ATTACHMENT PM 3

This is the attachment marked "**PM 3**" referred to in the witness statement of Peter Miller dated 15 July 2015.

Longitudinal predictors of domestic violence perpetration and victimization: A systematic review

[1*]Beth M Costa, [2]Christine E Kaestle, [1]Arlene Walker, [1]Ashlee Curtis, [1]Andrew Day, [1]John W Toumbourou and [1]Peter Miller

[1]School of Psychology, Deakin University, Victoria, Australia

[2] Department of Human Development, Virginia Tech, Blacksburg, Virginia, USA

[*] Corresponding author: Doctor Beth M Costa, School of Psychology, Faculty of Health, Deakin University, Geelong Waterfront campus, Victoria Australia, 3220. Email: beth.costa@deakin.edu.au; phone: +61 (03) 52 27 8434.

Abstract

Domestic violence (DV) is a serious and complex social issue which is associated with significant costs to both those individuals who are directly affected and the wider community. Preventative approaches with vulnerable population groups represent an important component of any integrated response to DV and should be informed by an understanding of those factors that influence violence developmentally. This paper reports the findings of a systematic review of longitudinal studies that have prospectively investigated childhood and/or adolescent predictors of DV perpetration and/or victimization among adult men and women in intimate relationships. We identified 25 original studies that met the inclusion criteria, all of which investigated predictors of domestic physical abuse. Few studies prospectively examined psychological, sexual and verbal abuse. Child and adolescent abuse, family of origin risks, child and adolescent behavioral problems, adolescent peer risks, and sociodemographic risks were all identified as significant predictors of DV perpetration and victimization. It is concluded that early childhood and adolescent factors are consistent predictors in the development of DV perpetration and victimization and that prevention and early intervention approaches targeting these factors are likely to prove the most effective.

Keywords: Domestic violence; Longitudinal predictors; Systematic review; Life-course studies; Prevention

Longitudinal predictors of domestic violence perpetration and victimization: A systematic review

Domestic Violence (DV) is a serious and complex social issue which is associated with significant health, economic and social costs to individuals and the wider community (Mitchell, 2011). DV is a term commonly used to refer to violent acts between adult intimate partners, and can include physical, sexual, emotional and/or psychological abuse (Mitchell, 2011). A significant body of DV literature has amassed over the past 30 years, and yet there have been few attempts to review the body of literature that has investigated developmental influences on DV using longitudinal research designs. Longitudinal studies provide a key method for identifying the risk and protective factors that predict DV perpetration and victimization by clarifying the temporal ordering and strength of potentially modifiable influences. Prospective longitudinal studies across different periods in the life-course can identify key developmental patterns and influences and in this way inform opportunities for DV prevention through the life-course (Hemphill, Smith et al., 2009).

A clear understanding of the patterns of DV and predictors of perpetration and victimization among both men and women is critical to inform preventative strategies (Hemphill et al., 2009; McCambridge, McAlaney & Rowe, 2011). A number of longitudinal studies have now been reported internationally documenting risk and protective factors for DV across childhood, adolescence and adulthood in a range of populations. These studies enable the onset of DV initiation to be identified and linked to prior developmental experiences. Such longitudinal data enables the temporal ordering of developmental antecedents to be separated from the onset of DV incidents, a precondition for causal relationships to be examined. Studies that rely on retrospective reports of childhood adversity make it difficult to draw valid conclusions regarding early life influences of DV experienced in adulthood owing to the well-recognised biases and fallibility of human memory. For example previous research indicates that recall of child abuse results in a substantial rate of false negatives, measurement error, and bias that could elevate type I errors, with higher wellbeing linked to retrospective forgetting and lower wellbeing tied to greater retrospective reporting (Hardt & Rutter, 2004). Prospective reports avoid some of the validity threats associated with retrospective reporting, especially when studying extended periods of the life-course (Schwartz & Sudman, 1994; Stone, Shiffman, Atienza & Nebeling, 2007; Tourangeau, Rips & Rasinski, 2000). To the authors' knowledge, there has been no prior systematic review of prospective longitudinal studies which allow the researcher to assess developmental trends and establish the sequencing and patterns of life-course influences and behaviors that contribute to DV in adulthood. Therefore, the authors undertook a systematic review of prospective longitudinal studies of childhood and adolescent predictors of DV perpetration and victimization among men and women and evaluated the strength of this evidence.

Previous reviews have investigated DV risk factors across childhood, adolescence, and adulthood from cross-sectional and longitudinal studies (e.g., Capaldi, Knoble, Shortt & Kim, 2012; Cattaneo & Goodman, 2005; Schumacher et al., 2001; Stith, Smith, Penn, Ward & Tritt, 2004). For example, Schumacher et al. (2001) reviewed 72 studies of male perpetrated physical abuse and found moderate to strong risk factors (rs ≥ 0.30) included low SES, low education level, experience of child abuse, witnessing parental violence in childhood, anger/hostility, depression, and alcohol and other drug abuse. Similarly, in a meta-analysis of 85 studies of male perpetrated domestic physical abuse Stith et al. (2004) found moderate to strong risk factors for male perpetration (r's ≥ 0.20) included a history of physical abuse perpetration (r = 0.24), marital dissatisfaction (r = 0.30), alcohol abuse (r = 0.24), drug use (r = 0.31), a violence-condoning attitude (r = 0.30), traditional sex role ideology (r = 0.30), anger/hostility (r = 0.26) and depression (r = 0.23). Three risk or co-occurring factors for female victimization were identified: female violence toward male partners (r = 0.41), depression (r = 0.28) and fear of partner violence (r = 0.27), although these factors are likely to be consequences of previous victimization experience. A significant limitation of Schumacher et al.'s and Stith et al.'s studies was failure to report the design of included studies. Further, the childhood risk factors (experience of child abuse, witnessing parental violence) in Schumacher et al.'s review appear to be based on retrospective recall.

A subsequent critical review of 62 studies by Cattaneo and Goodman (2005) reported that the length of time partners had lived together and a history of abuse within the relationship predicted rates of ongoing physical abuse perpetration across samples of men facing criminal or civil action or in treatment for DV. This review focused on patterns of DV reabuse and did not consider developmental risks of DV.

Capaldi et al. (2012) recently undertook a systematic review of over 200 studies of DV among adults and adolescents and found several demographic and contextual risk factors, including low SES, younger age, minority group membership, stress, types of friends and social support, drug use, and relationship conflict and satisfaction. They also described a small number of more recent prospective studies that spanned from childhood into adulthood. These studies indicated a varied set of potential risk factors, such as experience of child abuse, witnessing parental violence, association with aggressive peers in adolescence, and early antisocial behavior. Capaldi et al (2012) noted that the more recent emergence of studies with longitudinal designs opened opportunities to examine developmental hypotheses.

None of the prior reviews approached DV specifically from a developmental perspective or focused on prospective longitudinal evidence. Therefore, in the current review, the authors take a life-course approach to identify risk factors (stable longitudinal predictors of outcomes) assessed prospectively in childhood and adolescence that contribute to subsequent DV experienced in adulthood.

Different types of violence are more likely to be captured by different study designs (Graham-Kevan & Archer, 2003; Johnson, 1995, 2006; Johnson & Leone, 2005; Kelly & Johnson, 2008). For example, the term "intimate terrorism" has been used to capture situations in which a perpetrator is both violent and controlling (i.e., where the violence is one part of a general strategy of power and control). In contrast, "situational couple violence" is a term used to describe situations that involve occasional outbursts of violence, but where violence is not a part of a general pattern of control (Johnson, 1995; Johnson, 2006). These two types of domestic violence are considered to be qualitatively different, with characteristics that make each one more accessible by specific sampling methods. For example, samples drawn from law enforcement agencies, hospitals, or shelters successfully capture intimate terrorism, largely perpetrated by men (Biroscak, Smith, Roznowski, Tucker & Carlson, 2006; Johnson 1995; Johnson 2006), whereas situational couple violence is more commonly identified in large-scale surveys of the general population and generally show some gender symmetry in perpetration (Johnson, 1995; Johnson, 2006; Kimmel 2002). While general population studies may claim random or representative samples, in this instance the bias of even minor non-response has critical implications. For example, intimate terrorists may be extremely unlikely to agree to participate in such a survey, and their partners are often isolated and likely to fear reprisals if they answer such questions (Johnson, 1995). However, because victims of intimate terrorism are attacked more frequently, are more likely to be injured, and are more likely to seek help from police and medical facilities (Johnson & Leone, 2005), it makes sense that samples recruited from law enforcement agencies, emergency rooms, and shelters tap this difficult to reach population. For the purposes of the present review, we acknowledge that retaining individuals who experience intimate terrorism in longitudinal studies is difficult and hence such studies likely underestimate these groups.

Method

A systematic review of the scientific literature was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Schulz, Altman & Group, 2001) to identify relevant prospective longitudinal studies investigating child and adolescent predictors of DV perpetration and/or victimization experienced in the context of adult romantic relationships. Inclusion and exclusion criteria of included papers were discussed and decided by the authors prior to commencement of the literature search and contained in a written list of inclusion criteria.

Literature Search

A computer search of the EBSCO, PubMed, EMBASE, ProQuest and SCOPUS databases was conducted in May 2015. The reference lists of extracted articles were examined by hand for additional relevant articles. The search terms used were domestic violence OR interpersonal violence OR relationship violence OR intimate partner violence OR IPV OR Spous*

violence OR wife abuse OR Spous* abuse OR domestic abuse OR batter* AND longitudinal OR cohort OR determinants OR predictor. Two authors separately and independently conducted the literature search in consultation with a third author.

Inclusion and Exclusion Criteria

Article titles and abstracts were initially screened and retained if they: (a) were written in the English language; (b) were peer-reviewed; (c) described a longitudinal study; (d) empirically tested the strength of one or more predictors of DV perpetration and/or victimization in adulthood; and (e) the full text was accessible.

Following initial screening, full text articles were obtained and assessed for eligibility for review according to the following set of specific inclusion criteria.

Participants. Studies were included if participants were recruited prior to age 18 and followed to adulthood, were adults at the time DV occurred, and reported at least one DV incident within the context of a current or recent romantic relationship. No limits were placed on the sample size or recruitment method used. Studies of males, females or both males and females were included.

Independent Variables. Studies were included for review if they prospectively assessed at least one childhood or adolescent developmental risk, which included child/adolescent abuse experience, family of origin factors (e.g., poor quality of parenting, family conflict, witnessing parental violence), sociodemographic factors (e.g., SES, parental education), behaviors (e.g., antisocial behaviors, alcohol and other drug use), and peer factors (e.g., quality of friendships and adolescent dating relationships). Studies were included if they investigated individual risk factors or composites of multiple risk factors. It was a requirement for studies to report the significance and strength of association between predictor/s and DV outcome/s.

Outcomes. This review focuses on predictors of DV experienced in the context of adult romantic relationships. To be included for review, studies were required to report DV within specific current or recent romantic relationships in adulthood. Studies restricted to adolescent dating violence as outcome variable were excluded. Studies that assessed occurrence of at least one type of adult DV (e.g., sexual, emotional, or physical), via a single item or scale score that was self-reported or partner-reported were included. Individual early developmental risks may differentially predict specific types of DV; however given the small number of prospective longitudinal studies identified, an inclusive strategy was considered best. Frequency, severity and/or duration of DV were variously reported in individual studies however these factors were not necessary for studies to be included. It was necessary for studies to examine predictors of DV perpetration or victimization, included studies reported perpetration, victimization or perpetration and victimization of DV. While studies of adult male-male and female-female DV were not excluded, no such studies were identified during the literature search.

Type of Study. Prospective longitudinal studies were included if they reported a minimum two waves of data collection, where the first data collection occurred prior to age 18, and at least one follow-up assessment was made in adulthood.

Classification of studies

Studies were classified using the PRISMA model (refer to Figure 1). A total of 3,207 records were initially identified. Following removal of duplicates, titles and abstracts of 1,463 articles were reviewed manually to determine if they met the inclusion criteria for review. After the initial abstract and title search, 87 articles remained. Only those that reported on longitudinal predictors of DV perpetration and/or victimization were retained, resulting in 25 relevant articles from 14 cohorts. Cohorts with multiple studies include the National Longitudinal Study of Adolescent to Adult Health dataset (Add Health) (Cui, Ueno, Gordon & Fincham, 2013; Gomez, 2011; Halpern, Spriggs, Martin, & Kupper, 2009; Melander, Noel, & Tyler, 2010; Ramirez, Paik, Sanchagrin, & Heimer, 2012; Reingle, Staras, Jennings, Branchini, & Maldonado-Molina, 2012), the Cambridge Study in Delinquent Development (CSDD) (Lussier, Farrington, & Moffitt, 2009; Theobald & Farrington, 2012), the Christchurch Health and Development Study (CHDS) (Fergusson, Boden, & Horwood, 2008; Woodward, Fergusson, & Horwood, 2002), the Dunedin Multidisciplinary Health and Development Study (DMHDS) (Ehrensaft, Moffitt, & Caspi, 2004; Magdol, Moffitt, Caspi, & Silva, 1998), the Minnesota Longitudinal Study of Risk and Adaptation (MLSRA, formerly Minnesota Longitudinal Study of Parents and Children) (Linder & Collins, 2005; Narayan, Englund, Carlson, & Egeland, 2014), the Oregon Youth Study (OYS) (Capaldi, Dishion, Stoolmiller, & Yoerger, 2001; Kerr & Capaldi, 2011), and the Rochester Youth Development Study (RYDS) (Ireland & Smith, 2009; Smith, Ireland, Park, Elwyn, & Thornberry, 2011). Table 1 presents a summary of the studies that met the inclusion criteria. To consider each cohort with equal weight without losing information on unique factors examined in each study, multiple studies examining a single cohort are presented together.

Results

A summary of measures of DV predictors and outcomes and significant findings of each study is presented in Table 2.

Study Characteristics

Of the 25 studies identified for review, 16 examined predictors of both perpetration and victimization, and seven examined predictors of DV perpetration. Halpern et al. (2009) examined predictors of DV victimization, while Andrews et al. (2000) examined the predictors of any physical aggression within a current relationship. The sample sizes of individual studies ranged from 121 (Linder & Collins, 2005) to 9,421 (Reingle et al., 2012). Eighteen studies were conducted in the United States; six were based on the Add Health dataset (Cui et al., 2013; Gomez, 2011; Halpern et al., 2009; Melander et al.,

2010; Ramirez et al., 2012; Reingle et al., 2012). An additional four studies were from New Zealand, two were from the United Kingdom and one was from Canada. The follow-up period across individual studies ranged from six to 40 years (*M* = 17 years).

Outcome Measure

All studies reviewed included DV as the main outcome variable and all studies used the self-report Conflict Tactics Scale (CTS; Straus, 1990), a revised version of the CTS (Straus & Douglas, 2004; Straus, Hamby, Boney-McCoy & Sugarman, 1996), or individual items from the scale. Four studies incorporated additional scales to assess DV, including the Partner Conflict Calendar (Ehrensaft et al., 2004), the Intimate Relations Scale (Woodward et al., 2002), the Adjustment with Partner Scale (Capaldi et al., 2001; Kerr & Capaldi, 2011), the Dyadic Social Skills Questionnaire (Capaldi et al., 2001; Kerr & Capaldi, 2011), and the Partner Interaction Questionnaire (Kerr & Capaldi, 2011). Four studies included independent observations of couple interactions (Andrews et al., 2000; Capaldi et al., 2001; Kerr & Capaldi, 2011; Linder & Collins, 2005). All 25 studies assessed physical abuse. Five studies also assessed psychological abuse (Capaldi et al., 2001; Ehrensaft et al., 2004; Fergusson, et al., 2008; Kerr & Capaldi, 2011; Magdol et al., 1998) and three included verbal abuse (Lussier et al., 2009; Theobald & Farrington, 2012; Sunday et al., 2011). Frequency of past year abuse was assessed in one study (Sunday et al., 2011) and Gomez (2011) included self-reported abuse severity.

Three studies included assessment of DV outcomes (Ehrensaft et al., 2004; Fergusson et al., 2008; Kerr & Capaldi, 2011). Ehrensaft et al. (2004) included self-reported injury and help-seeking behaviors and police intervention records to differentiate clinical and less serious nonclinical DV. Fergusson et al. assessed participant medical records for evidence of severe DV requiring medical attention and found that, among the sample of 828 males and females, one male participant and two female partners received medical attention following a DV incident. Kerr and Capaldi (2011) assessed DV arrest records and partner-reported injury resulting from DV and reported differential predictors of physical abuse perpetration, arrest and partner injury.

Seven studies included partner-reported DV (Andrews et al., 2000; Capaldi et al., 2001; Kerr & Capaldi, 2011; Linder & Collins, 2005; Lussier et al., 2009; Magdol et al., 1998; Theobald & Farrington, 2012). Magdol et al. (1998) for example, reported a moderate correlation between partner- and self-reports of physical and psychological abuse (rs = 0.53 – 0.58 across patterns of DV perpetration and victimization) among 360 male and female participants and their romantic partners. Theobald and Farrington (2012) collected self- and partner-reports of DV at different time periods using different measures. Self-report DV perpetration was assessed via a single item at age 32, while at age 48 partners reported on participants' DV perpetration via the CTS.

The proportion of DV reported varied across samples from 19% reporting perpetration or victimization of physical abuse (Theobald & Farrington, 2012) to 70% reporting perpetration of psychological abuse (Magdol et al. 1998). Perpetration and victimization were highly correlated (Fergusson et al: r = 0.81; Linder & Collins: r = 0.71); in one study 56% of participants who experienced DV reported it occurred within the context of mutual partner abuse (Linder & Collins, 2005). Eight studies reported gender differences in DV patterns. A greater proportion of females were perpetrators (Cui et al., 2013; Fergusson et al., 2008; Gomez, 2011; Melander et al., 2010; Narayan et al., 2014; Reingle et al., 2012), victims (Gomez, 2011; Halpern et al., 2009), and initiators of conflict within relationships (Sunday et al., 2011). Gomez (2011) reported that females had a greater likelihood of perpetration (OR = 2.20, $p < .001$) and victimization (OR = 1.40, $p < .01$) compared to not experiencing DV. Linder and Collins (2005) found males reported a greater mean number of victimization instances ($M = 0.74$) compared with females ($M = 0.32$) ($p < .05$).

Predictors of DV

In the studies reviewed, predictors of DV related to child and adolescent abuse experiences (six cohorts), family of origin risks (ten cohorts), behavioral risks (nine cohorts), adolescent peer risks (four cohorts), and sociodemographic risks (four cohorts). Studies investigated the contribution of one (Herrenkohl et al., 2007; White & Widom, 2003) to 24 (Magdol et al., 1998) individual predictors. In the following section, key findings from individual studies are discussed in the context of the five domains of DV risk. Following the approach adopted by Capaldi et al. (2012) the contribution of each predictor to the perpetration and victimization of DV, for males and females, are considered together. The authors chose this approach in the current review as there were few differences in predictors between males and females, for the perpetration and victimization of DV. Further, few studies considered sexual, psychological, and verbal abuse, which limited the data available to evaluate predictors of specific types of DV individually.

Child and adolescent abuse experiences

Five studies assessed abuse experiences prospectively (Ireland & Smith, 2009; Linder & Collins, 2005; Menard et al., 2014; Sunday et al., 2011; White & Widom, 2003), and two assessed adolescent dating violence victimization (Cui et al., 2013; Gomez, 2011). Substantiated physical abuse in adolescence was associated with a greater likelihood of perpetrating physical abuse (OR = 2.39, $p = .05$) and psychological aggression (OR = 2.95, $p < .05$) in the context of an adult romantic relationship compared with not experiencing abuse (Sunday et al., 2011). Further, substantiated physical abuse before age six significantly predicted physical abuse perpetration ($\beta = 0.25$, $p < .05$) and victimization ($\beta = 0.23$, $p < .05$) at age 23 among both males and females (Linder & Collins, 2005). White and Widom (2003) found that individuals who experienced child abuse or neglect prior to age 12 were significantly more likely to perpetrate physical abuse 20 years later compared to

matched controls not exposed to abuse or neglect in childhood ($p < .001$). However Ireland and Smith (2009) found substantiated physical abuse perpetrated by a parent in adolescence was unrelated to DV perpetration or victimization in early adulthood. Cui et al. (2013) found adolescent dating violence victimization significantly predicted physical abuse perpetration (OR=1.17, p<.01) and victimization (OR=1.27, p<.001) at age 24 to 32.

Family of origin risks

Adversity in the family of origin, including poor relationships with parents in childhood and adolescence, being raised by a single parent, and witnessing parental violence, emerged as risk factors for later DV. For example, a composite family adversity factor, that included poor economic circumstances and parental drug use and criminality, significantly predicted perpetration and victimization for both genders, although it was a stronger predictor of males' ($\beta = 0.12$) compared to females' ($\beta = 0.03$) victimization at age 24 ($p < .05$) (Fergusson et al., 2008). Linder and Collins (2005) observed parent-child interactions at age 13 and found that observed boundary violations (such as intrusive physical contact, private jokes, intimate talk, role reversal) significantly predicted perpetration ($\beta = 0.37$, $p < .01$) and victimization ($\beta = 0.25$, $p < .05$), while negative interactions between parents and children predicted victimization ($\beta = 0.22$, $p < .05$) in young adulthood for males and females. Magdol (1998) found weak attachment to parents measured in childhood to be a consistent significant predictor ($p < .01$) of DV perpetration and victimization for both genders. Specifically, a composite of poor quality family relations (incorporating negative interaction with mother at age 3, family conflict in childhood and adolescence, parents' use of harsh discipline at ages 7-9 years, poor attachment to parents at age 15 and having a mother with mental health issues in childhood and adolescence) was a significant strong predictor of females' ($\beta = 0.15$, $p < .001$), but not males' ($B = 0.01$, $p > .05$) subsequent physical abuse perpetration. Gomez (2011) additionally found that being raised in a single-father household was associated with a 2.8 greater odds ($p < .05$) of men perpetrating DV in adulthood.

Behavioral risks

Behavioral risk factors included internalising and externalising behaviors in childhood and adolescence, as well as substance use in adolescence. In the following section these factors are considered separately.

Of the 13 studies that investigated behavioral risks, all but Theobald & Farrington (2012) reported that child and adolescent behavior problems significantly predicted subsequent DV (Capaldi et al., 2001; Cui et al., 2013; Ehrensaft et al., 2004; Fergusson et al., 2008; Herronkohl et al., 2007; Johnson et al., 2015; Kerr & Capaldi, 2011; Lussier et al., 2009; Magdol et al., 1998; Temcheff et al., 2008; Woodward et al., 2002). Magdol et al. (1998) investigated the contribution of behavioral problems collected from multiple sources in early and middle childhood and adolescence to adult DV patterns. Together

these behaviors significantly predicted perpetration and victimization of domestic physical and psychological abuse in young adulthood for males (perpetration β = 0.18, victimization β = 0.20) and females (perpetration β = 0.25, victimization β = 0.30) (all $p < .01$). Temcheff et al. (2008) found that aggressive behavior (β = 0.14, $p < .05$) but not withdrawal behavior, assessed in middle childhood via peer evaluation, directly predicted males' and females' self-report of DV perpetration 30 years later. In contrast, Theobald and Farrington (2012) did not find that childhood and adolescent behavioral problems predicted males' perpetration in adulthood. Conduct problems assessed via parent and teacher ratings at ages 7 -13 years predicted perpetration and victimization at ages 24 - 25 for both genders, yet was a significantly stronger predictor ($p < .01$) for females (βs = 0.09, 0.10 perpetration and victimization respectively) compared with males (βs = 0.02, 0.02 for perpetration and victimization, respectively)(Fergusson et al., 2008).

Alcohol and drug use in adolescence increased the likelihood of DV perpetration and victimization in adulthood for both males and females (Fergusson et al., 2008; Kerr & Capaldi, 2011; Melander et al., 2010; Reingle et al., 2012; Sunday et al., 2012). Past year frequency of alcohol use assessed once between ages 12 and 18 was not significantly associated with DV (OR = 1.08, $p > .05$), while any past-month use of illicit substances was associated with being more than twice as likely to perpetrate DV in young adulthood (OR = 2.40, $p < .01$) (Melander et al., 2010). In another study, substance use behavior (including purchasing alcohol, being intoxicated in a public space, smoking marijuana, sniffing glue and other drug use) reported at age 15 was significantly correlated with perpetration and victimization of physical and psychological abuse at age 21 for both males (rs = 0.22, 0.23, 0.27, 0.21 perpetration and victimization of physical abuse and perpetration and victimization of psychological abuse, respectively) and females (rs = 0.24, 0.24, 0.21, 0.20 perpetration and victimization of physical abuse and perpetration and victimization of psychological abuse, respectively) (all ps < .01) (Magdol et al., 1998). Kerr and Capaldi (2011) found that alcohol and other substance use in adolescence significantly predicted partner-reported injury resulting from DV perpetration (OR=1.62, $p < .05$) but not self-reported aggression towards a partner.

Adolescent peer risks

Poor quality adolescent peer networks significantly predicted subsequent DV in five studies. Poor friendship quality, characterised by conflict, poor conflict resolution, and lack of both disclosure and closeness, at age 16 predicted DV perpetration (β = .27, $p<.05$) and victimization (β = .31, $p < .05$) for males and females at age 21 but not age 23 (Linder & Collins, 2005). Narayan et al. (2014) subsequently found that conflict with a best friend but not with family or a romantic partner at age 16 significantly predicted DV perpetration six years later among males and females (β = .17, $p < .05$). Ramirez et al. (2012) found that identifying with a large network of 13 or more violent peers in adolescence was associated

with a 3.76 greater odds of men's DV perpetration in young adulthood compared to having a smaller network of violent peers (p<.001).

Socidemographic risks

Low socio-economic status (SES) in the family of origin in childhood and adolescence was a significant predictor of DV in three studies (Fergusson et al., 2008; Gomez, 2011; Magdol et al., 1998). Specifically, low family SES in childhood and adolescence predicted males' perpetration (β = 0.05, p < .01) and victimization (β = 0.05, p < .01) of physical abuse and males' and females' perpetration (β = 0.05, β = 0.00 males and females, respectively) and victimization (β = 0.01, β = 0.03 males and females, respectively) of psychological abuse (Magdol et al., 1998). Parental income above US$ 50, 000 was protective against perpetration and victimization for males and females (ps < .05) (Gomez, 2011). Further, low family SES at birth was significantly correlated with men's perpetration (r = 0.23, p < .0001) and victimization (r = 0.21, p < .0001) and low SES at age 14 was correlated with women's perpetration (r = 0.17, p < .001) and victimization (r = 0.11, p < .05) and men's victimization (r = 0.13, p < .05). None of these correlations emerged as significant predictors in multiple regression analyses (Fergusson et al., 2008).

Discussion

A careful search for prospective longitudinal studies examining child and adolescent predictors of adult DV perpetration and victimization using specified inclusion criteria identified only 25 studies. Across these studies, five domains were consistently identified as predictive of both perpetration and victimization. Child and adolescent abuse experiences and family of origin risks were the most commonly investigated and consistent predictors, followed by child and adolescent behavioral and adolescent peer risks. Evidence for the influence of early life socidemographic risks to subsequent DV was weaker across the studies reviewed.

Prevalence of DV

Assessing the true prevalence of DV within the population is difficult, exacerbated by differences in theoretical and methodological approaches and the population groups from which samples are drawn (Esquivel-Santovena & Dixon, 2012). In this literature review, the prevalence of DV across studies varied, as expected, due in part to the heterogeneity of samples at baseline and differences in the type/s of DV investigated and the manner in which these were measured. For example, one of the studies with a large population-based sample found the rate of domestic physical abuse was 25% (7% perpetrators, 5% victims and 13% both perpetrators and victims) (Melander et al., 2010). This falls within the range found in an examination of 11 nationally representative cross-sectional surveys of domestic physical abuse, where 12-month rates of

perpetration ranged from 9% to 14% for males and 3.5% to 17% for females and rates of victimization ranged from 5% to 12% for males and 5% to 35% for females (Esquivel-Santovena & Dixon, 2012). In contrast, one of the studies in the current review that purposively tracked child abuse survivors found that 42% of child abuse survivors were perpetrators and 34% were victims of physical abuse later in life (Sunday et al., 2011).

Gender

As the studies in this review largely relied on the CTS and samples of the general population, we expected the gender prevalence patterns typical of situational couple violence, in which there is generally more gender symmetry and female perpetration reported compared to other DV typologies, such as intimate terrorism (Braaf & Meyering, 2013; Johnson, 1995, 2006). Indeed, these longitudinal studies generally found female perpetration and victimization were as high or higher than males (Cui et al., 2013; Fergusson et al., 2008; Gomez, 2011; Linder & Collins, 2005; Melander et al., 2010; Narayan et al., 2014; Ramirez et al., 2012; Sunday et al., 2011). Most studies grouped male and female DV together when modelling, but Magdol et al. (1998) stratified their analyses by gender and found few differences in childhood and adolescent predictors of DV for males and females.

Adult DV perpetration and victimization were highly correlated across studies. The interrelationship may arise through common risk factors and through acts of perpetration of DV leading to reciprocated DV victimization. Thus teasing out specific predictors for perpetrators and victims may be difficult. It is possible that the development of this type of DV, namely situational reciprocated couple violence, may be better understood in terms of the underlying processes that lead to the formation of dysfunctional partnerships where attitudes, communication, interactions, rituals, and behaviors increase the likelihood of DV.

Predictors of DV

Adverse early life experiences and a lack of nurturing relationships in childhood are associated in the literature with long-term negative outcomes for a range of violent behaviors (WHO, 2010). Consistent with this body of research, abuse and family of origin problems experienced in childhood and adolescence were consistent predictors of DV perpetration and victimization for males and females in the studies reviewed. A number of reviewed studies prospectively assessed substantiated abuse experienced in childhood and adolescence (Ireland & Smith, 2009; Linder & Collins, 2005; Sunday et al., 2011; White & Widom, 2003) and adolescent dating violence victimization (Cui et al., 2013; Gomez, 2011). Retrospectively recalled histories of abuse were collected in three studies (Cui et al., 2013; Fergusson et al., 2008; Halpern et al., 2009) but were not considered in the present review that was focussed on prospective studies. Biases of memory can

lead to inaccuracies in recall, including underreporting of a significant incident (such as a child abuse incident) by up to a third of individuals (Hardt & Rutter, 2004).

Many questions about the influence of early abuse experiences remain unaddressed by prospective research. Differences in the nature of child abuse experienced, whether a single incident or ongoing systemic abuse, could differentially influence the risk for subsequent DV perpetration and/or victimization. Childhood and adolescent abuse may also be related to different types of partner violence in different ways (Johnson & Cares, 2004). These issues were not considered in the reviewed research and could enrich future studies. Furthermore, there are still many questions regarding the intergenerational transmission of DV (Johnson & Cares, 2004; Levendosky, 2013; Stith, Rosen, Middleton, Busch, Lundeberg & Carlton, 2000). Only six of the studies in the current review prospectively followed youth of parents who reported DV (Ireland & Smith, 2009; Kerr & Capaldi, 2011; Linder & Collins, 2005; Narayan et al., 2014; Smith et al., 2011; Sunday et al., 2011).

Child and adolescent behavioral risks, including aggressive behavior, withdrawal, and conduct disorders, also emerged as significant predictors of DV perpetration and victimization in this review. This evidence is strengthened by the inclusion of parent, teacher, and peer reports collected prospectively in childhood and adolescence (Capaldi et al., 2001; Ehrensaft et al., 2014; Fergusson et al., 2008; Kerr & Capaldi, 2011; Magdol et al., 1998; Temcheff et al., 2008). Well-controlled trials have consistently found parenting interventions to be effective in reducing child behavior problems (e.g., O'Brien & Daley, 2011; Shelleby & Shaw, 2014). Longitudinal studies have found that family problems, including poor parenting practices and family breakdown, predict childhood externalizing and internalizing behavior problems (Fergusson et al., 2008; Magdol et al., 1998). This evidence suggests that parenting is an important and modifiable underlying cause of child behavior problems. Child behavior problems may also be influenced by underlying genetic predispositions (Santana et al., 2006) or developmental conditions such as autism spectrum disorder (ASD; Farmer & Aman, 2011). Children and adolescents with ASD have difficulty regulating emotion and frequently engage in externalising and aggressive behaviors (Pouw, Rieffe, Oosterveld, Huskens & Stockman, 2013). Given the increasing rate at which ASD is being diagnosed (Biroscak et al., 2006), research into the role ASD and other behavioral disorders play in the risk of subsequent DV is warranted.

Alcohol and other drug use in adolescence was consistently found to be a significant risk factor for subsequent DV. Differences in the way in which substance use was assessed limits comparability across studies, particularly whether use or dependence/abuse were measured. Of note, no studies assessed binge drinking and/or level of intoxication yet these may have impacted relative risk. Early age of uptake and frequent adolescent use are linked to the subsequent development of adult alcohol abuse and dependence (Toumbourou et al., 2004). Cross-sectional research consistently identifies alcohol use as a concurrent risk for any DV (Cunradi, Caetano & Schafer, 2002) and incidents in which alcohol is involved tend to

lead to more severe abuse and greater fear among victims (Stuart et al., 2013). Future research should establish whether the risk factor of adolescent substance use operates directly or indirectly by increasing substance use disorders that then increase adult DV.

A synthesis of the identified developmental risks of DV and how each of these contributes to the experience of DV in adulthood is presented in Figure 2. Early childhood is a critical developmental period; a lack of nurturing relationships is associated with poor social, cognitive and emotional development (WHO, 2010). These findings indicate the need for a developmental approach to DV and the importance of considering the contribution of early life risks to subsequent perpetration and victimization of DV in adult relationships.

Methodological considerations

As anticipated, most of the longitudinal studies of DV identified for this review were general population surveys, and as such, they likely represent experiences of situational couple violence rather than intimate terrorism. When interpreting results from this review, it is important to keep in mind that because of sampling and other design decisions, the longitudinal studies included in the present review are unlikely to provide specific insight into the largely non-overlapping population experiencing intimate terrorism (Johnson, 1995, 2006).

Longitudinal research focused on intimate terrorism presents both a challenge and an important area requiring further study to fully understand the developmental antecedents of all types of DV. Three of the studies in the present review included design elements such as deliberate follow-up of high risk children that may provide strategies to broaden the capture of different DV typologies in longitudinal research (Linder & Collins, 2005; Narayan et al., 2014; Sunday et al. 2011). Sampling method is critical when considering the likelihood of uncovering cases of intimate terrorism, with general population surveys having a low likelihood and shelter, law enforcement, or other purposive samples having a much higher likelihood (Kelly & Johnson, 2008). Unfortunately, encounters with shelters or law enforcement occur after intimate terrorism has already occurred, making prospective study impossible. However, sampling children with indicators that may potentially put them at higher risk may increase the chance of finding intimate terrorism. Linder and Collins (2005) and Narayan et al. (2014) sampled children in poverty, whom they considered developmentally at risk. This approach could be used to sample based on characteristics, such as parental spousal abuse or child abuse, which may be possible indicators of high risk. Sunday et al. (2011) focused not on the general population, but on physically abused adolescents and matched controls. Such an approach might have captured both situational couple violence and possibly some intimate terrorism. Ehrensaft et al. (2004) and Sunday et al. (2011) also reached beyond more typical measures of DV by including jealousy and controlling behaviors in their measures. Ehrensaft et al. (2004) stands out in this review for differentiating clinical from nonclinical DV on the basis

of clinical DV outcomes and controlling abusive behaviors. Compared to less severe nonclinical DV, clinical abuse was associated with a greater frequency of DV incidents, proportion of alcohol-related DV incidents and proportion of injury, which may indicate intimate terrorism. In future research attempting to distinguish between types of DV, control indicators could be incorporated into the DV outcome to make finer distinctions between DV experiences.

When interpreting prevalence estimates, it is important to consider how DV was operationalized. In all of the studies reviewed, measurement of DV was based on the self-report CTS. The revised CTS (Straus, 1990) provides a count of physical, sexual, and verbal abusive acts over the past 12 months within the context of a current relationship and distinguishes minor from severe acts (Braaf & Meyering, 2013). The CTS provides a snapshot of aggressive behavior within intimate relationships, but does not consider contextual factors in which abuse occurs, such as motivation and consequences of abuse (Kimmel, 2002). Eight of the studies reviewed included additional measures of DV, and three of these considered DV outcomes (Ehrensaft et al., 2004; Fergusson et al., 2008; Kerr & Capaldi, 2011). DV may include emotional abuse, sexual assault, intimidation, manipulation and isolation (Dobash, Dobash, Wilson & DalySource, 1992; Johnson, 2006), but these are not measured by the CTS and were rarely considered in the studies reviewed. In addition, retrospective recall of abuse incidents that have occurred over the past 12 months is subject to bias and inaccuracies in reporting (Dobash et al., 1992). Further, studies investigating the influence that longitudinal predictors have on the frequency of DV incidents over the past year do not reveal the extent that such predictors contribute to an initial DV incident or ongoing systematic DV. Thus, the exclusive use of a single measure as the primary indicator across the DV literature must be examined critically and interpreted with caution.

In this review we adopted a highly selective search strategy and set of inclusion criteria in order to capture prospective longitudinal studies of developmental predictors of DV in the context of stable adult relationships. Prospective longitudinal studies that track development across extended periods of the life course are expensive, time consuming, and subsequently comprise a small proportion of the published literature (Taplin, 2005). Thus, this approach excluded all cross-sectional studies. While such literature has relevance to general understandings of violence in relationships, it does not provide the same insight as longitudinal evidence into developmental processes. Literature looking only at DV in adolescence was also excluded. Research on adolescent relationships should not be generalized to relationships in adulthood, which often involve greater intimacy and more often include or lead to cohabitation, marriage, and family formation (Halpern & Kaestle, 2013). Despite the critical role of adult relationships, very few studies examined such relationships as an outcome. Where relationship outcomes were examined this was done in early adulthood, underscoring the need for longer adult follow up.

Implications

The current findings have a number of implications for policy and interventions targeted to the prevention of DV. Policy responses need to take a whole of life approach to addressing DV. Major resources should be funnelled to interventions targeting at-risk families in early life, starting with the ante-natal and peri-natal periods. An effective example is the Nurse-Family Partnership (NFP) program whereby support and education is delivered to vulnerable parents during a series of home visits across the ante- and post-natal periods (Olds, Henderson, Chambelin & Tatelbaum, 1986). Further, investment is needed in school-based programs targeting children exposed to DV and substance using parents, such as via the Strengthening Families program (Spoth, Redmond, Shin & Azevedo, 2004). Finally, greater delivery of effective interventions to reduce adolescent alcohol and drug use are needed, particularly targeting vulnerable youths exposed to multiple risks. For example the Communities that Care model has been shown to be an effective community-based approach to reducing youth substance use and violent behaviors (e.g., Hawkins, Oesterle, Brown, Abbott, & Catalano, 2014).

There are several implications for further research. Further longitudinal studies of how child and adolescent risks contribute to DV and other negative outcomes in adulthood should adopt a prospective approach, collect data from multiple sources, and begin early in the life course. Because of the difficulty and expense of such longitudinal work, existing and emerging longitudinal studies are encouraged to incorporate high-quality measures of DV in adulthood, as this review makes clear the importance of such data to this critical area of research. The relationships between risks at each life stage and DV in adulthood remain untested. Specifically, longitudinal evidence on the extent to which early childhood risks indirectly influence DV via adolescent and early adulthood risks is very limited and should be examined in further research. Longitudinal data tracking DV through mid and older adulthood is currently limited. Finally, investigation is needed into how the identified risk factors differentially predict the perpetration and victimization of intimate terrorism and situational couple violence.

Conclusions

The selection criteria identified only 25 prospective longitudinal studies examining childhood and adolescent developmental predictors of DV perpetration and victimization. Such studies depended heavily on the CTS and on population-based surveys. Significant predictors of DV captured in these studies included child abuse, family of origin risks, child and adolescent behavior problems, adolescent substance use, adolescent peer risks and, less consistently, sociodemographic risk. These findings indicate that there may be opportunities to prevent DV in adulthood through efforts to reduce risk factors in the childhood family context and in adolescence (WHO, 2010).

References

*Andrews, J. A., Foster, S. L., Capaldi, D., & Hops, H. (2000). Adolescent and family predictors of physical aggression, communication, and satisfaction in young adult couples: A prospective analysis. *Journal of Consulting and Clinical Psychology, 68*(2), 195-208.

Ansara, D.L., & Hindin, M.J. (2009). Perpetration of intimate partner aggression by men and women in the Philippines: prevalence and associated factors. *Journal of Interpersonal Violence, 24*(9), 1579-1590.

Biroscak, B.J., Smith, P.K., Roznowski, H., Tucker, J., & Carlson, G. (2006). Intimate partner violence against women: Findings from one state's ED surveillance system. *Journal of Emergency Nursing, 32*, 12-16.

Braaf, R, & Meyering, I.B. (2013). The gender debate in domestic violence: The role of data *Issues Paper 25*: Australian Domestic & Family Violence Clearninghouse.

*Capaldi, D. M., Dishion, T. J., Stoolmiller, M., & Yoerger, K. (2001). Aggression toward female partners by at-risk young men: the contribution of male adolescent friendships. *Developmental Psychology, 37*(1), 61-73.

Capaldi, D.M., Knoble, N.B., Shortt, J.W., & Kim, H.K. (2012). A systematic review of risk factors for intimate partern violence. *Partner Abuse,3*(2), 231-280.

Cattaneo, L.B., & Goodman, L.A. (2005). Risk factors for reabuse in intimate partner violence: A cross-disciplinary critical review. *Trauma, Violence & Abuse, 6*(2), 141-175.

*Cui, M., Ueno, K., Gordon, M., & Fincham, F.D. (2013). The continuation of intimate partner violence from adolescence to young adulthood. *Journal of Marriage and the Family*, 75, 300-313.

Cunradi, C. B., Caetano, R., & Schafer, J. (2002). Alcohol-related problems, drug use, and male intimate partner violence severity among US couples. *Alcoholism: Clinical and Experimental Research, 26*(4), 493.

Dobash, R.P., Dobash, R.E., Wilson, M. & DalySource M. (1992). The myth of sexual symmetry in marital violence. *Social Problems, 39*(1), 71-91.

Douglas, E.M., & Hines, D.A. (2011). The helpseeking experiences of men who sustain intimate partner violence: An overlooked population and implications for practice. *Journal of Family Violence, 26*, 473-485.

Dutton, D.G., & Nicholls, T.L. (2005). The gender paradigm in domestic violence: Research and theory. *Aggression & Violent Behavior, 10*, 680-714.

*Ehrensaft, M. K., Moffitt, T. E., & Caspi, A. (2004). Clinically abusive relationships in an unselected birth cohort: Men's and women's participation and developmental antecedents. *Journal of Abnormal Psychology, 113*(2), 258-270.

Esquivel-Santovena, E.E., & Dixon, L. (2012). Investigating the true rate of physical intimate partner violence: A review of nationally representative surveys. *Aggression & Violent Behavior, 17*(3), 208-219.

Farmer, C.A., & Aman, M.G. (2011). Aggressive behavior in a sample of children with autism spectrum disorders. *Research in Autism Spectrum Disorders, 5*, 317-323.

*Fergusson, D., Bowden, J., & Horwood, L. J. (2008). Developmental antecedents of interpartner violence in a New Zealand birth cohort. *Journal of Family Violence, 23*(8), 737-753.

*Gomez, A.M. (2011). Testing the cycle of violence hypothesis: Child abuse and adolescent dating violence as predictors of intimate partner violence in young adulthood. *Youth & Society, 43*(1), 171-192.

Graham-Kevan & Archer, J. (2003). Intimate terrorism and common couple violence: A test of Johnson's predictions in four British samples. *Journal of Interpersonal Violence, 18*, 1247.

Halpern, C. T., & Kaestle, C. E. (2013). Sexuality in emerging adulthood. In L. Diamond & D. Tolman (Eds.), *APA handbook of sexuality and psychology* (pp. 487-522). Washington, DC: American Psychological Association.

*Halpern, C.T., Spriggs, A.L., Martin, S.L. & Kupper, L.L. (2009). Patterns of intimate partner violence victimization from adolescence to young adulthood in a nationally representative sample. *Journal of Adolescent Health, 45(5)*, 508-516.

Hardt, J. & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: review of the evidence. *Journal of Child Psychology and Psychiatry, 45*(2), 260-273.

Hawkins, J.D., Oesterle, S., Brown, E.C., Abott, R.D., & Catalano, R.F. (2014). Youth problem behaviors 8 years after implementing the Communities that Care Prevention System: A community-randomized trial. *Journal of the American Medical Association Pediatrics, 168*, 122-129.

Hemphill, S.A., Smith, R., Toumbourou, J.W., Herrenkohl, T.I., Catalano, R.F, McMorris, B.J. et al. (2009). Modifiable determinants of youth violence in Australia and the United States: A longitudinal study. *Australia and new Zealand Journal of Criminology,* 42, 289-309.

*Herrenkohl, T. I., Kosterman, R., Mason, W. A., & Hawkins, J. D. (2007). Youth violence trajectories and proximal characteristics of intimate partner violence. *Violence and Victims, 22*(3), 259-274.

*Ireland, T., & Smith, C. (2009). Living in Partner-violent Families: Developmental Links to Antisocial Behavior and Relationship Violence. *Journal of Youth & Adolescence, 38*(3), 323.

Johnson, M.P. (2005). Apples and oranges in child custody disputes: Inimate partner terrorism vs. situational couple violence. *Journal of Child Custody, 2*, 43-52.

Johnson, M.P. (2006). Conflict and control: Gender symmetry and asymmetry in domestic violence. *Violence Against Women, 12(11)*, 1003-1018.

Johnson, M.P. & Cares, A. (2004). Effects and non-effects of childhood experiences of family violence on adult partner violence. Paper presented at the National Council on Family Relations annual meeting, Orlando, FL.

Johnson, M.P. & Leone, J.M. (2005). The differential effects of intimate terrorism and situational couple violence: Findings from the National Violence Against Women Survey. *Journal of Family Issues, 26(3)*, 322-349.

Johnson, M.P., Leone, J.M. & Xu, Y. (2014). Intimate terrorism and situational couple violence in general surveys: Ex-spouses required. *Violence Against Women, 20*(2), 186-207.

*Johnson, W.L., Giordano, P.C., Manning, W.D., & Longmore, M.A. (2015). The age-IPV curve: Changes in the perpetration of intimate partner violence during adolescence and young adulthood. *Journal of Youth and Adolescence*, 44, 708-726.

Kelly, J.B. & Johnson, M.P. (2008). Differentiation among types of intimate partner violence: Research update and implications for interventions. *Family Court Review, 46*(3), 476-499.

*Kerr, D. C., & Capaldi, D. M. (2011). Young men's intimate partner violence and relationship functioning: long-term outcomes associated with suicide attempt and aggression in adolescence. *Psychological Medicine, 41*(4), 759-769.

Kimmel, M.S. (2002). "Gender symmetry" in domestic violence. *Violence Against Women, 8*(11), 1332-1363.

Levendosky, A.A. (2013). Drawing conclusions: An intergenerational transmission of violence perspective. *Psychodynamic Psychiatry, 41*, 351-360.

*Linder, J.R., & Collins, A.W. (2005). Parent and peer predictors of physical aggression and conflict management in romantic relationships in early adulthood. *Journal of Family Psychology, 19*(2), 252-262.

*Lussier, P., Farrington, D. P., & Moffitt, T. E. (2009). Is the antisocial child father of the abusive man? A 40-year prospective longitudinal study on the developmental antecedents of intimate partner violence. *Criminology, 47*(3), 741-780.

*Magdol, L., Moffit, T.E., Caspi, A., & Silva, P.A. (1998). Developmental antecedents of partner abuse: A prospective-longitudinal study. *Journal of Abnormal Psychology, 107*(3), 375-389.

McCambridge, J., McAlaney, J., & Rowe, R. (2011). Adult consequences of late adolescent alcohol consumption: A systematic review of cohort studies. *PLoS Medicine*, 8. e1000413.

*Melander, L.A., Noel, H., & Tyler, K.A. (2010). Bidirectional, unidirectional, and nonviolence: A comparison of the predictors among partnered young adults. *Violence and Victims, 25*(5), 617-630.

*Menard, S., Weiss, A. J., Franzese, R. J., & Covey, H. C. (2014). Types of adolescent exposure to violence as predictors of adult intimate partner violence. *Child Abuse & Neglect, 38*(4), 627-639.

Mihorean, K. (2005). Trends in self-reported spousal violence. In K. AuCoin (Ed.), *Family violence in Canada: A statistical profile*. Ottawa, ON: Statistics Canada.

Mitchell, L. (2011). Domestic violence in Australia - An overview of the issues *Background note*. Canberra: Parliamentary Library.

Moher, D, Schulz, KF, Altman, DF, & Group, for the CONSORT. (2001). The CONSORT Statement: Revised Recommendations for Improving the Quality of Reports of Parallel-Group Randomized Trials. *Jama, 285*, 1987 - 1991.

*Narayan, A. J., Englund, M. M., Carlson, E. A., & Egeland, B. (2014). Adolescent conflict as a developmental process in the prospective pathway from exposure to interparental violence to dating violence. *Journal of Abnormal Child Psychology, 42*(2), 239-250.

O'Brien, M. & Daley, D. (2011). Self-help parenting interventions for childhood behaviour disorders: A review of the evidence. *Child: Care, Health and Development, 37*, 623-637.

Olds, D.L., Henderson, C.R.J., Chambelin, R., & Tatelbaum, R. (1986). Preventing child abuse and neglect: A randomized trial of nurse home visitation. *Pediatrics, 78*, 65-78.

Pouw, L.B.C., Rieffe, C., Oosterveld, P., Huskens, B., & Stockmann, L. (2013). Reactive/proactive aggression and affective/cognitive empathy in children with ASD. *Research in Developmental Disabilities, 34*, 1256-1266.

*Ramirez, M., Paik, A., Sanchagrin, K., & Heimer, K. (2012). Violent Peers, Network Centrality, and Intimate Partner Violence Perpetration by Young Men. *Journal of Adolescent Health, 51*, 503-509.

*Reingle, J. M., Staras, S. A. S., Jennings, W. G., Branchini, J., & Maldonado-Molina, M. M. (2012). The Relationship Between Marijuana Use and Intimate Partner Violence in a Nationally Representative, Longitudinal Sample. *Journal of Interpersonal Violence, 27*(11), 1562-1578.

Santana, M.C., Raj, A., Decker, M.R., LaMarche, A., & Silverman, J.G. (2006). Masculine gender roles associated with increased sexual risk and intimate partner violence perpetration among young adult men. *Journal of Urban Health, 83*, 575-585.

Shelleby, E.C., & Shaw, D.S. (2014). Outcomes of parenting interventions for child conduct problems: A review of differential effectiveness. *Child Psychiatry & Human Development*, DOI 10.1007/s10578-013-0431-5

Schwartz, N. & Sudman, S. (1994). *Autobiographical memory and the validity of retrospective reports.* New York: Springer Verlag.

*Smith, C. A., Ireland, T. O., Park, A., Elwyn, L., & Thornberry, T. P. (2011). Intergenerational Continuities and Discontinuities in Intimate Partner Violence: A Two-Generational Prospective Study. *Journal of Interpersonal Violence, 26*(18), 3720-3752.

Spoth, R., Redmond, C., Shin, C., & Azevedo, K. (2004). Brief family intervention effects on adolescent substance initiation school-level growth curve analyses 6 years following baseline. *Journal of Consulting and Clinical Psychology, 72*, 535-542.

Stewart, D.E., MacMillan, H. & Walhen, N. (2013). Intimate partner violence. *Canadian Journal of Psychiatry, 58*(6), 1-15.

Stith, S.M., Rosen, K.H., Middleton, K.A., Busch, A.L., Lundeberg, K. & Carlton, R.P. (2000). The intergenerational transmission of spouse abuse: A meta-analysis. *Journal of Marriage and the Family, 62*, 640-654.

Stith, S.M., Smith, D.B., Penn, C.E., Ward, D.B., & Tritt, D. (2004). Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. *Aggression and Violent Behavior, 10*(1), 65-98.

Stone, A., Schiffman, S., Atienza, A. & Nebeling, L. (2007). *The science of real-time data capture: Self-reports in health research*. New York: Oxford University Press.

Straus, M. A. (1990). Measuring intrafamily conflict and violence: The Conflict Tactics (CT) Scales. In M. A. Straus & R. J. Gelles (Eds.), *Physical violence in American families: Risk factors and adaptations to violence in 8,145 families* (pp. 29-47). New Brunswick, NJ: Transaction.

Straus, M.A. (2010). Thirty years of denying the evidence on gender symmetry in partner violence: implications for prevention and treatment. *Partner Abuse, 1*(3), 332-362.

Straus, M.A. & Douglas, E.M. (2004). A short form of the Revised Conflict Tactics Scales, and typologies for severity and mutuality. *Violence and Victims, 19*(5), 507-520.

Straus, M.A., Hamby, S.L., Boney-McCoy, S. & Sugarman, D.B. (1996). The Revised Conclict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues, 17*(3), 283-316.

Stuart, G.L., Moore, T.M., Elkins, S.R., O'Farrell, T.J., Temple, J.R., Ramsey, S.E., & Shorey, R.C. (2013). The temporal association between substance use and intimate partner violence among women arrested for domestic violence. *Journal of Consulting and Clinical Psychology, In Press*.

*Sunday, S., Kline, M., Labruna, V., Plelcovitz, D., Salzinger, S., & kaplan, S.L. (2011). The role of adolescent physical abuse in adult intimate partner violence. *Journal of Interpersonal Violence, 26*(18), 3773-3789.

Talpin, S. (2005). *Methodological design issues in longitudinal studies of children and young people in out-of-home care: Literature review*. New South Wales Department of Community Services: NSW.

*Temcheff, C.E., Serbin, L.A., Martin-Storey, A., Stack, D.M., Hodgins, S., Ledingham, J., & Schwartman, A.E. (2008). Continuity and pathways from aggression in childhood to family violence in adulthood: A 30-year longitudinal study. *Journal of Family Violence, 23*, 231-242.

*Theobald, D., & Farrington, D.P. (2012). Child and adolescent predictors of male intimate partner violence. *Journal of Child Psychology & Psychiatry & Allied Disciplines, 53*, 1242-1249.

Toumbourou, J.W., Williams, I.R., White, V.M., Snow, P.C., Munro, G.D., & Schofield, P.E. (2004). Prediction of alcohol-related harm from controlled drinking strategies and alcohol consumption trajectories. *Addiction, 99*, 498-508.

Tourangeau, R., Rips, L.J. & Rasinski, K. (2000). *The psychology of survey response*. New York: Cambridge University Press.

Vezina, J. & Hebert, M. (2007). Risk factors for victimization in romantic relationships of young women - A review of empirical studies and implications for prevention. *Trauma, Violence, and Abuse, 8(1)*, 33-66.

Whitaker, D.J., Haileyesus, T., Swahn, M., & Saltzman, L.S. (2007). Differences in frequency of violence and reported injury between relationships with reciprocal and nonreciprocal intimate partner violence. *American Journal of Public Health, 97*(5), 941-947.

*White, H.R. & Widom, C.S. (2003). Intimate partner violence among abused and neglected children in young adulthood: The mediating effects of early aggression, antisocial personality, hostility and alcohol problems. *Aggressive Behavior, 29*, 332-345.

WHO. (2010). Violence prevention: The evidence *Series of briefings on violence prevention*: World Health Organisation.

*Woodward, L. J., Fergusson, D. M., & Horwood, L. J. (2002). Romantic relationships of young people with childhood and adolescent onset antisocial behavior problems. *Journal of Abnormal Child Psychology, 30*(3), 231-243.

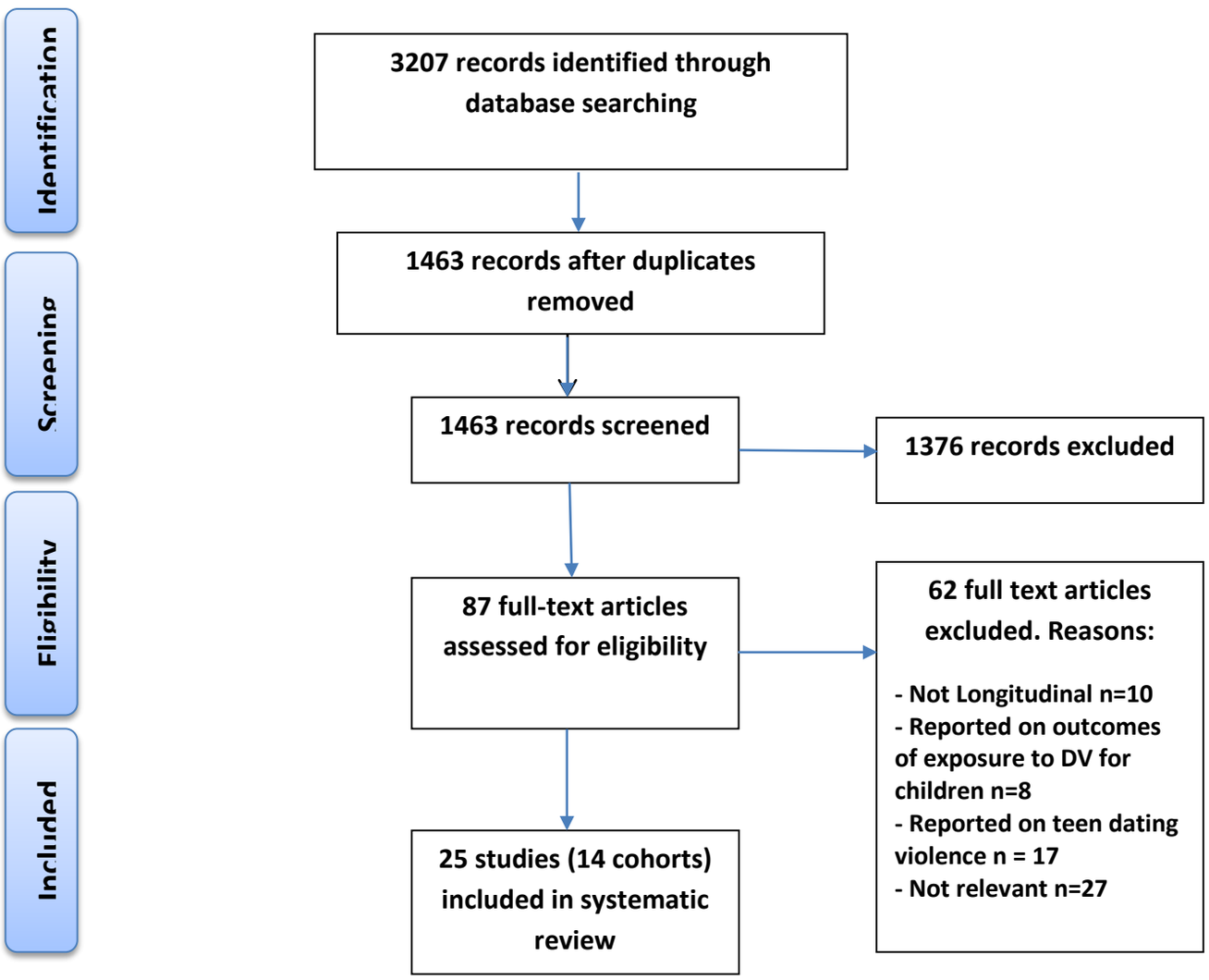

Figure 1. Search strategy based on the PRISMA model.

Table 1. Summary of reviewed studies.

Study/Cohort (Country)	Participants	Length of follow up (Number of waves)
1. Add Health Cohort (USA)		
Cui, Ueno, Gordon & Fincham, 2013	4,048 males and females in grade 7-12 at T1 and followed up to age 18-27 who reported at least one romantic relationship in adolescence at Wave II.	13-14 years (4 waves)
Gomez, 2011	4,191 males and females in grade 7-12 at T1 and followed up to age 22-27 who reported at least one romantic relationship after the age of 18.	6-7 years (3 waves)
Halpern, Spriggs, Martin, & Kupper, 2009	4,134 males and females in grade 7-12 at T1 and followed up to age 18-27 who reported at least one romantic relationship before and after age 18	6-7 years (3 waves)
Melander, Noel, & Tyler, 2010	6, 563 males and females in grade 7-12 at T1 and followed up to age 18-27 who were in a current romantic relationship at follow up.	6-7 years (3 waves)
Ramirez, Paik, Sanchagrin, & Heimer, 2012	2,993 males in grade 7-12 at T1 and followed up to age 18-27 who reported a recent romantic relationship at follow up.	6-7 years (3 waves)
Reingle, Staras, Jennings, Branchini, & Maldonado-Molina, 2012	9,421 males and females in grade 7-12 at T1 and followed up to age 24-32.	13-14 years (4 waves)
2. CSDD Cohort (UK)		
Lussier, Farrington, & Moffitt, 2009	224 males aged 8 at T1 and followed up to age 48	40 years (5 waves)
Theobald & Farrington, 2012	365 males aged 8 at T1 and followed up to age 48	40 years (5 waves)
3. CHDS Cohort (New Zealand)		
Fergusson, Boden, & Horwood, 2008	828 males and females followed from birth up to age 25 who were in a romantic relationship for at least one month during the past 12 months	25 years (21 waves)
Woodward, Fergusson, & Horwood, 2002	495 males and females followed from birth up to age 21 who were in a romantic relationship for at least one month during the past 12 months	21 years (20 waves)
4. DMHDS Cohort (New Zealand)		

Ehrensaft, Moffitt, & Caspi, 2004	980 males and females aged 3 years at T1 followed up to age 26	23 years (9 waves)
Magdol, Moffitt, Caspi, & Silva, 1998	861 males and females aged 3 years at T1 followed up to age 21 and who had been in an intimate relationship for at least one month in the 12 months prior to follow up	18 years (10 waves)
5. MLSRA Cohort (USA)		
Linder & Collins, 2005	121 developmentally at risk males and females followed from birth until age 23 and who were in a romantic relationship for at least four months at age 21	23 years (# waves not indicated)
Narayan, Englund, Carlson, & Egeland, 2014	182 developmentally at risk males and females followed from birth until age 23	23 years (# waves not indicated)
6. OYS Cohort (USA)		
Capaldi, Dishion, Stoolmiller, & Yoerger, 2001	206 delinquent at risk males aged 9-10 at T1 and followed up to age 24	~ 14 years (4 waves)
Kerr & Capaldi, 2011	153 delinquent at risk males aged 9-10 at T1 and followed up to age 31 and who were in a romantic relationship	21 years (21 waves)
7. RYDS Cohort (USA)		
Ireland & Smith, 2009	846 males and females aged 14 at T1 and followed to age 23	9 years (12 waves)
Smith, Ireland, Park, Elwyn, & Thornberry, 2011	913 males and females aged 14 at T1 and followed to up to age 31	17 years (14 waves)
8. Andrews, Foster, Capaldi, & Hops, 2000	604 males and females with mean age 16 at T1 and followed up to age 24	6 years (3 waves)
9. Herrenkohl, Kosterman, Mason, & Hawkins, 2007	644 males and females in grade 5 at T1 followed to age 24 and who had been in an intimate relationship in the 12 months prior to follow up	~14 years (# waves not indicated)
10. Johnson, Giordano, Manning & Longmore, 2015 (USA)	1,235 males and females aged 13-16 at T1 followed up to age 28	11 years (5 waves)
11. Menard, Weiss, Franzese, & Covey, 2014	726 males and females aged 11-17 at T1 followed up to age 43 and who were in a serious relationship at follow up	27 years (11 waves)

12. Sunday et al., 2011	67 of 99 males and females physically abused in adolescence and 78 of 99 non-abused matched controls who were 12 – 18 at T1 and followed up 10 years later	10 years (2 waves)
13. Temcheff et al., 2008	365 males and females in grades 1, 4 or 7 at T1 followed up to mean 33 years of age who were in a romantic relationship of at least one month duration and had become a parent.	~ 20 years (3 waves)
14. White & Widom, 2003	676 males and females physically or sexually abused or neglected in childhood and 520 matched controls who were aged 12 or younger at T1 and followed up 20 years later	20 years (2 waves)

Table 2. Summary of predictor variables, outcome measures and significant findings.

Study (Country)	Predictor Variables Measured in Childhood and Adolescence	Outcome Measures	Significant Predictors from Childhood and Adolescence
1. Add Health Cohort Studies (USA)			
Cui et al., 2013	Adolescent dating violence victimization (T2); general aggression (T2)	Past year experience of physical abuse perpetration and victimization (from CTS items)	-Perpetration: adolescent dating violence victimization, general aggression in adolescence -Victimization: adolescent dating violence victimization, general aggression in adolescence
Gomez, 2011	Family: parental income (T1); family living arrangements (T1) Adolescent dating violence victimization (T2);	Past year experience of physical abuse perpetration and victimization (from CTS items)	- Perpetration: being female; adolescent dating violence; parents' low income; growing up with a single mother - Victimization: adolescent dating violence; being female; parents' low income
Halpern et al. 2009	Sociodemographic and family characteristics in adolescence (T1); adolescent depression (T1); multiple partners in adolescence (T2); older partners in adolescence (T2)	No IPV victimization, adolescent-limited IPV victimization, young adult onset IPV victimization, and adolescent–young adult persistent IPV victimization (from CTS items)	- Young adult victimization (onset and persistent): family structure; older partners, more than two recent partners
Melander et al., 2010	Depressive symptoms; past year frequency of alcohol consumption; past month marijuana and illicit drug use; participant, parent and partner education level	Past year experience of physical abuse perpetration and victimization (from CTS items); transformed into four DV categories: bidirectional abuse, perpetration only, victimization only, no abuse	- Bidirectional abuse: not dating; being younger age; depressive symptoms - Perpetration: being female; not dating; illegal drug use; being older - Victimization: being male; not dating; childhood neglect; self has low education level
Ramirez et al., 2012	Adolescent peer violence; adolescent friendship network size and density (T1)	Past year experience of physical abuse perpetration (T3)	-Perpetration: having > 13 friends and peer violence

Reingle et al., 2012	Lifetime marijuana use (T1 , T2); Past month marijuana use (T2)	Past year experience of physical abuse perpetration and victimization (from CTS items); transformed into four DV categories: bidirectional abuse, perpetration only, victimization only, no abuse	-Perpetration: marijuana use -Victimization: marijuana use
2. CSDD Cohort (UK)			
Lussier et al., 2009	Individual factors: IQ age 10 (T1), antisocial behavior (T1, T2, T4 Family factors: socioeconomic status, criminal parents, parental conflict, inadequate parenting age 10 (T1)	Partner reported occurrence of verbal and physical abuse perpetration and victimization during the past 5 years collected at T5 (revised CTS)	-Perpetration: low IQ at age 10; antisocial in adolescence
Theobald & Farrington, 2012	Family factors: criminal parents, disrupted family, socioeconomic status, parental disagreement, physical neglect and poor supervision age 8-10 (T1); family size, marital disharmony, poor housing, unemployed father age 12-14 (T2) Individual factors: low attainment, daring, unpopular, IQ, impulsivity, lack concentration, troublesome, truancy, discipline difficulties age 8-10 (T1); antisocial, hostility towards police, lying, delinquency and aggression, anxiety, IQ, delinquent friends, juvenile conviction age 12-14 (T2); antisocial, aggressive attitude, smoker, low education attainment, lack of stable employment, drug user, alcohol related aggression, group violence, poor parental relationship age 18 (T3)	Experience of perpetration, victimization or mutual partner physical abuse reported at age 32 (T4) (revised CTS); Partner reported occurrence of verbal and physical abuse perpetration and victimization during the past 5 years collected at T5 (revised CTS)	- Physical abuse perpetration and victimization: being unpopular; having a criminal father; poor supervision at age 10; not passing school exams; poor parental relationship at age 18
3. CHDS Cohort (New Zealand)			
Fergusson et al., 2008	Socioeconomic status: parents' education (T1), family standard of living (T1-T12), socioeconomic status (T1,T16)	Any experience of psychological aggression, physical assault and sexual coercion perpetration and victimization (revised CTS);	- Perpetration: socioeconomic status; alcohol abuse age 15-18; conduct problems ages 7-13 - Victimization: family adversity; conduct problems ages 7-13; child abuse

	Family functioning: parent's use of illicit drugs (T13), parents' criminality (T17), family disadvantage (T1-T17) Child and adolescent adjustment: aggressive behaviors (T5-T7), conduct problems (T9-T19), violent offending (T14--T19), psychological disorder or alcohol/other drug abuse (T18-T19)	severity assessed via self-report rating (minor, severe) and inspection of medical history for evidence of severe physical abuse	
Woodward, et al., 2002	Childhood antisocial behavior (T10-T12), adolescent violent offending (T14-T18)	Past year experience of physical violence perpetration and victimization at age 21 (CTS; Intimate Relations Scale)	-Perpetration: childhood antisocial behavior, adolescent violent offending -Victimization: childhood antisocial behavior, adolescent violent offending
4. DMHDS Cohort (New Zealand)			
Ehrensaft et al., 2004	Socioeconomic status (T1-T7), family structure (T1-T5) Quality of family relationships : negative mother-child interaction (T1), harsh discipline (T3, T4), inconsistent discipline (T3, T4) Individual factors : hyperactive and antisocial behavior problems (T2-T5), psychiatric disorders (T5-T7), personality (T8)	Physical and psychological controlling abuse perpetration and victimization (Dunedin Study Abuse Scales – similar to CTS; Partner Conflict Calendar)	-Female perpetration/victimization: family structure instability, behavior problems in adolescence, aggressive personality in late adolescence -Male perpetration/victimization: harsh discipline, behavior problems in childhood and adolescence, psychiatric disorders, deviant personality traits in late adolescence
Magdol et al., 1998	Socioeconomic status: social class (T1,T4,T5,T8), family structure (T1,T5,T8) Quality of family relationships: negative mother-child interaction (T2), family conflict (T4,T5,T8), harsh discipline (T4-5), parent-child attachment (T8), mother's mental health issues(T4,T5,T8) Education: IQ score (T4-5), reading ability (T4,T5,T8),leaving school age (T8) Problem behaviors: temperament (T2-3), conduct problems (T4,T5,T8), adolescent delinquency (T8), police contact (T8), drug abuse in adolescence (T8)	Physical and psychological domestic abuse perpetration and victimization (CTS + additional items)	- Male perpetration: Family socioeconomic status; quality of family relationships; education; problem behaviors - Female perpetration: not living with both parents at age 15; quality of family relationships; age at leaving school; problem behaviors - Male victimization: Family socioeconomic status; quality of family relationships; education; problem behaviors - Female victimization: not living with both parents at age 15; quality of family relationships; education; problem behaviors
5. MLSRA Cohort (USA)			

Linder & Collins, 2005	Childhood: substantiated child abuse at ages 2 and 6 (T3,T8); witnessing parental abuse (T2-T6); Adolescence: negative interactions with parent at age 13 (T9); parent-child boundary violations at age 13 (T9); friendship quality at age 16 (T10)	Physical abuse perpetration and victimization at age 21, 23; independently reported by self and partner (CTS); participant and partner observed conflict management at age 21	- Perpetration at age 21: parent-child boundary violations; poor friendship quality - Perpetration at age 23: parent-child boundary violations; negative interaction with parent; child abuse -Victimization at age 21: parent-child boundary violations; negative interaction with parent; witnessing parental abuse; poor friendship quality - Victimization at age 23: being male; child abuse; parent-child boundary violations
Narayan et al., 2014	Childhood: witnessing parental abuse Adolescence: family conflict, friendship conflict, romantic partner conflict	Past 2 year physical abuse perpetration and victimization self-reported at age 23 (CTS)	-Perpetration: witnessing parental abuse; friendship conflict -Victimization: being female
6. OYS Cohort (USA)			
Capaldi et al., 2001	Antisocial behavior (T1, T3), deviant peer association (T2), observed hostile talk about women (T3)	Physical and psychological aggression perpetration independently reported by self and partner (CTS, Dyadic Social Skills Questionnaire, Kessler items); Participant and partner observed physical and psychological aggression	-Perpetration: observed hostile talk about women, antisocial behavior in late adolescence (direct effects); antisocial behavior in childhood and early adolescence, deviant per association in adolescence (indirect effects)
Kerr & Capaldi, 2011	Family factors: parental depression (T1-T3); interparental aggression (T1,T3,T5) ; unskilled parenting (T1,T3,T5) Adolescent Factors : suicidality (T4-T8) ; depression (T2-T8) ; aggression (T1-T8) ; substance use (T3-T8)	Physical and psychological aggression perpetration independently reported by self and partner (CTS; Dyadic Social Skills Questionnaire; Adjustment with Partner Scale; Partner Interaction Questionnaire); Participant and partner observed physical and psychological aggression	Aggression towards partner: suicidality, aggression Domestic violence arrest: aggression in adolescence Partner reported injury: substance use, suicidality

		Domestic violence arrests Partner reported injury resulting from domestic violence	
7. RYDS Cohort (USA)			
[1]Ireland & Smith, 2009	Parent reported interparental physical abuse (T3-T7); substantiated physical abuse victimization before age 18	Physical violence perpetration and victimization at ages 21 and 23 (CTS)	-Experience of any physical violence: severe interparental physical abuse
Smith et al., 2011	Adolescence: exposure to severe parental IPV	Any experience of physical violence perpetration and victimization self-reported at age 20, 30 (CTS)	Experience of any physical violence: exposure to severe IPV in adolescence Experience of severe physical violence: exposure to severe IPV in adolescence
8. Andrews et al., 2000 (USA)	Depression (T1), antisocial behavior (T1), family conflict (T1)	Presence of physical aggression in current relationship; independently reported by self and partner (CTS) Observed aversive behavior towards partner Couple dissatisfaction	Physical aggression: family conflict in adolescence, antisocial behavior in adolescence, partner antisocial behavior Observed aversive behaviors: family conflict in adolescence Couple dissatisfaction: family conflict in adolescence
9. Herrenkohl et al., 2007 (USA)	Adolescent violent offending (T1-T4)	Physical abuse perpetration (from CTS)	-Perpetration: consistent chronic and increasing patterns of violent offending across adolescence
10. Johnson et al., 2015 (USA)	General antisocial behavior (T1-T5), depressive symptoms (T1-T5)	Within person change in physical abuse perpetration (CTS)	-Perpetration: antisocial behavior, depressive symptoms in adolescence (males)
11. Menard et al., 2014 (USA)	General violence victimization in adolescence: physical abuse victimization by parents (T1-T5); exposure to neighborhood violence (T1, T5)	Physical abuse perpetration and victimization (CTS)	-Perpetration: adolescent physical abuse (males); general violence victimization (females) -Victimization: general violence victimization (females)

12. Sunday et al., 2011 (USA)	Substantiated physical abuse victimization by parents in adolescence (T1), witnessing interparental violence in adolescence (T1)	Perpetration and victimization of physical and verbal domestic violence (modified CTS)	- Physical abuse perpetration: adolescent abuse; alcohol abuse - Physical abuse victimization: partner's controlling behaviors - Verbal abuse perpetration: adolescent abuse; own controlling and jealous behaviors - Verbal abuse victimization: own controlling behaviors
13. Temcheff et al., 2008 (Canada)	Childhood peer reported aggression and withdrawal behavioral tendencies (T1)	Physical abuse perpetration (CTS)	- Perpetration: Childhood aggression
14. White & Widom, 2003 (USA)	Substantiated child abuse or neglect prior to age 12	Physical abuse perpetration (3 items)	Perpetration: Child abuse or neglect

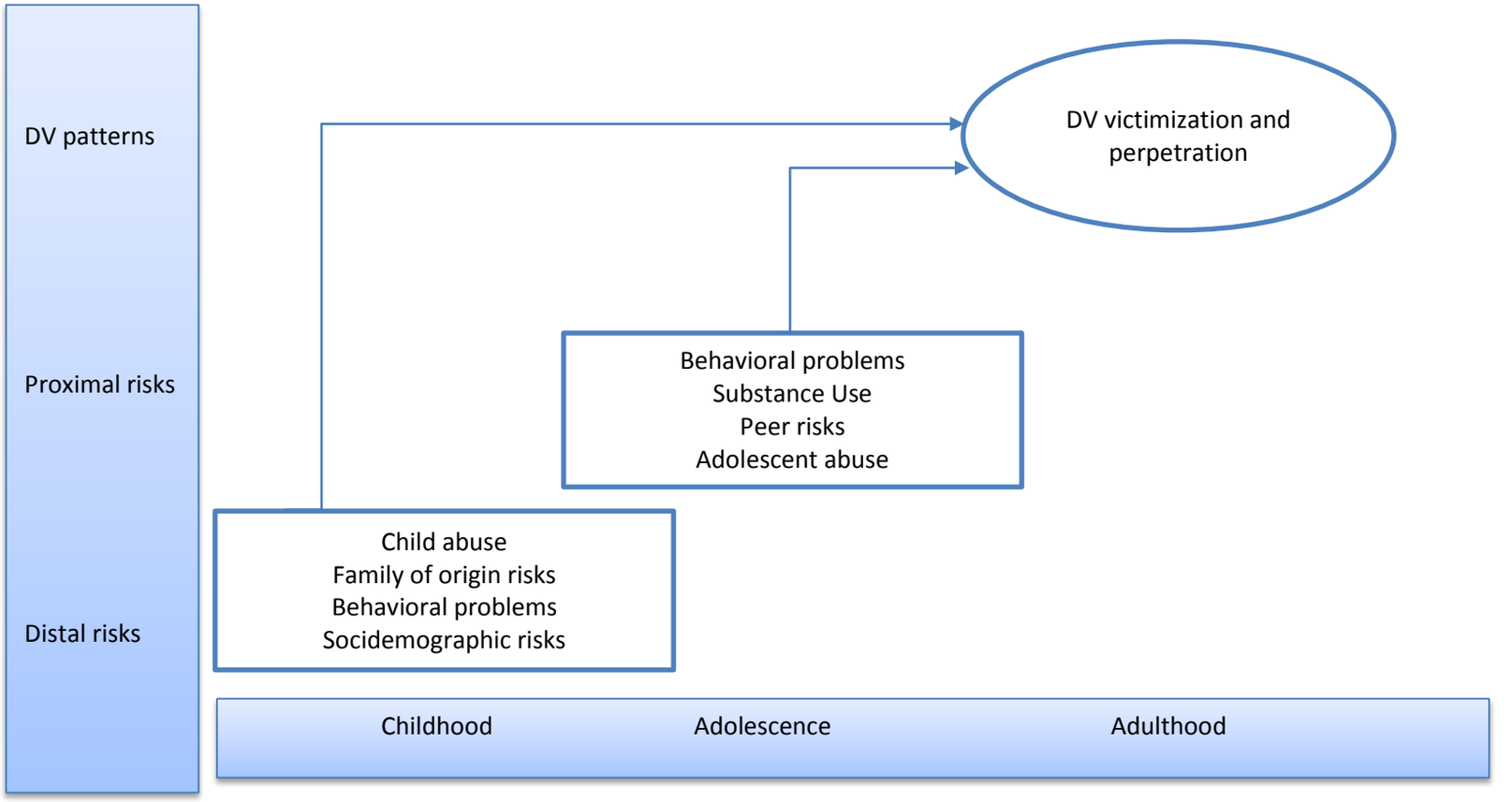

Figure 2. Synthesis of developmental risks for Domestic violence.