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Invited review

The relationship between child neglect and adolescent interpersonal functioning: A systematic review

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ABSTRACT

Background: Neglect is a highly prevalent, yet historically understudied form of maltreatment. Recent research has revealed the far reaching and unique effects that neglect has on subsequent cognitive, behavioural and socio-emotional development, and on long-term physical and mental health outcomes. Adolescent interpersonal functioning is important to explore given the significant relational transitions that occur during this stage of development, and the known impact that these social changes can have on future life outcomes.

Objective: This systematic review synthesises the literature exploring the relationship between neglect and adolescent interpersonal functioning in peer relationships.

Methods: Seven databases and three grey literature sites were systematically searched, and identified records screened against inclusion criteria.

Results: Twenty-one articles were included in the final sample, exploring five different indicators of adolescent interpersonal functioning. Around half of the papers investigating quality of peer relationships found that neglect, particularly emotional neglect, is associated with reduced relationship quality, and there is consistent evidence that neglect increases the risk of gang involvement and deviant peer affiliation.

Conclusions: These findings may be used to strengthen a trauma-informed approach to work with adolescents. Research on neglect and adolescent romantic relationships is sparse. Overall, the literature is varied and further research using longitudinal data and consistent measures of neglect would be of value.

1. Parental neglect

Childhood maltreatment is associated with poorer outcomes, including physical and mental health, personal functioning and offending behaviour (Badr et al., 2018; Felitti et al., 1998; Malvaso, Delfabbro, & Day, 2016). Neglect is a highly prevalent form of child maltreatment, estimated to affect almost one in five children and adolescents in community samples (Cohen, Menon, Shorey, Le, & Temple, 2017; Stoltenborgh, Bakermans-Kranenburg, & Van Ijzendoorn, 2013), and as many as 92% of maltreated samples (Shields & Cicchetti, 2001). Concerns for child welfare during the Covid-19 pandemic have increased due to lockdown measures placing additional stresses on vulnerable families, isolating at-risk children, and restricting access of protective services to those at greatest risk (Romanou & Belton, 2020). As such, rates of neglect may have risen further during this period, placing greater urgency on our need to understand the impact of this form of maltreatment.

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Despite its prevalence, neglect was historically understudied compared to other forms of maltreatment (Hobbs & Wynne, 2002). A recent systematic review of the prevalence of neglect confirmed the dearth of research in this area, with only 72 studies reporting on neglect, compared to 287 on child sexual abuse (Moody, Cannings-John, Hood, Kemp, & Robling, 2018). The reason for this neglect of neglect may be related to challenges in defining the construct, as understandings of children's physical and emotional needs are inconsistent around the world (Moody et al., 2018) and differ according to developmental stage (Rees et al., 2011). The current review uses the definition of neglect provided by The World Health Organisation, involving the failure of parents/caregivers to meet the needs of their child in any area of development, where they are able to do so (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002).

Neglect frequently co-occurs with other forms of maltreatment (Brown, Rienks, McCrae, & Watamura, 2019) and acts of physical and sexual violence towards children have historically been of greater concern making the isolated effects of neglect more difficult to identify. Cumulative risk theory postulates that any maltreatment in addition to neglect will result in greater deficits than neglect alone. However O'hara et al. (2015) found unique effects of neglect on child cognitive development compared to that of other forms of maltreatment, such that experiences of neglect alone were associated with the lowest scores on vocabulary tests. Similar research indicates that neglect-experienced individuals exhibit these cognitive deficits into their sixth decade of life (Geoffroy, Pinto Pereira, Li, & Power, 2016), demonstrating its long-lasting effects. Additionally, neglect is understood to have unique impacts on attachment, as lack of mentalising from a caregiver deprives the infant of understanding of their own internal world and distress in a way distinct from abuse, affecting the development of emotion regulation, empathy and subsequent interpersonal functioning (IPF; (Howe, 2005). Evidence to support this theory comes from a sample of children with parental neglect experience, in which neglect was negatively correlated with quality of peer attachment with small to medium effect sizes (Lim & You, 2019). Although this study did not compare outcomes associated with multiple maltreatment types, it contributes to the evidence that neglect has far-reaching implications for development.

Accordingly, evidence is accumulating to demonstrate the deleterious effects that neglect can have on subsequent development and functioning. A recent systematic review of indicators of neglect in childhood found associations with behavioural, socio-emotional and cognitive outcomes, suggesting the impact of childhood neglect can be pervasive (Maguire et al., 2015). Similarly, a review of the relationship between maltreatment and subsequent offending behaviour concluded that neglect was associated with all forms of crime, including violent, non-violent and sexual (Malvaso et al., 2016), demonstrating that although an act of omission, experiences of neglect can increase the risk of extreme externalising behaviours. However, Malvaso et al. (2016) also acknowledge that while a majority of individuals involved in crime have experienced childhood adversity, only a small proportion of individuals with childhood maltreatment histories go on to criminality. This observation is supported by data demonstrating that around 50% of samples with experience of child maltreatment display improving or resilient psychosocial functioning and positive peer relationships in childhood and adolescence (Bolger & Patterson, 2001; Witt et al., 2019). It is important, therefore, to hold in mind the positive outcomes experienced by significant proportions of individuals with experience of abuse and neglect, while also seeking to understand what distinguishes these from those who experience difficulties.

2. Adolescent interpersonal functioning

Adolescence is a relevant developmental stage to explore in relation to neglect and IPF, due to the shift in focus from familial to peer and romantic relationships, as well as changes in socio-emotional functioning (Burnett, Thompson, Bird, & Blakemore, 2011; Lam, Mchale, & Crouter, 2014). On the one hand, this presents the possibility of exacerbating risks associated with neglect as related socio-emotional deficits are amplified by the more universal sensitivities in social relationships experienced by adolescents (Monk et al., 2003; Sebastian, Viding, Williams, & Blakemore, 2010). This process is evidenced in that experiences of neglect have been found to correlate with peer victimisation, bullying, deviant peer group affiliation, and sexual assault (De Oliveira et al., 2018; Diaz et al., 2020; Indias, Arruabarrena, & De Paúl, 2019) demonstrating impairments to IPF in a number of different ways. Using General Strain Theory, Iratztoqui (2018) suggests that experience of child maltreatment increases risk of maladaptive coping to alleviate distress, which itself is associated with vulnerability to situations involving violence. This, they argue, can result in greater likelihood of both victimisation and perpetration of violence. Though this research did not delineate the impact of different forms of maltreatment, it is conceivable how both physical and emotional neglect at any stage of childhood may increase risk of repeat victimisation in other relationships, related to poor IPF.

Conversely, this change in socio-emotional functioning and the relative importance of different relationships during adolescence could theoretically hold the potential for ameliorating the impact of parental neglect as the importance of extrafamilial relationships increases. There is evidence that many with maltreatment experience enjoy successful relationships in later development, and that these relationships can be protective of later mental health and personal functioning outcomes. While Bolger and Patterson (2001) found an association between chronic maltreatment and peer rejection, around half of those in their study who experienced maltreatment for five years reported no peer rejection across any of the three data collection points. Evidence suggests such positive relationships are protective of later mental health and predictive of resilience for individuals with experience of abuse (Collishaw et al., 2007; Edmond, Auslander, Elze, & Bowland, 2006). Similarly, in a sample of young mothers, positive social support was associated with greater empathy and reduced likelihood of maintaining the cycle of neglect, with over three quarters breaking this cycle (Bartlett & Easterbrooks, 2015). The study's correlational design means direction of causality between empathy and social support is unclear;

however, the findings also indicated that social support had a greater impact for mothers with personal experience of maltreatment compared to those without. Taken together, the literature indicates that adolescent IPF in extrafamilial relationships may be especially powerful in mitigating risk for those with experience of maltreatment. Nevertheless, research on neglect specifically is less abundant, so our understanding remains limited.

Factors influencing whether neglected individuals go on to develop difficulties in IPF or not are complex. Recent evidence suggests that timing, chronicity and severity of maltreatment have a greater impact than maltreatment type (Malvaso et al., 2016; Witt et al., 2019), and findings that neglect is associated with both longer chronicity and earlier timing suggest it could confer higher risks to an individual than other maltreatment types (Bolger & Patterson, 2001). Various individual and contextual factors such as community characteristics are also known to influence the impact of abuse on internalising and externalising behaviours (Zielinski & Bradshaw, 2016), and similar processes may be at work in the pathway from neglect to adolescent IPF too. Such complexities are out with the scope of this review, but must be considered when interpreting findings.

Given the prevalence of neglect, it is important to clarify and improve our understanding of how it impacts on development. It would be pertinent to explore its relationship with adolescent IPF within platonic or romantic peer relationships, given their salience as individuals distance from the family unit, as well as their influence on subsequent outcomes. Understanding how neglect affects adolescents' ability to navigate social developmental goals of this stage could inform intervention and professional practice. In this review, the evidence to date on the relationship between neglect and adolescent IPF is collated and synthesised.

3. Aims

This systematic review synthesises the literature examining the impact of neglect on adolescent IPF. Specifically, this review seeks to answer the following research question: What is the relationship between neglect and adolescent IPF within platonic and romantic peer relationships?

4. Methodology

In order to address the research question, a systematic review of relevant literature was undertaken following the guidance outlined by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher, Liberati, Tetzlaff, & Altman, 2009). The protocol for this review was registered with PROSPERO on 11 September 2020 [CRD42020199545].

4.1. Eligibility criteria

4.1.1. Participants

Participants of studies were adolescents between the ages of 10–24 years, with a mean age ≥ 12 and ≤ 21 years at outcome measurement. The mean age was deployed as a criterion where an age range was not provided, and was narrower to ensure the majority of participants were within the review's age range. The overall extended age range reflects the continued delaying of role transitions between adolescence and adulthood, particularly in Western society (Sawyer, Azzopardi, Wickremarathne, & Patton, 2018), as well as the biological transitions demarking this developmental life stage (Smith, Cowie, & Blades, 2015). Studies with clinical or non-clinical samples from community populations or specialised settings were included.

4.1.2. Types of exposure variable

Studies were eligible for inclusion if they used a multiple-item measure of physical and/or emotional neglect (PN/EN), reported separately from measures of physical, emotional and/or sexual abuse. Psychometric measures of neglect experience or the presence of a child protection order related to neglect were accepted as measures of neglect following criteria set out by Maguire et al. (2015). Studies measuring either childhood or adolescent neglect within the family home were included. Studies were excluded if they did not measure the isolated effect of neglect on the outcome variable, either by statistical techniques or by delineating subgroups according to maltreatment type.

4.1.3. Types of outcome variable

Included studies measured adolescent IPF related to peer or romantic relationships. IPF was operationalised as that which pertains to peer relationship quality and quantity, adaptive and maladaptive social behaviour, and perpetration or experience of physical or psychological violence within relationships. Studies which measured only personal factors known to influence IPF, such as confidence or emotion regulation, were excluded from this review, as were studies reporting on relationships with anyone other than peers or romantic partners. Studies focused on criminal justice outcomes for sexual offences were judged to be beyond scope and were excluded.

4.1.4. Types of studies

Studies were included if they employed quantitative analysis of longitudinal or cross-sectional data. Studies had to be peer-reviewed; that is, published in an academic journal or a Doctoral Thesis. Finally, full texts had to be published in English.

4.2. Search strategy

On August 29th 2020, a systematic search was conducted in the electronic databases *PsycInfo*, *Medline*, *Embase*, *ASSIA*, *ERIC*, *Sociological Abstracts* and *ProQuest Dissertations & Theses*. All were searched from database inception to present, and full-text restricted to English Language. The following search terms were identified through an iterative process over a number of trial searches: neglect AND (adolescen* OR teen* OR youth OR “young person” OR “young people”) AND (peer* OR friend* OR romantic OR dating OR “relationship quality” OR reject OR bull* OR revictim* OR re-victim* OR prosocial). The same search strategy was used in the grey literature database *Social Care Online*. Finally, a simplified search of *Open Grey* and *NSPCC Research & Resources* was carried out as well as hand searching of reference lists of studies selected for inclusion.

4.3. Study selection

The primary reviewer screened study titles and abstracts according to the review aims. Full-texts of potentially eligible papers were obtained and assessed according to the eligibility criteria. Reasons for exclusion were recorded and a summary can be viewed in the PRISMA flowchart (Fig. 1). A sample of included papers (20%) was assessed by a second reviewer against inclusion and exclusion criteria to confirm their inclusion.

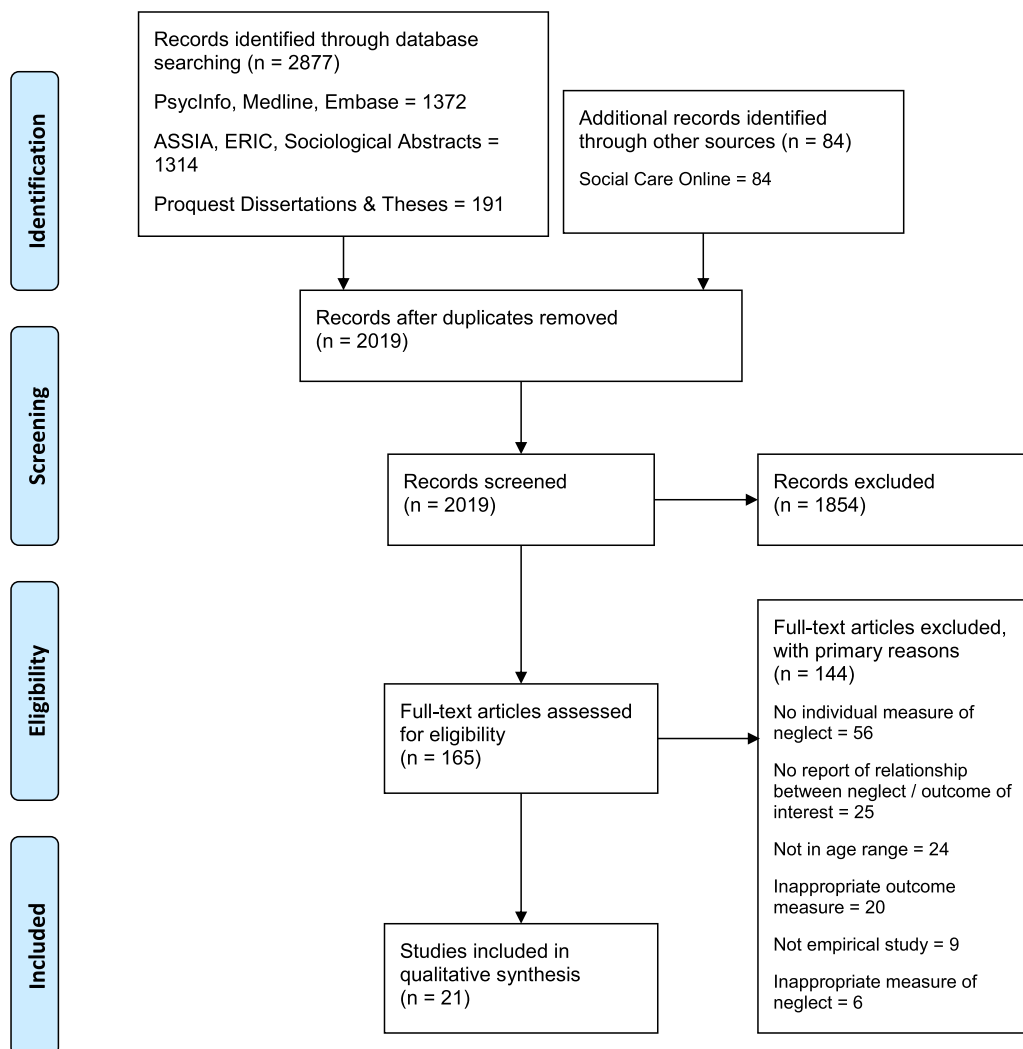


Fig. 1. PRISMA flowchart.

4.4. Assessment of risk of bias

In order to evaluate the quality of the included studies, the NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies was used (National Institutes of Health, 2020), with the dichotomous “Y/N” response exchanged for a graded “0/1/2” response. A full evaluation of all studies was conducted by the primary reviewer and a second reviewer evaluated a subset of studies (20%); agreement was high with only two items (3.6%) requiring discussion and resolution. In line with guidance, studies were not given an overall quality score, but respective strengths and weaknesses taken into consideration in narrative synthesis (Boutron et al., 2019).

4.5. Analysis

Narrative synthesis of the selected study findings was conducted, using statistical data to evidence a textual summary of the literature (Popay et al., 2006). The heterogeneity inherent in the outcome variable of interest made a meta-analysis impossible. There were no predefined sub-groups for analysis, and findings are organised in the written report according to patterns which emerged from the literature.

5. Results

5.1. Study selection

Twenty-one articles were included in the final review. One potential article was identified through reviewing reference lists of included studies, but the full text was not available online and correspondence with a cited author yielded no response. Full details of the screening process with reasons for exclusion of studies may be viewed in the PRISMA flowchart (Fig. 1).

5.2. Study characteristics

Full details of the characteristics of included articles are presented in Table 1. In summary, 16 studies were represented across 21 articles; this included four articles using data from the LONGSCAN dataset and three from the Korean Children and Youth Panel Survey. Due to the shared sources of data for these studies, it is impossible to state the total number of participants in this review; however, the 14 unique studies consisted of a total of 24,572 participants. Just below half of the articles were of North American origin, five were conducted in South Korea, and the remaining six in Bosnia & Herzegovina, Brazil, China and Uganda. Sixteen articles utilised cross-sectional data in their analysis, with the remaining five analysing longitudinal data.

Where reported, the age range of participants included in the current review was 11–20 years. Sixteen articles drew their sample from either a community, school or national cohort population. There was significant heterogeneity in gender and ethnicity of samples, prevalence of neglect and choice of neglect measure. With regards to IPF outcome, every study included in this review used a different outcome measure.

5.2.1. Risk of bias

Overall, the methodological quality of the studies included in this review was weak to moderate. A strength across the studies was well defined and appropriately sampled participants, and most studies analysed neglect as a continuous or categorical variable rather than dichotomous. There is significant variability in the validity and reliability of measures; nine studies were deemed to have good quality measures of neglect and seven had good quality measures of IPF. The rest had weak to moderate quality measures. Further weaknesses across studies included the use of cross-sectional data and the lack of control for confounding variables in the relevant analysis – particularly other maltreatment types. Details of quality appraisal for included studies are available in Supplementary Table 1.

5.3. Synthesis of results

The results from articles included in this review were inconsistent. Fewer articles reported non-significant results ($n = 7$) than reported significant ($n = 12$), while two articles reported mixed findings. Details of study findings are presented in Table 1.

5.3.1. Bullying and peer victimisation

The most commonly researched adolescent IPF outcome in relation to neglect was bullying victimisation ($n = 6$) or peer victimisation ($n = 4$). Of these ten studies, four reported no significant results (Hong et al., 2019; O'Hara, 2020; Saltz et al., 2020; Sterzing et al., 2016), one study reported mixed findings (Reisen et al., 2019) while five found all relevant analyses produced significant results (De Oliveira et al., 2018; Hamilton et al., 2013; Hong et al., 2018; Ssenyonga et al., 2019; Wang et al., 2019).

Five articles reported on the separate effects of emotional versus physical neglect. Four found that emotional neglect (EN) was

Table 1
Study characteristics and findings.

Author (date); country; study design	Sample N	Age range, M (SD); Gender; ethnicity	Study name; Population of sample	Type of neglect (prevalence)	Neglect measure	IPF indicator	IPF measure	Findings
Ban and Oh (2016); South Korea; C-S	2070	14–16, NR; 47.4% F; Korean	KCYPS; National Cohort	Ne (NR)	Child Abuse Questionnaire	Peer relationships	Teacher and peer relationship scale	Neglect corr. with peer relationships ($r = -0.519, p < .001$)
Black et al. (2015); USA; C-S	175	NR, 14.1 (1.40) 60.6% F; African American	Community/School	Ne (31.1%)	CTSPC	Teenage dating violence	Conflict tactics scale (adapted)	NS
Chapple, Tyler, and Bersani (2005); USA; L	942	11–13, NR; 52% F; 53% White, 47% Other	NLSY-Child; National Cohort	EN ($M = 1.80$ - Low) PN ($M = 2.76$ - Low)	HOME-SF	Peer rejection	Bespoke measure	PN predicted greater peer rejection ($\beta = -0.14, p < .001$) EN = NS
Dale (2017); USA; C-S	68	12, NR; 100% F; 77% African American, 8.8% Mixed Race, 5.9% Caucasian	LONGSCAN; Maltreated (or risk of)	Ne ($M = 63.2, SD = 7.8$ - High)	Neglect scale	Peer relationships	Bespoke measure	NS
De Oliveira et al. (2018); Brazil; C-S	347	11–17, 13.28; 48% F; 44% African-Brazilians, 36% combined European, Native, and African Ancestry, 20% other	Community/School	EN (45.2%) PN (39.9%)	CTQ	Peer victimisation	Olweus bully/victim questionnaire (2 items)	EN&PN corr. with peer victimisation and perpetration (EN: Victim $r = 0.15, p < .01$, Perpetrator $r = 0.14, p < .05$; PN: Victim $r = 0.16, p < .001$, Perpetrator $r = 0.15, p < .01$)
Diaz et al. (2020); USA; C-S	882	13–19, 17.6 (1.31); 100% F; 60.5% Hispanic, 35.8% African American, 3.8% other non-Hispanic	Inner city, sexually active girls	EN (26.2%) PN (40.4%)	CTQ	DPA	Chicago youth development study self-report delinquency scale	Full sample, EN&PN associated with increased risk of DPA (both OR = 2.3)
Hamilton et al. (2013); USA; C-S	225	12–13, 12.84 (0.60); 59% F; 55% African American	Community/School	EN ($M = 8.09, SD = 3.23$ - Low to moderate)	CTQ	Peer victimisation	Social experiences questionnaire - self report	EN corr. with relational peer victimisation ($r = 0.29, p < .001$)
Hong, Kim, and Hunter (2019); South Korea; C-S	2284	NR, 13.89, (0.34); 49.5% F; Korean	KCYPS; National Cohort	Ne ($M = 7.48, SD = 2.37$ - Moderate)	PBI	Bullying	Juvenile perpetration and peer victimisation questionnaire	NS
Hong, Kim, Thornberg, Kang, and Morgan (2018); South Korea; C-S	10,453	11–19, 15.3, (2.58); 44.2% F; Korean	KCYRS; National Cohort	Ne ($M = 0.30, SD = 1.05$ - Low)	PBI	Cyberbullying; peer relationships	CBQ; Juvenile Peer Victimization Questionnaire (Korean version)	Neglect predicted cyberbullying victimisation (Indirect $\beta = 0.05, p < .001$; direct $\beta = 0.025, p < .001$)
Kubik, Docherty, and Boxer (2019); USA; L	611	12–18, NR; 52.2% F; 55.65% Black, 23.73% White, 20.62% Other	LONGSCAN; Maltreated (or risk of)	EN + PN (Reported according to gang involvement - Moderate to High)	CPS reports	Gang involvement	Combined measures	Neglect associated with increased risk of gang involvement ($RRR = 2.34, p < .05$)
Kwak, Kim, and Yoon (2018); South Korea; C-S	1170	14–19, NR; 58.4% F; Korean	Community/school	Ne (8.7%)	CTSPC	Peer relationships	The maladjustment inventory	Neglect correlated with relational maladjustment ($r = 0.11, p < .001$)
Li, Zhao, and Yu (2020); China; C-S	961	11–20, 15.21, (1.57); 51.2% F; Chinese	Community/school	EN ($M = 2.14, SD = 0.85$ - Low) PN ($M = 1.71, SD = 0.57$ - Low)	CTQ	DPA	Deviant peer affiliation questionnaire	Neglect corr. with DPA (both EN&PN $r = 0.19, p < .01$)

(continued on next page)

Table 1 (continued)

Author (date); country; study design	Sample N	Age range, M (SD); Gender; ethnicity	Study name; Population of sample	Type of neglect (prevalence)	Neglect measure	IPF indicator	IPF measure	Findings
Lim and Lee (2017); South Korea; C-S	2259	15–16, NR; 47.6% F; Korean	KCYPS; National Cohort	Ne ($M = 1.86$, $SD = 0.46$ – Low)	Child maltreatment scales ACE-Q	Isolation	Peer attachment scale	Neglect corr. with peer isolation ($r = 0.19$, $p < .01$)
Musa, Peek-Asa, Jovanović, & Selimović (2018); Bosnia & Herzegovina; C-S	400	NR, 20.4 (NR); 58.5% F; NR	Community	EN (25.6%) PN (11.0%)		Teenage dating violence	Bespoke measure	EN associated with increased risk of being a victim of dating violence (AOR = 2.59, 95%CI = 1.26–5.31); PN = NS
O'Hara (2020); USA; L	650	16, NR; 49.6% F; 57.7% Black, 21.2% White, 7.2% Hispanic	LONGSCAN; Maltreated (or risk of)	Ne (52.2%)	Official child protective services reports	Peer victimisation	Single question	NS
Reisen, Viana, and dos Santos Neto (2019); Brazil; C-S	2284	15–19, NR; 61% F; 45.4% Brown, 28.4% White, 17.9% Black	Community/school	EN (24.5%) PN (23.7%)	Childhood adversity history questionnaire	Bullying	Olweus bully/victim questionnaire	EN associated with increased risk of being bullied (OR = 2.1, $p < .001$); PN = NS. Relationship with being a bully NS
Saltz, Rozon, Pogge, and Harvey (2020); USA; C-S	50	13–17, 15.22, (1.89); 68% F; 50% Latino, 50% Non-Latino	Psychiatric inpatient unit	EN + PN	CTQ	Cyberbullying	Adapted CBQ	NS
Ssenyonga, Muwonge, and Hecker (2019); Uganda; C-S	702	12–17, 15.5, (1.15); 50% F; Ugandan	Community/school	Ne (79.2%)	CTSPC	Peer victimisation	Maltreatment and abuse chronology of exposure - peer victimisation subscale	Neglect predicted peer victimisation in regression ($\beta = 0.10$, $p < .01$)
Sterzing, Hong, Gartner, and Auslander (2016); USA; C-S	123	15–19, 17.2, (1.3); 48.8% F, 40.8% M, 10.4% Transgender; 68.8% white, 14.4% African American, 11.2% multi-racial	Sexual minority youth	EN (27.6%) PN (26.0%)	CTQ	Bullying	Swearer bullying survey (adapted)	NS
Wang et al. (2019); China; C-S	5726	12–18, 14.81; 50.3% F; Chinese	Community/school	EN (5.7%) PN (4.0%)	CTQ	Bullying	Combined measures	EN & PN both increased risk of all roles in all forms of bullying (aOR min = 1.12, aOR max = 1.30, all $p < .05$)
Yoon, Snyder, and Yoon (2020); USA; L	811	14, NR; 50.2% F; 56.2% Black	LONGSCAN; Maltreated (or risk of)	Ne (M all subscales < 0.44 – Low)	Neglect Scale	DPA	Youth Risk Behaviour and Monitoring the Future Survey	NS

Note: C-S = Cross-Sectional; L = Longitudinal; Ne = Neglect; NR = Not Reported; NS = Not Significant F = Female; EN = Emotional Neglect; PN = Physical Neglect; CTSPC = Conflict Tactics Scale–Parent Child; CTQ = Childhood Trauma Questionnaire; DPA = Deviant Peer Affiliation; CBQ = Cyberbullying Questionnaire; ACE-Q = Adverse Childhood Experiences Questionnaire; PBI = Parenting Behaviour Inventory; CPS = Child Protective Services.

associated with increased risk of experiencing relational peer victimisation and bullying, albeit with small effect size (De Oliveira et al., 2018; Hamilton et al., 2013; Reisen et al., 2019; Wang et al., 2019). Results for physical neglect (PN) were less consistent, as De Oliveira et al. (2018) and Wang et al. (2019) found that PN was associated with greater risk of being bullied, but Reisen et al. (2019) did not. The latter study acknowledges the risk of under-reported neglect in their otherwise high-maltreatment sample, which may have contributed to the discrepancy between these studies. However, de Oliveira et al.'s (2018) measure of PN had very poor reliability ($\alpha = 0.31$) meaning their significant findings are considered with caution. Among sexual minority youth, no relationship was found between EN or PN and experiencing bullying (Sterzing et al., 2016). The null findings may be due to sampling or measurement bias, or a genuine absence of relationship resulting from the unique experiences of this subgroup of the general population. As this is the only study to investigate this population, no firm conclusions can be drawn.

Among other articles reporting null findings, methodological weaknesses relating to measurement (Hong et al., 2019) and sample size (Saltz et al., 2020) limit the strength of their findings. O'Hara (2020) was the only author exploring bullying victimisation to use longitudinal data, and the only study in the review to identify a 'neglect only' sub-group within their sample, giving weight to their non-significant results. Nevertheless, their research investigated physical victimisation only and cannot be generalised to other forms of peer victimisation.

Finally, two studies investigated cyberbullying exclusively (Hong et al., 2018; Saltz et al., 2020) and a further two included cyberbullying within broader measures of bullying (Sterzing et al., 2016; Wang et al., 2019), with varied results. Saltz et al. (2020) and Sterzing et al. (2016) employed less robust sampling and measurement and less powerful analysis, and their non-significant findings are considered tentative. Conversely, Hong et al. (2019) and Wang et al. (2019) found that neglect predicted online bullying among large samples of school students in South Korea and China, respectively.

In summary, there is some evidence to support a relationship between EN and bullying or peer victimisation, but evidence for the same relationship with PN or neglect more broadly is less consistent. It could be that studies employing a combined measure of neglect lose helpful variation between the two forms of neglect, affecting what can be inferred from results. The study that analysed longitudinal data found no relationship, emphasising the caution with which cross-sectional data must be interpreted.

5.3.2. Bullying perpetration

Four articles in this review reported on the relationship between experiences of neglect and being a perpetrator of bullying or peer victimisation in adolescence. De Oliveira et al. (2018) and Wang et al. (2019) found small but significant relationships between both EN and PN and being a perpetrator, whereas Reisen et al. (2019) and Hong et al. (2019) found none. The latter three had large samples with robust sampling methods, and all utilised cross-sectional data. However, they all used different measures of both neglect and bullying, compromising comparability.

Hong et al. (2019) employed a dichotomous measure of bullying behaviour having been committed at all in the past year, contrasting with Wang et al. (2019) whose measure had a more conservative threshold of behaviour having been committed two to three times to constitute bullying, which may be a more meaningful operationalisation of the term. Reisen et al. (2019) differed from both the aforementioned studies in their high prevalence of child maltreatment. None of the studies sufficiently controlled for the effects of other forms of abuse in analysis, and the high co-occurrence of maltreatment types in the population dilutes the strength of findings. The relationship between neglect and adolescent bullying perpetration therefore remains unclear, with research to date in need of replication.

5.3.3. Peer relationships

Outside of experiences of bullying and victimisation, six studies investigated broader indicators of peer relationships, including relationship quality (Ban & Oh, 2016; Dale, 2017; Hong et al., 2018; Kwak et al., 2018) and isolation and rejection (Chapple et al., 2005; Lim & Lee, 2017). The five studies with significant findings had effect sizes ranging from small to large, and this variation may be attributed to measurement of outcome. In particular, Hong et al. (2018) and Chapple et al. (2005) both used single items to measure their peer relationship outcome and this may have lacked sufficient nuance to capture the phenomenon. One study (Dale, 2017) found no significant association between neglect and peer relationships. This study differed from the others in that its sample size was much smaller ($N = 68$) and measures less robust, limiting confidence in the findings. Four of the studies (Ban & Oh, 2016; Hong et al., 2018; Kwak et al., 2018; Lim & Lee, 2017) were conducted in South Korea, and out of the six these were the studies with the most robust methodology. Therefore, the research on child neglect and adolescent peer relationships outside of South Korea is currently lacking or of poor quality. Nevertheless, current evidence indicates that neglect is associated with generally poorer outcomes in adolescent peer relationships.

5.3.4. Gang involvement and deviant peer affiliation

Limited research was found on the relationship between neglect and gang involvement or deviant peer affiliation; however, three of the four studies exploring these outcomes reported significant results. Kubik et al. (2019) were the only researchers to explore gang involvement specifically, but their finding that neglect-experienced individuals were more than twice as likely to be consistently involved in gangs than never involved is mirrored in the results reported by Diaz et al. (2020) regarding deviant peer affiliation. Both studies used high risk samples, drawing data from Child Protection Services (CPS) and a population of vulnerable inner-city adolescent girls, respectively. The study by Li et al. (2020) had a school-based sample which is more representative of the general population, and though the strength of the evidence is weaker due to cross-sectional data, it is in support of Diaz et al. (2020) and Kubik et al. (2019).

One study reporting on peer deviance found non-significant results (Yoon et al., 2020). This study analysed data from the LONGSCAN study, as did Kubik et al. (2019), presenting a surprising discrepancy. The reason for this may be the different measures of

neglect used, as Kubik et al. (2019) used CPS reports and a self-report measure of gang involvement, whereas Yoon et al. (2020) utilised adolescent self-report for measures of both neglect and peer deviance. Additionally, gang involvement is arguably of higher severity than peer deviance, with the latter representing engagement in behaviours that are more common throughout the period of adolescence (e.g. substance use) as adolescents explore risk and push boundaries.

An additional difference among the findings is in the strength of influence neglect has relative to other maltreatment types. Kubik et al. (2019) found that only neglect had a main effect on gang involvement, however the risk of peer deviancy associated with neglect was lower than that of other forms of abuse for the adolescent girls (Diaz et al., 2020). Furthermore, the relationship was non-significant when girls who had not experienced sexual abuse were removed from the sample. This may be a result of bias in sampling, as the adolescent girls reported a higher prevalence of sexual abuse than was reported in Kubik et al.'s (2019) study.

It is worth noting that, across all studies, involvement in gangs or with deviant peers was low. In particular, 72% of Kubik et al.'s (2019) sample reported no involvement with gangs at any time point, and 57% of these had a CPS report of neglect in their childhood. Therefore, while evidence suggests childhood neglect may increase risk of involvement with deviant peers or gangs, most adolescents with a history of neglect are not involved with such groups.

5.3.5. Romantic relationships

Lastly, two articles explored the relationship between neglect and IPF in romantic relationships; specifically, dating violence (Black et al., 2015; Musa, Peek-Asa, Jovanović, & Selimović, 2018). These two studies drew differing conclusions, with Black et al. (2015) finding that neglect did not predict reports of either victimisation or perpetration of dating violence among African-American adolescents, while (Musa, Peek-Asa, Jovanović, & Selimović, 2018) found that 18–24 year-olds reporting emotional neglect were more than twice as likely to also report having experienced physical, sexual or psychological violence in dating relationships. Examination of study designs revealed multiple variations between the two studies, including in age and ethnicity of sample, measures used for both independent and dependent variables, and the analytic approach employed. All of these likely contribute to the observed discrepancy in findings and present a challenge to meaningfully comparing the two studies. Furthermore, Black et al. (2015) note the weakness of self-report measures in relation to an outcome that is heavily influenced by social acceptability, particularly for boys. As both papers utilised self-report measures and found significantly higher reports of experiencing or perpetrating dating violence among female participants, caution should be exercised when interpreting results. As such, few conclusions can currently be drawn about the association between neglect and violence in dating relationships, and additional research is needed to further our understanding in this field.

6. Discussion

This systematic review sought to identify and synthesise the literature investigating the relationship between neglect and IPF in adolescent platonic and romantic relationships. The research included in this review is sufficient to partially answer the research question in Section 3. While there is evidence to indicate that neglect is associated with detrimental effects on peer relationships and increased risk of engagement with deviant peers, there are significant discrepancies within and limitations to the literature. Furthermore, research on romantic relationships is mostly absent.

6.1. Summary of findings

The literature provides some evidence for an effect of neglect on peer relationship quality, bullying and victimisation, with this being more consistent for experiences of EN than PN. These findings reflect similar relationships found in the broader maltreatment literature, for example identifying links with perceived social support, social skill and victimisation in adolescence (Burack et al., 2006; Pepin & Banyard, 2006; Yoon, Yoon, Park, & Yoon, 2018). Based on psychological and developmental theory, it is reasonable to expect neglect to shape IPF as individuals are more likely to develop attachment styles which are maladaptive beyond familial relationships (Howe, 2005). Additionally, the evidenced impact that maltreatment has on emotion regulation and both internalising and externalising difficulties would likely further impair abilities in social relationships with peers (Maguire et al., 2015; Maughan & Cicchetti, 2002).

However, seven articles in this review found non-significant results relating to neglect and peer relationships. In a younger sample, Shields and Cicchetti (2001) found similar results in that bully and victim scores for neglected children did not differ significantly from those of non-maltreated children, whereas scores for abused children did, suggesting the effect that neglect has on peer relationships is small at most. The modest effect sizes of many significant findings in this review echo this. As mentioned previously, the failure of most articles to clearly control for other maltreatment types in analysis make it difficult to untangle the discrepancy in findings across the literature. It may also be that timing, chronicity and severity of maltreatment is of greater significance than type in relation to adolescent IPF outcomes (Witt et al., 2019) and this warrants further exploration.

Though the literature on the relationship between neglect and peer deviance or gang involvement was less abundant, the findings that neglect increases the risk of these outcomes was more consistent. This aligns with similar research on child maltreatment, finding increased risks for gang affiliation in both early adolescence and adulthood (Coid et al., 2020; Ha et al., 2016). Of particular interest was Kubik et al.'s (2019) finding that neglect had a stronger relationship with gang involvement than other forms of maltreatment. This research requires replication, but if subsequently supported it suggests that neglect may have a unique impact on this outcome. Though Kubik et al.'s (2019) study utilised CPS reports from childhood, the evidenced chronicity of neglect (Bolger & Patterson, 2001) may mean that lack of care and supervision during adolescence itself influences an individual's vulnerability to gang involvement. Research

exploring the timing of neglect in relation to gang involvement would be of value. Alternatively, given the evidence that contextual factors play a role in outcomes for maltreated children (Zielinski & Bradshaw, 2016), it could be that neighbourhood factors such as high gang membership and criminal behaviour increase the likelihood of neglected children falling into such groups. While the evidence found in this synthesis suggests that gang membership will affect a minority of neglect youth, understanding of the pathway from neglect to gang involvement and deviant peer affiliation is needed as proximity to deviant groups increases the risk of revictimization and associated mental health and relational outcomes (Iratzoqui, 2018) and gang membership typically has severe outcomes for individuals.

Finally, this review yielded two studies investigating the relationship between neglect and dating violence, which produced contradictory findings. This differs from wider research on dating relationships in adolescent and young adult relationships, which consistently find that child maltreatment increases risk of intimate partner violence and poorer relationship quality (Bradbury & Shaffer, 2012; Gover, Park, Tomsich, & Jennings, 2011; Karsberg, Bramsen, Lasgaard, & Elklit, 2019; Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004). The limited research on neglect and adolescent romantic relationships in this review means it is difficult to identify the reason for this discrepancy. In previous research, sexual abuse has been a stronger predictor than other forms of maltreatment (Karsberg et al., 2019), suggesting the difference in findings could be related to maltreatment type. However, Black et al. (2015) found the relationship between sexual abuse and teenage dating violence to be non-significant in their sample, and (Musa, Peek-Asa, Jovanović, & Selimović, 2018) found that emotional neglect in fact had the greatest influence on the outcome variable of all the forms of abuse measured in the study, suggesting instead that differences may be related to study design. There is insufficient research at present to fully understand the unique relationship that neglect might have with teenage dating violence. Furthermore, there is an absence of research exploring adolescent romantic relationship variables which aren't related to victimisation or perpetration of violence.

6.2. Strengths and limitations

With regards to the included studies, a strength of the research is the significant proportion of articles using national cohort or community samples, improving confidence in findings due to a smaller margin for error, and strengthening generalisability to wider populations. However, a number of limitations exist.

Firstly, though the nature of research on child maltreatment makes retrospective report and cross-sectional design understandably more likely, these studies lack statistical power to indicate causality, even though child maltreatment logically precedes the outcome of interest. This is true for the majority of studies in this review, meaning many of the significant associations observed may be an artefact of consistency between adolescent perceptions of their relationships both with parents and peers. Secondly, few studies controlled for experiences of other maltreatment types in their analysis and those that did found this had an effect on results (Diaz et al., 2020; O'Hara, 2020). Given the high co-occurrence of maltreatment types, this process in analysis is crucial in our understanding of the unique effects that neglect has. Finally, the diversity of measures of neglect in this review indicate an inconsistency of conceptualisations of the term across the literature. Furthermore, half of the studies did not differentiate between EN and PN in their analysis. As those studies which did acknowledge this distinction often found different outcomes for each, the decision to combine the two subtypes of neglect arguably conceals important nuance in individuals' experiences. This field of research still requires a strengthening of the definition and measurement of neglect to ensure validity of findings and clarity as to which maltreatment experiences are relevant to findings.

With regards to strengths and limitations of the review, this review benefitted from thorough quality appraisal of studies to contextualise identified research within risks of bias. Additionally, the mix of significant and null findings indicate there is low risk of publication bias, increasing the likelihood that the findings reported in this review are an accurate reflection of reality. Furthermore, the diversity in country of origin of included studies avoids drawing conclusions about neglect and adolescent interpersonal functioning which is overly dominated by a Western perspective. The review was also limited in the following ways.

As the search was limited to articles published in the English language, it may have missed important research published in non-English journals. While the aforementioned diversity in country of origin minimises bias, it also introduces diversity in how neglect and interpersonal functioning are conceptualised within the context of culture, compromising the validity of synthesising the breadth of findings included. Additionally, in order to keep this review to a manageable scale some decisions were made about search terms that may have limited the results, particularly relating to adolescent romantic relationships. For example, as using the term "sex*" would have identified all literature related to sexual abuse, this was left out and as such some research related to adolescent romantic relationships may not have been identified. Having said this, inclusion of the search terms "romantic" and "dating" only yielded two results, suggesting that there is still a dearth of research in this area which needs addressing. Lastly, although agreement between the primary and secondary reviewers was high on the 20% of studies reviewed jointly, the breadth and subjectivity of IPF mean that there is risk of bias in the screening and quality appraisal process.

6.3. Implications for practice

Given the aforementioned limitations, implications of the findings of this review are tentative. The impact of neglect on subsequent IPF in adolescent peer relationships remains unclear, but there is some evidence to suggest that it has a deleterious effect. Though it should not be assumed, practitioners working with adolescents may consider the possibility that individuals displaying significant difficulties in their peer relationships might not have their physical or emotional needs met at home. This is of concern given the importance of adolescent peer relationships in subsequent development across multiple domains (Collishaw et al., 2007; Edmond

et al., 2006) and the impact of neglect on development (Maguire et al., 2015), putting neglected individuals at risk of a double disadvantage if not detected and supported. Although this review did not consider interventions, neglect-experienced children and adolescents may benefit from scaffolding and support in IPF in peer relationships.

An additional implication relates to the risk of deviant peer affiliation and gang involvement associated with neglect. Recognition that youth involved in gangs and deviant groups are likely to have experienced neglect and other maltreatment demands a trauma-informed approach to work with such individuals which takes this experience into consideration. Policy makers may like to consider the mandatory training that professionals receive and ensure all those whose work involves interaction with trauma-experienced individuals are skilled to respond in a trauma-informed way.

6.4. Implications for research

As already alluded to in Section 6.2, this field of research requires further refining of the definition and measurement of neglect and should ensure future researchers distinguish neglect by subtype. Although the United Nations (2011) offer a global definition of multiple forms of neglect, areas of contention exist around different cultural and developmental understandings of the phenomenon (Moody et al., 2018; Rees et al., 2011). Similarly, care must be taken to recognise how neglect both differs from and overlaps with phenomena such as poverty, parental mental illness and different parenting styles (Morrongiello & Cox, 2020; Shanahan, Runyan, Martin, & Kotch, 2017). Clarifying these boundaries, then accurately and consistently measuring neglect in large representative samples, will enhance our understanding of the influence neglect has on adolescent outcomes.

Additionally, a potential gap in research relates to the impact of neglect on adolescent romantic relationships. Though the aforementioned limitation in search terms may mean some literature was missed, a seeming absence of literature exploring relationship quality in dating relationships among neglect-experienced adolescents remains. As romantic relationships are a key developmental transition of adolescence (Smith et al., 2015) and adult romantic relationships appear to be impacted by experiences of neglect and maltreatment (Bradbury & Shaffer, 2012; Karsberg et al., 2019), such research would be valuable.

This review was not limited to studies examining negative outcomes, yet we found no studies reporting on positive outcomes following neglect. Given the equivocal findings, there is scope to explore more outcomes that relate to young people's resilience in the context of childhood neglect. This would help uncover individual and contextual protective factors, giving practitioners guidance on how to mitigate negative outcomes.

Finally, most findings in this review require replication in large samples with more robust measurement, controlling for other maltreatment types. While childhood neglect logically precedes adolescent IPF, cross-sectional data is insufficient to indicate direction of causality; as such, more longitudinal data would strengthen the research base.

6.5. Conclusions

This study sought to review the literature exploring neglect and adolescent IPF in peer relationships. Research to date contains many inconsistencies and methodological weaknesses, and significant findings often have small effect sizes. Based on the importance of peer relationships in adolescent development, and the deleterious effects of neglect on multiple outcomes, the subject of this review warrants further exploration. Continued efforts must be made to understand the impact of this prevalent form of maltreatment in order to inform practice, and consideration given to the role that adolescent IPF might play in ameliorating or exacerbating existing vulnerabilities.

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Declaration of competing interest

None.

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