



CREaTE

Canterbury Research and Theses Environment

Canterbury Christ Church University's repository of research outputs

<http://create.canterbury.ac.uk>

Please cite this publication as follows:

Plant, D., Pawlby, S., Pariante, C. and Jones, F. W. (2017) When one childhood meets another – maternal childhood trauma and offspring child psychopathology: a systematic review. *Clinical Child Psychology and Psychiatry*. ISSN 1359-1045.

Link to official URL (if available):

<https://doi.org/10.1177/1359104517742186>

This version is made available in accordance with publishers' policies. All material made available by CReaTE is protected by intellectual property law, including copyright law. Any use made of the contents should comply with the relevant law.

Contact: create.library@canterbury.ac.uk



When One Childhood Meets Another – Maternal Childhood Trauma and Offspring Child

Psychopathology: A Systematic Review

Dominic T. Plant^{a,b}

Susan Pawlby^a

Carmine M. Pariante^a

Fergal W. Jones^b

^aInstitute of Psychiatry, Psychology & Neuroscience, King's College London, United Kingdom; ^bSalomons Centre for Applied Psychology, Canterbury Christ Church University, United Kingdom.

Corresponding author: Dr. Fergal Jones, Salomons Centre for Applied Psychology, 1 Meadow Road, Tunbridge Wells TN1 2YG. Email: fergal.jones@canterbury.ac.uk. Phone: +443330117110

Abstract

Background: Child maltreatment can have a long-term impact on mental health. Less is known about the consequences of child maltreatment on the next generation's psychological wellbeing.

Aim: This systematic review aimed to synthesise existing empirical literature on the association between a mother's history of maltreatment in her own childhood and her children's experience of psychopathology, and to characterise potential mediating pathways.

Method: Electronic database and hand searches yielded 12 studies, with a combined sample size of 45,723 mother-child dyads, which met criteria for inclusion in the review.

Results: There was evidence of an overall positive association between a mother's history of child maltreatment and her child's experience of emotional and behavioural difficulties across childhood and adolescence. Maternal psychological distress and poorer parenting practices were found to be key mediating pathways of this association.

Conclusion: Children of mothers who were exposed to maltreatment in childhood appear to be at an increased risk for psychopathology. Mothers with traumatic childhood experiences should be offered improved access to psychological therapies and parenting programmes to help mitigate the potential impact of child maltreatment on future generations.

Keywords: childhood abuse; childhood maltreatment; maternal trauma; adolescents; intergenerational

Child maltreatment constitutes a major public health issue (World Health Organization, 2015). The impact of child maltreatment can vary widely; stark immediate consequences include physical injuries, death (Krug et al., 2002; Pinheiro, 2006) and lower school performance (Boden, Horwood, & Fergusson, 2007). Several studies have demonstrated that child maltreatment predicts emotional and behavioural difficulties through childhood and adolescence (Appleyard, Egeland, van Dulmen, & Sroufe, 2005).

Studies have investigated the recurrence of maltreatment experiences across adjacent generations. Findings have been contentious, with some studies documenting evidence for the intergenerational cycle of child maltreatment (Berlin, Appleyard, & Dodge, 2011; Cort, Toth, Cerulli, & Rogosch, 2011; Dixon, Browne, & Hamilton-Giachritsis, 2005; Egeland, Jacobvitz, & Sroufe, 1988), and others finding minimal support (Sidebotham & Golding, 2001; Zuravin, Mcmillen, Depanfilis, & Risley-Curtiss, 1996). Wide methodological variation across studies, due particularly to the ethical inability to implement experimental designs, which is an inherent limitation of many cohort studies, likely accounts for these discrepant findings. Safe, stable and nurturing relationships have been observed to buffer against the intergenerational transmission of maltreatment experiences (Jaffee et al., 2013).

Studies have also demonstrated that mothers who experienced maltreatment often experience greater difficulties in parenting. A history of child maltreatment is associated with increased intrusiveness towards their own children, decreased sensitivity, decreased responsiveness, lower rated confidence in parenting abilities and increased use of harsh discipline, including physical discipline (Bert, Guner, & Lanzi, 2009; Lomanowska, Boivin, Hertzman, & Fleming, 2015; Moehler, Biringen, & Poustka, 2007).

Review Aims

Despite the well-documented relationships between child maltreatment and psychopathology outcomes, parenting and maltreatment experiences in the next generation, there has been no comprehensive review on the association between child maltreatment in the first generation and child psychopathology in the subsequent generation. The purpose of this systematic review is to synthesise existing empirical literature on the relationship between a mother's history of maltreatment in her own childhood (henceforth referred to as "maternal childhood maltreatment") and her children's experience of psychopathology. The systematic review therefore sets out (i) to determine if there is a reliable association between maternal childhood maltreatment and offspring child psychopathology, and (ii) to characterise the mediating pathways that may underpin such an association.

Method

Literature Search Process

Electronic databases (MEDLINE, PubMed, PsycINFO, Embase, Cochrane Library) were searched for articles relating to maternal childhood maltreatment (search terms: maternal child* abuse OR maternal child* maltreatment OR maternal child* trauma OR maternal child* victimi* OR maternal child* neglect) and (AND) child psychopathology (depress* OR anxiety OR psychopathology OR conduct OR antisocial OR disruptive OR PTSD OR internali* OR externali* OR adjustment OR maladjustment OR behavio*). Citations from inception of the databases up to 28th October 2015 were included for review. Additional citations were identified through hand searches of key reference lists.

All abstracts and titles of retrieved citations were screened for eligibility. Articles were retrieved for full text review if they met the following inclusion criteria: (i) published in

a peer-review journal in English, (ii) reported an empirical investigation, (iii) included measurement of maternal maltreatment experiences in the childhood period (< 18 years), (iv) measured child psychopathology (emotional/behavioural problems) in the childhood period (< 18 years) and (v) tested for association between (iii) and (iv). When multiple articles reported on data derived from the same study sample, each article was evaluated individually and included in the review if different outcomes (child psychopathology) and/or exposures (maternal childhood maltreatment) were assessed. Individual articles are hereon referred to as “studies” to denote their investigation of distinct research questions. Figure 1 summarises the systematic literature search process.

Data Extraction and Analysis

The methodological quality of studies was evaluated in reference to guidelines set forth by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement checklist (von Elm et al., 2007). Descriptive analysis of types of maternal childhood maltreatment experiences, forms of child psychopathology, assessment instruments and statistical methods was undertaken. Prevalence rates were characterised using weighted means where data was available. Study findings were categorised by form of child psychopathology. Data on the association between maternal childhood maltreatment and child psychopathology analysed using multiple regression, analysis of variance (ANOVA) and structural equation modelling (SEM) were examined to identify covariates and mediators. The proportion of studies demonstrating a positive, null or negative association between maternal childhood maltreatment and child psychopathology was calculated. Due to the heterogeneity of study designs, measurement and statistical methods, quantitative pooled analysis of effect sizes was not feasible.

Results

Overview of Reviewed Studies

Of the 57 retrieved citations, 12 studies were included in the systematic review based on 10 distinct datasets. Table 1 provides a summary of reviewed studies. Two studies were based on the same UK longitudinal dataset (Avon Longitudinal Study of Parents and Children; Collishaw, Dunn, O'Connor, & Golding, 2007; Roberts, O'Connor, Dunn, & Golding, 2004) and two studies were based on a Spanish sample of outpatient adolescents and their mothers (Miranda, de la Osa, Granero, & Ezpeleta, 2011, 2013). Studies were conducted across five countries, all high median income ones: USA ($n = 5$), UK ($n = 3$), Spain ($n = 2$), Norway ($n = 1$) and the Netherlands ($n = 1$).

Studies employed mostly longitudinal (83%) designs and drew mostly samples from community (83%) populations. Six (50%) studies recruited pregnant women and their expectant children, four (33%) studies recruited mother-child dyads in early childhood, and two (17%) studies recruited outpatient adolescents and their mothers. Four (40%) of the ten community sample studies drew their sample from high-risk community populations (child maltreatment risk, child physical health risk, maternal drug use, low-income families).

Measures of Maternal childhood maltreatment

Measures of maternal childhood maltreatment ranged from single maltreatment items to five items. All studies assessed a combination of physical abuse, sexual abuse, emotional abuse or neglect (physical, emotional, undefined), apart from one study that also included witnessing violence as an additional type of maltreatment. Physical (92%) and sexual abuse (92%) were the most frequently measured types of maltreatment, followed by emotional abuse (58%), neglect (physical/emotional; 33%) and witnessing violence (8%).

Two (17%) studies generated a continuous latent factor of maltreatment based on all measured items, three (25%) studies defined maltreatment by the categorical presence of

any single measured item, one (8%) study defined maltreatment by the categorical presence of two or more items, two (17%) studies separated maltreatment experiences into separate categorical types, two (17%) studies generated continuous variables of maltreatment ordered by sum of types and severity of experiences, and two (17%) studies measured only a single categorical item of maltreatment. The prevalence of categorically defined maternal childhood maltreatment ranged from 4% to 50%. Rates were highest amongst high-risk community (26%-50%) samples compared to non-high-risk community (4%-18%) and clinical (12%-14%) samples.

Key methodological considerations include the reliance on retrospective self-reports, the limited use of psychometric measures, variation in operational definitions of maltreatment and the overrepresentation of physical and sexual abuse. The limited use of psychometric measures of maltreatment amongst the majority of reviewed studies likely contributed to the wide variation in definitions of maltreatment. Furthermore, the degree of comorbidity between maltreatment types is not clear in most studies, and raises the issue as to whether findings are indicative of the impact of a particular form of maltreatment or of multi-type maltreatment experiences (Higgins & McCabe, 2001).

Measures of Child Psychopathology

The youngest age of child psychopathology assessment was one year, and the eldest age seventeen years. Psychopathology was most frequently characterised according to the traditional two-dimensional taxonomy of internalising versus externalising difficulties (Krueger, Caspi, Moffitt, & Silva, 1998; Krueger, 1999). The majority (83%) of studies assessed psychopathology at the level of problems and clinical disorder, whilst two studies (17%) assessed psychopathology in terms of infant expressed affect.

Problems. Of those studies ($n = 9$) which included an assessment of child psychopathology at the level of problems, seven (78%) studies utilised the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000, 2001) and two (22%) studies employed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). The CBCL and SDQ are both parent/teacher-rated instruments. Parental reports were provided predominantly by mothers; one study collected both maternal and teacher reports (analysed separately). One study included a measure of child-rated problems, assessed using the Berkeley Puppet Interview (Ablow et al., 1999), in addition to a parent-rated CBCL (analysed separately). All nine studies assessed both internalising and externalising problems, apart from one, which assessed only externalising problems. Five studies presented analyses for only total problems as the sum of internalising and externalising scales.

Clinical disorder. Psychopathology rated at the level of clinical disorders was assessed in three (25%) studies, of which all assessed clinical disorder according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994). Whilst the use of psychiatric classifications of psychopathology is useful from the research perspective of measurement standardisation allowing for facilitated comparison of findings across studies, it is questionable whether such measurement methods are most appropriate for community populations such as in the case of Plant et al. (2013). Furthermore, the generation of latent factors and use of composite diagnostic category variables limits the opportunity to assess associations with specific clinical disorders.

Infant temperament. Lang et al. (2010) assessed temperament using the Infant Behavior Questionnaire-Revised (Gartstein & Rothbart, 2003), a maternal-rated scale of

infant affect and behaviour, whilst Lyons-Ruth & Block (1996) conducted researcher-rated video recorded home observation sessions (40 minutes) of expressed affect.

Statistical Methods

Studies applied correlational analyses (Lyons-Ruth & Block, 1996; Miranda et al., 2011, 2013; Plant et al., 2013; Rijlaarsdam et al., 2014), ANOVAs (Dubowitz et al., 2001; Myhre et al., 2014), multiple regression models (Collishaw, Dunn, et al., 2007; Lang et al., 2010; Miranda et al., 2011; Myhre et al., 2014; Roberts et al., 2004; Thompson, 2007) and SEM (Min et al., 2013; Plant et al., 2013; Rijlaarsdam et al., 2014) to test for the direct association between maternal childhood maltreatment and child psychopathology. Nine (75%) studies employed a variety of analytic methods to test for mediation.

Techniques included (i) Baron and Kenny's (1986) method of inferred mediation through the comparison of a series of multiple regression models (Collishaw, Dunn, et al., 2007; Thompson, 2007), including the use of Sobel's (1982) test to assess the significance of the change in variance when including the mediator (Miranda et al., 2011; Myhre et al., 2014; Thompson, 2007), (ii) generation of path analytic models (Plant et al., 2013) and (iii) the quantification of the indirect effect by applying a product of coefficients approach (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Min et al., 2013; Miranda et al., 2013; Preacher & Hayes, 2008; Rijlaarsdam et al., 2014; Roberts et al., 2004).

Maternal childhood maltreatment and Child Psychopathology

Child problems. At least one significant positive association between maternal childhood maltreatment and child problems was reported in all nine studies that measured child problems. Four studies reported a significant positive association for externalising problems, two studies reported a significant positive association for internalising problems, and four studies reported a significant positive association for total problems. Notably,

Dubowitz and colleagues (2001) observed an overall effect of exposure to life-course maltreatment (childhood and adulthood) for externalising problems. In the cases of studies which included multi-informant ratings, associations were observed for parent, teacher and child ratings. Positive associations were observed amongst children aged 3 years to 17 years, including poorer total problem trajectories between 4 to 7 years. The range of maltreatment types assessed in these nine studies included physical abuse, sexual abuse, emotional abuse, physical neglect and emotional neglect.

Adjusted analyses demonstrated that associations were significant in all studies except one (Miranda et al., 2011), when controlling for the following covariates: (i) maternal factors (age, ethnicity, education, parity, adulthood violence, psychological distress, alcohol abuse, childhood cruelty); (ii) family factors (income, parental marital status); (iii) child factors (gender, age, temperament, prior total problems). In the study conducted by Miranda et al. (2011), maternal childhood maltreatment did not remain a significant predictor of child externalising problems in analyses adjusted for maternal and paternal DSM-IV diagnoses, partner violence, child age, child gender and child physical punishment (maltreatment); maternal DSM-IV diagnoses and child maltreatment significantly predicted child total problems, however. It is worth noting that this was the only study of the nine which assessed maternal psychological distress at the level of psychiatric disorder (as opposed to symptomatology), as well as including offspring child maltreatment as a covariate in adjusted analyses.

Child clinical disorder. Of the three studies that assessed children's clinical disorders, two studies (67%) reported significant positive direct associations between maternal childhood maltreatment experiences and child DSM-IV disorders (Miranda et al., 2011; Plant et al., 2013), whilst the third reported a null result (Min et al., 2013). Maternal childhood

maltreatment predicted DBDs but not affective disorders; although Miranda et al. (2011) observed an association between maternal childhood maltreatment and total number of child diagnoses. Notably, rates of DBDs were higher compared to rates of mood disorders in both these studies. In Miranda et al.'s (2011) study, the association between maternal childhood maltreatment and child DBDs remained significant when controlling for offspring child maltreatment (physical abuse; in addition to controlling for parental DSM-IV disorders, partner violence, child age, child comorbid DSM-IV diagnoses and child gender); however, in Plant et al.'s (2013) study the association was no longer significant when controlling for child maltreatment experiences which included measures of physical abuse (in addition to sexual abuse and harsh discipline).

In Min and colleagues (2013) study, only child reports of DSM-IV symptoms were collected, whilst the other two studies employed combined parent and child reports, in addition to the generation of latent factors of total DSM-IV symptoms with no analysis of individual disorders. These methodological differences could account for the discrepant findings such that single-informant measures yielded less power than multi-informant measures in conjunction with non-specificity of disorder types making for less sensitive assessment. Furthermore, key methodological differences between Miranda et al.'s (2011) and Plant et al.'s (2013) studies include (i) sample type (clinical versus community), (ii) types of maternal maltreatment (sexual abuse, physical abuse, emotional abuse versus sexual abuse, physical abuse, emotional neglect, physical neglect), and (iii) ages of children (8-17 years versus 11 and 16 years). These data suggest that the association between maternal childhood maltreatment and child clinical disorders is less robust than the association with child problems. The strongest association was observed for child DBDs; however, this

association did not appear to be fully independent of pertinent risk factors such as offspring child maltreatment experiences.

Infant temperament. Lyons-Ruth et al. (1996) observed infant negative affect to be positively associated with summative maternal maltreatment experiences, whilst Lang et al. (2010) observed both positive and negative associations between infant negative affect and maternal maltreatment depending on the type of maltreatment experience: maternal physical abuse positively predicted negative affect but maternal emotional abuse negatively predicted negative affect (adjusted for maternal psychological distress), whilst no significant association with maternal sexual abuse was observed. Given that Lyons-Ruth et al. (1996) did not measure maternal emotional abuse, in conjunction with the fact that both studies employed small sample sizes, it remains challenging to draw conclusions about the counterintuitive finding that maternal emotional abuse predicted improved infant temperament.

Mediating Pathways

Psychological distress. Eight studies tested the mediating effect of maternal psychological distress, with seven studies reporting that maternal psychological distress (antenatal period through to child adolescence) mediated significantly the effect of maternal childhood maltreatment on child psychopathology (Collishaw, Dunn, et al., 2007; Min et al., 2013; Miranda et al., 2013; Myhre et al., 2014; Rijlaarsdam et al., 2014; Roberts et al., 2004; Thompson, 2007), and one study finding a null result (Miranda et al., 2011). Two studies observed mediation of externalising problems (Miranda et al., 2013; Myhre et al., 2014), one study observed mediation of internalising problems (Rijlaarsdam et al., 2014) and four studies observed mediation of total problems (Collishaw, Dunn, et al., 2007; Min et al., 2013; Roberts et al., 2004; Thompson, 2007). Five studies reported a partially mediated

effect (Min et al., 2013; Myhre et al., 2014; Rijlaarsdam et al., 2014; Roberts et al., 2004; Thompson, 2007), whilst two studies reported a fully mediated effect (Collishaw, Dunn, et al., 2007; Miranda et al., 2013).

Forms of maternal psychological distress found to be significant mediators were anger (Miranda et al., 2013; Rijlaarsdam et al., 2014), depression (Miranda et al., 2013; Thompson, 2007), anxiety (Roberts et al., 2004), affective (depression, anxiety; Collishaw et al., 2007; Rijlaarsdam et al., 2014) and generalised (Min et al., 2013; Myhre et al., 2014) symptomatology. In Miranda and colleagues' (2011) study which reported a null mediated effect, this was the only study which assessed maternal psychological distress at the level of DSM-IV disorders, as well as including maternal adulthood violence as a co-predictor in SEM models. These two factors may have contributed to the null findings in comparison to other studies, such that studies that employed measurement of maternal psychological distress at the level of symptomatology and included maternal childhood maltreatment as the sole predictor variable may have benefited from increased power. Furthermore, Rijlaarsdam and colleagues (2014) also assessed the mediating effect of paternal psychological distress. Maternal childhood maltreatment was found to be indirectly associated with parent and child-rated externalising problems through paternal and maternal anger and harsh discipline practices; maternal childhood maltreatment predicted parental anger, which predicted parental harsh discipline, which predicted child externalising problems (i.e. a serial mediation pathway).

Parenting. Of the four studies that tested mediation by parenting practices, all reported that poorer parenting mediated significantly the association between maternal childhood maltreatment and child psychopathology (Collishaw, Dunn, et al., 2007; Rijlaarsdam et al., 2014; Roberts et al., 2004; Thompson, 2007). Two studies found that

maternal child-directed aggression and hostility partially mediated the pathway between maternal childhood maltreatment and child total problems (Collishaw, Dunn, et al., 2007; Thompson, 2007), whilst one study found that low maternal parenting confidence partially mediated this association (Roberts et al., 2004). One study reported that independently maternal and paternal harsh discipline fully mediated the effect of maternal childhood maltreatment on child externalising problems via maternal/paternal anger, but not child internalising problems (Rijlaarsdam et al., 2014).

Child maltreatment. Of the three studies which included measures of offspring child maltreatment (Miranda et al., 2011; Plant et al., 2013; Thompson, 2007), only one study reported that child maltreatment (sexual abuse, physical abuse and harsh discipline) significantly mediated the association between maternal childhood maltreatment and child psychopathology (DSM-IV DBDs; Plant et al., 2013). Maternal antenatal depression was found to moderate this mediation effect, such that a significant mediated effect was observed only amongst mothers depressed in pregnancy. Miranda and colleagues (2011) observed a null result for tests of mediation of maternal childhood maltreatment on child externalising problems by child physical abuse. Notably, this study tested for mediation in a model in which maternal childhood maltreatment and adulthood violence were entered simultaneously as predictor variables, thereby likely reducing power for the potential effects of each predictor independently.

Similarly, Thompson (2007) did not find evidence that offspring child maltreatment (physical abuse, neglect, sexual abuse) mediated the association between maternal childhood maltreatment and child total problems. In this study, maternal adulthood violence was also entered as a co-predictor variable in multiple regression analyses. Plant and colleagues' (2013) sample was the only one to include mothers depressed during

pregnancy, which has been identified as a risk factor for offspring child maltreatment (Lereya & Wolke, 2013; Pawlby, Hay, Sharp, Waters, & Pariante, 2011), therefore likely accounting for the significant mediated effect in this subgroup which could be expected to yield greater power, in conjunction with likely reduced power in Thompson's (2007) and Miranda et al.'s (2011) studies.

Life events. Stressful child and family life events partially mediated the association between maternal childhood maltreatment and child total problems in the one study that tested for this (Collishaw, Dunn, et al., 2007).

Social support. One study tested and reported that maternal childhood maltreatment indirectly predicted child total DSM-IV disorder symptoms through low maternal social support (Min et al., 2013).

Discussion

The systematic review examined the relationship between a mother's history of child maltreatment and her children's experience of psychopathology. The review synthesised findings across twelve studies with a combined sample size totalling 45,723 mother-child dyads. Across studies, between 4% and 50% of mothers reported a history of child maltreatment, with prevalence rates highest amongst high-risk community samples, which is consistent with existent literature (Choi & Sikkema, 2015).

Maternal childhood maltreatment and Child Psychopathology

Overall, the review documented evidence of positive association between maternal childhood maltreatment and child problems and clinical disorder psychopathology. Findings regarding the relationship between maternal childhood maltreatment and infant negative temperament were less consistent. A robust relationship was documented for child total problems, with all studies that tested this relationship reporting a positive association.

Eighty percent of studies that assessed externalising problems separately reported a positive association, whilst fifty percent of studies that assessed internalising problems separately reported a positive association. Sixty-seven percent of studies reported a positive association between maternal childhood maltreatment and child clinical disorder; specifically, DBDs. Of the two studies which assessed infant temperament, one reported a positive association between maternal childhood maltreatment and infant negative affect, whilst the other reported both positive and negative associations which varied by type of maternal childhood maltreatment experience.

Overall, these findings suggest that a high proportion of children of mothers who experienced child maltreatment tend to experience generalised and externalising difficulties through early childhood into adolescence, with a more tenuous association documented for specifically internalising difficulties. Findings remain when controlling for multiple maternal, family and child factors. Documented associations reflect difficulties reported predominantly by parents, as well as child reports in the cases of severe difficulties, and exist across varied types of maternal maltreatment experiences.

A possible explanation for the more evidenced association for externalising difficulties in contrast to internalising difficulties could be increased power, given that some epidemiological research suggests that prevalence in internalising difficulties tends to start at a lower rate and increase through the life-course, whilst the opposite is true for externalising difficulties (Hipwell et al., 2011). Prevalence rates in the reviewed studies followed this trend for psychopathology at the level of clinical disorder but not for psychopathology at the level of symptomatology; externalising and internalising problems were of similar prevalence in most reviewed studies that reported separate rates. Thus, the robust association between maternal childhood maltreatment and total problems could

indeed reflect a risk for generalised psychopathology. However, it is also plausible that discrepancies in types of problems classed as internalising versus externalising in the CBCL, SDQ and various versions of these, contributed to differences between study findings. Furthermore, it is also possible that these associations are driven by a unique vulnerability for children of mothers maltreated in childhood to develop externalising difficulties, as well as for a tendency for traumatised mothers to be less likely to identify their children's internalising psychopathology. Without further separate analyses and disparities in prevalence rates it remains difficult to draw conclusions about the specificity of this risk.

A Conceptual Framework: Mediating Pathways

Several pathways were documented in reviewed studies that statistically mediated the association between mothers' child maltreatment and her children's experience of psychopathology.

Maternal psychological factors. Numerous studies evidenced maternal psychological distress to mediate the association between maternal childhood maltreatment and child psychopathology. Studies documented partial and full mediation of externalising, internalising and generalised child problems, by various types of maternal psychological distress, particularly affective, occurring through the antenatal period to child adolescence. These data complement the literature linking child maltreatment experiences to vulnerability for adulthood mental health difficulties (Nanni et al., 2012), as well as the impact of such on child psychopathology (O'Donnell, Glover, Barker, & O'Connor, 2014). Maternal psychopathology at key developmental stages, such as the perinatal period, and recurrence through childhood and adolescence, is thought to influence children's development through a variety of ways such as foetal programming of sensitised stress and inflammatory systems, disruption of secure attachment, poorer educational attainment and

compromised prosocial development, all of which can increase vulnerability for emotional and behavioural maladjustment (Hay & Pawlby, 2003; Lee & Hankin, 2009; Nemeroff & Vale, 2005; Toth, Rogosch, Sturge-Apple, & Cicchetti, 2009; Van den Bergh et al., 2008). These data thereby support the idea of maternal psychological distress being considered a key pathway for the intergenerational transmission of such adversity.

Parenting practices. Studies documented that punitive and hostile parenting styles accounted for a large proportion of poor parenting practices that were found to statistically mediate maternal childhood maltreatment and child problem psychopathology. There was also evidence indicating that low parenting confidence was a significant mediator. Punitive and insensitive parenting likely influences children's behaviour through a variety of ways including social modelling and compromising emotion regulation and security (Cummings & Cummings, 2002).

Environmental factors. A couple of the reviewed studies found evidence for the mediating influences of low maternal social support and family life events on total child problems and disorder symptoms. Research suggests that early adversity such as child maltreatment often aggregates with the experience of environmental adversity factors such as low social economic status, family disorganisation and social isolation (Appleyard et al., 2005; Fergusson, Boden, & Horwood, 2008; McLaughlin et al., 2010). Mothers maltreated in childhood may be at increased risk of experiencing continued environmental adversity in adulthood, which could contribute to their children's vulnerability to experiencing psychopathology. However, more studies are required to examine the persistence of social and environmental adversity amongst mothers with a history of maltreatment. It is also plausible that environmental factors moderate documented associations (Mersky & Reynolds, 2007).

Offspring child maltreatment. There was minimal support for the hypothesis that offspring child maltreatment mediates the pathway between mothers' child maltreatment and child psychopathology. Whilst child maltreatment has been documented to predict later psychopathology in childhood and adolescence (Herrenkohl & Herrenkohl, 2007; McLaughlin et al., 2012; Thornberry et al., 2001), research documents the link between maternal childhood maltreatment and offspring maltreatment to be more tenuous (Thornberry et al., 2012). However, given that only one out of the three reviewed studies testing the association between maternal childhood maltreatment and offspring child maltreatment reported a significant association, these mixed findings amongst only a handful of studies makes it unwarranted to draw any firm conclusions.

Limitations of Review

Whilst the systematic review has several strengths, including investigation of mediation pathways to help answer questions around how and why a relationship between a mother's maltreatment history and her children's' psychopathology may exist, and drawing on samples from ranging population types and demographics, there are methodological issues about the review that warrant consideration. The review included only peer-reviewed empirical papers and did not include grey literature such as book chapters or dissertations. As the focus of the study was the impact of maternal trauma in childhood on offspring childhood psychopathology, several studies were excluded as (i) they did not differentiate maternal adulthood traumatic experiences from childhood ones or (ii) they also included offspring aged over eighteen years, suggesting a potentially larger literature base.

There was considerable heterogeneity amongst reviewed studies, particularly around definitions of maternal multi-type maltreatment, definitions and inclusion of

confounder and child variables, timing of assessments and statistical procedures, all of which limited how well findings across a smaller pool of studies could be aggregated and extrapolated. Furthermore, all measures of maternal childhood maltreatment were attained retrospectively, thereby potentially introducing increased levels of reporting error in contrast to prospectively collected data. Several studies recruited mothers currently experiencing psychological distress and there was no evidence of assessing potential confounding of such in relation to either maternal self-reports of maltreatment or maternal-rated reports of child psychopathology.

Clinical Implications and Directions for Future Research

The reviewed data indicates a need to identify and support mothers with traumatic childhoods as a means to protecting their own and their children's psychological wellbeing. Mothers with gross child maltreatment histories may benefit from improved access to psychological interventions aimed at reducing psychological distress and promoting high-quality social support, as well as parenting programmes aimed at promoting sensitive and warm caregiving practices that instil a sense of confidence. Interventions focused around developing a robust attachment relationship with their child may be particularly useful (Cicchetti, Rogosch, & Toth, 2006). Future research would benefit from assessing the impact of particular maternal maltreatment types on child psychopathology, as well as investigating trajectories of difficulties. Whilst maternal psychological distress, poorer parenting and environmental adversity were identified as relevant mediators, there was little analysis on the specificity of timing for when these factors may exert the most detrimental influences. Research identifying key developmental periods of sensitivity, such as the perinatal period (when many women are already in contact with clinical services), would allow for more targeted interventions and allow for enhanced preventative treatments. There was little

investigation into the role of genetic factors as well as the impact of fathers; future research would benefit from exploring these factors, as well as investigating key facets of affect regulation and processing in vulnerable children, to inform potential child-based intervention programmes.

Conclusion

A mother's history of child maltreatment appears to be associated with children's emotional and behavioural difficulties across childhood and adolescence. Identified mediating pathways include mothers' adulthood mental health difficulties, poorer parenting practices and environmental adversity. Historically maltreated mothers could be offered improved access to psychological therapies and parenting programmes to help mitigate the potential consequences of child maltreatment on future generations.

Acknowledgements

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

References

- Ablow, J. C., Measelle, J. R., Kraemer, H. C., Harrington, R., Luby, J., Smider, N., ... Kupfer, D. J. (1999). The MacArthur Three-city Outcome Study: evaluating multi-informant measures of young children's symptomatology. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*, 1580–90.
- Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.
- Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms & profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families.

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders, fourth edition: DSM-IV* (4th ed.). Washington, DC: Author.
- Appleyard, K., Egeland, B., van Dulmen, M. H. M., & Sroufe, L. A. (2005). When more is not better: the role of cumulative risk in child behavior outcomes. *Journal of Child Psychology and Psychiatry, 46*, 235–45.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.
- Berlin, L. J., Appleyard, K., & Dodge, K. A. (2011). Intergenerational continuity in child maltreatment: mediating mechanisms and implications for prevention. *Child Development, 82*, 162–76.
- Bert, S. C., Guner, B. M., & Lanzi, R. G. (2009). The influence of maternal history of abuse on parenting knowledge and behavior. *Family Relations, 58*, 176–187.
- Boden, J. M., Horwood, L. J., & Fergusson, D. M. (2007). Exposure to childhood sexual and physical abuse and subsequent educational achievement outcomes. *Child Abuse & Neglect, 31*, 1101–14.
- Choi, K. W., & Sikkema, K. J. (2015). Childhood Maltreatment and Perinatal Mood and Anxiety Disorders: A Systematic Review. *Trauma, Violence, & Abuse*, 1524838015584369. [Epub ahead of print].
- Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2006). Fostering secure attachment in infants in maltreating families through preventive interventions. *Development and Psychopathology, 18*, 623–49.
- Collishaw, S., Dunn, J., O'Connor, T. G., & Golding, J. (2007). Maternal childhood abuse and offspring adjustment over time. *Development and Psychopathology, 19*, 367–83.

- Collishaw, S., Pickles, A., Messer, J., Rutter, M., Shearer, C., & Maughan, B. (2007). Resilience to adult psychopathology following childhood maltreatment: evidence from a community sample. *Child Abuse & Neglect, 31*, 211–29.
- Cort, N. a., Toth, S. L., Cerulli, C., & Rogosch, F. (2011). Maternal intergenerational transmission of childhood multitype maltreatment. *Journal of Aggression, Maltreatment & Trauma, 20*, 20–39.
- Cummings, E., & Cummings, J. (2002). Parenting and attachment. In M. Bornstein (Ed.), *Handbook of parenting. Volume 5. Practical issues in parenting* (2nd ed., pp. 35–58). Lawrence Erlbaum Associates.
- Dixon, L., Browne, K., & Hamilton-Giachritsis, C. (2005). Risk factors of parents abused as children: a mediational analysis of the intergenerational continuity of child maltreatment (Part I). *Journal of Child Psychology and Psychiatry, 46*, 47–57.
- Dubowitz, H., Black, M. M., Kerr, M. A., Hussey, J. M., Morrel, T. M., Everson, M. D., & Starr, R. H. (2001). Type and timing of mothers' victimization: effects on mothers and children. *Pediatrics, 107*, 728–35.
- Egeland, B., Jacobvitz, D., & Sroufe, L. A. (1988). Breaking the cycle of abuse. *Child Development, 59*, 1080–8.
- Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2008). Exposure to childhood sexual and physical abuse and adjustment in early adulthood. *Child Abuse & Neglect, 32*, 607–19.
- Gartstein, M. A., & Rothbart, M. K. (2003). Studying infant temperament via the Revised Infant Behavior Questionnaire. *Infant Behavior and Development, 26*, 64–86.
- Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. *Journal of Child Psychology and Psychiatry, 38*, 581–586.
- Hay, D. F., & Pawlby, S. (2003). Prosocial Development in Relation to Children's and

- Mothers' Psychological Problems. *Child Development*, 74, 1314–1327.
- Herrenkohl, T. I., & Herrenkohl, R. C. (2007). Examining the overlap and prediction of multiple forms of child maltreatment, stressors, and analysis of youth outcomes. *Journal of Family Violence*, 22, 553–562.
- Higgins, D. J., & McCabe, M. P. (2001). Multiple forms of child abuse and neglect: adult retrospective reports. *Aggression and Violent Behavior*, 6, 547–578.
- Hipwell, A. E., Stepp, S., Feng, X., Burke, J., Battista, D. R., Loeber, R., & Keenan, K. (2011). Impact of oppositional defiant disorder dimensions on the temporal ordering of conduct problems and depression across childhood and adolescence in girls. *Journal of Child Psychology and Psychiatry*, 52, 1099–108.
- Jaffee, S. R., Bowes, L., Ouellet-Morin, I., Fisher, H. L., Moffitt, T. E., Merrick, M. T., & Arseneault, L. (2013). Safe, stable, nurturing relationships break the intergenerational cycle of abuse: A prospective nationally representative cohort of children in the United Kingdom. *Journal of Adolescent Health*, 53, 4–10.
- Krueger, R. F. (1999). The structure of common mental disorders. *Archives of General Psychiatry*, 56, 921–6.
- Krueger, R. F., Caspi, A., Moffitt, T. E., & Silva, P. A. (1998). The structure and stability of common mental disorders (DSM-III-R): a longitudinal-epidemiological study. *Journal of Abnormal Psychology*, 107, 216–27.
- Krug, E. G., Dahlberg, L., Mercy, J. A., Zwi, A., & Lozano, R. (2002). *World report on violence and health*. Geneva: World Health Organization.
- Lang, A. J., Gartstein, M. A., Rodgers, C. S., & Lebeck, M. M. (2010). The impact of maternal childhood abuse on parenting and infant temperament. *Journal of Child and Adolescent Psychiatric Nursing*, 23, 100–10.

- Lee, A., & Hankin, B. L. (2009). Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. *Journal of Clinical Child and Adolescent Psychology, 38*, 219–31.
- Lereya, S. T., & Wolke, D. (2013). Prenatal family adversity and maternal mental health and vulnerability to peer victimisation at school. *Journal of Child Psychology and Psychiatry, 54*, 644–52.
- Lomanowska, A. M., Boivin, M., Hertzman, C., & Fleming, A. S. (2015). Parenting begets parenting: a neurobiological perspective on early adversity and the transmission of parenting styles across generations. *Neuroscience*, Epub ahead of print.
- Lyons-Ruth, K., & Block, D. (1996). The disturbed caregiving system: relations among childhood trauma, maternal caregiving, and infant affect and attachment. *Infant Mental Health Journal, 17*, 257–275.
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 83–104*.
- McLaughlin, K. A., Greif Green, J., Gruber, M. J., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2012). Childhood adversities and first onset of psychiatric disorders in a national sample of US adolescents. *Archives of General Psychiatry, 69*, 1151–60.
- Mersky, J. P., & Reynolds, A. J. (2007). Child maltreatment and violent delinquency: disentangling main effects and subgroup effects. *Child Maltreatment, 12*, 246–58.
- Min, M. O., Singer, L. T., Minnes, S., Kim, H., & Short, E. (2013). Mediating links between maternal childhood trauma and preadolescent behavioral adjustment. *Journal of Interpersonal Violence, 28*, 831–851.
- Miranda, J. K., de la Osa, N., Granero, R., & Ezpeleta, L. (2011). Maternal experiences of

- childhood abuse and intimate partner violence: psychopathology and functional impairment in clinical children and adolescents. *Child Abuse & Neglect*, *35*, 700–11.
- Miranda, J. K., de la Osa, N., Granero, R., & Ezpeleta, L. (2013). Maternal childhood abuse, intimate partner violence, and child psychopathology: the mediator role of mothers' mental health. *Violence Against Women*, *19*, 50–68.
- Moehler, E., Biringen, Z., & Poustka, L. (2007). Emotional availability in a sample of mothers with a history of abuse. *American Journal of Orthopsychiatry*, *77*, 624–8.
- Myhre, M., Dyb, G., Wentzel-Larsen, T., Groggaard, J., & Thoresen, S. (2014). Maternal childhood abuse predicts externalizing behaviour in toddlers: a prospective cohort study. *Scandinavian Journal of Public Health*, *42*, 263–269.
- Nanni, V., Uher, R., & Danese, A. (2012). Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: a meta-analysis. *American Journal of Psychiatry*, *169*, 141–51.
- Nemeroff, C. B., & Vale, W. W. (2005). The neurobiology of depression: inroads to treatment and new drug discovery. *The Journal of Clinical Psychiatry*, *66*, 5–13.
- O'Donnell, K. J., Glover, V., Barker, E. D., & O'Connor, T. G. (2014). The persisting effect of maternal mood in pregnancy on childhood psychopathology. *Development and Psychopathology*, *26*, 393–403.
- Pawlby, S., Hay, D., Sharp, D., Waters, C. S., & Pariante, C. M. (2011). Antenatal depression and offspring psychopathology: the influence of childhood maltreatment. *The British Journal of Psychiatry*, *199*, 106–12.
- Pinheiro, P. S. (2006). *World report on violence against children*. New York, NY: United Nations Secretary-General's study on Violence against Children.
- Plant, D. T., Barker, E. D., Waters, C. S., Pawlby, S., & Pariante, C. M. (2013).

- Intergenerational transmission of maltreatment and psychopathology: the role of antenatal depression. *Psychological Medicine*, *43*, 519–28.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–91.
- Rijlaarsdam, J., Stevens, G. W. J. M., Jansen, P. W., Ringoot, A. P., Jaddoe, V. W. V., Hofman, A., ... Tiemeier, H. (2014). Maternal childhood maltreatment and offspring emotional and behavioral problems: maternal and paternal mechanisms of risk transmission. *Child Maltreatment*, *19*, 67–78.
- Roberts, R., O'Connor, T., Dunn, J., & Golding, J. (2004). The effects of child sexual abuse in later family life; mental health, parenting and adjustment of offspring. *Child Abuse & Neglect*, *28*, 525–545.
- Sidebotham, P., & Golding, J. (2001). Child maltreatment in the “children of the nineties” a longitudinal study of parental risk factors. *Child Abuse & Neglect*, *25*, 1177–200.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). San Francisco, CA: Jossey-Bass.
- Thompson, R. (2007). Mothers' violence victimization and child behavior problems: examining the link. *American Journal of Orthopsychiatry*, *77*, 306–15.
- Thornberry, T. P., Ireland, T. O., & Smith, C. A. (2001). The importance of timing: the varying impact of childhood and adolescent maltreatment on multiple problem outcomes. *Development and Psychopathology*, *13*, 957–79.
- Thornberry, T. P., Knight, K. E., & Lovegrove, P. J. (2012). Does maltreatment beget maltreatment? A systematic review of the intergenerational literature. *Trauma*,

Violence, & Abuse, 13, 135–52.

Toth, S. L., Rogosch, F. A., Sturge-Apple, M., & Cicchetti, D. (2009). Maternal depression, children's attachment security, and representational development: an organizational perspective. *Child Development, 80, 192–208.*

Van den Bergh, B. R. H., Van Calster, B., Smits, T., Van Huffel, S., & Lagae, L. (2008). Antenatal maternal anxiety is related to HPA-axis dysregulation and self-reported depressive symptoms in adolescence: a prospective study on the fetal origins of depressed mood. *Neuropsychopharmacology, 33, 536–45.*

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., & Vandenbroucke, J. P. (2007). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Lancet, 370, 1453–7.*

World Health Organization. (2015). *Preventing youth violence: an overview of the evidence.*

Zuravin, S., Mcmillen, C., Depanfilis, D., & Risley-Curtiss, C. (1996). The intergenerational cycle of child maltreatment: continuity versus discontinuity. *Journal of Interpersonal Violence, 11, 315–334.*

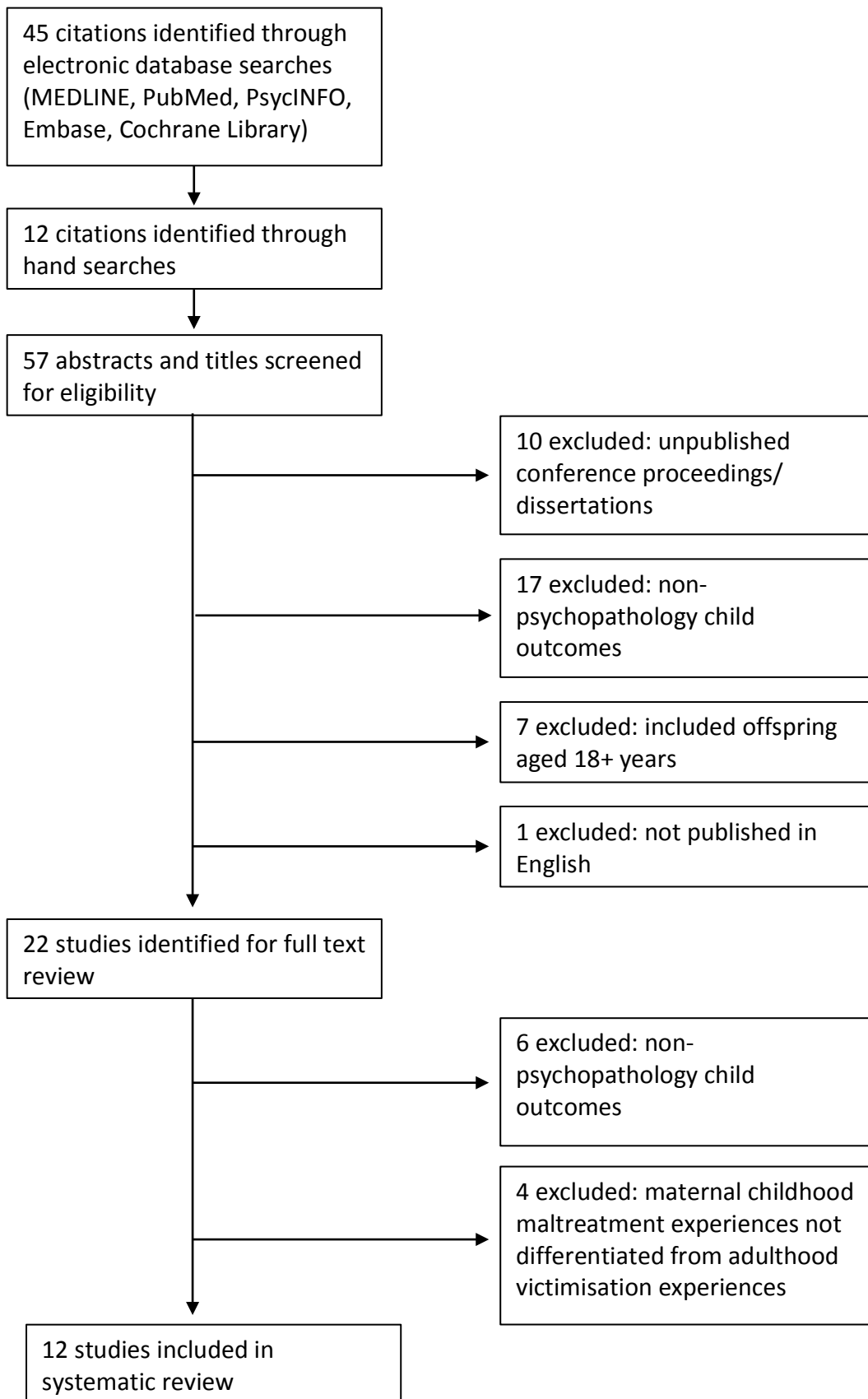


Figure 1. PRISMA flow diagram of literature search process