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# **Characteristics of Technology Assisted Adolescent Dating Abuse (TAADA) perpetrators – A Rapid Evidence Assessment**

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## **Abstract**

Communication using technology is commonplace for adolescents with numerous positive advancements in this area. However, this has given rise to new forms of abusive behaviours such as the use of technology to control, harass, stalk and abuse dating partners. The aim of the current review was to establish the literature base on the risk factors for technology assisted abuse in adolescents. A Rapid Evidence Assessment (REA) was conducted to identify risk factors and characteristics of technology assisted adolescent dating abuse perpetrators. 18 studies were found to meet the inclusion criteria and were quality appraised. Narrative synthesis was used to review data and identify common factors. Factors that were found to contribute towards perpetration of TAADA included: being a victim of adverse childhood experiences (ACE's); holding attitudes which normalised violence and TAADA; experiencing feelings of jealousy and insecurity; engaging in other non-TAADA risk behaviours such as aggression and substance misuse; family attachments; and peer networks. Differences in types of perpetration behaviour were noted between males and females although this warrants further research. Understanding risk factors specific to TAADA for adolescents is relevant to professionals who are responsible for the assessment and risk management of perpetrators and provides information regarding possible treatment targets. Recommendations for policy and practice are provided.

**Keywords:** Dating Abuse, Adolescent, Technology, Online, Characteristics, Risk Factors

## **Introduction**

Adolescence has been defined as the developmental period between the ages of 10-18 (World Health Organisation, 2015). It is within this maturation period adolescents begin to establish romantic relationships, with 83-88% of 12–17-year-olds experiencing at least one romantic relationship (Barter et al., 2009). Through these relationships, adolescents begin to develop resolution skills, experience emotional support and develop feelings of self-worth (Baker & Carreno, 2016). They also act as a basis for the formation of future intimate

relationships (Meier & Allen, 2009). While there are a number of benefits, there is also the potential for negative outcomes, such as unsafe sexual behaviour, pregnancy and abusive behaviour (Stonard et al., 2014). Abusive behaviour within these early relationships is generally known in the literature as 'Adolescent Dating Violence and Abuse' (ADVA). ADVA includes psychological, physical and sexual violence or abuse, as well as those behaviours, such as stalking that can be considered controlling towards a dating partner (Stonard, 2020; Reed et al., 2020). However, the widespread use of digital technologies has created a new range of behaviours that can be considered abusive towards partners (Van Ouytsel et al., 2018).

There are a range of digital tools available, such as text messaging, video-chat, emails, social-networking-sites and webcams. 95% of adolescents have access to smartphones and/or unlimited use of the internet (Reed et al., 2020; Lancaster et al., 2020). These allow adolescents to develop, maintain and end relationships, including those of a romantic nature (Draucker & Martsolf, 2010). Whilst the use of digital media has its benefits, it can also mean adolescents are more vulnerable to different types of victimisation, specifically cyberstalking, cyberbullying and, more recently technology assisted adolescent dating abuse (TAADA) (Caridadea et al., 2019). TAADA is a subtype of cyber-aggressive behaviour that occurs between young couples and includes the use of technology to demonstrate unhealthy, controlling and intimidating behaviours (Deans & Bhogal, 2019; Munoz-Fernandez & Sanchez-Jimenez, 2020).

More specifically, TAADA has been defined as 'the control, harassment, stalking and abuse of one's current or former dating partner via technology and social media' (Van Ouytsel et al., 2016, p. 147). A recent study by Gámez-Guadix et al. (2018) identified three typologies of TAADA: cyber-control or monitoring (e.g. knowing the whereabouts of a partner at all times), cyber-harassment (e.g. repeated text messages or phone calls) and cyber-psychological and direct aggression (e.g. making direct threats). Others have identified sexual forms of TAADA (e.g. sending sexual pictures of a partner to others without permission) (Van Ouytsel et al., 2017; Caridadea et al., 2019; Stonard, 2020).

Several studies have attempted to ascertain the prevalence of TAADA. One review concluded victimisation rates ranged between 12-56% and perpetration rates ranged between 12-54%, whereas another found a much larger range of 6-91% (Stonard et al., 2014; Brown & Hegarty, 2018). Prevalence data has also shown that TAADA can be reciprocal, with 82.5% reporting being both perpetrator and victim (Smith et al., 2018). Zweig et al. (2013) found that females in a relationship were significantly more likely to report engaging in reciprocal TAADA than males (9.8% versus 7.1%). Females were also significantly more likely to report TAADA perpetration only (4.1%) in comparison to males (2.3%). However as noted by the authors the study did not differentiate reciprocal TAADA in terms of whether this was used offensively or defensively. The gender of the victim was also not recorded in terms of whether this related to heterosexual versus same sex couples.

Although there is a wealth of evidence that TAADA is prevalent, as shown there is a vast difference in the numbers reported between studies. This is likely due to the type of behaviours examined, the measurement tool used, the age parameters and the time scale researchers were investigating. For example, in a large sample of youth in the USA, it was found that 8.1% of participants reported perpetrating TAADA in the past year, whereas in a Spanish sample, a rate of 93.7% was found when examining lifetime prevalence (Yahner et al., 2015; USA, Sanchez et al., 2015; Spain). Other studies investigating prevalence rates have broken them down by the type of abusive behaviour. Caridadea et al. (2019) found that controlling behaviour demonstrated the highest prevalence (49.6-88%), whereas direct

aggression accounted for fewer cases (14-20.3%). This has been a consistent finding across research, with the most common behaviours being those of a less explicit nature (Lucero et al., 2014). There has also been debate whether TAADA is an extension of ADVA or whether it is a new behaviour in itself, with some arguing that technology acts as an additional means of exerting control over a partner (Barter et al., 2009) and others noting it should be considered separate as it differs in several ways (Zweig et al., 2014). There is also evidence that TAADA is more prevalent than ADVA, with some adolescents only experiencing abusive behaviour online (Stonard, 2020). With these differences in mind, there may be distinctive risk factors, experiences and consequences for TAADA.

Over recent years information regarding the factors that increase or decrease risk for adults perpetrating TAADA has begun to emerge in the literature, however this has not been specifically considered in relation to adolescents (aged 10-18). It is unclear whether ADVA and TAADA share the same predictors or whether TAADA has its own unique predictors. An understanding of risk factors specific to TAADA will be relevant to professionals who are responsible for the assessment and risk management of perpetrators, will provide information regarding possible treatment targets and afford evidence for policy and prevention. An evidence base is imperative to the development of both policy and professional practice. Therefore the aim of the current review is to focus on identifying common risk factors and characteristics of TAADA perpetrators.

## **Methodology**

A Rapid Evidence Assessment (REA) was completed following the standards set out by the Centre for Evidence-Based Management (CEBMA; Barends et al., 2017) to provide a systematic method of evaluating existing literature.

### *Search Strategy*

The following databases were searched: SCOPUS, PsycInfo, Pubmed and ProQuest. Searches were limited to those published in English. Keywords used in the search term were:

(‘dating’ OR ‘relationship’)

AND

(‘abuse’ OR ‘violence’ OR ‘harassment’ OR ‘stalking’ OR ‘aggression’)

AND

(‘adolescen\*’ OR ‘youth’ OR ‘juvenile’ OR ‘teen\*’ OR ‘school’)

AND

(‘cyber’ OR ‘technology assisted’ OR ‘digital’ OR ‘electronic’ OR ‘internet’ OR ‘digital age’ OR ‘online’)

AND

(‘factors’ OR ‘correlates’ OR ‘characteristics’ OR ‘risk factors’ OR ‘predict\*’ OR ‘profile’).

### *Inclusion Criteria*

The criteria for inclusion were selected using the PICOC (Patient, Intervention Comparison, Outcome and Context). See Table 1.

*Quality appraisal:*

Following the guidelines by Barends et al. (2017), the screening of papers was established following a two-fold approach. First, all included studies were classified based on the six levels of appropriateness (Shadish, Cook, & Campbell, 2002; Petticrew & Roberts, 2008) that assess a study’s validity. Levels range from “AA”, representing the so-called “gold standard” with systematic reviews or meta-analyses of randomised control trials, to the lowest level of appropriateness “E”, representing case studies, case reports, and other anecdotal data. Due to the mixed methodology between studies, a range of appraisal tools were then used. This included the Critical Appraisal Skills Programme (CASP) qualitative checklist (CASP, 2018), the CASP cohort study checklist (CASP, 2018) and the Appraisal tool for Cross-Sectional Studies (AXIS) (Downes et al., 2016). Appraisals were completed by the author and shared with a second reviewer to ensure quality in the assessments (Inter-rater reliability [IRR] between ratings was assessed to be 0.86 and therefore ‘good’) (Hallgren, 2012). Depending on the tally of methodological weaknesses, the appraised studies were downgraded a certain number of levels (e.g. two weaknesses result in the downgrading of one level, three in two levels, etc.; Barends et al., 2017). The quality of studies ranged between ‘C’ and ‘E’ (see Table 2), it is important to note there were constraints to the quality of studies due to the methodologies used (e.g., cross-sectional design), however all studies were retained in the review to reduce bias. Nevertheless, the quality assessments allowed weighting to be given to the findings drawn from particular studies.

**Table 1. Inclusion/Exclusion Criteria**

	<b>Inclusion</b>	<b>Exclusion</b>
<b>Population</b>	Adolescents (ages 10-18). Male and female. Experience within a romantic relationship.	Adults (<18 years old). Studies that data cannot be separated by age (i.e., looks at adolescents and young adults).
<b>Exposure</b>	Risk factors, correlates and/or characteristics (i.e., demographics, social, behavioural indicators).	Does not focus on risk factors, correlates or characteristics of perpetrators. Focuses solely on victim factors.
<b>Outcomes</b>	Has experience within an adolescent dating relationship where TAADA has occurred.	Exclusively offline perpetration of ADVA. Behaviour included that could be considered a different type of offence (e.g., 16+ offender and 10 year old victim).
<b>Context/Language</b>	English. Western Countries. Studies completed with community samples and offending samples.	Non-western countries. Published in other languages.
<b>Type of publication</b>	Peer-reviewed. Individual studies identified from reviews.	Literature reviews. Book chapters. Opinion papers.

	Primary and secondary data.	Unpublished studies or dissertations.
<b>Date restrictions</b>	2011-2021 (rationale – generation who are native to technology).	Any studies completed prior to 2011.

### *Data extraction*

Due to the number of included studies ( $n= 18$ ), each one was assigned a reference number (e.g. [1]) that allowed easier identification throughout data extraction. These reference numbers can be found in Table 2 and will be used throughout the remainder of this review. All studies were reviewed several times; this ensured all relevant data to the research question was extracted.

### *Data Synthesis*

The characteristics of the studies were tabulated to include examination of their content and any other relevant characteristics. The studies were then grouped based on characteristics using a matrix to determine similarities worthy of grouping. This was then used to synthesise the characteristics of the studies contributing to each comparison. Studies addressed a variety of research questions and employed a heterogeneous range of measurement approaches and analytic techniques. As a result, meta-analysis was not feasible. Hence, a structured reporting of the effects (rather than statistical synthesis) was adopted based on the Cochrane Guidance that if the data is heterogeneous and cannot be synthesised using mathematical procedures, then a narrative synthesis should be adopted. This was conducted following the MECIR standards for the reporting of reviews using narrative synthesis (Popay *et al.*, 2006).

**Table 2. Articles included in the study with ID and quality rating**

<b>ID</b>	<b>Study</b>	<b>Methodology</b>	<b>Level</b>
<b>1</b>	Doucette et al. (2018)	Cross-sectional	‘D’
<b>2</b>	Patton et al. (2019)	Cross-sectional	‘E’
<b>3</b>	Semenza (2019)	Cross-sectional	‘D’
<b>4</b>	Wright (2014)	Longitudinal	‘C’
<b>5</b>	Munoz-Fernandez et al. (2020)	Longitudinal	‘C’
<b>6</b>	Smith-Darden et al. (2017)	Cross-sectional	‘D’
<b>7</b>	Muniz (2017)	Cross-sectional	‘D’
<b>8</b>	Muniz-Rivas et al. (2019)	Cross-sectional	‘D’
<b>9</b>	Peskin et al. (2016)	Cross-sectional	‘D’
<b>10</b>	Cava et al. (2020)	Cross-sectional	‘D’
<b>11</b>	Reed et al. (2018)	Cross-sectional	‘D’

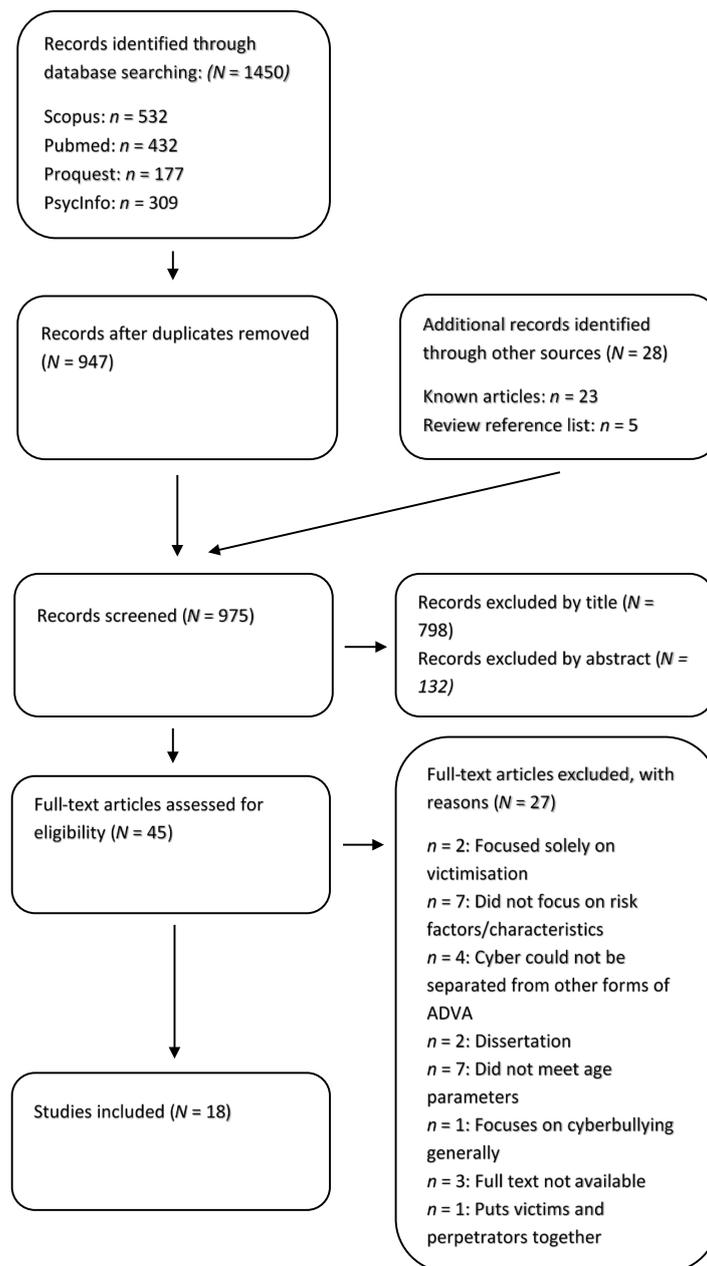
12	Van Ouystel et al. (2017)	Cross Sectional	‘D’
13	Baker & Carreno (2016)	Qualitative focus group	‘E’
14	Zweig et al. (2013)	Cross-sectional	‘D’
15	Stonard (2021)	Cross-sectional	‘D’
16	Lu et al. (2020)	Cross-sectional	‘D’
17	Kernsmith et al. (2018)	Cross-sectional	‘D’
18	Cutbush et al. (2021)	Longitudinal	‘C’

## Results

### *Description of the Included Studies*

All potentially relevant articles were exported into EndNote ([www.endnote.com](http://www.endnote.com)) for de-duplication. The title and abstract of articles were screened by the first and second authors to assess whether they were relevant for review. The initial search yielded 1,450 papers which were reviewed for relevancy. 45 articles were fully read to assess if they met the criteria for inclusion. Out of these, 27 papers were excluded, and 18 papers were deemed to meet the inclusion criteria (see Figure 1).

**Figure 1.** *Flowchart outlining the study selection process*



### *Description of the study characteristics*

Of the 18 studies, most were conducted in the USA ( $n=12$ ) and Spain ( $n=4$ ), with one study conducted in the UK and one in Central America. Sample sizes ranged between 39 [1] and 5,647 [3,14]. Studies were published between 2013-2021, with 83% published in the past five years. The majority of studies used samples recruited from schools ( $n=16$ ), one used a sample known to the author of the paper due to their involvement with prior experience of physical ADVA [1], and one sample was recruited from community organisations, including a peer mentoring program, an alcohol support-group, a youth centre, and court-ordered group homes [13]. 17 of the 18 studies investigated TAADA across both genders. One study investigated TAADA perpetration with an all female sample [1]. Three studies [2,3,14] used the same data set from a larger USA project; these studies had varying aims and conducted different analyses. 10 studies investigated perpetration only [1,3,4,5,6,7,8,9,10,12], and eight

investigated both perpetration and victimisation [2,11,13,14,15,16,17,18]. Eight studies included participants who did not identify as heterosexual (e.g., homosexual, ‘other’), however six of the studies did not differentiate results based on sexual orientation [1,5,10,11,14,16], one study found no significant effect when looking for differences in the type of TAADA between sexualities [2] and one study found no significant result when using sexual orientation as a control variable in relationship with the dependent variable [12].

### *Quality of Studies*

One study adopted a qualitative methodology, with the remaining being quantitative. The quality ratings are provided below:

Quality Rating	Number of Papers
A	0
B	0
C	3
D	12
E	2

### *Narrative Synthesis*

Narrative synthesis resulted in four overarching themes being identified: demographic factors; internal processes; observable risk behaviours and relationships with others.

#### ***Theme 1: Demographic***

This theme represents demographic information that has been investigated as potential characteristics of TAADA perpetrators. Demographic information was present in 17 out of the 18 included studies [1,2,3,4,5,6,7,8,9,10,11,12,14,15,16,17,18].

##### *1a. Gender*

Three studies found significant group differences for gender, with females identified as perpetrators at higher rates [2,5,9]. Other studies however, did not find this significant effect [3,4,7,10,12,15,16,18]. Similar prevalence rates were found by gender in two longitudinal studies [4,18], and while two cross-sectional studies found females reported more perpetration overall, this did not achieve significance [7,15]. Differences by gender were more likely to be found when studies investigated a range of TAADA behaviours, as opposed to TAADA overall. For example, females were more likely to report the perpetration of non-sexual TAADA (i.e. monitoring and control), whereas males were significantly more likely to report sexual TAADA (i.e. coercive sexting) [11,14]. As such, perpetrator gender may be more informative regarding the type of behaviour adolescents are likely to engage in rather than a risk factor for perpetration overall.

##### *1b. Age*

With regards to age, three studies demonstrated older adolescents were at a greater risk for perpetration [3,6,9]. For example, 14-15-year-olds were 2½ times more likely than

11-12-year-olds to engage in TAADA [6]. Other studies focusing on specific TAADA behaviours also found that 14-18-year-olds were significantly more likely to perpetrate coercive sexting than 11-13-year-olds [6,17]. This is in line with the wider literature, showing TAADA to remain a prevalent problem into young adulthood (Caridadea et al., 2019; Lara, 2020).

### *1c. Adverse Childhood Experiences (ACE's)*

This sub-theme represents experiences of trauma and victimisation, such as child abuse, parental imprisonment, witnessing domestic violence and negative experiences with peers. In terms of childhood traumatic experiences, adolescents who reported higher levels of ACE's were at increased risk of perpetrating all forms of TAADA [6]. The largest effect was found for electronic harassment, whereas the likelihood of coercive sexting only increased when adolescents reported five or more ACE's [6].

Adolescents who had been victims of traditional bullying were more likely to perpetrate TAADA [9,12]. One study investigated victimisation in more detail by incorporating a range of victimisation experiences that can occur between adolescent peer and romantic relationships. Respondents were asked about experiences across five key areas: in-person bullying, cyberbullying, two forms of ADVA and TAADA. Results highlighted poly-victimisation to be associated with higher incidence rates of TAADA, with the strongest association found for TAADA victimisation and TAADA perpetration [3]. This link is supported by a number of prevalence studies that highlight TAADA is mutual in nature (Smith et al., 2018).

## ***Theme 2: Internal Processes***

Two sub-themes emerged in terms of the internal processes of perpetrators of TAADA; attitudes and emotions. Six of the 18 studies [1,5,9,10,11,13] provided results relevant to this theme; some of the studies investigated similar constructs, whereas others provided information not present in other studies.

### *2a. Attitudes*

Five studies discussed attitudes [1, 9, 10, 11, 13] which were related to perpetration of TAADA. Attitudes which normalised violence for boys against girls portrayed a strong association with TAADA perpetration [9] as were attitudes normalising monitoring behaviours to be a sign of trust and commitment [13]. Endorsement of sexting behaviour was also associated with the perpetration of all TAADA behaviours [9].

Males involved in TAADA also scored higher for hostile and benevolent sexism acceptance [10]. Hostile sexism predicted male involvement in cyber-control behaviours, whereas romantic myths predicted female involvement. None of the attitudinal variables significantly predicted males' involvement in cyber-aggression; however hostile sexism and romantic myths predicted females' involvement [10].

Building further on the literature around gender roles and sexist views, other researchers investigated the role of stereotypical gender and dating beliefs (SGDB). For females, significant associations were found between SGDB and the perpetration of two forms of TAADA; digital monitoring/control and sexual coercion. When investigating adolescent males, those who endorsed SGDB were more likely to be involved in all three forms of TAADA under investigation: digital monitoring/control, sexual coercion and digital

direct-aggression. A surprising result from this study was the association of SGDB and digital sexual coercion for females, as SGDB endorsement would indicate beliefs that females should not be sexually proactive. The authors attempted to explain this result and highlighted the tool used to measure sexually coercive behaviour incorporated items that were not obviously opposing SGDB. For example, adolescents were asked whether they had autonomously sent a sexual photo of themselves to a partner without prior permission. Items similar to this may indicate that a female is sexually appealing and not necessarily sexually proactive [11].

### *2b. Emotions*

Anger, jealousy and insecurity were the three emotions investigated within the literature. Anger was not observed as a factor that increased the likelihood of perpetrating digital direct-aggression [5]. However, the association of jealousy was less clear. Within one study, no direct effect of emotional jealousy was found [5]. However, this lack of association may be due to the investigation of digital direct-aggression only. Researchers using older samples found strong relationships when examining monitoring and control behaviours (i.e. Brem et al., 2015). The distinct association between emotional jealousy and digital monitoring/control was supported in one of the included studies [13]. Adolescents within the study described a vicious cycle in that jealousy led to monitoring behaviours and vice versa. In a similar sense, adolescents within the study described feeling insecure about their partner meeting someone else, and monitoring behaviours were viewed as necessary in order to keep their partner within the relationship. In terms of emotional management, dysfunctional emotional regulation has not been found to be associated with higher odds of electronic intrusiveness [1]. On the other hand, destructive conflict resolution skills were found to be associated with higher odds of TAADA perpetration [9].

## ***Theme 3: Observable risk behaviours***

Risk related behaviours that increased the likelihood of an adolescent engaging in TAADA were grouped into three sub-themes; aggressive behaviour, behavioural indicators and technology use. Information regarding this theme was present in six of the 18 included studies [2,3,9,10,12,14].

### *3a. Aggressive behaviours*

This sub-theme represents adolescents' involvement with other forms of aggressive behaviour, both within and outside of their dating relationships. Two of the included studies found that those adolescents who had bullied their peers were more likely to perpetrate TAADA [9,12]. In terms of aggressive behaviours against dating partners, four studies found those engaged in one form of violence may be at an increased risk of perpetrating another form of violence, including TAADA [4,9,12,14]. More specially, relational, verbal-emotional and physical offline ADVA were significant predictors of male adolescents' involvement in TAADA. Verbal-emotional and physical ADVA were also significant predictors of female perpetration [10]. When breaking this down by behaviour, relational-offline ADVA significantly predicted males' engagement with digital control, whereas relational and verbal-emotional offline ADVA significantly predicted females' involvement. In terms of digital direct-aggression, offline relational and physical ADVA were significant predictors for males, and verbal-emotional ADVA was the only behavioural indicator for females [10]. Significant associations between ADVA and TAADA were also found in a study that looked at the perpetration of behaviours within the same time period [14]. A history of TAADA as a

risk factor has also been studied, with results showing a history of TAADA being significantly associated with later TAADA [4].

### *3b. Behavioural indicators*

Information regarding two behavioural indicators was available within three studies [2,9,12]. Adolescents who reported substance use were consistently more likely to report TAADA across all of the studies, however, not all substances achieved significance. One study did not find significant differences based on marijuana use, pain relievers or illicit substances; alcohol was the only substance to produce a significant result [2]. Alcohol use as a correlate was found in a further study. However this study also found the consumption of cigarettes and the misuse of medication to be significantly associated with perpetration [12]. The significant result regarding the misuse of medication in this study may be due to the broader range of medication under investigation. Alcohol and drug use was also found to be associated with higher odds of perpetrating TAADA at an individual level, however, the variable did not remain significant when investigated in conjunction with other potential correlates [9]. Information regarding sexual behaviour was limited.

### *3c. Technology Use*

This sub-theme represents adolescents' technology usage; two studies found that greater texting frequency (based on seven categories <5, 5–40, 41–70, 71–100, 101–150, 151–200, and 200+) and social-networking-site use (from none to more than 6 hr) was significantly associated with perpetration [3,12]. This association is likely the result of the higher dosage of content adolescents may come across, which can elicit jealousy and subsequent TAADA [12].

## ***Theme 4: Relationships with others***

This theme represents the type and quality of relationships adolescents have with others that may increase the odds of TAADA. This theme contains three sub-themes; family relationships, partner relationships and other relationships. Seven of the 18 included studies provided evidence within this theme [4,5,7,8,9,12].

### *4a. Family relationships*

Information was available regarding the structure within the family home and adolescents' relationships with parents. The structure of the family was investigated in two studies and both found those who lived in a different family setting than a two-parent household were at higher odds of perpetration [9,12]. A further study looked at the family climate; this measure was composed of three dimensions: cohesion, expressiveness and conflict. Results portrayed that the quality of the family climate perceived was related to the degree of TAADA used. For example, high scores in the family conflict dimension were found to be significantly related to TAADA perpetration, whereas higher scores in family cohesion portrayed a negative relationship. The strongest associations were also found for females, suggesting the family climate may be most significant within this group [7]. Another study investigated the impact of parental alienation [4]. Whilst both mother and father parental alienation was found to be associated with adolescents' partner attachments, only mother alienation was found to have an indirect effect on TAADA perpetration. The importance of the mother-child relationship was further highlighted in a study that concluded the mother's current parenting style has significant effects on TAADA [8]. The highest association was found with authoritarian mothers, suggesting parenting in the form of low

involvement and strong discipline increases the likelihood of TAADA. Considering these findings, it is unsurprising other studies have identified parental involvement, parental monitoring and greater child-closeness as factors that lower the odds of adolescents perpetrating TAADA [6,9].

#### *4b. Partner relationships*

This sub-theme represents the quality of the dating relationship between perpetrators and victims of TAADA. Anxious partner attachment was found to be associated with TAADA perpetration, whereas avoidant partner attachment was not [4]. These results suggest anxiously attached adolescents handle conflict by engaging in abusive behaviour, whereas partners with an avoidant attachment style do not. Another study using a longitudinal design investigated the quality of the relationship, it was found those who reported negative couple quality in the initial stages were more likely to report TAADA in the later wave of the study [5]. Further testing within this study also found those who scored less on the cognitive empathy scale had higher scores of TAADA. It could be suggested the online context may further impact on adolescents' ability to comprehend the impact of their behaviour. For example, both parties are not required to be in proximity to each other, and therefore the emotional distress caused to the victim is not immediately apparent.

#### *4c. Other relationships*

This sub-theme represents adolescents' relationship with both peers and teachers. In terms of peer relationships, a study investigating a range of correlates found those who reported having peers who engaged in dating violence were at higher odds of perpetrating TAADA. Peers who engaged in substance misuse also increased the likelihood of adolescents perpetrating TAADA [9]. Another study looked at the impact of school climate; adolescents were asked about three dimensions, relationship with teachers, affiliation with peers, and involvement in school activities. Those who rated this measure lower were at increased likelihood of perpetration [7]. Overall, results in this sub-theme suggest while having peers who engage in risk-related behaviour may increase risk, feeling affiliated with a pro-social peer group is also important.

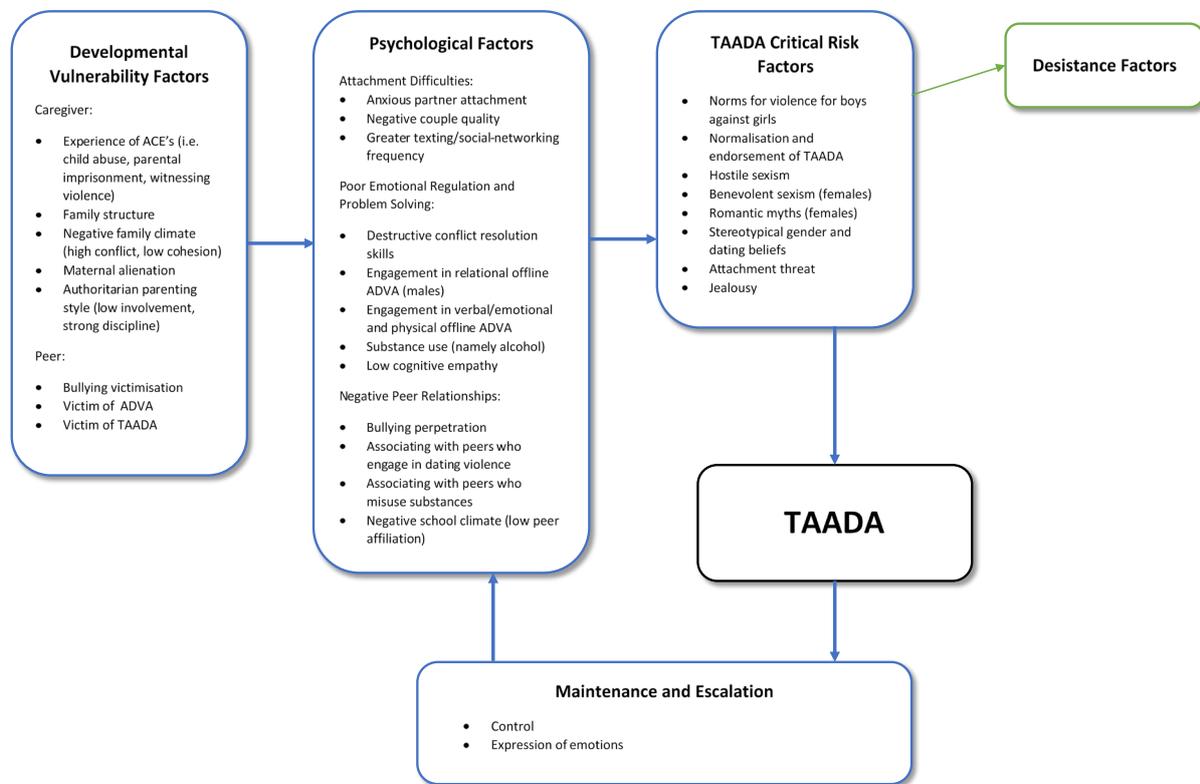
## **Discussion**

The aim of this review was to advance understanding of the risk factors for the perpetration of TAADA. 18 studies met the inclusion criteria and were synthesised into four themes. Below is a model of the risk factors, separated by theme and level of support, identified within the review (see figure 2).

The first theme *Demographics* represented background information and its mixed association with TAADA. ACEs were consistently linked to higher levels of perpetration; these findings are in line with research regarding other forms of adolescent violence, including ADVA (Gorman-Smith et al., 2001; Kaukinen, 2014). These findings can be explained through the cycle of violence hypothesis, which postulates children who are exposed to violence later become perpetrators themselves, both towards peers and intimate partners (Duke et al., 2010; Kaukinen et al., 2015). Results regarding other factors within this theme (gender and age) were inconsistent and varied depending on the type of behaviour explored. For example, older male adolescents may be more likely to perpetrate sexual TAADA. Future research would benefit from a greater exploration of TAADA perpetration

and victimisation between heterosexual and same sex couples as well as victim-perpetrator overlap in terms of whether reciprocal TAADA was used offensively or defensively.

**Figure 2. Model of Risk Factors for TAADA**



Despite these inconsistencies and the factors being mostly static, some of the demographic factors were shown to increase susceptibility, and therefore efforts could be targeted to those adolescents (Hinduja & Patchin, 2020). For example, intervention efforts should be trauma-informed and focus given to teaching adolescents skills to manage the impact of their experiences. Demographic information can also be considered by professionals assessing the risk of future TAADA and can inform relevant risk management plans i.e. monitoring and warning signs.

The second overarching theme *internal process* acknowledged perpetrators of TAADA were more likely to hold norms for violence, normalisation and acceptance of TAADA, sexist attitudes, SGDB and experience feelings of jealousy and insecurity. These results are similar to those found for ADVA, whereby tolerant attitudes and traditional beliefs have been identified as one of the most significant factors (Sears et al., 2007). Whilst the evidence base for ADVA intervention is poor, there have been several intervention programmes evaluated that have focused on addressing attitudes specifically (i.e. Teen Choices; Levesque et al., 2016, True Love; Sosa-Rubi et al., 2016), and results have shown a significant reduction in ADVA perpetration (Wolfe & Tempe, 2018). The focus on attitudinal change has also been a focus in the limited number of programmes designed applicable to TAADA (DARSI; Carrascosa et al., 2019 & Date-e Adolescence; Sánchez-Jiménez, 2019). There is incomplete follow-up data and methodological flaws in the evaluations to date. However initial studies have shown positive results. Although it is important to note the reduction in the online context has shown the lowest effect (Galende et al., 2020).

Nevertheless, with the potential for change over time, treatment efforts should continue to be implemented with the goal of increasing understanding of TAADA and attitudinal change. Prevention efforts may also benefit; schools could teach adolescents about healthy and unhealthy dating relationships with the aim of instilling norms against TAADA. These programmes should also include teaching around consent, internet safety, sexting and sexual behaviour as an attempt to prevent sexual TAADA in older adolescence. Research into the prevention of ADVA has shown this as a viable way to attempt to prevent such behaviour (Hellevik, 2018).

Jealousy and insecurity were only found to be associated with monitoring and controlling TAADA. The reason for this finding may be due to the importance individuals place on social relationships and their sensitivity when faced with the possibility of loss (Harris & Darby, 2010). As a result, monitoring and control may be used as a way for adolescents facing insecurity to try and ensure everything is going well (Stonard et al., 2017). A further explanation relates to jealousy constituting one of the main romantic myths where the complex emotion is validated as a sign of love and not necessarily viewed in a negative manner (Yela, 2003). As such, intervention strategies targeting adolescents' understanding of TAADA and attitude change may be useful, as well as introducing strategies for handling situations involving feelings of jealousy and insecurity.

*Observable risk behaviours* acknowledged adolescents who are perpetrating TAADA are likely engaging in other forms of risk-related behaviour, including aggression, substance misuse, sex and increased technology use. It would appear when adolescents establish coercive relationships with their peers; these are continued into their dating relationships through the internalisation of an aggressive relational pattern (Connolly et al., 2000). Furthermore, a history of ADVA and TAADA would suggest adolescents have already overcome any internal barriers and therefore may continue to use this type of behaviour or find new ways of being abusive i.e. via technology. Additionally, those engaging in TAADA are more likely to have a history of substance use and spend an increased amount of time using technology. Professionals are able to use the information within this theme and monitor for any warning signs of such behaviours; the presence of these warning signs would suggest a potential increase in risk for TAADA. Intervention strategies that include exercises to address these areas holistically may therefore be beneficial in reducing future risk.

The final theme *relationships with others* highlighted the importance of adolescents' attachments at different levels. From the social-ecological framework (Bronfenbrenner, 1977), adolescents are influenced not only by individual factors but also by their immediate settings. These include parents, partners, peers and others within the school environment. In relation to family, insecure parental attachment and harsh parenting are all factors that are known to affect psychosocial adjustment. Those adolescents who have lacked support, witnessed conflict and have insecure attachments may not have developed pro-social solutions to problems and therefore be at increased risk of TAADA perpetration. Anxious partner attachment and perceived negative relationship quality were also found to be associated with TAADA. This is in line with ADVA literature (Murta et al., 2020). The role of peers was also found to be important for TAADA perpetration, this is consistent with ADVA literature where peer dating violence and anti-social behaviour has been shown to heighten adolescent risk (Schnurr, 2009 & Foshee et al., 2010). Together this information highlights the need for intervention targeted at various levels of adolescents' social environment. Practitioners would also benefit from assessing for insecure attachment styles

and working to strengthen adolescents' comfort and feelings within their relationships (Mosley & Lancaster, 2019; Toplu-Demirtas et al., 2020).

### *Limitations*

A limitation of the review is the exclusion of articles that were not published in English. Although this was unavoidable, potential beneficial data may not have been included from those articles. Two final limitations relate to the majority of included studies being cross-sectional and the use of self-report measures. As such, the cause-and-effect relationship cannot be confirmed, and data may be subject to bias. Future research would benefit from exploring the extent of the variance of TAADA which may be explained by the factors identified. As such the factors identified should be used using a formulation based approach to understand TAADA.

### *Implications*

- Given the link between ACE's and the higher risk of TAADA perpetration, intervention efforts for TAADA should be trauma-informed and attend to interpersonal relationships and attachment.
- Perpetrators of TAADA are more likely to hold attitudes that normalise and accept TAADA, sexism and violence generally. The efficacy of interventions to reduce these has not yet been proven conclusive, but initial studies have shown tentative promising results for interventions such as DARSI (Carrascosa et al., 2019) and Date-e Adolescence (Sánchez-Jiménez, 2019).
- TAADA prevention efforts could be targeted in schools to teach adolescents about healthy and unhealthy relationships with the aim of instilling norms against TAADA.
- TAADA interventions could include teaching younger adolescents about consent, internet safety, sexting and sexual behaviour to prevent sexual TAADA in older adolescence.
- Professionals developing risk formulations for the risk of TAADA should attend to factors such as peer involvement, information on any history of substance use and the amount of time using technology. This could be used to monitor for warning signs of the risk of TAADA increasing.
- Interventions for TAADA should also include approaches to reduce the risk of substance misuse and time spent using technology.

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## **About the Authors**

(to be inserted upon acceptance of the manuscript)