) systematic review identified associations between avoidant and anxious attachment styles and victimisation. It was suggested that an individual with an anxious attachment style may find it more difficult to leave an abusive relationship due to fear of abandonment and high separation anxiety, therefore, increasing the risk of victimisation, and/or revictimisation (Allison et al., 2008). Further, Mikulincer and Shaver (2005) reported that a low self-esteem and negative view of self may also prevent an individual leaving an abusive relationship, and this could be related to dependency theory, where low economic status may increase dependency and hence the likelihood of victimisation, (Rodriguez-Menes & Safranoff, 2012). However, dependency theory focuses on female victims and male perpetrators of IPV, suggesting that women have a lower economic status and therefore higher dependency on

their partner. Therefore, it could be argued that insecurely attached women may be more vulnerable to IPV victimisation.

Evidence of contrasting findings of no association between attachment and IPV victimisation (Gay et al., 2013; Karakoc et al., 2015), has led researchers to consider other factors that prevent the risk of IPV perpetration and victimisation, despite trauma exposure or insecure attachment styles. For example, literature explores positive or mitigating factors that create resilience, described in multiple ways, from the ability to bounce back and recover from stressful situations (Smith et al., 2008) to positive growth after a traumatic event (Tedeschi & Calhoun, 2004). Researchers have adapted a social-ecological model (Ungar, 2013) when examining resilience and have identified factors such as social support and spirituality to enhance resilience after trauma exposure (Howell et al., 2017; Martinez-Toreyna et al., 2009). Therefore, it is important to understand that some individuals, regardless of traumatic experiences or insecure attachment, may develop healthy intimate relationships.

The overall aim of the current study is firstly, to investigate effects of trauma on attachment, and effects of attachment on IPV perpetration and victimisation. Second, the study investigates the effects of attachment on resilience. Third, the study aims to explore whether insecure attachment styles are associated with IPV perpetration and victimisation, and the associations between resilience and negotiation behaviours to resolve conflicts. Fourth, it aims to assess which attachment types predict IPV perpetration and victimisation.

Hypothesis 1

Based on the attachment literature, it was hypothesised that those participants who report trauma will report an insecure past and current attachment style.

Hypothesis 2

Based on the 'child temperament' component of the Catalyst Model, it was hypothesised that of those participants who report an insecure attachment style, will report significantly more IPV perpetration and victimisation.

Hypothesis 3

Based on previous literature exploring resilience and protective factors, it was hypothesised that those who report an insecure attachment style will report low scores on resilience.

Hypothesis 4

In accordance with the Intergenerational Transmission Theory, it was hypothesised that there will be an association between past (parents) and current (partner) attachment types, and that insecure past and current attachment types will be associated with IPV perpetration and victimisation.

Hypothesis 5

It was hypothesised that high resilience scores will be negatively significantly associated with IPV perpetration and positively correlated with negotiation behaviours, in line with Johnson (2008).

Hypothesis 6

Based on previous literature, it was hypothesised that insecure attachment styles will predict IPV perpetration and victimisation.

Results

The data was screened for data entry errors, missing data, univariate and multivariate outliers, and normality of distribution (See Appendix C for details on data screening). Some participants were removed due to incompletion of single and multiple scales within the questionnaire, some did not have a current or ex-partner, and some were under the age of 18. Data from the remaining 246 participants were analysed (men = 125, women = 121). The table below provides general descriptive (means and standard deviations) information on the different types of trauma experienced, two subtypes of attachment, physical IPV and controlling behaviours, and resilience (See Table 18).

Table 18. ***Means and standard deviations of the different types of trauma experienced, attachment types, resilience, and perpetration and victimisation of physical IPV and controlling behaviours (psychological, sexual and financial control).***

Variables	Means	Standard deviations
Total Number of Trauma	5.89	5.92
Crime-Related Event	.75	.88
General Disaster and Trauma	2.25	1.81
Unwanted Sexual Experiences	.25	.61
Unwanted Physical Experiences	.31	.63
Other Trauma	.11	.32
Avoidance Mother	2.82	1.47
Anxiety Mother	1.71	1.45
Avoidance Father	3.85	1.74
Anxiety Father	2.21	1.76
Avoidance Partner	2.48	1.22
Anxiety Partner	2.87	1.91
Resilience	133.26	.96
Participant Negotiation	47.95	39.42
Partner Negotiation	44.93	37.23
Psychological Aggression Perpetration	13.26	21.61
Psychological Aggression Victimisation	13.39	23.26
Physical Assault Perpetration	4.06	16.00
Physical Assault Victimisation	4.28	17.84
Sexual Coercion Perpetration	3.22	11.42
Sexual Coercion Victimisation	3.64	11.34
Injuries Perpetration	1.22	5.94
Injuries Victimisation	.97	5.79
Financial control (general) perpetration	.88	1.55
Financial control (general) Victimisation	1.25	2.00
Financial control (child) Perpetration	.02	.27
Financial control (child) Victimisation	.09	.65

Hypothesis 1

To test the hypothesis that those participants who report trauma will report an insecure attachment style, an independent samples t-test was conducted. Participants were categorised into secure and insecure groups. To categorise attachment styles, the total scores of anxiety items and the total scores of avoidance items were computed, generating two subscales, attachment avoidance and attachment anxiety, both representing insecure attachments. Then, the two scores of avoidance and anxiety was summed, computing a total score of attachment insecurity. For example, case 1 had scored 12 on avoidance and 3 on anxiety, equalling a score of 15 as an overall insecure attachment score. Low scores on this represented secure attachment, and high scores represented an insecure attachment and the total possible score that an individual could report was 21 on avoidance and 21 on anxiety, 41 in total. It was therefore decided that any participants who had scored 21 and below would have a secure attachment and participants whose total was above 21 would fall into the insecure attachment style category.

Results revealed that there was a significant difference in reports of unwanted sexual experiences between those who reported an insecure attachment style (M = .48) and those who reported a secure attachment style (M = .20) with a *Mean Difference* of .27, $t(51.40) = 2.12$, $p<.05$. There was also a significant difference in reports of unwanted physical trauma experiences between those who reported an insecure attachment style (M=.70) and a secure attachment style (M = .22) with a *Mean Difference* of .48, $t(48.86) = 3.33$, $p<.01$. The results confirm the hypothesis that participants who report trauma will report an insecure attachment style.

Hypothesis 2

Independent samples t-tests were conducted to investigate whether those who report an insecure attachment style will report significantly more IPV perpetration and victimisation, and controlling behaviours. The results revealed that there was a significant difference in victimisation reports of physical assault between those who had secure (*M*=2.13) and insecure attachment (*M*=14.11) with a *Mean Difference* of 11.98, *t*(43.62) = 2.07, *p*<.05. Although the results did not indicate significant differences for perpetration, the results confirm the hypothesis that those who report an insecure attachment style will report more physical assault victimisation.

Hypothesis 3

A one-way between-subject's MANOVA was conducted to test whether those who report an insecure attachment, and low scores on resilience, will report IPV perpetration and victimisation. Participants were further categorised into two groups, those who scored high on resilience and those who scored low on resilience. High scores represented high resilience and low scores represented low resilience. The highest possible mean score of resilience that participants could report was 7, and the lowest was 1. It was therefore decided that participants who had scored 4 or more would be grouped into high resilience, and those who scored below 4 were grouped into low resilience.

There was a significant difference between high and low resilience scores on the combined dependent variables (*F*(14,229) = 2.20, *p*<.01, *Wilks' Lambda* = .8, *partial eta squared* = .12). The results reveal that resilience had a statistically significant effect on psychological aggression victimisation (*F*(1,242) = 5.47, *p*=.02, *partial eta squared* = .02, showing that people who scored lower on resilience reported more victimisation reports of

psychological aggression (*M*=27.29) than people who scored high on resilience (*M*=12.45) with a *Mean Difference* of 14.84. Although results did not indicate significant differences for perpetration, the findings confirm the hypothesis that, of those who report an insecure attachment style, and those who score low on resilience, will report significantly more IPV victimisation.

Hypothesis 4

To test this hypothesis, Pearson's correlations were employed. Table 19 and 20 below demonstrates these associations.

Table 19*. Pearson's Correlations between attachment with parents and attachment with partner*

Variables	Avoidance Mother	Anxiety Mother	Avoidance Father	Anxiety Father
Avoidance Partner	.08	.10	.12	.11
Anxiety Partner	.15*	.18**	.19**	.24**

Table 20. ***Pearson's Correlations between attachment and physical IPV perpetration and victimisation and the use of controlling behaviours (psychological, sexual and financial control)***

Variables	Avoidance	Anxiety
Participant	-.15*	-.03

Negotiation Partner	-.19**	-.10
Negotiation Psychological Aggression Perpetration	.02	.17**
Psychological Aggression Victimisation	.13*	.14*
Physical Assault Perpetration	.01	.26**
Physical Assault Victimisation	.12	.19**
Sexual Coercion Perpetration	-.00	.22*
Sexual Coercion Victimisation	.01	.19**
Injuries Perpetration	.09	.24**
Injuries Victimisation	.06	.19**
Financial control (general) Perpetration	.09	.20**
Financial control (general) Victimisation	.16*	.23**
Financial control (child) Perpetration	.00	.07
Financial control (child) Victimisation	.09	.08

Table 19 shows that there was a positive significant association between both an avoidant and anxious attachment style with the mother and father, and an anxious attachment pattern to the partner. Table 20 shows that an avoidant attachment style was negatively significantly correlated with negotiation behaviours and positively significantly correlated with financial control (general) victimisation. An anxious attachment style was positively significantly

correlated with all perpetration and victimisation physical IPV and controlling behaviours. These results confirm the hypothesis that an insecure attachment type will be associated with IPV perpetration and victimisation.

Hypothesis 5

To test this hypothesis, another Pearson's correlation was conducted. Table 21 below shows the results. The results show that resilience was negatively significantly correlated with physical assault perpetration and sexual coercion victimisation. In other words, high resilience scores were associated with low scores on physical assault perpetration and sexual coercion victimisation. Although there were no associations between resilience and negotiation behaviours, the results confirmed the hypothesis that there will be some negative correlations between resilience and IPV perpetration and victimisation.

Table 21. ***Pearson's correlations between resilience and physical IPV perpetration and victimisation and the use of controlling behaviours (psychological, sexual and financial control).***

Variables	Resilience
Participant Negotiation	.09
Partner Negotiation	.07

Psychological Aggression Perpetration	-.11
Psychological Aggression Victimisation	-.07
Physical Assault Perpetration	-.13*
Physical Assault Victimisation	-.09
Sexual Coercion Perpetration	-.13
Sexual Coercion Victimisation	-.13*
Injuries Perpetration	-.07
Injuries Victimisation	-.10
Financial control (general) Perpetration	.08
Financial control (general) Victimisation	.00
Financial control (child) Perpetration	-.13
Financial control (child) Victimisation	.10

*Correlations are significant at the 0.05 level (2-tailed)
**Correlations are significant at the 0.01 level (2-tailed)

Hypothesis 6

With the data being non-normally distributed and overly dispersed (where standard deviations are higher than the corresponding means of physical IPV and controlling behaviours, See Table 18), negative binomial regression analyses were conducted to test the hypothesis that past and current insecure attachment will predict physical IPV and controlling behaviours. Table 22 below presents goodness-of-fit information for IPV perpetration and victimisation behaviours which shows that the *goodness-of-fit* for each variable was acceptable as all the deviance values were close to 1 and the *p* values were significant (besides Financial control (child) Perpetration, See Table 22). Table 23 and 24 presents the negative binomial regression analysis for perpetration and victimisation.

Table 22. ***Table of goodness-of-fit with deviance and p values***

	Deviance	*p* value
Psychological Aggression Perpetration	2.18	.005
Psychological Aggression Victimisation	2.44	.001
Physical Assault Perpetration	2.85	.001
Physical Assault Victimisation	3.05	.001
Sexual Coercion Perpetration	2.95	.001
Sexual Coercion Victimisation	2.95	.001
Injuries Perpetration	1.64	.001
Injuries Victimisation	1.52	.001
Financial control (general) Perpetration	1.13	.001
Financial control (general) Victimisation	1.27	.001
Financial control (child) Perpetration	.15	.09
Financial control (child) Victimisation	.33	.001

Table 23. ***Negative binomial regression of attachment types as predictors of physical IPV perpetration and the use of controlling behaviours (psychological, sexual and financial control).***

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child),
*Correlations are significant at the .05 level (2-tailed)
**Correlations are significant at the .01 level (2-tailed)

Table 24. ***Negative binomial regression of attachment types as predictors of physical IPV victimisation and the use of controlling behaviours (psychological, sexual and financial control).***

Variables		Avoidance Mother	Anxiety Mother	Avoidance Father	Anxiety Father	Avoidance Partner	Anxiety Partner
PSYA	B	-.03	.11	.00	.01	-.12	.13
	SE	.06	.05	.05	.06	.06	.05
	Wald X^2	.28	3.70	.01	.02	3.53	7.37*
PA	B	-.11	.35	-.30	.15	.00	.16
	SE	.07	.06	.06	.06	.08	.06
	Wald X^2	2.40	29.27**	26.58***	6.64**	.00	8.80**
SC	B	-.09	.21	-.25	.22	.10	.06
	SE	.08	.06	.05	.07	.07	.05
	Wald X^2	1.16	12.99**	21.22***	11.40**	1.99	1.31
I	B	.13	.24	-.37	.15	.45	.37
	SE	.09	.08	.09	.08	.10	.07
	Wald X^2	1.94	10.51**	16.00***	3.60	20.85***	31.54***
FCG	B	.07	-.08	-.07	.27	-.00	.00
	SE	.08	.08	.07	.07	.09	.06
	Wald X^2	.67	1.08	.93	16.22**	.00	.00
FCC	B	.18	-.13	-1.03	.65	.64	.10
	SE	.37	.31	.46	.33	.39	.27
	Wald X^2	.24	.17	5.16*	3.83*	2.65	.15

PSYA = Psychological Aggression, PA = Physical Assault, SC = Sexual Coercion, I = Injuries, FCG = Financial Control (general), FCC = Financial Control (child)*Correlations are significant at the .05 level (2-tailed)
**Correlations are significant at the .01 level (2-tailed)
***Correlations are significant at the .001 level (2-tailed)

Variables		Avoidance Mother	Anxiety Mother	Avoidance Father	Anxiety Father	Avoidance Partner	Anxiety Partner
PSYA	B	.08	.05	-.01	-.04	.04	.12
	SE	.06	.06	.05	.06	.07	.05
	Wald X^2	1.90	.89	.05	.44	.28	5.92*
PA	B	.02	.39	.03	-.13	.21	.25
	SE	.07	.07	.06	.06	.07	.05
	Wald X^2	.09	34.33**	.18	4.94*	7.80**	20.33***
SC	B	.08	.17	-.34	.14	.10	.17
	SE	.07	.06	.05	.07	.07	.06
	Wald X^2	1.25	8.56**	39.60***	4.45*	2.19	8.77**
I	B	.11	.35	-.40	.13	.54	.18
	SE	.11	.08	.10	.09	.11	.07
	Wald X^2	1.08	18.32**	16.01***	1.96	25.38***	6.50**
FCG	B	.04	-.06	-.04	.12	.16	.13
	SE	.07	.08	.06	.07	.08	.05
	Wald X^2	.24	.51	.36	3.50	4.25*	6.73**
FCC	B	.50	-2.51	-.22	.33	.35	.52
	SE	.21	1.23	.21	.18	.19	.16
	Wald X^2	5.66*	4.17*	1.19	3.41	3.45	10.86***

Table 24 and 25 shows that insecure attachment styles with mother, father, and partner were positively significantly predicted IPV perpetration and victimisation. An avoidant attachment style with the mother was positively significantly predicted financial control (child) victimisation. An anxious attachment with the mother positively significantly predicted physical assault, sexual coercion, and injuries perpetration and victimisation. An avoidant attachment with father positively significantly predicted physical assault perpetration, sexual coercion, injuries perpetration and victimisation, and financial control

(child) perpetration. An anxious attachment with father positively significantly predicted physical assault, sexual coercion perpetration and victimisation, and financial control perpetration. Lastly, an avoidant attachment with partner positively significantly predicted physical assault victimisation, injuries perpetration and victimisation, and financial control (general) victimisation. An anxious attachment style with partner revealed to be a positive significant predictor of psychological aggression, physical assault and injuries perpetration and victimisation, sexual coercion and financial control victimisation. Drawing from these findings, it can be concluded that insecure attachment styles with both parents and partners predicted forms of IPV perpetration and victimisation.

Discussion

The aims of this study were to firstly, investigate the effects of trauma on attachment, and effects of attachment on IPV perpetration and victimisation. Second, the study investigated the effects of attachment on resilience. Third, the study aimed to explore the associations between attachment and IPV perpetration and victimisation, as well as the associations between resilience and IPV perpetration and victimisation. Fourth, the study aimed to assess which attachment types predicted IPV perpetration and victimisation.

Results indicated a significant difference in reports of unwanted physical and sexual traumatic experiences between those who reported an insecure attachment than those reported a secure attachment. In line with previous findings such as Gormley and Lopez (2010), results suggest the importance of ACEs. It can be argued that the experience of unwanted physical and sexual trauma can increase the likelihood of developing an insecure attachment style. This is consistent with the attachment literature which has suggested that ACE's may influence attributional styles, values and beliefs regarding significant others (Gormley &

Lopez, 2010). Also, it may explain why when examining the effects of trauma on adult development, researchers primarily focus on trauma experiences within the family environment, consistent with the 'family environment' component of the Catalyst Model (Ferguson et al., 2008).

Furthermore, the attachment theory has explained the importance of abuse in childhood to subsequent IPV. Richards, Tillyer, and Wright (2017) explained that a secure attachment in childhood creates a strong sense of security and trust, enabling them to build confidence and develop secure relationships with other people. Conversely, an insecure attachment causes fear, anxiety, rejection and an absence of safety, which contributes to violence in later relationships (Bowlby, 1982). Therefore, the presence of a history of childhood abuse may prevent individuals from learning and practicing emotion management with their caregivers, and as a result of this, individuals with insecure attachment may have emotional deficits, which may also adversely impact adult relationships.

The results found a significant difference in report rates of physical assault victimisation between those who reported a secure attachment than those who reported an insecure attachment. Again, these results are consistent with previous findings that individuals with an insecure attachment style may be at the risk of experiencing IPV victimisation (Belanger et al., 2015; Kujipers et al., 2012; Sandberg et al., 2016; Velotti et al., 2018). Velotti et al., (2018) identified a number of studies that found an association between avoidant and anxious attachment styles and IPV victimisation. Allison et al., (2008) stated that people with an anxious attachment style may find it difficult to leave an abusive relationship due to the fear of abandonment and high separation anxiety. This could relate to Bartholomew and Horowitz's (1991) four-category attachment patterns; that having a negative view of self and a negative view of others results in an insecure attachment. More precisely, a 'fearful' attachment style, according to Bartholomew and Horowitz's (1991)

four-category model. To explain the link between insecure attachment and physical assault victimisation may stem from the concept of self-esteem. Mikulincer and Shaver (2005) found that low self-esteem was linked with individuals feeling reluctant to leave an abusive relationship. Characteristics such as negative view of self and fear of abandonment also relates to low self-esteem, and therefore, individuals with an insecure attachment style may find it difficult to leave an abusive relationship, increasing the possibility of experiencing IPV victimisation.

In addition to insecure attachment impacting IPV victimisation, the results showed of those participants with insecure attachment types, those who scored low on the resilience scale reported more psychological aggression victimisation. These results reflect that individuals are more likely to experience IPV victimisation in the form of psychological aggression if they are hold an insecure attachment type and low resilience. This is consistent with previous research that has explored the risks of IPV victimisation (Dutton & White, 2012; Hellemans, Loeys, & De Smet, 2015).

In relation to these findings, Marriner, Cacioli, & Moore (2014) investigated the relationships between attachment and levels of resilience, and how this related to levels of perceived stress and use of coping strategies. Focusing on the relationship between attachment and resilience, their findings indicated that a secure attachment was correlated with resilience. Fitzpatrick and Koerner (2005) identified four factors that determined resilience. First, positive temperament and individual characteristics, second, skills, esteem processes and social competence, third, family cohesion and good parent-children communication, and fourth, social support. Positive temperament and good parent-children communication can reflect secure attachment styles, and therefore, it can be argued that attachment plays an important role as a determinant of resilience in an individual. Khoshouei (2009) emphasised that teenagers and adults presented with features such as an internal locus

of control, positive self-concept, social maturity, compassion, a sense of responsibility, and independence, factors which structure high resilience. All of which may also positively impact adult intimate partner relationships, therefore, less likely to experience IPV victimisation due to positive sense of self.

Relating this to the current findings that of those who report insecure attachment, those who had low resilience, reported significantly more psychological aggression victimisation. In other words, insecure attachment and low resilience may increase the risk of being susceptible to become a victim of psychological aggression in adult relationships. From the attachment theory perspective, childhood maltreatment can disrupt the attachment system, leading to developing insecure attachment styles (Rapoza & Baker, 2008), low self-esteem (Coates et al., 2013), impaired social functioning (Alink et al., 2012), and poor interpersonal relationships (Prather & Golden, 2009). All of which contribute to the risk of IPV victimisation.

The current study found an association between an avoidant attachment style and psychological aggression and financial control victimisation, and associations between an anxious attachment and IPV perpetration and victimisation. These results not only emphasise the impact of attachment on IPV, but also contradict some of the conclusions derived from Velotti et al.,'s (2018) systematic review suggesting lack of significant associations between insecure attachment and IPV. Their systematic review noted that almost half of the studies found no association between an avoidant or anxious attachment style and psychological IPV victimisation (Belanger et al., 2015; Oka et al., 2014; Tougas et al., 2016; Wigman et al., 2008). However, of the 23 studies that investigated attachment among victims of psychological IPV, 11 of them found a significant association between the two, with only women (Péloquin et al., 2011) and both men and women (Goncy and van Dulmen, 2016; Seiffge-Krenke and Burk, 2015; Sommer et al., 2017). However, the review identified no

studies relating to the role of attachment on financial IPV. These findings further the understanding that insecure attachment is associated with the risk of both perpetration and victimisation, in line with Doumas et al., (2008).

The current results that show an association between an avoidant attachment style and financial control victimisation, highlight that an insecure attachment style leads to an increased vulnerability of experiencing financially controlled in a relationship. This finding can be explained by theories such as resource theory/gendered resource theory (Blood & Wolfe, 1960) and dependency theory (Prebisch, 1962). however, these have focused on men lacking control over resources and therefore, resorting to violence.

These results can be linked to Schrag et al., (2016) who found that exposure to high levels of economic abuse in childhood, related to increased rates of depression and PTSD symptoms, as well as a decreased rate of financial self-efficacy. As experience of trauma in childhood may form insecure attachment styles, developing low self-esteem (Coates et al., 2013), impaired social functioning (Alink et al., 2012), and poor interpersonal relationships (Prather & Golden, 2009), it can explain why people with an insecure attachment type report financial control victimisation. In other words, a decreased rate of financial self-efficacy in an intimate partner relationship may hinder the ability to financially succeed solely, therefore, increasing the risk of financial dependency, in turn increasing the risk of this form of victimisation.

The negative association between an avoidant attachment style and negotiation behaviours can reflect the use of positive conflict resolution with individuals who are securely attached. Previous research finds that securely attached individuals are more likely to have well-functioning relationships (Holland, Fraley, & Roisman, 2012), and this is likely

achieved and maintained by using negotiation techniques to resolve any conflicts. Insecure attachment has been found to have negative effects on conflict management processes and outcomes in the context of close relationships (Mikulinver & Shaver, 2008, 2010), in that insecurely attached individuals are more likely to use dominating tactics and less likely to use integrative conflict resolution (Mikulincer & Shaver, 2008). Additionally, individuals displaying avoidant attachment tend to value self-reliance, be emotionally distant, and avoid closeness. Anxiously attached individuals tend to have a negative self-image, much interpersonal dependency, and excessive concern with the evaluation of others (Bartholomew & Horowitz, 1991); Mikulincer & Shaver, 2008). Therefore, when in a conflicted situation within relationships, these individuals may experience high levels of distress, increased by a negative view of self. Such individual's may see negotiation as a loss of independence and a threat to self-reliance. This in turn may lead to either partner escalating the conflict, which would further exacerbate the avoidant individual's need for separation. Relating this to the current findings of negative association between avoidant attachment and negotiation, it can be said that individuals who report low on the avoidant attachment scale, in other words, a more secure attachment style, are more likely to use negotiation tactics to resolve tactics, as well as responding positively to negotiation behaviours used by their partner.

An interesting topic of research within the psychological literature has been the question of whether the parental attachment style continues into adult attachment, explained by the IGT of Violence (Kalmuss, 1984). Thus, it is important to understand whether parental attachment and partner attachment impact differently on IPV. That is, whether it is insecure parent attachment or an insecure partner attachment, or both, that lead to IPV.

Firstly, according to the attachment theory, a secure attachment to a mother initiates lifelong sets of attachment styles that have been assessed in adulthood (Bartholomew & Horowitz, 1991) and contribute to cognitions, affect, and intimate relationships. It is said that

insecure attachment styles manifest through anxious, avoidant, dismissing, and disorganised attachment, and that early dyadic attachment influences the formation of attachment styles (Lyons-Ruth & Jacobvitz, 2008). Results from the present study showed positive significant associations between an insecure parental attachment and an insecure partner attachment. More specifically, both parental avoidant and anxious attachment styles was significantly correlated with an anxious attachment style to the partner. This also provides support to the theoretical framework of IGT of violence that applies to explaining the link between infant attachment and adult attachment. Also, the current findings support the studies that have used the IGT of violence theory to assume a parallel attachment between infant experiences of attachment and the replications of insecure attachment pattern in adulthood (McClellan & Killeen, 2000; McVay, 2009).

Secondly, results showed that negotiation was negatively significantly correlated with insecure attachment with partner. Not only does this highlight that attachment security with the partner is crucial in effective conflict resolution, supporting findings from earlier analyses, but also shows the importance of adult attachment in relationship behaviours. Also, an avoidant attachment with the mother was found to be positively significantly correlated with psychological aggression victimisation within this university student sample. There may be a number of reasons for this. For example, attachment researchers often argue that abuse during childhood, especially parental abuse, can disrupt the attachment system, leading to a fearful or disorganised attachment style, (Rapoza & Baker, 2008), low self-esteem (Coates et al., 2013), impaired social functioning (Alink et al., 2012), and poor interpersonal relationships (Prather & Golden, 2009). All of which contribute to the risk of IPV victimisation. Note, no other significant associations with avoidant attachment with mother or father were indicated.

However, those who reported an anxious attachment style with the mother were significantly more likely to be the victim of physical, sexual, injuries perpetration and victimisation, and psychological aggression perpetration. An anxious attachment style with the father was positively significantly associated with physical, sexual, and financial control perpetration, as well as financial control victimisation. A substantial amount of research focuses on childhood abuse and the development of insecure attachment, resulting in IPV (Kong et al., 2018; Riggs, 2010; Smith & Stover, 2016), however, there is a lack of evidence demonstrating the direct role of insecure parental attachment on the risk IPV victimisation. These findings emphasise the direct role of insecure parental attachment on IPV perpetration and victimisation, with or without the experience of trauma.

Analyses of partner attachment and IPV demonstrate that an avoidant attachment was positively significantly associated with physical assault and financial control victimisation. In terms of avoidance and physical IPV victimisation, Belanger et al., (2015) also confirmed a positive correlation between the two. Although in their study this was found in males, results show that an avoidant attachment increases the risk of physical IPV, to an extent where an avoidant attachment is found as a predictor of physical IPV (Kujiper et al., 2012). In an attempt to understand this relationship, avoidant individuals tend to have difficulties in seeking help due to dysfunctional beliefs such as not wanting to present their vulnerabilities and personal difficulties to others, or that help would be rejected. In turn, this lack of social support, related to IPV victimisation (Zapor et al., 2018) may increase the risk of IPV victimisation (Coker et al., 2002).

An association between an avoidant attachment with partner and injuries perpetration was also revealed. This suggests that having an avoidant attachment can impact infliction of injuries to an intimate partner, relating to physical assault perpetration. Velotti et al., (2018) stated that avoidant individuals share characteristics of an anti-social and highly

violent batterer subtype, and that violence may be used to control and dominate their partner. Additionally, Mikulincer and Shaver (2010) maintained that when withdrawal from a relationship is prohibited, an avoidant individual's high need for control and domination and emotional distance, in line with their negative view of others, may increase the risk of violence perpetration, in this case, inflicting injuries to their partner. Feelings of entrapment and the need to escape may also contribute to violence perpetration. However, research has focused on male batterers (Mahalik et al., 2005) and MGRS (McDermott & Lopez, 2013) when exploring this concept.

Turning to the anxious attachment with partner dimension, a positive significant correlation was found with psychological aggression, physical assault and financial control victimisation. Referring back to the description of an anxious individual where anxiety reflects a fear of rejection and abandonment, along with the doubts of one's own social value and lovability (Fournier, Brassard, & Shaver, 20111), this association can be explained. These individuals may find it difficult to leave an abusive relationship due to the fear of separation. Mikuliner and Shaver (2005) also suggested that anxiously attached individuals may suffer from low self-esteem, again, contributing to reluctance to leave an abusive partner, therefore, increasing the likelihood of vulnerability. With psychological aggression, it has been hypothesised that anxiously attached individuals may not be able to reject psychological abuse, again, in fear of separation or alienation (Bonache et al., 2016). Therefore, the association between participants who reported an anxious attachment style and the reporting of psychological aggression victimisation may be due to separation anxiety. Despite the importance, there has been a lack of consideration of other factors such as social support or self-esteem (Velotti et al., 2018) when understanding the link between IPV victimisation and insecure adult attachment styles.

Furthermore, the IGT of violence (Kalmuss, 1984) has been used to explain the link between an insecure attachment and IPV victimisation. McVay (2012) found an association between the IGT of IPV, as well as individual or partner attachment styles. Findings indicated that witnessing IPV combined with the influence of insecure parental attachment pattern creates an individual who is more likely to develop an anxious adult attachment with their romantic partner. In turn, increasing the likelihood of entering a violent intimate relationship. Therefore, the present study is consistent with previous findings and suggests that when examining risk factors for IPV victimisation, an anxious attachment style should be considered.

In terms of perpetration, an anxious attachment with the partner was found to be positively significantly associated with psychological aggression and injuries perpetration. Similar to victimisation, this is in line with the attachment theory of IPV, showing that anxiously attached individuals resort to violence for reasons such as the need to belong or when attachment needs are not met (Holtzworth-Munroe et al., 2000). For example, if the relationship is threatened, then an individual with an anxious attachment may use violence to maintain and continue this relationship, to prevent separation. Further, when attachment needs are not met, an anxious person may use extreme forms of emotion regulation, in this case, injury infliction, to control their partner.

Within the attachment literature, psychological aggression has often been reviewed in conjunction with other forms of violence, such as physical and sexual violence (Bonache et al., 2016; Velotti et al., 2018). One study attempted to identify how trust and attachment anxiety might interact to predict jealousy and physical and psychological abuse (Rodriguez et al., 2017). In relation to psychological abuse, it was found that an anxiously attached individual was at risk for perpetrating psychological abuse when experiencing distrust in the relationship; subsequently becoming jealous or searching through partner's belongings,

which are behaviours of psychological abuse. These results add to the support that individuals with an anxious attachment to their partner are at greater risk of IPV perpetration.

Although evidence has shown robust, but small, associations between trauma and attachment and IPV, other researchers have found no associations (Gay et al., 2013; Karakoc et al., 2015). This raises questions of other factors such as social support or self-esteem that may reduce or even prevent IPV. Recently, there has been a change in which the way treatment interventions are led, where there is an emphasis on the individual's positive and resilience factors to promote well-being, rather than focusing on negative factors. In relation to this, the social-ecological model (Ungar, 2013) demonstrated factors such as social support and spirituality can enhance resilience after adverse events, and some authors have shown positive growth after trauma (Tedeschi & Calhoun, 2004). It can be argued that these resilience factors may also contribute to the development of secure attachment styles with the partner, in turn, decreasing the likelihood of violence in relationships.

There was a significant difference in reports of psychological aggression victimisation, where individuals who scored low on resilience reported more psychological aggression victimisation, than those who scored high on resilience. Additionally, correlational analyses revealed a negative significant association between resilience and physical IPV perpetration, and sexual coercion victimisation. Therefore, high resilience was associated with scores of low physical assault perpetration and sexual coercion victimisation. People who scored high in resilience demonstrated the ability to cope with, and respond successfully to, various life stressors. The scale measured personal competence and acceptance of self and life. Therefore, the negative correlation between resilience and physical assault perpetration and sexual assault victimisation indicated that these individuals were highly resistant following adverse experiences, and therefore, were less likely to perpetrate or experience IPV. This reflects on the association found between

Similarly, the current findings can also relate to the social-ecological model (Ungar, 2013) as this sample shows that some participants presented with resilience and that they were able to "bounce back or recover from stress," (Smith et al., 2008, p. 194) and positively grow after a traumatic event (Tedeschi & Calhoun, 2004). This may be due to other positive contributing factors such as psychological, social, and cultural resources sustaining their well-being after facing adversity. With this being a student population and general population, it can be said that university life, socialising, meeting new friends and peers may have contributed to their resilience, in turn, decreasing the risk of perpetrating or experiencing IPV, despite traumatic exposure.

Regression analyses revealed a number of attachment predictors of IPV perpetration and victimisation. An avoidant attachment with the mother significantly predicted financial control victimisation. An anxious attachment with the mother significantly predicted physical assault, sexual coercion, and injuries perpetration and victimisation, as well as financial control victimisation. An avoidant attachment with the father also significantly predicted physical perpetration, sexual and injuries perpetration and victimisation, and an anxious attachment significantly predicted physical assault, sexual coercion perpetration and victimisation and financial control victimisation.

These findings show substantial support to the attachment theory's perspective on IPV. Dutton and White (2012) argued that anger (and substance abuse) is a symptomatic correlate of attachment insecurity, and the child abuse is an indicator of attachment insecurity. The authors defined attachment insecurity as "any set of psychological factors that have anxiety or fear as a component affect of intimacy" (p. 476). They proposed that fault parent-child attachment such as mis-attunement and rejection developed attachment insecurity, and in turn is a major psychological predictor of IPV. Similarly, Dutton and White

(2012) stated that negative emotionality, a pattern of anxious, mistrusting cognitions and affect, strongly predicted IPV. This concept was also explored by Fearon et al., (2010) and explained the effect of attachment insecurity on aggression as these individuals were unable to receive any parental support or any cognitive memory of parental support, e.g., working models or internal representations. Therefore, a lack of this parental support led to fearful, mistrust and emotion dysregulation, in turn leading to negative emotionality, which can be used to explain why insecure attachment (avoidant and anxious) predicted IPV perpetration and victimisation.

The findings may also relate to Holtzworth-Munroe and Stuart's (1994) typology of IPV and research has identified that the 'generally-violent/antisocial' group tend to perpetrate severe forms of violence, experience severe inter-parental violence during childhood, and hold an avoidant-attachment style (Deson et al., 2003; Holtzworth-Munroe et al., 2000). Individuals in this group may hold positive attitudes of violence use due to their violent childhood experiences, and therefore, this suggests that those with an avoidant attachment style may perceive violence as appropriate conflict resolution.

Additionally, research has shown evidence of an association between attachment and aggression mediated by borderline personality disorder. For example, Crawford et al., (2006) found that an anxious attachment was related with personality disorder symptoms, and both related to self-reported interpersonal aggression. Supporting this, Scott, Levy, and Pincus (2009) proposed that insecure attachment and borderline personality symptoms were associated with common factors such as maladaptive personality features, negative affect, and impulsivity. Although their results showed evidence for attachment anxiety but not avoidance, it was explained that maladaptive coping strategies and lack of social support may be due to an insecure attachment style. This shows that individuals with an anxious

attachment style may find it difficult to seek support or have positive coping strategies and therefore may be at risk for perpetration and victimisation of IPV.

When exploring IPV, a majority of the research has investigated the impact of adult attachment insecurity, yet, the current findings show a predictive role of an avoidant and anxious parental attachment on IPV perpetration and victimisation. Although, it has been argued that the relationship between attachment to parents and IPV needs to adopt a longitudinal research design rather than a cross-sectional design, questioning the validity of the current findings, a longitudinal study investigating this has been conducted. For example, Sousa et al., (2011) found that stronger attachment bonds to parents in adolescents appeared to predict a lower risk of antisocial behaviour. In relation to the present study, it can be explained why insecure attachment to parents predict IPV and in relation to the attachment theory, the results emphasise Bowlby's (1969) theoretical perspectives. That is, the role of a healthy parent-child relationship influences a health long-term development including adult intimate relationships.

From the developmental perspective within the attachment literature, internal working models have a consistent role in adult intimate relationships. Individuals who do not receive consistent or nurturant caregiving in early childhood may not form a healthy internal working model, in turn, resulting in a negative view of self or of others. This negative view of self or others will play a role in adult relationships, and studies have argued that weak parent-child attachment, specifically mis-attunement and rejection, are underlying principles of attachment insecurity, in turn, major predictors of IPV (Dutton & White, 2012). Therefore, drawing from current findings that that anxious and avoidant attachment with mother and father predict IPV perpetration and victimisation can contribute to the importance of attachment theory on partner violence.

As well as insecure parental attachment, current findings also demonstrate that an insecure partner attachment predicted IPV perpetration and victimisation. Specifically, an avoidant attachment predicted physical and financial control victimisation, and injuries perpetration and victimisation. Also, an anxious attachment style predicted psychological, physical and injuries perpetration and victimisation, as well as controlling behaviours including sexual and financial control victimisation. According to Shaver and Mikulincer (2011), people with an avoidant attachment tend to be autonomous and distant in their relationships, have a critical view of others, and have a perception that others are there to satisfy their needs. Considering this, if for example relationship needs are not met, individuals may resort to violence to achieve this. Therefore, an avoidant attachment predicted injuries perpetration. Victimisation studies have found similar results showing that physical and psychological IPV victimisation corresponded to both avoidant and anxious attachment styles (Hellemans, Loeys, & De Smet, 2015). Drawing from previous research, the effect of attachment insecurity on financial IPV has had a lack of attention, yet, the current results show that financial control perpetration and victimisation are associated with and predicted by insecure attachment styles with parents and partners.

The current findings add valuable insight into insecure attachment as a risk factor for both IPV perpetration and victimisation, and different forms of these. It extends previous research and shows that early influences negatively impact adult relationships. Research has shown that the transfer of attachment from parents to partners occurs during late teens and early 20's, and therefore, an ideal time to investigate the role of attachment in adult relationships. Also, traumatic experiences may form insecure parental attachment, which may be continued into adulthood which supports the IGT of violence theory and explains the increasing risk of IPV. This can be linked to the 'child temperament' component of the Catalyst Model, related to attachment and suggest that insecure parental attachment is an

important predictor of violence perpetration. Therefore, there is a great need for implementation of attachment theory in treatment provisions for both victims and perpetrators of IPV, as well as considering the importance of resilience.

Chapter 5 – General Discussion

This thesis consisted of two studies. Study 1 examined firstly, investigated sex-differences in physical IPV and the use of controlling behaviours (psychological, sexual and financial control). Second, the study investigated whether those who experience trauma will report more acts of physical IPV perpetration and victimisation and controlling behaviour in accordance with the 'family violence exposure' and 'environmental stressors' components of the Catalyst Model. Third, the study aimed to explore whether experiencing sexual or physical trauma is associated with physical IPV (or injuries) perpetration or victimisation, and sexual coercion perpetration or victimisation. Fourth, it aims to assess which trauma experiences significantly predict which form of IPV perpetration and victimisation.

To summarise the findings of study 1, results showed no sex differences in reports of IPV perpetration or victimisation. Participants who had experienced trauma, reported significantly more financial control perpetration, psychological aggression and sexual coercion victimisation. There were some associations between trauma and IPV perpetration and victimisation, and according to the IGT theory of violence (Kalmuss, 1984), those who experienced physical and sexual trauma, reported experiencing physical IPV and sexual coercion victimisation, in line with the LTS (Bandura, 1977). The regression analyses demonstrated that experiencing some forms of trauma predicted some form of IPV perpetration and victimisation as explained by the Catalyst Model (Ferguson et al., 2008).

The overall aims for study 2 were to firstly, investigate effects of trauma on attachment, and effects of attachment on IPV perpetration and victimisation. Second, the study investigated the effects of attachment on resilience. Third, the study aimed to explore whether insecure attachment styles associated with IPV perpetration and victimisation, and

the associations between resilience and negotiation behaviours to resolve conflicts. Fourth, it aimed to assess which attachment types predict IPV perpetration and victimisation.

To summarise the findings of study 2, participants who had experienced unwanted physical and sexual trauma, reported insecure past and current attachment style. Those who reported an insecure attachment style, reported significantly more physical assault victimisation. Results revealed that participants who scored low resilience, reported more psychological aggression victimisation. In relation to the correlation analyses, results found some associations between past and current insecure attachment and IPV perpetration and victimisation. Also, participants who reported high resilience were associated with low scores on physical assault perpetration and sexual coercion victimisation. Lastly, past and current insecure attachment predicted IPV perpetration and victimisation.

Results from study one and two suggest that as part of risk assessments for IPV in adults, it is important to screen for a history of traumatic experiences as this may be critical to inform preventive strategies (McCambridge et al., 2011). Also, it is important to examine the role of attachment in the context of parent and partner relationships. As deficit models are an incomplete picture, it is also important to consider the role of resilience and its protective role in risk of IPV perpetration and victimisation.

Theoretical Implications

A wealth of research has identified some of the ways to conceptualise and respond to IPV where various perspectives have been recognised. For example, some researchers have concluded that IPV is primarily directed by men towards women, with patriarchy viewed as a direct cause of IPV. Studies adopting this gendered conceptualisation have typically focused on female IPV victimisation, as opposed to investigating both partners' experiences of perpetration and victimisation. This approach can be deemed problematic as theories

regarding female violence can often be overlooked. The current study incorporates men's and women's reports of perpetration and victimisation to address gender bias and adopt gender inclusive standpoint. Findings can further our understanding of male and female engagement in IPV and highlight the importance of individual factors using theories such as SLT (Bandura, 1977), power theory (Straus, 1976), and IGT of violence theory (Kalmuss, 1984).

Specifically, results contribute to recent work around risk factors of IPV and show that the experience of ACEs and insecure attachment styles increase the risk of perpetrating and experiencing IPV. The findings support the Catalyst Model of violence (Ferguson et al., 2008) and furthers the understanding of risk factors that contribute to violence by exploring the two components, 'family violence exposure' and 'environmental strain,' as well as 'child temperament' which is explored using attachment patterns. As perpetrator typologies can be useful to help structure and interpret information, findings may be of particular interest to professionals using risk assessments to determine trauma history in individuals at increased risk of offending and/or re-offending against their intimate partner. It is also important to be aware of individual's attachment patterns in their relationship domains in order for comprehensive risk assessments.

Our findings show a lack of sex differences across both studies in terms of perpetration, and to an extent, victimisation. These results are not supportive of a gendered approach to IPV and suggest that there is more to IPV perpetration and victimisation than what patriarchal theories propose. The findings demonstrate that traumatic experiences impact both men and women, and that trauma experiences increase the likelihood for both to use and sustain IPV. As a result, this may suggest that men and women have similar motivations or risk factors of perpetration and victimisation. Linking this to the Catalyst Model, these findings do not support this, as this model proposes that 'genetic predisposition (& male gender)' contribute to violence.

Drawing from this, although findings relating to ACEs show support to theoretical perspectives including SLT and IGT of violence, results show that it is important to understand that different types of trauma experiences heavily influence IPV perpetration and victimisation, regardless of gender. Therefore, a better understanding and framework of IPV would derive from trauma-focused approaches which acknowledge that there are different factors involved that contribute to violent behaviour.

Vasovic (2018) stated that ACEs have neurological, biological and psychological impact in young children which can be measured in the children's cognitive, emotional, biological and social development. For example, an association was found between ACEs and poor early childhood mental health, as well as chronic medical conditions (Kerker et al., 2015). Also, Hanson et al., (2015) suggested neurological changes such as volumetric alterations in the amygdala and hippocampus in children who had experienced physical abuse and early neglect. Specific alterations in the hippocampus have been associated with behavioural problems, and changes in the amygdala have been associated with fear processing and issues relating to understanding and responding social stimuli (Morey et al., 2016). This shows that these neurological changes subsequent to experiencing ACEs, may provide a physiological explanation of the relationship between traumatic experiences and IPV perpetration. In other words, due to these changes in the brain as a result of ACEs, individuals may be prone to behavioural problems.

Supporting this further, it has been found that neurological alterations, specifically with the amygdala, children were more emotionally reactive, showed less emotional regulation, and an increased level of anxiety, hyperarousal and dysphoria (Dvir, Ford, Hill, & Frazier, 2014). Arguably, this may be related to attachment development. Therefore, individuals in our population who had experienced traumatic experiences were more likely to report an insecure (anxious or avoidant) attachment style, and more IPV perpetration and

victimisation due to emotion regulation problems caused by ACEs. In addition, this biological input can directly relate to the 'Genetic Predisposition' component of the Catalyst Model (Ferguson et al., 2008). This model proposed that a number of components, including genes (and male gender), trauma, child temperament (attachment), personality, cognitions, and motivations, all contributed to violent behaviour. Therefore, as well as acknowledging the input of theoretical foundations to understand IPV, it is imperative to examine different risk factors. More importantly, to understand that traumatic experiences can lead to several dysfunctional developments such as emotion regulation, attachment difficulties and poor social development, which all lead to IPV perpetration and victimisation. Accordingly, changing the direction from a treatment focused healthcare system to early prevention and trauma focused interventions may minimize the effects of ACEs and help individuals to learn to manage their experiences to prevent problems in adult relationships.

Practical Implications

The findings from these studies have several important practical implications. Due to the significant associations between trauma and IPV, it can be argued that individuals in treatment for IPV perpetration or victimisation should be screened for a history of traumatic experiences and that it is important to identify underlying trauma experiences. Practitioners and health clinicians should in fact aim to adapt trauma-focused interventions such as cognitive behaviour therapy to perpetrators and victims of partner violence, incorporating methods of emotion management in relation to their trauma. Within the health sector, trauma informed approaches have increasingly shown to be an effective technique to strengthen foundations of physical and mental health to promote a healthy development.

Also, results are consistent with previous evidence in showing that individuals with insecure attachment styles are more likely to report some form IPV perpetration and

victimisation. This study examines attachment anxiety and avoidance with the participant's mother, father, and partner and the impact on different forms of IPV perpetration and victimisation, which to our knowledge has not been examined previously. Therefore, the results add value in terms of whether specific attachment relations impact IPV, and suggest that practitioners need to understand the influence of individuals' attachment styles and address these measures of insecure attachments to more positive means of attachment in their relationships. In turn, this may increase the possibility of developing secure attachment styles in adult relationships, despite insecure infant attachment, or ACEs, and decreasing the likelihood of IPV perpetration and victimisation.

On a broader level, these results speak to the ways in which identifying risk factors are likely to be important within intervention programmes. The findings of this thesis would suggest that it may be appropriate to adapt interventions accordingly, specifically providing clients with skills to enhance positive emotion management. Enhancing emotional resilience may help individuals to overcome their traumatic experiences or insecurity within their intimate relationship and adapt more successful negotiation techniques and conflict resolution strategies. Also, it may be useful to adapt certain skills and techniques within interventions for those individuals who may use certain pathways to offend in accordance with the self-regulation model (Ward & Hudson, 2000). For example, for those who may use the avoidant-passive pathway, it may be important to focus on increasing awareness of the process of offending and developing specific skills and abilities to help them deal with problems more appropriately and effectively (Ward et al., 2006). For those using the approach pathways, it may help to build on self-regulation skills to change their positive beliefs on abusive behaviour. However, it is suggested that this should only be carried out after a fundamental shift in motivation to offend has occurred (Day & Bowen, 2015) as the attempt to regulate

behaviour without the change of positive beliefs regarding abuse may instead facilitate the approach-explicit pathway (Yates & Ward, 2008).

The examination of own perpetration and victimisation experiences, and their partner's perpetration and victimisation experiences, in both men and women, provide valuable contributions to the existing literature by eliminating some methodological issues and gender bias. The results enhance the understanding of IPV etiology and its implications and can be used to guide practice and policy.

Limitations and future research

Although this research adds valuable insight into the effects of trauma, attachment, and resilience on IPV perpetration and victimisation, the findings of this research must be interpreted with consideration to its limitations. Due to using a cross-sectional design, it can be highlighted that it may be difficult to determine whether traumatic experiences and attachment insecurity led to IPV perpetration and victimisation in time, or whether IPV was a result of trauma experiences and insecure attachment. In other words, difficult to determine cause and effect. To overcome this, it may be valuable to conduct follow-up qualitative research to avoid this and assure that the data obtained at that particular time frame can enhance validity of associations outlined.

This research employed self-report questionnaire design which may be problematic. Self-reports may provide inaccurate information (Holden, Wheeler, & Marjanovic, 2012) due to social desirability (Logan, Claar, & Scharff, 2008) and impression management (Johnson, Sivadas, & Kashyap, 2009). For example, participants may be reluctant to report their IPV experiences, whether perpetration or victimisation, which may influence the reliability of the findings. Also, despite the advantages, it is recognised that although self-reports, using the Conflict Tactics Scales 2 (CTS) (Straus, 1997), have been the most common type methods to

assess IPV, reporting biases are inevitable. Researchers have also argued that men and women may exhibit different styles of reporting violence, for example, men may under report and women may over report (Chan, 2011) which may influence research conclusions. In addition to this memory and response bias can impact the validity of questionnaires used. Future research could instead use observational study designs to perceive interactions between intimate partners.

An important critique relates to the method of which data was coded. For example, one of the category of the Trauma History Questionnaire (Green B., 1996) was 'other trauma,' and findings revealed some associations between this type of trauma and IPV perpetration/victimisation. This subtype was made up of item 24 from the questionnaire, which provided participants to identify a trauma they had experienced but not mentioned in the other 23 items of the scale. Although majority of participants had reported this as 'stress' due to university, this made it difficult to interpret and assess the associations that were found. To overcome this difficulty, item 24 could be assessed individually according to the type of trauma reported, or grouped into the other four categories.

In relation to the attachment scale, to examine security and insecurity, the data was coded and groups were split into 'secure' and 'insecure,' using scores of 21 and below to classify as 'secure' and over 21 to classify as 'insecure.' Although this provided a reasonable method of dividing the groups, arguably, those who scored 21 on this would be neither secure or insecure, yet were put into the 'secure' group. This may implicate the findings discussed. Similar difficulties may be found with the resilience scale and the method of how high and low resilience were categorised. Furthermore, although the questionnaire instructed participants at the beginning to record trauma incidents which occurred in childhood, as the age of the participant at which trauma occurred was not considered, whether these truly reflected childhood trauma, can be questionable.

In relation to the CTS2, researchers have argued that this act-based measure used by family interaction researchers consider acts out of context, and do not address the consequences, motivations, and intentions behind the partner violence (Dobash & Dobash, 2004). The authors also highlight concerns about the measures' external validity, which can be applied to this research as the population consists of a general student and public sample. The meaning of certain behavioural acts are neglected, and researchers interpret both partners as 'violent,' irrespective of the difference in frequency of acts between the two couple. Further limitations have been highlighted in a review critically evaluating the CTS2 (Jones, Browne, & Chou, 2017).

However, Straus and Mickey (2012) persisted with the advantageous uses of the CTS2. They concluded that the scale had "adequate to high internal consistency reliability, high sensitivity, and good construct validity in male-dominant nations as well as in relatively gender-equal nations," (p.8). The authors also acknowledged that other partner violence measures that have been developed tend to ignore the dyadic nature of relationships as they ask participants of their victimisation experiences (Hegarty et al., 1999), whereas, as current findings as well as previous research has suggested that women also perpetrate violence. In addition, physical sexual, and psychological abuse are often confounded and therefore, the CTS provides reliable and well-validated separate subscales for each of these behaviours and can be used to create a measure of polyvictimisation. Overall, The CTS is said to be the only instrument that addresses the dyadic nature of partner violence by measuring acts of both partners, in terms of perpetration and victimisation, and therefore, is described to be a robust psychometric measure (Straus & Mickey, 2012). However, to enhance clinical utility, future research should administer this alongside other measures or interviews that can provide further information regarding the context and motivations of IPV.

Further, findings revealed a significant association between experiencing a crime-related event and financial control IPV, however, the specific type of crime-related event remains unclear. In relation to these results, the association between experiencing a mugging or a crime-related event involving money and experiencing financial control may further enhance the support of theories such as IGT of violence. As well as this, it may also provide a clear understanding to how this theory uses modelling behaviours to explain the direct link between the similarity of trauma experienced and IPV perpetration or victimisation. Therefore, it may useful to explicitly examine in further detail the precise nature of the trauma event and how this impact IPV.

Additional limitations related to the nature of analysing perpetration and victimisation separately. Although these findings demonstrate an understanding that trauma, attachment, and resilience have different impacts on perpetration and victimisation, there is existing literature that argues an overlap between perpetration and victimisation (Richards, Tillyer, & Steiner, 2017; Tillyer & Wright, 2015). By assessing perpetration and victimisation separately, important factors that related to both may be given less attention. Therefore, future research should consider that it may be important to explore and discuss in detail overlapping risk factors of IPV perpetration and victimisation.

To conclude, as this research investigated different trauma experiences in conjunction with attachment styles across parental and partner domains, and the impact of resilience on IPV, it can be argued that these findings add significant value to existing literature and can be used to guide practise and policy. This risk factor approach, evidence based, and population orientated research can also aim to provide IPV prevention strategies across the general population as well as offenders in IPV treatment programmes.

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Appendices

Appendix 1 – Trauma History Questionnaire

Green, B., (1996). Trauma History Questionnaire. In B. H. Stamm (Ed.), *Measurement of stress, trauma, and adaptation* (pp. 366-369). Lutherville, MD: Sidran Press.

Please be aware that the following questions will ask you about various traumatic events which may have happened in your childhood. This may cause distress. You are under no obligation to continue with the questionnaire if you feel you may become distressed by the subsequent questions.

Trauma History Questionnaire.

This questionnaire will ask you a series of questions about serious or traumatic life events. The questionnaire is divided into questions covering crime experiences, general disaster and trauma questions, and questions about physical and sexual experiences.

For each event, please indicate if you experienced this event, and if you did, the number of times this event occurred and your approximate age when it happened (give your best guess if you are not sure).

****

				If Yes	
				No. of Times	Approx. Age
1.	Has anyone ever tried to take something directly from you by using force or the threat of force, such as a stick-up or mugging?	No	Yes	_____	_____
2.	Has anyone ever attempted to rob you or actually robbed you (i.e. stolen your personal belongings)?	No	Yes	_____	_____

3. Has anyone ever attempted to or succeeded in breaking into your home when you weren't there? No Yes _____ _____

4. Has anyone ever tried to or succeeded in breaking into your home while you were there? No Yes _____ _____

5. Have you ever had a serious accident at work, in a car or somewhere else? No Yes _____ _____
If yes, please specify

_____

6. Have you ever experienced a natural disaster such as a tornado, hurricane, flood, major earthquake, etc., where you felt you or your loved ones were in danger of death or injury? No Yes _____ _____
If yes, please specify

_____

7. Have you ever experienced a "man-made" disaster such as a train crash, building collapse, bank robbery, fire, etc., where you felt you or your loved ones

were in danger of death or injury? No Yes _____ _____

If yes, please specify

_____

8. Have you ever been exposed to dangerous chemicals or radioactivity that might threaten your health? No Yes _____ _____

Have you ever been in any other situation in which you were seriously injured? No Yes _____ _____

If yes, please specify

_____

10. Have you ever been in any other situation in which you feared you might be killed or seriously injured? No Yes _____ _____

If yes, please specify

_____

11. Have you ever seen someone seriously injured or killed? No Yes _____ _____

If yes, please specify who

_____

12. Have you ever seen dead bodies (other than at a funeral) or had to handle dead bodies for any reason? No Yes _____ _____

If yes, please specify

_____

13. Have you ever had a close friend or family member murdered, or killed by a drunk driver? No Yes _____ _____

If yes, please specify relationship (e.g.mother, grandson,etc.)

_____

14. Have you ever had a spouse, romantic partner, or child die? No Yes _____ _____

If yes, please specify Relationship

_____

15. Have you ever had a serious or life-threatening illness? No Yes _____ _____

If yes, please specify

_____

16. Have you ever received news of a serious injury, life-threatening illness or unexpected death of someone close to you?
If yes, please indicate No Yes _____ _____

_____

17. Have you ever had to engage in combat while in military service in an official or unofficial war zone? No Yes _____ _____

If yes, please indicate where.

_____

18. Has anyone ever made you have intercourse, oral or anal sex against your will? No Yes _____ _____
If yes, please indicate nature of relationship with person (e.g. stranger, friend, relative, parent, sibling) _____

19. Has anyone ever touched private parts of your body, or made you touch theirs,

under force or threat?
If yes, please indicate
nature of relationship with
person (e.g. stranger,
friend, relative, parent,
sibling) No Yes _____ _____

_____

20. Other than incidents mentioned
in Questions 18 and 19, have
there been any other situations
in which another person tried
to force you to have unwanted
sexual contact? No Yes _____ _____

21. Has anyone, including family
members or friends, ever
attacked you with a gun,
knife or some other weapon? No Yes _____ _____

22. Has anyone, including family
members or friends, ever
attacked you without a weapon
and seriously injured you? No Yes _____ _____

23. Has anyone in your family
ever beaten, "spanked" or

pushed you hard enough to cause injury? No Yes _____ _____

24. Have you experienced any other extraordinarily stressful situation or event that is not covered above? No Yes _____ _____

If yes, please specify.

_____

Appendix 2 – Trauma History Questionnaire used in Study 2

Trauma History Questionnaire

Please be aware that the following questions will ask you about various traumatic events which may have happened in your childhood. The questionnaire is divided into questions covering crime, general disaster and trauma, and physical and sexual experiences. This may cause distress. You are under no obligation to continue with the questionnaire if you feel you may become distressed by the subsequent questions.

For each event, please indicate if you experienced this event by circling 'yes' or 'no,' and if you did, the number of times this event occurred to **you** and **your** approximate age when it happened (give your best guess if you are not sure). Also, for each event that has occurred, please circle the severity of this experience. If an event has occurred more than once, please indicate the severity of the one that you perceived to be the most severe event.

Below is an example of a completed question:

	If Yes	***No. of times this happened to you***	***Your approximate age (s) when this happened***
1. Has anyone ever tried to take something directly from you by using force or the threat of force, such as a stick-up or mugging?	***(Yes)*** / ***No***	***2***	***9 years old*** / ***16 years old***

Severity (***Your perception of severity***)	***Not severe***	***Minimal/ mild severity***	***Moderate severity***	***Severe***	***Very severe***
	1	***2***	***3***	***4***	***(5)***

	If Yes	No. of times this happened to **you**		**Your** approximate age (s) when this happened	
1. Has anyone ever tried to take something directly from you by using force or the threat of force, such as a stick-up or mugging?	Yes No				
Severity (Your perception of severity)	Not severe	Minimal/mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**		**Your** approximate age (s) when this happened	
2. Has anyone ever attempted to rob you or actually robbed you (i.e. stolen your personal belongings)?	Yes No				
Severity (Your perception of severity)	Not severe	Minimal/mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**		**Your** approximate age (s) when this happened	
3. Has anyone ever attempted to or succeeded in breaking into your home when you weren't there?	Yes No				
Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

		If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
4. Has anyone ever tried to or succeeded in breaking into your home while you were there?		Yes No		
Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5
		If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
5. Have you ever had a serious accident at work, in a car or somewhere else? If yes, please specify		Yes No		
Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
		If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
6. Have you ever experienced a natural disaster such as a tornado, hurricane, flood, major earthquake, etc., where you felt you or your loved ones were in danger of death or injury? If yes, please specify		Yes No		
Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe

	If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
7. Have you ever experienced a "man-made" disaster such as a train crash, building collapse, bank robbery, fire, etc., where you felt you or your loved ones were in danger of death or injury? If yes, please specify	Yes No		

Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
8. Have you ever been exposed to dangerous chemicals or radioactivity that might threaten your health?	Yes No		

Severity (Your perception of severity)	Not severe	Minimal/mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened

9. Have you ever been in any other situation in which you were seriously injured? <u>If yes,</u> please specify Yes No					
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5
	<u>If Yes</u>	No. of times this happened to **<u>you</u>**		**<u>Your</u>** approximate age (s) when this happened	
10. Have you ever been in any other situation in which you feared you <u>might</u> be killed or seriously injured? <u>If yes,</u> please specify Yes No					
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5
	<u>If Yes</u>	No. of times this happened to **<u>you</u>**		**<u>Your</u>** approximate age (s) when this happened	
11. Have you ever seen someone seriously injured or killed? <u>If yes,</u> please specify who Yes No					
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	<u>If Yes</u>	No. of times this happened to **<u>you</u>**		**<u>Your</u>** approximate age (s) when this happened	
12. Have you ever seen dead bodies (other than at a funeral) or had to handle dead bodies for any reason? **<u>If yes,</u> please specify** [ ]	Yes No				
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	<u>If Yes</u>	No. of times this happened to **<u>you</u>**		**<u>Your</u>** approximate age (s) when this happened	
13. Have you ever had a close friend or family member murdered, or killed by a drunk driver? <u>If yes,</u> please specify relationship (e.g.mother, grandson,etc.) [ ]	Yes No				
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5
	<u>If Yes</u>	No. of times this happened to **<u>you</u>**		**<u>Your</u>** approximate age (s) when this happened	

14. Have you ever had a spouse, romantic partner, or child die? <u>If yes,</u> please specify relationship	Yes No				
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5
<u>If Yes</u>	No. of times this happened to **<u>you</u>**			**<u>Your</u>** approximate age (s) when this happened	
15. Have you ever had a serious or life-threatening illness? If yes, please specify	Yes No				
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	<u>If Yes</u>	No. of times this happened to **<u>you</u>**		**<u>Your</u>** approximate age (s) when this happened	
16. Have you ever received news of a serious injury, life-threatening illness or unexpected death of someone close to you? <u>If yes</u>, please indicate	Yes No				
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe

	1	2	3	4	5
	<u>If Yes</u>	No. of times this happened to **<u>you</u>**		**<u>Your</u>** approximate age (s) when this happened	
17. Have you ever had to engage in combat while in military service in an official or unofficial war zone? **If yes, please indicate where**.	Yes No				
<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

<u>If Yes</u>	No. of times this happened to **<u>you</u>**	**<u>Your</u>** approximate age (s) when this happened	
18. Has anyone ever made you have interco oral or anal sex against your will? <u>If yes,</u> please indicate nature of relationship with person (e.g. stra friend, relative, parent, sibling).	Yes No		

<u>Severity</u> (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**		**Your** approximate age (s) when this happened	
19. Has anyone ever touched private parts of your body, or made you touch theirs, under force or threat? If yes, please indicate nature of relationship with person (e.g. stranger, friend, relative, parent, sibling)	Yes No				
Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**		**Your** approximate age (s) when this happened	
20. Other than incidents mentioned in Questions 18 and 19, have there been any other situations in which another person tried to force you to have unwanted sexual contact?	Yes No				
Severity (Your perception of severity)	Not severe	Minimal/mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
21. Has anyone, including family members or friends, ever attacked you with a gun, knife or some other weapon?	Yes No		

Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
22. Has anyone, including family members or friends, ever attacked you without a weapon and seriously injured you?	Yes No		

Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**	**Your** approximate age (s) when this happened
23. Has anyone in your family ever beaten, "spanked" or pushed you hard enough to cause injury?	Yes No		

Severity (Your perception of severity)	Not severe	Minimal/ mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

	If Yes	No. of times this happened to **you**		**Your** approximate age (s) when this happened	
24. Have you experienced any other extraordinarily stressful situation or event that is not covered above? If yes, please specify.	Yes No				
Severity (Your perception of severity)	Not severe	Minimal/mild severity	Moderate severity	Severe	Very severe
	1	2	3	4	5

Appendix 3 – Experiences in Close Relationships-Relationship Structures Questionnaire (Fraley, Heffernan, & Brumbaugh, 2011)

This questionnaire is designed to assess the way in which you mentally represent important people in your life. You'll be asked to answer questions about your parents and your romantic partners. Please indicate the extent to which you agree or disagree with each statement by circling a number for each item.

Please answer the following questions about your mother or a mother-like figure

1. It helps to turn to this person in times of need.
strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.
strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.
strongly disagree 1 2 3 4 5 6 7 strongly agree

Please answer the following questions about your father or a father-like figure

1. It helps to turn to this person in times of need.
strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.
strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.
strongly disagree 1 2 3 4 5 6 7 strongly agree

Please answer the following questions about your dating or marital partner.

Note: If you are not currently in a dating or marital relationship with someone, answer these questions with respect to a former partner or a relationship that you would like to have with someone.
Please circle for this questionnaire who you are referring to: former partner / ideal partner

1. It helps to turn to this person in times of need.
strongly disagree 1 2 3 4 5 6 7 strongly agree

2. I usually discuss my problems and concerns with this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

3. I talk things over with this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

4. I find it easy to depend on this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

5. I don't feel comfortable opening up to this person.
strongly disagree 1 2 3 4 5 6 7 strongly agree

6. I prefer not to show this person how I feel deep down.
strongly disagree 1 2 3 4 5 6 7 strongly agree

7. I often worry that this person doesn't really care for me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

8. I'm afraid that this person may abandon me.
strongly disagree 1 2 3 4 5 6 7 strongly agree

9. I worry that this person won't care about me as much as I care about him or her.
strongly disagree 1 2 3 4 5 6 7 strongly agree

Appendix 4 – The Resilience Scale (Wagnild & Young, 1993)

Resilience Scale

Please read the following statements. To the right of each you will find seven numbers ranging from "1" (Strongly Disagree) on the left to "7" (Strongly Agree) on the right. Circle the numbers which best indicate your feelings about that statement.

For example, if you strongly disagree with a statement, circle "1." If you are neutral, circle "4," and if you strongly agree, circle "7" etc.

	Strongly Disagree						Strongly Agree
1. When I make plans, I follow through with them.	1	2	3	4	5	6	7
2. I usually manage one way or another.	1	2	3	4	5	6	7
3. I am able to depend on myself more than anyone else.	1	2	3	4	5	6	7
4. Keeping interested in things is important to me.	1	2	3	4	5	6	7
5. I can be on my own if I have to.	1	2	3	4	5	6	7
6. I feel proud that I have accomplished things in life.	1	2	3	4	5	6	7
7. I usually take things in stride.	1	2	3	4	5	6	7
8. I am friends with myself.	1	2	3	4	5	6	7
9. I feel that I can handle many things at a time.	1	2	3	4	5	6	7
10. I am determined.	1	2	3	4	5	6	7
11. I seldom wonder what the point of it all is.	1	2	3	4	5	6	7
12. I take things one day at a time.	1	2	3	4	5	6	7
13. I can get through difficult times because I've experienced difficulty before.	1	2	3	4	5	6	7
14. I have self-discipline.	1	2	3	4	5	6	7
15. I keep interested in things.	1	2	3	4	5	6	7
16. I can usually find something to laugh about.	1	2	3	4	5	6	7
17. My belief in myself gets me through hard times.	1	2	3	4	5	6	7
18. In an emergency, I'm someone people can generally rely on.	1	2	3	4	5	6	7
19. I can usually look at a situation in a number of ways.	1	2	3	4	5	6	7
20. Sometimes I make myself do things whether I want to or not.	1	2	3	4	5	6	7
21. My life has meaning.	1	2	3	4	5	6	7
22. I do not dwell on things that I can't do anything about.	1	2	3	4	5	6	7
23. When I'm in a difficult situation, I can usually find my way out of it.	1	2	3	4	5	6	7
24. I have enough energy to do what I have to do.	1	2	3	4	5	6	7
25. It's okay if there are people who don't like me.	1	2	3	4	5	6	7

Appendix 5 – Conflict Tactics Scale 2 (CTS2) (Straus et al., 1996)

RELATIONSHIP BEHAVIOURS

No matter how well a couple gets along, there are times when they disagree, get annoyed with the other person, want different things from each other, or just have spats or fights because they are in a bad mood, are tired, or for some other reason. Couples also have many different ways of trying to settle their differences. This is a list of things that might happen when you have differences. Please circle how many times you did each of these things in the past year, and how many times your partner did them in the past year. If you or your partner did not do one of these things in the past year, but it happened before that, circle "7."

How often did this happen?

1 = Once in the past year

2 = Twice in the past year

3 = 3-5 times in the past year

4 = 6-10 times in the past year

5 = 11-20 times in the past year

6 = More than 20 times in the past year

7 = Not in the past year, but it did happen before

0 = This never happened

1.	I showed my partner I cared even though we disagreed.	1	2	3	4	5	6	7	0
2.	My partner showed care for me even though we disagreed.	1	2	3	4	5	6	7	0
3.	I explained my side of a disagreement to my partner.	1	2	3	4	5	6	7	0
4.	My partner explained his or her side of a disagreement to me.	1	2	3	4	5	6	7	0
5.	I insulted or swore at my partner.	1	2	3	4	5	6	7	0
6.	My partner did this to me.	1	2	3	4	5	6	7	0
7.	I threw something at my partner that could hurt	1	2	3	4	5	6	7	0
8.	My partner did this to me.	1	2	3	4	5	6	7	0
9.	I twisted my partner's arm or hair.	1	2	3	4	5	6	7	0
10.	My partner did this to me.	1	2	3	4	5	6	7	0
11.	I had a sprain, bruise, or small cut because of a fight with my partner.	1	2	3	4	5	6	7	0
12.	My partner had a sprain, bruise, or small cut because of a fight with me/	1	2	3	4	5	6	7	0
13.	I showed respect for my partner's feelings about an issue	1	2	3	4	5	6	7	0

14.	My partner showed respect for my feelings about an issue.	1	2	3	4	5	6	7	0
15.	I made my partner have sex without a condom.	1	2	3	4	5	6	7	0
16.	My partner did this to me.	1	2	3	4	5	6	7	0
17.	I pushed or shoved my partner.	1	2	3	4	5	6	7	0
18.	My partner did this to me.	1	2	3	4	5	6	7	0
19.	I used force (like hitting, holding down, or using a weapon) to make my partner have oral or anal sex.	1	2	3	4	5	6	7	0
20.	My partner did this to me.	1	2	3	4	5	6	7	0
21.	I used a knife or gun on my partner.	1	2	3	4	5	6	7	0
22.	My partner did this to me.	1	2	3	4	5	6	7	0
23.	I passed out from being hit on the head by my partner in a fight.	1	2	3	4	5	6	7	0
24.	My partner passed out from being hit on the head in a fight with me.	1	2	3	4	5	6	7	0
25.	I called my partner fat or ugly.	1	2	3	4	5	6	7	0
26.	My partner called me fat or ugly.	1	2	3	4	5	6	7	0
27.	I punched or hit my partner with something that could hurt.	1	2	3	4	5	6	7	0
28.	My partner did this to me.	1	2	3	4	5	6	7	0
29.	I destroyed something belonging to my partner.	1	2	3	4	5	6	7	0
30.	My partner did this to me.	1	2	3	4	5	6	7	0
31.	I went to a doctor because of a fight with my partner.	1	2	3	4	5	6	7	0
32.	My partner went to a doctor because of a fight with me.	1	2	3	4	5	6	7	0
33.	I choked my partner.	1	2	3	4	5	6	7	0
34.	My partner did this to me	1	2	3	4	5	6	7	0
35.	I shouted or yelled at my partner.	1	2	3	4	5	6	7	0
36.	My partner did this to me.	1	2	3	4	5	6	7	0
37.	I slammed my partner against a wall.	1	2	3	4	5	6	7	0
38.	My partner did this to me.	1	2	3	4	5	6	7	0
39.	I said I was sure we could work out a problem.	1	2	3	4	5	6	7	0
40.	My partner was sure we could work out a problem.	1	2	3	4	5	6	7	0

41.	I needed to see a doctor because of a fight with my partner, but I didn't.	1	2	3	4	5	6	7	0
42.	My partner needed to see a doctor because of a fight with me, but didn't.	1	2	3	4	5	6	7	0
43.	I beat up my partner.	1	2	3	4	5	6	7	0
44.	My partner did this to me.	1	2	3	4	5	6	7	0
45.	I grabbed my partner.	1	2	3	4	5	6	7	0
46.	My partner did this to me.	1	2	3	4	5	6	7	0
47.	I used force (like hitting, holding down, or using a weapon to make my partner have sex.	1	2	3	4	5	6	7	0
48.	My partner did this to me.	1	2	3	4	5	6	7	0
49.	I stomped out of the room or house or yard during a disagreement.	1	2	3	4	5	6	7	0
50.	My partner did this to me.	1	2	3	4	5	6	7	0
51.	I insisted on sex when my partner did not want to (but did not use physical force).	1	2	3	4	5	6	7	0
52.	My partner did this to me	1	2	3	4	5	6	7	0
53.	I slapped my partner.	1	2	3	4	5	6	7	0
54.	My partner did this to me.	1	2	3	4	5	6	7	0
55.	I had a broken bone from a fight with my partner.	1	2	3	4	5	6	7	0
56.	My partner had a broken bone from a fight with me.	1	2	3	4	5	6	7	0
57.	I used threats to make my partner have oral or anal sex with	1	2	3	4	5	6	7	0
58.	My partner did this to me.	1	2	3	4	5	6	7	0
59.	I suggested a compromise to a disagreement.	1	2	3	4	5	6	7	0
60.	My partner did this to me.	1	2	3	4	5	6	7	0
61.	I burned or scalded my partner on purpose.	1	2	3	4	5	6	7	0
62.	My partner did this to me.	1	2	3	4	5	6	7	0
63.	I insisted my partner have oral or anal sex (but did not use physical force).	1	2	3	4	5	6	7	0

64.	My partner did this to me.	1	2	3	4	5	6	7	0
65.	I accused my partner of being a lousy lover.	1	2	3	4	5	6	7	0
66.	My partner accused me of this.	1	2	3	4	5	6	7	0
67.	I did something to spite my partner.	1	2	3	4	5	6	7	0
68.	My partner did this to me.	1	2	3	4	5	6	7	0
69.	I threatened to hit or throw something at my partner.	1	2	3	4	5	6	7	0
70.	My partner did this to me.	1	2	3	4	5	6	7	0
71.	I felt physical pain that still hurt the next day because of a fight with my partner.	1	2	3	4	5	6	7	0
72.	My partner still felt physical pain the next day because of a fight with me.	1	2	3	4	5	6	7	0
73.	I kicked my partner.	1	2	3	4	5	6	7	0
74.	My partner did this to me.	1	2	3	4	5	6	7	0
75.	I used threats to make my partner have sex.	1	2	3	4	5	6	7	0
76.	My partner did this to me.	1	2	3	4	5	6	7	0
77.	I agreed to try a solution to a disagreement my partner suggested.	1	2	3	4	5	6	7	0
78.	My partner agreed to try a solution I suggested.	1	2	3	4	5	6	7	0

Appendix 6 – six items of financial control extracted from the Measure of Control and Abusive Tactics scale (Hamel et al., 2015).

Circle how often you and your partner, or most recent ex-partner, engage or have engaged in the behaviours listed below, using the following scale. The column 'partner did this' is for THIER behaviour against you, the column 'I did this' is for YOUR behaviour against partner/ex-partner.

0 = never 1 = rare 2 = occasional 3 = common 4 = frequent

	Partner did this	**I did this**
1. Controls the money and excludes. partner from financial decisions.	0 1 2 3 4	0 1 2 3 4
2. Spends money excessively or lies about expenses.	0 1 2 3 4	0 1 2 3 4
3. Refuses to work or contribute financially.	0 1 2 3 4	0 1 2 3 4
4. Withholds child support.	0 1 2 3 4	0 1 2 3 4
5. Demands unreasonable child support or lies to get more of it.	0 1 2 3 4	0 1 2 3 4
6. Threatens to have partner fired.	0 1 2 3 4	0 1 2 3 4

Appendix 7 – Briefing sheet

Brief

My name is Almas Chilmai and I am conducting this piece of research for my PhD thesis in Forensic Psychology under the supervision of Dr Nicola Graham-Kevan and Dr Gayle Brewer at the University of Central Lancashire. This study investigates the effects of childhood trauma on intimate partner violence perpetration. If you agree to take part, you will be asked to complete a series of questionnaires, which focus on a range of sensitive subjects including childhood trauma, crime, close personal relationships, intimate partner violence, and resilience.

I would greatly appreciate if you could help me in my research by filling out a questionnaire booklet that should take approximately 20 minutes to complete. Participation in this study is purely voluntary. Please do not participate if you feel you would be distressed by this. Whilst we would like you to answer as many questions as possible if there are any questions that you do not wish to answer then please feel free to leave them blank. If you decide to take part but later change your mind, you can withdraw your data at any time until submission. Withdrawal after submission is not possible, as all the data is anonymous and your responses cannot be identified.

To take part in this study you must be aged 18 or over, be in a current relationship or have had a previous relationship lasting at least 1 month. If this does not apply to you then return this questionnaire to the researcher or in the appropriate box located in Darwin Building, First Floor, near to room 135 in **BOX 37**. Please continue reading if this does apply to you and still wish to take part.

All responses will be anonymous and we will only ask for general information (e.g. age, gender) explore general differences (e.g. differences between men and women). Please **DO NOT** write your name on the questionnaire. No one can be identified from what they have written and no one except the researcher and research collaborators will see the data. Please answer the questions as honestly as possible and return your completed questionnaire to the researcher in person or to **BOX 37** located in Darwin Building, First Floor, near to room 135. If you decide that you do not want to take part but have started to complete the questionnaire, please destroy this or ask the researcher to do so.

There are sources of support listed on the debriefing sheet if you feel you need free confidential advice after completing the questionnaire. Also, if you would like some further information before participating in this study, please contact:

Almas Chilmai – achilmai@uclan.ac.uk
Nicola Graham-Kevan – ngraham-kevan@uclan.ac.uk
Gayle Brewer – gbrewer@uclan.ac.uk

If you are unhappy or have concerns about any aspect of the project, you can contact the University Officer for Ethics (OfficerForEthics@UCLan.ac.UK) who is entirely independent of the research and will respond to your concerns.

Appendix 8 – De-brief

Debrief

Please detach and keep these two pages for your information

Thank you for participating in this study.

In England and Wales an estimated 1.2 million women and 700,000 men reported being victims of any types of intimate partner violence (IPV) in 2013. Moreover, an estimated 4.9 million women and 2.7 million men reported being victimised by IPV since the age of 16. (Office for National Statistics, 2014). Apart from injuries and even deaths in some cases, physical intimate partner violence has been associated with a number of adverse health concerns. Such as bruises, wounds, traumatic brain injury, asthma, bladder and kidney infections, chronic pain syndromes, joint diseases and many more (Black, 2011). Psychological consequences for victims can include depression, Post Traumatic Stress Disorder (PTSD), low self-esteem, fear of intimacy, sleep disturbances and many more (Warshaw & Brashler, 2009).

This study explores the effects of childhood trauma on physical intimate partner violence perpetration as well as controlling behaviours such as emotional, sexual and financial abuse. It also explored the effects of trauma on attachment styles and how this influenced intimate partner violence. The trauma questionnaire measured any traumatic experience that you have experienced during your childhood and the number of times these occurred. The attachment styles questionnaire assesses the way you represent the important people in your life, these include your parents and your romantic partner. The intimate partner violence perpetration scales consisted of physical, emotional, sexual and financial abuse and measures the types of abuse that you may have perpetrated towards an intimate partner.

The aim of the study is to investigate whether individuals that have experienced any type of trauma during childhood are more likely to perpetrate intimate partner violence and controlling behaviours towards their partners due do a number of different reasons. These can include unhealthy childhood upbringing, emotion dysregulation and PTSD affecting psychological well-being in adult relationships. Resilience is also measured in this questionnaire to be mindful of people who experience trauma yet develop a healthy psychological well-being, including attachment styles (Martinez-Torteya et al, 2009).

If you have had an adverse effect by any of the issued raised and would like some free confidential advice or just somebody to talk to, the following services are available.

- UCLan Counselling Services – 01772 892572; Email: corecep@uclan.ac.uk

This service is available for UCLan students, which offers free, confidential advice for any concerns, problems, issued or general worries.

- Victim Supportline – 08453030900; Victim Supportline provides information and support for anyone affected by crime. A number for a 24-hour national domestic violence helpline that can be contacted is 08082000247. Helpline for men in an abusive relationship is 08450646800.
- Crime Stoppers – 0800555111
- Samaritans – 08457909090

Please return your completed questionnaire to the researcher in person or to **BOX 37** located in Darwin Building, First Floor, near to room 135. If you decide that you do not want to take part but have started or completed the questionnaire please destroy this or ask the researcher to do so.

If you wish to be kept updated of the results of this study or for any further information regarding this research or any other information, queries and concerns about this topic and study, please feel free to contact me or my supervisors using the following details:

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If you are unhappy or have concerns about any aspect of the project, you can contact the University Officer for Ethics (OfficerForEthics@UCLan.ac.UK) who is entirely independent of the research and will respond to your concerns.

Appendix 9 – Data Screening

Data Screening

Study 1

Examining the data file

There were a total of 275 respondents that were entered into an SPSS data file. A value of '-99' was entered into all variables that were left blank, which represented to a missing value. Before conducting any analyses, a data screening procedure was conducted which included identifying errors such as missing data, data entry errors, patterns of missing data, univariate and multivariate outliers and normality of distribution. The inclusion criteria consisted of all participants that had fully completed all questionnaires, all participants that had completed the trauma questionnaire, regardless of further details such as the age when event occurred, or further details regarding the event, and all participants that had completed the relationship behaviour questionnaire. Participants that had complete the trauma scale and the relationship behaviour scale but not the financial control or the resilience scale were still included as analysis was conducted separately. However, 29 participants were removed due to incompletion of single and multiple scales within the questionnaire booklet. Participant number 8, 9, 18, 19, 20, 24, 25, 28, 29, 31, 94, 101, 102, 126, 174, 177, 191, 222, 226, 230, 232, 233, 235, and 237 were removed as the whole CTS2 scale, financial control items and the Resilience Scale was not filled out. Participant number 12 and 32 were removed as the Resilience Scale was not filled out. Participant number 135 and 144 were removed as they had not filled out the CTS2 scale and the financial control items. Finally, participant number 218 was removed and the financial control items and the Resilience Scale was not filled out. A total of 246 cases remained.

Identifying and dealing with data entry errors

Using the explore function to identify any data entry errors, the following scales were explored: 'TotalNumberOfTrauma', 'CrimeRelatedEvent', 'GeneralDisasterAndTrauma', 'UnwantedSexualExperiences', 'UnwantedPhysicalExperience,' 'OtherTrauma,' 'ParticipantNegotiation,' 'PartnerNegotiation,' 'PsychologicalAggressionPerpetration,' 'PsychologicalAggressionVictimisation,' 'PhysicalAssaultPerpetration,' 'PhysicalAssaultVictimisation,' 'SexualCoercionPerpetration,' 'SexualCoercionVictimisation,' 'InjuryPerpetration,' 'InjuryVictimisation,' 'FinancialControlPerpetration,' 'FinancialControlVictimisation,' 'FCGeneralPerpetration,' 'FCChildPerpetration,' 'FCGeneralVictimisation,' 'FCChildVictimisation,' and 'ResilienceScore.'

The 'Extreme Values' box showed the top five highest and lowest scores for each variable. However, 'TotalNumberOfTrauma', 'CrimeRelatedEvent', 'GeneralDisasterAndTrauma', 'UnwantedSexualExperiences', 'UnwantedPhysicalExperiences' and 'OtherTrauma,' were continuous scales so highest or lowest value did not apply to these. For 'ParticipantNegotiation' and 'PartnerNegotiation,' the highest value that could be reported was 150 and lowest was 0. For 'PsychologicalAggressionPerpetration' and 'PsychologicalAggressionVictimisation,' the highest value that could be reported was 200 and lowest was 0. For 'PhysicalAssaultPerpetration' and 'PhysicalAssaultVictimisation,' the highest value that could be reported was 300 and lowest was 0. For 'SexualCoercionPerpetration' and

‘SexualCoercionVictimisation,’ the higest value that could be reported was 175 and lowest was 0. Lastly, for the ‘InjuryPerpetration’ and ‘InjuryVictimisation’ scales, the highest value that could be entered was 150 and the lowest was 0. For ‘FinancialControlPerpetration’ and ‘FinancialControlVictimisation,’ the highest valued that could be entered was 24 and lowest was 0. For ‘FCGeneralPerpetration’ and ‘FCGeneralVictimisation,’ the highest value that could be entered was 16 and lowest was 0. For ‘FCChildPerpetration’ and ‘FCChildVictimisation,’ the highest value that could be entered was 8 and lowest was 0. For the ‘ResilienceScore,’ the highest value that could be entered was 175 and lowest was 25. The ‘Extreme Values’ box showed no out of range values.

Examining the amount of missing data and missing data patterns

This study dealt with missing values on an item-level rather than on a scale-level to mitigate the loss in power. A missing value analysis was conducted on all trauma variables (TotalNumberOfTrauma, CrimeRelatedEvent, GeneralDisasterAndTrauma, UnwantedSexualExperiences, UnwantedPhysicalExperiences and OtherTrauma) and showed no missing data. The variables that represented the number of times the trauma event occurred and the approximate were all string variables, and therefore, a missing value analysis could not be conducted on these.

Next, a Missing Value Analysis was conducted with the relationship behaviour items (rb1-rb78), financial control items and resilience items. For the purpose of obtaining the Little’s MCAR Test, after all these variables were moved into the Quantitative Variables box, the ‘EM’ tab was also selected. The ‘Missing Patterns’ box indicated a pattern of missing data, represented by ‘A’s’ on the same rows. Also, the Little’s MCAR test showed a pattern of missing data, X^2 (1269) = 1484.48², $p < .001$.

To deal with this, missing data were replaced by the means of each scale. Although originally the value of '-99' was inserted into each cell that the participants had left blank, these were removed in order for the mean to be calculated correctly. First, a mean variable was computed for each scale with the use of a syntax. It was decided that 1 more than half of the values in each scale had to be entered to calculate the mean. For example, the mean score of 'ParticipantNegotiation,' there were 6 items making up this scale, so as half of this is 3, a minimum of 4 values had to be entered for a mean score to be calculated most accurately, e.g. MEAN.4(rb3,rb59,rb1,rb39,rb77,rb13). This was carried out for each variable. For 'SexualCoercionPerpterationMean' and 'SexualCoercionVictimisationMean' there were 7 items comprising this variable, therefore, it was decided that a minimum of 5 items had to be entered. Also, for 'FCChildPerpetrationMean' and 'FCChildVictimisationMean' no syntax was added as this variable was only comprised of 2 items. Next, the mean scores for each variables were multiplied by the number of items in each scale, computing a total score and subsequently dealing with any missing data.

A missing value analysis was conducted on the new computed variables that had been replaced with the means. All the variables showed no missing data besides 'FCGeneralVictimisationTotal' which had 1 missing value on case number 58 and on the 'ResilienceScaleTotal' which showed 2 missing values on case number 5 and 6. Case number 58 was not included in the analysis of general financial control as each item in this scale was left blank. Also, case number 5 and 6 was not included in the resilience analysis as this fully incomplete. These cases could not be removed as the participants had fully completed the other scales.

Exploring the data for univariate outliers

All the variables were screened for univariate outliers. Outliers and extreme outliers were present on all subscales of trauma including the total number of trauma. However, due to this variable being a continuous scale with no highest or lowest possible value, and participants experiencing different number of traumas, these outliers were left in the data. The box plots revealed no univariate outliers on 'ParticipantNegotiationTotal' scale. The rest of the scales, 'PartnerNegotiationTotal,' 'PsychologicalAggressionPerpetrationTotal,' 'PsychologicalAggressionVictimisationTotal,' 'PhysicalAssaultPerpetrationTotal,' 'PhysicalAssaultVictimisationTotal,' 'SexualCoercionPerpetrationTotal,' 'SexualCoercionVictimsationTotal,' 'InjuriesPerpetrationTotal,' 'InjuriesVictimisationTotal,' 'FCGeneralPerpetrationTotal,' 'FCGeneralVictimisationTotal,' 'FCChildPerpetrationTotal,' 'FCChildVictimisationTotal' and 'ResilienceScore' all revealed univariate outliers and extreme univariate outliers. However, these responses were all still valid experiences as the values were all within the lowest and highest possible scores for each scale. Therefore, there were no real outliers.

Exploring the data for multivariate outliers

Next the data was screened for multivariate outliers. Using a linear regression, a Mahalanobis Distance was calculated. As there were 15 variables, a critical chi-square value of 37.697 was used. In total, 25 cases were identified with multivariate outliers, however, due to investigating aggression in a student sample, this was expected and therefore, these were still included in the analysis. Also, to deal with this a binomial regression was conducted.

Exploring the data for normality of distribution

Table 3 and 4 below represents information on skewness and kurtosis and shows that all variables were significantly positively skewed besides ‘ParticipantNegotiationTotal’ and ‘ResilienceScaleTotal’ which were both significantly negatively skewed.

	Skewness Value	Kurtosis Value
Total Number Of Trauma	1.220	1.708
Crime Related Event	1.220	.803
General Disaster And Trauma	.767	.159
Unwanted Sexual Experiences	2.647	6.614
Unwanted Physical Experiences	2.168	3.989
Other Trauma	1.993	1.989
Participant Negotiation Total	.798	-.241
Partner Negotiation Total	.904	.331
Psychological Aggression Perpetration Total	2.434	6.423
Psychological Aggression Victimisation Total	2.755	8.950
Physical Assault Perpetration Total	5.367	34.075
Physical Assault Victimisation Total	5.530	35.968
Sexual Coercion Perpetration Total	3.839	16.628
Sexual Coercion Victimisation Total	3.291	11.584
Injuries Perpetration Total	6.010	38.188
Injuries Victimisation Total	7.451	58.508
FC General Perpetration Total	2.930	12.638
FC General Victimisation Total	2.097	4.523

FC Child Perpetration Total	9.390	90.921
FC Child Victimisation Total	7.556	65.132
Resilience Score Total	-1.359	2.921

Table 3. ***Skewness and Kurtosis values for the trauma, relationship behaviour and resilience scales.***

Table 4. ***Information of Skewness and Kurtosis values divided by the standard Skewness and Kurtosis values.***

	Skewness / Std Error Skewness	Kurtosis / Std Error Kurtosis
Total Number Of Trauma	1.220/.156=7.821	1.708/.311=5.492
Crime Related Event	1.220/.156=7.821	.803/.311=2.582
General Disaster And Trauma	.767/.156=4.917	.159/.311=.511
Unwanted Sexual Experiences	2.647/.156=16.968	6.614/.311=21.267
Unwanted Physical Experiences	2.168/.156=13.897	3.989/.311=12.826
Other Trauma	1.993/.156=12.776	1.989/.311=6.395
Participant Negotiation Total	.798/.156=5.115	-.241/.311=-.775
Partner Negotiation Total	.904/.156=5.795	.331/.311=1.064
Psychological Aggression Perpetration Total	2.434/.156=15.603	6.423/.311=20.653
Psychological Aggression Victimisation Total	2.755/.156=17.660	8.950/.311=28.778
Physical Assault Perpetration Total	5.367/.156=34.404	34.075/.311=109.566
Physical Assault Victimisation Total	5.530/.156=35.449	35.968/.311=115.653
Sexual Coercion Perpetration Total	3.839/.156=24.609	16.628/.311=53.466
Sexual Coercion Victimisation Total	3.291/.156=21.096	11.584/.311=37.248
Injuries Perpetration Total	6.010/.156=38.526	38.188/.311=122.791
Injuries Victimisation Total	7.451/.156=47.763	58.508/.311=188.129
FC General Perpetration Total	2.930/.156=18.782	12.638/.311=40.637
FC General Victimisation Total	2.097/.156=13.442	4.523/.311=14.543
FC Child Perpetration Total	9.390/.156=60.192	90.921/.311=292.350
FC Child Victimisation Total	7.556/.156=48.436	65.132/.311=209.428
Resilience Score Total	-1.359/.156=-8.112	2.921/.311=9.392

The histograms and box plots also showed that none of the variables were normally distributed. The Kolmogorov-Smirnov test revealed significant results for TotalNumberOfTrauma, D (243) = .152, p<.001, CrimeRelatedTrauma, D (243) = .323, p<.001, GeneralDisasterAndTrauma, D (243) = .183, p<001, UnwantedSexualExperiences, D (243) = .491, p<.001, UnwantedPhysicalExperiences, D (243) = .454, p<.001, OtherTrauma,

D (243) = .513, *p*<.001, ParticipantNegotiationTotal, *D* (234) = .136, *p*<.001 PartnerNegotiationTotal, *D* (234) = .124, *p*<.001 PsychologicalAggressionPerpetrationTotal, *D* (234) = .259, *p*<.001, PsychologicalAggressionVictimisationTotal, *D* (234) = .274, *p*<.001, PhysicalAssaultPerpetrationTotal, *D* (234) = .375, *p*<.001, PhysicalAssaultVictimisationTotal, *D* (234) = .376, *p*<.001, SexualCoercionPerpetrationTotal, *D* (234) = .390, *p*<.001, SexualCoercionVictimisationTotal, *D* (234) = .359, *p*<.001, InjuriesPerpetrationTotal, *D* (234) = .432, *p*<.001, InjuriesVictimisationTotal, *D* (234) =.464, *p*<.001, FCGeneralPerpetrationTotal, *D* (234) = .320, *p*<.001, FCGeneralVictimisationTotal, *D* (234) = .344, *p*<.001, FCChildPerpetrationTotal, *D* (234) = .530, *p*<.001, FCChildVictimisationTotal, *D* (234) = .533, *p*<.001 and ResilienceScoreTotal *D* (234) = .119, *p*<.001.

The histograms show that all of the variables were positively skewed, besides the 'ResilienceScoreTotal' scale which was negatively skewed. Again, this is deemed as normal in studies investigating partner aggression in a sample of university students. Therefore, this was one of the reasons the data was left the way it was. Another reason the data was not transformed was because, a binomial regression analysis was carried out which accounted for non-normally distributed data and data that is usually over-dispersed.

Study 2

Examining the data file

There was a total of 250 respondents that were entered into an SPSS file. A value of '-99' was entered into all variables that were left blank, which represented to a missing value. Before data analysis, data screening procedure was conducted, which included identifying errors such as missing data, data entry errors, patterns of missing data, univariate and multivariate outliers and normality of distribution. The inclusion criteria consisted of all participants that had fully completed all questionnaires, all participants that had completed the trauma questionnaire, regardless of missing items on further details such as the age when event occurred, or further details regarding the event, and all participants that had completed the relationship behaviour questionnaire. Participant number 109, 112, 119, and 131 were removed due to missing values on all items in each scale, and so a total of 246 cases remained for analysis.

A missing value analysis showed that 6 participants had not filled out answers relating to attachment with their father and stated that they did not have any contact with their father so were unable to answer these questions. This was similar for 3 other participants who had not responded to the items relating to attachment with their partner and identified that were not currently in a relationship or were unable to recall attachment with their partner, so were unable to respond to these items.

Identifying and dealing with data entry errors

Using the explore function to identify any data entry errors, the following scales were explored: 'RealTraumaTotal', 'CrimeRelatedEvent', 'GeneralDisasterAndTrauma', 'UnwantedSexualExperiences', 'UnwantedPhysicalExperience,' 'OtherTrauma,' 'ParticipantNegotiation,' 'PartnerNegotiation,' 'PsychologicalAggressionPerpetration,'

‘PsychologicalAggressionVictimisation,’ ‘PhysicalAssaultPerpetration,’ ‘PhysicalAssaultVictimisation,’ ‘SexualCoercionPerpetration,’ ‘SexualCoercionVictimisation,’ ‘InjuryPerpetration,’ ‘InjuryVictimisation,’ ‘FinancialControlPerpetration,’ ‘FinancialControlVictimisation,’ ‘FCGeneralPerpetration,’ ‘FCChildPerpetration,’ ‘FCGeneralVictimisation,’ ‘FCChildVictimisation,’ and ‘ResilienceScore’ ‘Avoidance_Mother,’ ‘Anxiety_Mother,’ ‘Avoidance_Father,’ ‘Anxiety_Father,’ ‘Avoidance_Partner’ and ‘Anxiety_Partner.’

The ‘Extreme Values’ box showed the top five highest and lowest scores for each variable. However, ‘TotalNumberOfTrauma’, ‘CrimeRelatedEvent’, ‘GeneralDisasterAndTrauma’, ‘UnwantedSexualExperiences’, ‘UnwantedPhysicalExperiences’ and ‘OtherTrauma’ were all continuous scales so highest or lowest values did not apply to these. For ‘ParticipantNegotiation’ and ‘PartnerNegotiation,’ the highest value that could be reported was 150 and lowest was 0. For ‘PsychologicalAggressionPerpetration’ and ‘PsychologicalAggressionVictimisation,’ the highest value that could be reported was 200 and lowest was 0. For ‘PhysicalAssaultPerpetration’ and ‘PhysicalAssaultVictimisation,’ the highest value that could be reported was 300 and lowest was 0. For ‘SexualCoercionPerpetration’ and ‘SexualCoercionVictimisation,’ the higest value that could be reported was 175 and lowest was 0. Lastly, for the ‘InjuryPerpetration’ and ‘InjuryVictimisation’ scales, the highest value that could be entered was 150 and the lowest was 0. For ‘FinancialControlPerpetration’ and ‘FinancialControlVictimisation,’ the highest valued that could be entered was 24 and lowest was 0. For ‘FCGeneralPerpetration’ and ‘FCGeneralVictimisation,’ the highest value that could be entered was 16 and lowest was 0. For ‘FCChildPerpetration’ and ‘FCChildVictimisation,’ the highest value that could be entered was 8 and lowest was 0. For the ‘ResilienceScore,’ the highest value that could be entered was 175 and lowest was 25. For

the avoidance and anxiety subscales for mother, father, and partner, the highest possible value was 7 and the lowest was 1. The 'Extreme Values' box showed no out of range value.

Examining the amount of missing data and missing data patterns

Missing values were dealt with on an item-level to mitigate the loss in power. First, a missing value analysis showed no missing data on trauma items, however, additional information on trauma experiences such as number of times, age, details about the events and the severity was not included in the analysis. This was purposely excluded as not all participants who had stated an experience of a traumatic event, gave further information on the details of this, and this could have been due to a number of reasons. Such as, some participants do not wish to disclose sensitive information, or if the event was experienced in childhood, the information may not be remembered. Secondly, the analysis was conducted for all three attachment scales. Looking at the 'Tabulated Patterns' box, it can be seen that although a pattern of missing is indicated, it can be justified. Six cases had no fathers and three cases had no partners or ex-partners, hence it was not possible to complete these scales. Thirdly, the missing value analysis showed no missing data on all items in the relationship behaviour scale. Fourthly, for the financial control scale, the missing value analysis showed that there was some missing data, however, one participant had indicated that that these items did not apply, and therefore purposely left blank (case 161, participant 165). Lastly, the missing value analysis for resilience items showed no missing data. In addition to this, a missing value analysis was also conducted on the demographics, which showed that one participant did not identify their age, and two participants did not identify whether they were referring to an ex-partner or current partner while completing the questionnaire.

Exploring the data for univariate outliers

All the variables were screened for univariate outliers. Outliers and extreme outliers were present on all subscales of trauma. However, due to the variable being a continuous scale with no highest or lowest possible value, and the possibility of participants experiencing different number of traumas, these outliers were not treated. Also, this analysis consisted of non-parametric testing, therefore, another reason why outliers remained in the data. For relationship behaviours scale, the only scale that presented with no outliers was the 'ParticipantNegotiationTotal' scale. The rest revealed outliers and extreme outliers. Again, these outliers were kept in the data set as these responses were all still valid experiences regardless of the diversity, and all within the highest and lowest possible score. The same applied to the Resilience Scale. Finally, for the attachment subscales, 'Avoidance_Mother,' 'Avoidance_Father,' and 'Anxiety_Partner' no showed no univariate outliers. 'Anxiety_Mother,' 'Anxiety_Father,' and 'Avoidance_Partner' revealed outliers, however, all values were within the range and therefore these remained as they were.

Exploring the data for multivariate outliers

Next the data was screened for multivariate outliers for each scale. Using a linear regression, a Mahalanobis Distance was calculated. For the trauma scale, as there were 5 variables, a critical chi-square value of 20.515 was used. In total, 4 cases (129, 137, 108 and 84) presented with multivariate outliers. For the relationship behaviour scale, there was a total of 14 variables, so a critical chi-square value of 36.123 was used and revealed 21 outliers (118, 145, 129, 96, 204, 23, 15, 51, 238, 180, 89, 133, 34, 193, 167, 100, 49, 192, 37, 84 and 8). For resilience, as there was only one variable, a critical chi-square value of 10.828 was used and revealed 2 outliers (9 and 172). Lastly, for the attachment scale, there were 6 variables and therefore, a critical chi-square value of 22.458 was used and revealed that there

were 2 outliers (87 and 102). However, all these multivariate outliers were kept in the analysis as this study investigated intimate partner violence in a student sample, this variance of traumatic experiences, relationship behaviours, resilience and attachment was expected. Also, to deal with this, a binomial regression analysis was used.

Exploring the data for normality of distribution

Table 5 and 6 below represents information on skewness and kurtosis and shows that all 'CrimeRelatedEvent,' 'ResilienceScoreTotal,' 'Avoidance_Mother,' 'Avoidance_Father,' and 'Anxiety_Partner' were negatively skewed, and the rest of the scales were positively skewed.

Table 5. ***Skewness and Kurtosis values for the trauma, relationship behaviour, attachment and resilience scales.***

	Skewness Value	Kurtosis Value
Crime Related Event	.951	-.046
General Disaster And Trauma	.926	.323
Unwanted Sexual Experiences	2.526	5.977
Unwanted Physical Experiences	2.191	4.479
Other Trauma	2.506	4.317
Participant Negotiation Total	.949	.045
Partner Negotiation Total	1.048	.438
Psychological Aggression Perpetration Total	2.966	10.867
Psychological Aggression Victimisation Total	3.528	18.769
Physical Assault Perpetration Total	5.657	34.144
Physical Assault Victimisation Total	6.988	55.879
Sexual Coercion Perpetration Total	5.403	33.382
Sexual Coercion Victimisation Total	4.147	18.480
Injuries Perpetration Total	6.864	54.452
Injuries Victimisation Total	8.709	86.248
FC General Perpetration Total	2.349	6.273
FC General Victimisation Total	1.991	4.204
FC Child Perpetration Total	13.254	187.199
FC Child Victimisation Total	9.172	95.176
Resilience Score Total	-.077	1.310
Avoidance_Mother	.750	-.143
Anxiety_Mother	2.384	4.921
Avoidance_Father	.193	-.924
Anxiety_Father	1.290	.393
Avoidance_Partner	.773	.201
Anxiety_Partner	.721	-.740

Table 6. ***Information of Skewness and Kurtosis values divided by the standard Skewness and Kurtosis values.***

	Skewness / Std Error Skewness	Kurtosis / Std Error Kurtosis
Crime Related Event	.951/.158=6.019	-.046/.316=-.146
General Disaster And Trauma	.926/.158=5.861	.323/.316=1.022
Unwanted Sexual Experiences	2.526/.158=15.987	5.977/.316=18.912
Unwanted Physical Experiences	2.191/.158=13.860	4.479/.316=14.174
Other Trauma	2.506/.158=22.189	4.317/.316=13.661
Participant Negotiation Total	.949/.158=6.006	.045/.316=.142
Partner Negotiation Total	1.048/.158=6.633	.438/.316=1.386
Psychological Aggression Perpetration Total	2.966/.158=18.772	10.867/34.389.316
Psychological Aggression Victimisation Total	3.528/.158=22.329	18.769/.316=59.396
Physical Assault Perpetration Total	5.657/.158=35.804	34.144/.316=108.051
Physical Assault Victimisation Total	6.988/.158=44.228	55.879/.316=176.832
Sexual Coercion Perpetration Total	5.403/.158=34.196	33.382/.316=105.639
Sexual Coercion Victimisation Total	4.147/.158=26.247	18.480/.316=58.481
Injuries Perpetration Total	6.864/.158=43.443	54.452/.316=172.316
Injuries Victimisation Total	8.709/.158=55.120	86.248/.316=272.937
FC General Perpetration Total	2.349/.158=14.867	6.273/.316=19.851
FC General Victimisation Total	1.991/.158=12.601	4.204/.316=13.304
FC Child Perpetration Total	13.254/.158=83.886	187.199/.316=591.772
FC Child Victimisation Total	9.172/.158=58.051	95.176/.316=301.190
Resilience Score Total	-.077/.158=-.487	1.310/.316=4.146
Avoidance_Mother	.750/.158=4.747	-.143/.316=-.0453
Anxiety_Mother	2.384/.158=15.089	4.921/.316=15.573
Avoidance_Father	.193/.158=1.222	-.924/.316=-2.924
Anxiety_Father	1.290/.158=8.165	.393/.316=1.244
Avoidance_Partner	.773//.158=4.892	.201/.316=.636
Anxiety_Partner	.721/.158=4.563	-.740/.316=-2.342

The histograms and box plots also show that none of the variables were normally distributed, besides 'ResilienceScaleTotal.' The Kolmogorov-Smirnov test supported this as all the tests revealed significant results for each variable besides the resilience scale. CrimeRelatedTrauma, D (236) = .300, p<.001, GeneralDisasterAndTrauma, D (236) = .205, p<001, UnwantedSexualExperiences, D (236) = .485, p<.001, UnwantedPhysicalExperiences, D (236) = .461, p<.001, OtherTrauma, D (236) = .527, p<.001, ParticipantNegotiationTotal, D (236) = .123, p<.001, PartnerNegotiationTotal, D (236) = .133, p<.001, PsychologicalAggressionPerpetrationTotal, D (236) = .275, p<.001, PsychologicalAggressionVictimisationTotal, D (236) = .285, p<.001, PhysicalAssaultPerpetrationTotal, D (236) = .408, p<.001, PhysicalAssaultVictimisationTotal, D (236) = .405, p<.001, SexualCoercionPerpetrationTotal, D (236) = .405, p<.001,SexualCoercionVictimisationTotal, D (236) = .396, p<.001, InjuriesPerpetrationTotal, D (236) = .451, p<.001, InjuriesVictimisationTotal, D (236) =.458, p<.001, FCGeneralPerpetrationTotal, D (236) = .347, p<.001, FCGeneralVictimisationTotal, D (236) = .314, p<.001, FCChildPerpetrationTotal, D (236) = .524, p<.001, FCChildVictimisationTotal, D (236) = .526, p<.001, ResilienceScoreTotal, D (236) = .049, p=.20, Avoidance_Mother, D (236) = .111, p<.001, Anxiety_Mother, D (236) = .363, p<.001, Avoidance_Father, D (236) = .071, p<.005, Anxiety_Father, D (236) = .297, p<.001, Avoidance_Partner, D (236) = .113, p<.001, Anxiety_Partner, D (236) = .172, p<.001.

Looking at the historgrams for each of these scales, all variables were positively skewed, besides 'ResilienceScaleTotal,' 'CrimeRelatedEvent,' Avoidance_Mother,' 'Avoidance_Father' and 'Anxiety_Partner,' which were negatively skewed. This can be explained as normal as this study investigated partner violence in a sample of university students. Therefore, the data was not altered via transformations as a negative binomial

regression analysis was conducted to account for non-normally distributed data and over-dispersed data.