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Abstract

Background: Neglect is often overlooked in adolescence, due in part to assumptions about autonomy and misinterpretation of behaviors being part of normal adolescent development. Emotional maltreatment (abuse or neglect) has a damaging effect throughout the lifespan, but is rarely recognized amongst adolescents. Our review aims to identify features that adolescents experiencing neglect and/ or emotional maltreatment report.

Method: A rapid review methodology searched 8 databases (1990-2014), supplemented by hand searching journals, and references, identifying 2,568 abstracts. Two independent reviews were undertaken of 279 articles, by trained reviewers, using standardised critical appraisal. Eligible studies: primary studies of children aged 13-17 years, with substantiated neglect and/ or emotional maltreatment, containing self-reported features.

Results: 19 publications from 13 studies were included, demonstrating associations between both neglect and emotional maltreatment with internalising features (9 studies) including depression, post traumatic symptomatology and anxiety; emotional maltreatment was associated with suicidal ideation, while neglect was not (1 study); neglect was associated with alcohol related problems (3 studies), substance misuse (2 studies), delinquency for boys (1 study), teenage pregnancy (1 study), and general victimization for girls (1 study), while emotionally maltreated girls reported more externalising symptoms (1 study). Dating violence victimization was associated with neglect and emotional maltreatment (2 studies), while emotional abuse of boys, but not neglect, was associated with dating violence perpetration (1 study), and neither neglect nor emotional maltreatment had an association with low self-esteem (2 studies). Neither neglect nor emotional maltreatment had an effect on school performance (1 study), but neglected boys showed greater school engagement than neglected girls (1 study).

Conclusions: If asked, neglected or emotionally maltreated adolescents describe significant difficulties with their mental health, social relationships, and alcohol or substance misuse. Practitioners working with youths who exhibit these features should recognize the detrimental impact of maltreatment at this developmental stage, and identify whether maltreatment is a contributory factor that should be addressed.

Introduction

Neglect is the predominant form of maltreatment in the UK and US (US Department of Health and Human Services *et al.*, 2013; NSPCC, 2014), potentially damaging physical and mental health, with possible fatalities (Dubowitz, 1999; Gardner, 2008). The second most common reason for adolescents to be placed on the child protection register in the UK, and the third most common in the US, is emotional abuse (NSPCC, 2013; US Department of Health and Human Services *et al.*, 2013) which often co-exists with neglect (Iwaniec, 2006). Definitions of neglect and emotional abuse describe a continuing disregard by the parent for their child's psychological and emotional needs (Gardner, 2008).

While the damaging effects of neglect on young children are well recognised, little attention has been paid to neglected adolescents (Hicks and Stein, 2013). Self-reported UK prevalence statistics estimated that one in seven adolescents had experienced neglect (one in ten being severely neglected) and one in 14 adolescents had been subjected to emotional abuse (Radford *et al.*, 2011). Exploration of serious or fatal cases of maltreatment suggest the true prevalence is much higher, as abuse and neglect in teenagers frequently goes unrecognized or is underestimated by professionals (Brandon *et al.*, 2008), with reports of neglect being less likely to be substantiated (Powers and Eckenrode, 1988). Many teenage neglect cases fail to progress through the child protection system (Rees and Stein, 1997), and emotional abuse in particular is rarely the focus of investigations (Trickett *et al.*, 2009).

There are a number of reasons why teenage neglect may be taken less seriously than maltreatment in younger children. Physical neglect in adolescents may be particularly difficult to substantiate, as with increasing capacity for autonomy, it might be expected that they have acquired self-care skills and should be more able to look after themselves (Rees *et al.*, 2011). Professionals' perspectives of teenage maltreatment demonstrated that adolescents are perceived to be more resilient to the consequences of neglect than younger children (Rees *et al.*, 2010); adolescents simply "do not fit the image of victim" (Fisher and Berdie, 1978).

There are no age-specific working definitions of neglect or emotional maltreatment (Rees *et al.*, 2010), despite the clear differences between the nature of these forms of maltreatment experienced by adolescents and those faced by young children (Rees and Stein, 1997). Whereas neglect of the young

child involves acts of *omission* by the parent, neglect in adolescence may involve acts of *commission* such as being thrown out of the family home (Rees and Lee, 2005).

Neglect is as detrimental for adolescents as it is for young children (Hicks and Stein, 2013), as it continues to impact on brain development (De Bellis, 2005). Older children may be more distraught by their experiences due to their increased awareness of events (Rees *et al.*, 2011) and they may underestimate the harmful effects of chronic neglect. Thus it is vital to identify it, and facilitate appropriate action (Rees *et al.*, 2010).

Adolescents who display delinquent behavior evoke less sympathy than younger children (Kaufman and Widom, 1999) and can end up in the juvenile justice system (Cashmore, 2011). Co-existing neglect may go unrecognized, and the underlying needs of this vulnerable group may be unmet (Hicks and Stein, 2013). Indeed, these adolescents may receive harsher punishments for delinquent behavior than non-maltreated adolescents (Cashmore, 2011).

This rapid systematic review aims to identify the scientific evidence behind the *self-reported features* in adolescents aged 13-17 completed years, who are experiencing *substantiated* neglect and / or emotional maltreatment. It is intended to inform practitioners in health, education, social care and legal services, facilitating an evidence based assessment of neglected or emotionally maltreated adolescents.

Methods

'Rapid reviews' are knowledge synthesis in which components of the systematic review process are simplified or omitted, to produce information in a timely manner, while retaining rigour in the selection and appraisal of studies (Ganann *et al.*, 2010; Harker and Kleijnen, 2012; Khangura *et al.*, 2012), according to systematic review methodology (Centre for Reviews and Dissemination, 2009) employing PRISMA criteria (Moher *et al.*, 2009).

The search was limited by:

- A narrow research question
- The number and scope of databases searched
- English language articles only
- Supplementary searches restricted to table of contents scanning of the key journals

- Included studies published between 1990 and March 2014 to ensure relevance to today's adolescent population.

The literature search was conducted across eight bibliographic databases (Appendix A). The search strategy (Appendix B) was developed across the OVID MEDLINE databases using medical subject headings (MeSH), and keywords, and modified for the remaining bibliographic databases. The main search concepts related to self-reported or self-rated features combined with substantiated neglect or emotional maltreatment in countries within the Organization for Economic Co-operation and Development (OECD), as these were deemed to be socially comparable. The search sensitivity was improved by supplementary searching of key journals (Appendix A). An adapted PRISMA flow diagram (Moher *et al.*, 2009) describes the literature search and selection process for included studies (Figure 1).

After de-duplication, identified citations were scanned for relevancy by the lead researcher. Each study underwent two independent reviews, which involved conducting a full critical appraisal of the quality of the study and testing to see if the study met with the inclusion/exclusion criteria. Cohen's κ was calculated to determine inter-rater reliability with good agreement, $\kappa = .64$ (95% confidence interval; .46 - .83) (Altman, 1999). A third review resolved disagreement. Where applicable, authors were contacted for relevant data, and to confirm whether data had been duplicated across publications.. Critical appraisal and quality assessment was conducted to evaluate any risk of bias (Appendix C) based on criteria defined by the National Health Service's Centre for Reviews and Dissemination (Centre for Reviews and Dissemination, 2009) and systematic review advisory guidance (Critical Appraisal Skills Programme (CASP); Polgar and Thomas, 1995; Rychetnik and Frommer, 2002; Weaver *et al.*, 2002; Weightman *et al.*, 2004).

All included studies addressed neglect / emotional maltreatment during adolescence, although some study participants may also have experienced these forms of maltreatment earlier in their childhood. We restricted the security of diagnosis to substantiated maltreatment, thus ensuring independent confirmation of neglect / emotional maltreatment, to maximize homogeneity.

Terminology: We used the term 'adolescent' to describe young people aged 13-17 years. 'Comparative studies' relate to those comparing neglected or emotionally maltreated with non-maltreated controls. 'Non-comparative studies' included solely maltreated cases but all used standardized tools drawn from normative data.. 'Emotional maltreatment' is used to describe emotional neglect and emotional abuse in

combination. The terms ‘emotional abuse’ or ‘emotional neglect’ are used when these were the specific terms used in the *primary studies*. Where psychological abuse or maltreatment were used in the primary studies, we interpreted these to be equivalent to emotional abuse or maltreatment. Inclusion criteria, quality ranking and definitions of neglect, emotional abuse and maltreatment are described in Table 1

Results

Nineteen included publications reported data from 13 studies (Appendix D). Four compared neglected or emotionally maltreated adolescents with a non-maltreated group (Williamson *et al.*, 1991; Hibbard *et al.*, 1992; Thornberry *et al.*, 2001; Aarons *et al.*, 2008). The remainder either used normative datasets or adolescents with other forms of maltreatment for comparisons. A summary of the results can be found in Appendix E. Reported p values for each result can be found in the final column of the table of included studies (Appendix D). Two studies identified mediators (McGee, Wolfe & Wilson 1997) and moderators (McGee, *et al.*, 1997; Tyler, Johnson & Brownridge 2008). The quality standards achieved by the included studies are documented in Table 2. Due to wide and overlapping age ranges, and a multiplicity of tools utilized, a valid meta-analysis was not possible and results cannot be summarised by age.

Internalising

Nine studies (12 publications) considered **internalising** in the context of **neglect**. Neglected adolescents exhibited greater internalising behaviors (depression, post-traumatic symptomatology, anxiety, sexual concerns, anger, dissociation, and sleep disturbance) than non-neglected young people (Williamson *et al.*, 1991; Hibbard *et al.*, 1992; Thornberry *et al.*, 2001; Wekerle *et al.*, 2009 females.; Wechsler-Zimring and Kearney, 2011) but not altered self-esteem (Hibbard *et al.*, 1992). These results were supported by studies comparing to normative data, although the association was not as pronounced (McGee *et al.*, 1995; McGee *et al.*, 1997; McGee *et al.*, 2001; McMillen *et al.*, 2005; Kools *et al.*, 2009 ns; Goldstein *et al.*, 2011). Only one study reported no association between neglect and internalising symptoms (Thompson *et al.*, 2012). The significant associations related to a specific age subset (less than 15 years in Thornberry *et al.*, 2001), or disappeared when co-existent maltreatment (McGee *et al.*, 1997; McMillen *et al.*, 2005) was controlled for, and neglected adolescents exhibited lower internalising symptoms than those who were physically or sexually abused (Wechsler-Zimring and Kearney, 2011).

Five studies (seven articles) explored the relationship between **emotional maltreatment** and **internalising** behaviors. Among youth involved with CPS, emotional maltreatment was associated with internalising behaviors (Goldstein *et al.*, 2011), where emotional abuse predicted the number of clinically significant symptoms (Wekerle *et al.*, 2009). The association between emotional maltreatment and internalising features was also seen in studies without controls, (McGee *et al.*, 1995; McGee *et al.*, 1997; Wekerle *et al.*, 2001), reporting an association between emotional maltreatment and suicidal ideation (Thompson *et al.*, 2012), but no effect on self-esteem where explored (Kools *et al.*, 2009).

Externalising

Five studies (seven publications) addressed the relationship between **neglect** and **externalising** behavior. There was no strong relationship between neglect and externalising behaviors, apart from limited associations with delinquency. One non-comparative study reported a significant association between neglect and delinquency after age 16 (Thornberry *et al.*, 2001). Another non-comparative study reported an association between neglect and delinquency for boys (Tyler *et al.*, 2008). Adolescents, who *perceive* their neglect to be severe, showed an association with externalizing behaviours. (McGee *et al.*, 2001). The association between neglect and externalising features in one study disappeared when co-existing maltreatment and other variables were introduced (McMillen *et al.*, 2005).

Only two studies (both non-comparative) explored the relationship between **emotional abuse** and externalising behaviors, with conflicting results. One reported no association with emotional abuse (measuring lying, cheating, and disruptive behavior) (Kools *et al.*, 2009) and one reported a significant association with externalising features, which was stronger for girls than boys (McGee *et al.*, 1995; McGee *et al.*, 1997). The latter study utilized the Youth Self Report tool, was larger, encompassed emotional neglect and emotional abuse, and adjusted for potential confounders, which may explain the contradictory results.

Substance misuse

Three studies investigated the association of **neglect-alcohol use** (Thornberry *et al.*, 2001; Vaughn *et al.*, 2007; Traube *et al.*, 2012). Neglected adolescents had alcohol-related problems in both early (14-16 years) and late (16-18 years) adolescence compared with non-maltreated children (Thornberry *et al.*, 2001); however a study of maltreated adolescents alone showed similar alcohol consumption between physically neglected adolescents and other maltreatment groups (Vaughn *et al.*,

2007). This latter population was in foster care, and may have deliberately under-reported their level of alcohol use. One study reported no association between neglect and alcohol consumption (Traube *et al.*, 2012).

Four studies assessed the impact of **neglect** on **drug use**; two studies (Aarons *et al.* 2008; Thornberry *et al.* 2001) comparing neglect to non-maltreatment reported a significant association with drug use, limited to early adolescence in one study (Thornberry *et al.*, 2001). Further non-comparative studies reported no difference in drug use (Vaughn *et al.*, 2007; Traube *et al.*, 2012), although one showed a reduced risk of multiple substance use among physically neglected children, compared with children with other forms of maltreatment (Vaughn *et al.*, 2007).

Emotionally maltreated adolescents were no more likely to use **drugs** than non-maltreated adolescents in the only comparative study (Aarons *et al.*, 2008), and in a non-comparative study (Thompson and Auslander, 2007).

Risk taking behaviours

Two studies addressed the effect of **neglect** on **sexual risk taking** behavior with conflicting results. A small (34 neglected adolescents) comparative study by Thornberry *et al.* (2001), reported an increased risk of teenage pregnancy in late adolescence. One non-comparative study including 370 neglected / abandoned adolescents assessed consensual lifetime sexual intercourse, age at first sexual intercourse, use of protection, and teenage pregnancy in adolescents aged 14 years or older (James *et al.*, 2009) and reported similar sexual risk behaviors for all maltreatment types. In this study 48.8% of neglected adolescents were sexually active; 35.3% were aged less than 13 years at the age of first sexual intercourse.

None of the included studies addressed the impact of **emotional maltreatment** on **sexual risk taking**.

Two non-comparative studies investigated risk-taking behavior amongst neglected adolescents (Kools *et al.*, 2009; Thompson *et al.*, 2012), yielding conflicting results. **Neglect** and **psychological abuse** were significantly associated with **risk-taking behaviors** (gang involvement, having been arrested, smoking, alcohol use, drug use, unprotected sex) (Thompson *et al.*, 2012). Another study of foster care youths (mean age 14 years), describing the dimensions of health and illness in adolescents (Kools *et al.*, 2009) reported no significant association with either neglect or emotional abuse. Although both studies

measured similar constructs, the conflicting results may have arisen due to the different tools utilized in the two studies.

Interpersonal relationships

Four studies investigated the influence of **neglect** on **interpersonal relationships**; one comparative and three non-comparative. One study reported that neglected adolescents experience more family life events or changes, and lower levels of family cohesion than non-maltreated adolescents (Williamson *et al.*, 1991), whilst another reported no relationship between neglect and peer influences, interpersonal problem solving or family involvement (Kools *et al.*, 2009). Neglected adolescents of both genders were prone to dating violence victimization (Wekerle *et al.*, 2009), whilst neglected girls are at risk of more general victimization in the community (Tyler *et al.*, 2008), and neglected boys were no more likely to perpetrate dating violence than other maltreated adolescents (Wekerle *et al.*, 2009).

Three non-comparative studies examined the impact of **emotional maltreatment** on **interpersonal relationships** and reported that emotionally abused adolescents had limited involvement with their families (Kools *et al.*, 2009). In addition, emotionally abused adolescents of both genders were more prone to dating violence victimization (Wekerle *et al.*, 2001), and emotionally abused boys were at risk of dating violence perpetration, but there was insufficient data in girls to assess this (Wekerle *et al.*, 2009).

General health and wellbeing

Four studies assessed the impact of **neglect** on **general health and well-being**; one comparative and three non-comparative. These studies reported that neglected adolescents with a mean age of 14 exhibited significantly higher levels of daily stress in comparison to controls (Williamson *et al.*, 1991), while among maltreated groups there was no association between neglect and a number of measures of wellbeing (Tyler *et al.*, 2008; Kools *et al.*, 2009). Neglected teenagers' had low expectations for their future achievements including the likelihood of getting married (Thompson *et al.*, 2012).

There was no association between **emotional maltreatment** and levels of **general health and well-being** in one non-comparative study (Kools *et al.*, 2009). Another non-comparative study reported that emotionally abused teenagers had high negative social expectations and low positive achievement expectations with no association with positive social expectations (Thompson *et al.*, 2012).

Education

Three studies addressed the influence of **neglect on school experience**; one comparative and two non-comparative. Neglected adolescents were no more likely to drop out of school than non-neglected peers (Thornberry *et al.*, 2001). In a non-comparative study (Kools *et al.* 2009) neglect did not influence academic performance. A study of 262 maltreated adolescents reported that neglected boys had significantly greater school engagement than other maltreated adolescents, but girls had less engagement (Tyler *et al.* 2008).

One non-comparative study of **emotional maltreated** adolescents reported no impact on **academic performance** (Kools *et al.*, 2009).

Discussion

This review highlights that neglected and emotionally maltreated adolescents experience a range of issues impacting emotional well-being; internalising features (nine studies) namely depression, post traumatic symptoms and anxiety, victimization (three studies), alcohol related problems (one study), substance misuse (two studies). Suicidal ideation is associated with emotional maltreatment (one study) but not with neglect (one study). For emotionally abused boys, there were positive associations with dating violence victimization (two studies) and perpetration (one study). Neglected youths exhibited high levels of stress (one study), and neglected boys exhibited more delinquency than non-maltreated peers (one study).

This review aimed to describe the consequences of adolescent neglect that young people described themselves. Whilst the features listed above were described consistently in the included studies those studies that explored externalizing and risk taking behaviours gave conflicting results, and there was a paucity of high quality studies.

Internalising behaviours were consistently described amongst emotionally abused adolescents' and Thompson (Thompson *et al.*, 2012) hypothesized a direct relationship with increased suicidal ideation; Psychological distress was the key mediator of the impact of emotional maltreatment on subsequent suicidal ideation, consistent with previous research (Breton *et al.*, 2002). Young people experienced the most internalised distress when they both their self identification and CPS agreed that severe *psychological* maltreatment had occurred. This differential impact of emotional abuse self-labelling also resulted in higher reported rates of dating violence victimization amongst a group of maltreated adolescents. Glodich (1998) refers to "re-enactment" behaviors in either selecting situations

and partners to facilitate victim-consistent self-models, or perceiving and interpreting “other” information leading them to regard themselves as victimized by their partners.

This systematic review did not clearly substantiate previous publications linking neglect and emotional maltreatment to substance use in adolescents, (Dube *et al.*, 2003; Moran *et al.*, 2004). Unfortunately, two additional studies investigating specific drugs used by maltreated adolescents could not be included in this review due to potentially overlapping data with the Traube *et al.* (2012) (Wall and Kohl, 2007; Cheng and Lo, 2010)..

The lack of significant impact of neglect or emotional maltreatment on academic performance together with the finding that neglected *boys were more engaged* in school than girls was surprising. Tyler (2008) hypothesized that the girls became more depressed and withdrawn, thus becoming less involved with school. They go on to suggest that as society emphasizes male independence more than females, being neglected may not subsequently impact boys’ school involvement in negative ways as it does for girls.

Increasingly emphasis is placed on the importance of the timing of maltreatment with a more developmental psychopathology approach, which recognizes that maltreatment consequences vary according to the developmental stage in which it occurred (Manly *et al.*, 2001). Thornberry *et al.*, 2001 suggests either that concurrent neglect effects fade, or resilience emerges, to explain why being neglected before the age of 15 years increased the risk of depression, but not after 16 years. Juvenile offending research noted that adolescents whose maltreatment continued into, or occurred solely, in adolescence were more likely to engage in offending behaviors than adolescents maltreated only in early childhood (Jonson-Reid and Barth, 2000; Ireland *et al.*, 2002; Stewart *et al.*, 2008). Regrettably, ‘acting-out’ behaviors associated with neglect and emotional maltreatment in adolescence, such as delinquency and aggression, are likely to prevent, rather than aid, the identification of maltreatment (Powers and Eckenrode, 1988). Likewise victimized adolescents are more vulnerable to arrest, thus increasing the risk that they will be criminalized rather than treated (Garbarino *et al.*, 1997; Kaufman and Widom, 1999) This systematic review was limited by modified assessment tools, the varying age bands, definitions of maltreatment, and control populations across studies which precluded meta-analysis.. It is not

methodologically possible to combine self reported maltreatment with independently substantiated cases, however a systematic review of self-report studies alone would be of interest.

A number of the studies were based on populations of adolescents in foster care or institutions (Hibbard *et al.*, 1992; McMillen *et al.*, 2005; Thompson and Auslander, 2007; Vaughn *et al.*, 2007; Aarons *et al.*, 2008; Tyler *et al.*, 2008; Kools *et al.*, 2009; Goldstein *et al.*, 2011; Wechsler-Zimring and Kearney, 2011) who may adopt an overly positive social bias to avoid undue attention from authority figures according to Kools *et al.*, 2009, and may underreport alcohol or substance misuse, or high risk behaviours. This may explain the lack of association in this review between adolescent levels of self-esteem and neglect or emotional maltreatment, contrary to that reported in systematic reviews of younger children (Kim and Cicchetti, 2006; Naughton *et al.*, 2013; Maguire *et al.*, 2015). . The simplified methodology of the rapid review, while rigorous, limited the literature search thus both grey literature and conference proceedings were excluded and which may impact the results of the review.

The paucity of literature relating to adolescent neglect and emotional maltreatment should prompt future high quality work. Adolescents find it difficult to report maltreatment, and would sooner confide in their peers than authorities (Rees *et al.*, 2010), yet professionals in education, health, and youth justice could potentially identify them(Hicks and Stein, 2013). Our findings support the need for a holistic assessment of vulnerable teenagers, particularly within youth justice, as highlighted by their polyvictimisation..

Conclusions

This rapid systematic review describes how detrimental neglect and emotional maltreatment is for adolescents, including internalising behaviors, suicidal ideation, victimization, dating violence and delinquency. The behavior of neglected or emotionally maltreated adolescents can be easily misinterpreted, and all agencies are advised not to judge this behavior without attempting to understand the reasons behind it. These young people deserve to have their issues fully explored, and those experiencing such maltreatment warrant appropriate interventions.

- Neglect or emotional maltreatment of adolescents may have serious consequences: internalising behaviors, depression, suicidal ideation, alcohol related problems, dating violence victimization. Emotional abuse of boys is associated with dating violence perpetration.
- Emotionally maltreated adolescents express little confidence in their future, have high levels of daily stress and anxiety
- Risky behaviors (alcohol related problems, substance misuse, risky sexual behavior) or delinquency should not be dismissed as a lifestyle choice or teenage acting out without actively considering underlying neglect/emotional maltreatment.
- Emergency departments and mental health providers need to be especially aware that adolescents, particularly victims of violence, may be experiencing neglect or emotional maltreatment.
- A sensitive exploration of the adolescents' experience may help professionals understand their situation and allow them to access appropriate care.

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Table 1: Inclusion Criteria and Quality Standards for Confirmation of Neglect / Emotional Maltreatment / Definition of Educational Neglect**Definitions of Neglect used for the Purpose of this Review****Definition of Neglect**

Neglect refers to the failure of a parent to provide for the development of the child – where the parent is in a position to do so – in one or more of the following areas: health, education, emotional development, nutrition, shelter and safe living conditions. Neglect is thus distinguished from circumstances of poverty in that neglect can occur only in cases where reasonable resources are available to the family or caregiver.

(World Health Organization, 2002)

Definition of Emotional Abuse

Emotional abuse includes the failure of a caregiver to provide an appropriate and supportive environment, and includes acts that have an adverse effect on the emotional health and development of a child. Such acts include restricting a child's movements, denigration, ridicule, threats and intimidation, discrimination, rejection and other non-physical forms of hostile treatment.

(World Health Organization, 2002)

Definition of Psychological Maltreatment**Psychosocial evaluation of suspected psychological maltreatment in children and adolescents****Practice Guidelines**

Six forms of psychological maltreatment:

- Spurning (verbal and non-verbal hostile rejecting / degrading)
- Terrorizing (behavior that threatens or is likely to physically harm the child or place the child or the child's loved objects in danger)
- Exploiting / corrupting (encouraging the child to develop inappropriate behaviors)
- Denying emotional responsiveness (ignoring the child's need to interact, failing to express positive effect to the child, showing no emotion in interactions with the child)
- Isolating (denying the child opportunities for interacting / communicating with peers or adults)
- Mental, health, medical, and educational neglect (ignoring or failing to ensure provision for the child's needs)

(American Professional Society on the Abuse of Children, 1995)

***In the absence of an identifiable UK / World definition of educational neglect, we have developed our own for the purposes of the review:**

Educational neglect involves one or more of the following: The parent or caregiver's -

- Failure to enrol a child of mandatory school age in school
- Failure to comply with state requirements regarding school attendance
- Failure to access / provide appropriate home schooling
- Failure to avail of recommended special educational provision
- Failure to cooperate with treatment if the child is experiencing mental, emotional or developmental problems associated with school, and treatment is offered
- Failure to show an interest in the child's education at school and support their learning
- Failure to provide a stimulating environment
- Repeatedly keeping the child at home, thus failing to comply with state requirements
- Allowing the child or youth to engage in chronic truancy

Adapted from: (American Humane Association)/ (Public Health Agency of Canada, 2010) / (Horwath, 2007)

Inclusion Criteria

- Primary studies of children aged 13-17 completed years
- Self-reported or self-rated features of the impact of neglect/emotional abuse on the child during the period of exposure to neglect/emotional abuse
- Confirmed cases of neglect / emotional abuse
(*A-B Quality Standards for Confirmation of Neglect / Emotional Abuse*)
- Studies conducted in Organization for Economic Co-operation and Development (OECD) countries

Exclusion Criteria

- Studies of adults aged 18 or over or of children aged under 13 years - either exclusively or where relevant data cannot be extracted
- Studies which do not contain data that was self-reported / rated by the child experiencing neglect - either exclusively or where relevant data that was self-reported / rated cannot be extracted
- Studies relating to non-OECD country/ies - either exclusively or where relevant data relating to OECD country/ies cannot be extracted
- Studies of sexual or physical abuse alone, or studies combining sexual or physical abuse and neglect / emotional abuse, where the data from the neglect / emotional abuse cases could not be extracted
- Studies of management or complications of neglect
- Studies addressing outcomes of neglect and / or emotional abuse measured in adults aged 18 or over or children aged under 13 years – either exclusively or where relevant data cannot be extracted
- Studies with no data / documentation relating to impact on child (emotional, behavioral, psychological, developmental)
- Single case studies / case series of fewer than three cases / formal consensus / expert opinions / personal practice / review articles / systematic reviews
- Neglect / Emotional Abuse defined by **unreferenced** criteria / tool, not specified in our standards (*D Quality Standards for Confirmation of Neglect / Emotional Abuse*)

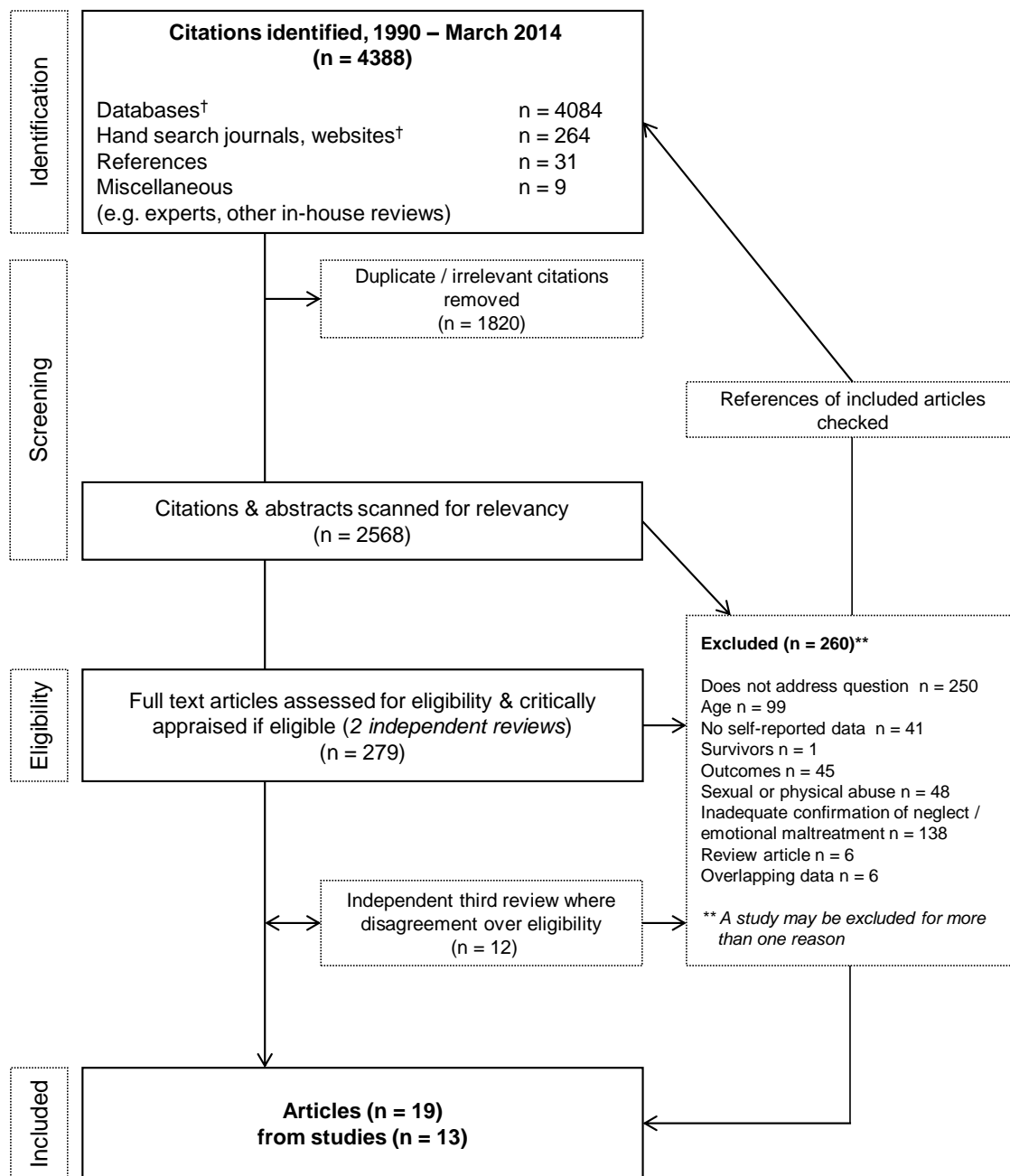
Ranking	Quality standards for confirmation of neglect / emotional maltreatment
A1	Neglect / Emotional Abuse confirmed at Child Protection case conference, multi-disciplinary assessment, including social services or Court proceedings, or admitted by the perpetrator or independently witnessed
A2	Diagnosis of Neglect / Emotional Abuse by clinical psychologist, psychiatrist or other mental health specialist
B	Neglect / Emotional Abuse defined by referenced criteria / tool designed to confirm neglect / emotional abuse (i.e. not a tool determining potential neglect)
C	Neglect / Emotional Abuse defined by unreferenced criteria / tool
D	NO SUPPORTING DETAIL

Table 2: Quality Standards for Included Studies

	Confirmation of neglect / emotional maltreatment	Comparison to non-maltreated population or normative data	Age	Gender	Ethnicity	Socio-economic status	Other
Aarons (2008) USA	A1	✓	✓ _c	✓ _c	✓ _c	✓ _c	Also control for peer substance abuse, sibling substance abuse, parent substance abuse, caregiver monitoring, family estrangement, internalising & externalising behaviors
Hibbard (1992) USA	A1	✓	✓ _m	✓ _m	✓ _m	✓ _m (only data on 35/82)	Maltreated & controls did not differ on prior mental health treatment, previous drug abuse or previous institutional placement. Maltreated: more often wards of the welfare department / court but less involved in criminal justice system
Thornberry (2001) USA	A1	✓	<i>n/a</i>	✓ _c	✓ _c	✓ _c	Also controlled for family structure, parental education, & community poverty level Measuring early and late adolescent outcomes
Williams on (1991) USA	A1	✓	✓ _m	✓ _m	✓ _m	✓ _m	Also matched on maternal age, number of siblings, father/step-father in home
Goldstein ^b (2011) Canada	A1	x	x	x	x	x	Controlled for sex, age, child welfare status in regression analysis, but data of interest is from bivariate analysis
James ^d (2009) USA	A1	x	✓ _c	✓ _c	✓ _c	x	
Kools (2009) USA	A1	x	x	x	x	x	Demographic data collected but not controlled for
McGee ^a (1995) Canada	A1	x	x	x	x	x	Some analyses by gender
McGee ^a (1997) Canada	A1	x	✓ _c	✓ _c	x	✓ _c	Also controlled for Stressful Life Events (past year), IQ & co-existent maltreatment
McGee ^a (2001) Canada	A1	x	x	x	x	x	Controlled for perceived severity of maltreatment, then five attribution variables regarding beliefs about cause of maltreatment Some analyses by gender
McMillen ^c (2005) USA	A1	x	<i>n/a</i> (all age 17)	✓ _c	✓ _c	x	Some data of interest is from bivariate analyses
Thompson (2007) USA	A1	x	✓ _c	✓ _c	✓ _c	x	Also controlled for other social risk factors – running away, school absenteeism/expulsion, poor academic performance, fighting, peer substance use
Thompson (2012) USA	A1	x	<i>n/a</i> (all age 16)	✓ _c	✓ _c	x	Also controlled for caregiver education level, family composition (living with biological mother), study site (LONGSCAN), lifetime indicators of suicidal ideation &

							lifetime indicators of stress Some data of interest is from bivariate analyses
Traube ^d (2012) USA	A1	x	✓ c	✓ c	✓ c	x	
Tyler ^d (2008) USA	A1	x	✓ c	✓ c	✓ c	✓ (income)	Some data of interest is from bivariate analysis
Vaughn ^c (2007) USA	A1	x	n/a (all age 17)	✓ c	✓ c	X	Also controlled for family history of substance use or treatment
Wechsler-Zimring (2011) USA	A1	✓ (partially, normative data)	✓ m	✓ m	✓ m	X	
Wekerle (2001) Canada	A1	x	x	x	x	X	Demographic data collected but not controlled for
Wekerle ^b (2009) Canada	A1	✓ (normative data)	✓ c	n/a (analyses by gender)	✓ c	✓ c	Also controlled for the length & nature of Child Protective Services involvement. Emotional abuse results also control for co-existent maltreatment
Legend c = Controlled, m = Matched ^a – data from the Adolescent Assessment Project (McGee, 1995 / McGee, 1997 / McGee, 2001) ^b – data from the Maltreatment and Adolescent Pathways study (Goldstein, 2011 / Wekerle, 2009) ^c – data from the Older Youths in Foster Care study (McMillen, 2005 / Vaughn, 2007) ^d – data from the National Survey of Child and Adolescent Well-Being (NSCAW) study (James, 2009 / Traube, 2012 / Tyler, 2008)							

Figure 1: Study Selection and Review Process*



* flow diagram based on PRISMA guidance, <http://www.prisma-statement.org/>

† see Appendix 1. Databases, journals and websites searched