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## **Perinatal interventions for mothers and fathers who are survivors of childhood sexual abuse**

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## **Perinatal interventions for mothers and fathers who are survivors of childhood sexual abuse**

### **Abstract**

Childhood sexual abuse (CSA) is a worldwide problem with severe long-term consequences. A history of CSA can impact the childbearing experience of mothers and fathers; affecting their mental health, parenting skills and compromising infant development. Nonetheless, the perinatal period offers huge opportunity for intervention and hope. This literature review collates evidence for perinatal psychosocial interventions targeting both mothers and fathers who are survivors of CSA. Publications dating from 1970 to June 2016 were searched using Medline, Maternity and Infant Health, PsychINFO, PsychArticles, PubMed and the International Bibliography of the Social Sciences (IBSS). There were no perinatal interventions that considered the needs of survivor fathers. Sixteen publications on 9 psychosocial perinatal interventions for CSA survivors were identified. However, no sub-analyses specific to CSA survivors were reported. Trauma-specific perinatal interventions drew from a range of theoretical models and varied widely in format. Generally interventions were associated with improvements in maternal mental health, parenting competence, infant attachment security and positive public health outcomes. They were safe and feasible to implement, acceptable to parents and therapist, and therapists were able to implement protocols with adequate fidelity. Yet current data is hampered by small sample size, inconsistent reporting of CSA rates and outcome measures, scarcity of observational data and longer-term follow-up. Intervention modifications are proposed for CSA survivors in view of their unique childbearing experiences.

**Key Words** Childhood sexual abuse, perinatal, parent, survivor, intervention, PTSD

## Introduction

Childhood sexual abuse (CSA) is a worldwide problem with widely varying prevalence estimates. Meta-analytic evidence from 55 studies conducted in 24 countries, indicates prevalence estimates of CSA to range from 8 to 31% for girls and 3 to 17% for boys (Barth, Bermetz, Heim, Trelle, & Tonia, 2013). CSA can be distinguished from other forms of abuse by specific sequelae that survivors experience. For instance, compared to women who have been exposed to non-sexual abuse, women with a history of CSA, are at increased risk of antenatal depression (Romano, Zoccolillo, & Paquette, 2006) and hypothalamic-pituitary-adrenal (HPA) dysregulation in pregnancy (Bublitz & Stroud, 2012). CSA has also been linked with parenting competence above and beyond the impact of other forms of childhood abuse (Bailey, DeOliveira, Wolfe, Evans, & Hartwick, 2012). Furthermore, compared to female survivors of CSA there is less research on male survivors who later become fathers (for example, Sandberg, Feldhousen, & Busby, 2012; Wark & Vis, 2016). Yet the long-term impact of CSA in males can be as severe as in females (Banyard, Williams, & Siegel, 2004; Dube, et al., 2005; Young, Kelli-Lee, Bill, & Jodi, 2007).

None the less, for both genders, the consequences of CSA may not manifest until salient triggers are experienced during periods of stress and transition (Noll, 2008). Pregnancy represents a vulnerable time for both parents with a considerable number of women and men reporting depression and distress (Howard, et al., 2018; Philpott, Leahy-Warren, FitzGerald, & Savage, 2017; Ramchandani, et al., 2008; Van den Bergh, Mulder, Mennes, & Glover, 2005). Evidence from our work suggests that childhood maltreatment increases the risk of antenatal depression by approximately 10-fold (Plant, Barker, Waters, Pawlby, & Pariante, 2013) – a much higher risk compared with the overall 2-3-fold increase in psychopathology throughout adult life. Similarly, the risk of posttraumatic stress disorder (PTSD) is increased by 12-fold during pregnancy in the context of childhood maltreatment (Seng, Low, Sperlich, Ronis, & Liberzon, 2009). As a result pregnant women with PTSD present with a higher number of complications during pregnancy (Mohler, et al., 2008), including severe anxiety about

labour and childbirth (Soet, Brack, & Dilorio, 2003). In addition to experiencing increased rates of psychiatric disorders and psychological distress, CSA survivors tend to become pregnant at a younger age (Garwood, Gerassi, Jonson-Reid, Plax, & Drake, 2015; Noll, Shenk, & Putnam, 2009), experience higher risk of substance misuse, find it more complicated to establish supportive relationships with family and professionals (Leeners, Richter-Appelt, Imthurn, & Rath, 2006) and are more likely to re-experience interpersonal violence (Whitfield, Anda, Dube, & Felitti, 2003). Given the extent of influence, it may be crucial to recognize multi-model trauma informed interventions which can address the diverse mental health and social functioning needs of abused survivors.

Past trauma tends to resurface during the perinatal period – consequently, the childbearing experience of both mothers and fathers is influenced due to physical and psychological salience of triggers (Byrne, Smart, & Watson, 2017; LoGiudice & Beck, 2016; Price-Robertson, 2012). In women, physical triggers may include procedures associated with pregnancy, labour and birth – for instance vaginal examinations. Emotional triggers may include the sense of a loss of control (for instance, being asked to stay still during an epidural placement), interpersonal difficulties and reminders of painful experiences in childhood. Female CSA survivors may also experience higher levels of perinatal dissociation (i.e. the occurrence of detachment and emotional distancing symptoms) (Lev-Wiesel & Daphna-Tekoah, 2010) and flashbacks – particularly during intrusive physical examinations and vaginal birth (Coles & Jones, 2009; Roller, 2011). Dissociation during pregnancy may in turn prevent women from getting appropriate obstetric care (Van Der Leder & Raskin, 1993). On the other hand, some women may become more alert to each sensation, leading to an increase in psychological distress (Heritage, 1998). As a result, many women may avoid protective routine maternity care or additional specialist services (Goodman & Tyler-Viola, 2010). Thus, the heterogeneity of presentation of abuse, the tendency to avoid reminders of trauma, and the subsequent challenges in treatment uptake, all suggest that existing long-term programmes (for example, Olds, 2006) or those that specifically require engagement with past trauma (Foa, Keane, Friedman, & Cohen, 2008; McDonagh, et al., 2005) may not be that helpful to CSA survivors during the perinatal period.

Similarly, for male survivors of CSA, fatherhood may be a trigger for the resurfacing of past trauma. Though less well-studied, in comparison to women, survivor fathers may also experience significant fears and anxiety. Key themes reported are distress during physical contact and displays of affection towards their child, as well as overprotection and anxious parenting behaviours (Price-Robertson, 2012). Insecurity surrounding masculinity and personal identity, as well as the inability to trust others are also significant issues (Turmel & Liles, 2015). Of note, however, is the concept of posttraumatic growth which may have important implications for survivor fathers. Accordingly, fatherhood may also drive the process of healing and provide male CSA survivors an opportunity to build trusting relationships (Easton, Leone-Sheehan, Sophis, & Willis, 2015; Wark & Vis, 2016). Similarly, childbearing may help empower women to experience control and competence (Heritage, 1998).

Thus far, provision of both medical and psychological interventions in the perinatal period for trauma survivors, is indeed complex due to perinatal physiological and psychological factors. As a result, trials often exclude pregnant women meaning that fewer interventions have proven efficacy and safety in the perinatal period. In the case of psychological therapies there may be concerns about the impact of exposure therapy (as in, for example, trauma focussed CBT) on intrauterine cortisol levels and provoking psychological instability (Arch, Dimidjian, & Chessick, 2012; Cook, Schnurr, & Foa, 2004). Likewise, the use of medications to treat PTSD may carry risks for foetal and neonatal development – hence decreasing their acceptability during pregnancy (Einarson & Einarson, 2005). Moreover, many high-risk families do not engage with services for several reasons, including practical aspects (lack of transport / child-care), disorganized life circumstances, stigma around mental health, lack of knowledge about available help and prior experiences with services offered. CSA survivors are also less trustful of service providers and also themselves when it comes to confidence about delivery (Leeners, Gorres, Hukic, & Rath, 2006). Despite these challenges women have indicated the need for non-pharmaceutical treatments (Muzik, et al., 2013) – accessible, time-limited interventions which do not require painful exposure to childhood trauma and address several areas of family functioning, including mental health, the parent-child relationship and child development.

Taken together, the prevalence of sexual abuse in both mothers and fathers, combined with the far-reaching consequences on pregnancy, labour, and the early postnatal period (Leeners, Richter-Appelt, et al., 2006), illustrates the need for research to identify effective perinatal trauma informed programmes. It is also vital that interventions are provided at the earliest time-points – i.e. across pregnancy and in early infancy. Recent evidence linking maternal childhood maltreatment and newborn brain structure highlights the intrauterine period of development as a crucial phase for the intergenerational transmission of the effects of exposure to childhood trauma (Moog, et al., 2018). Furthermore, the benefits of intervening early have been reported in high-risk, trauma-exposed families (Maher, Marcynyszyn, Corwin, & Hodnett, 2011). By disrupting the intergenerational transmission of risk and positively impacting on children’s life trajectories, they are cost-effective.

Therefore, this study aims to review, for the first time, psychosocial perinatal interventions targeting both mothers and fathers who are survivors of childhood sexual abuse. Key objectives are: (i) Identification of interventions suitable for survivors of CSA (including both mothers and fathers) in the perinatal period, (ii) Systematic description of perinatal interventions according to the Template for Intervention Description and Replication (TIDieR) checklist (Hoffmann, et al., 2014), study design and outcome domains, (iii) identification of directions for future research including specification of key elements of perinatal interventions for CSA survivors.

## **Methodology**

### Definition of CSA

This review defines sexual abuse as ‘unwanted sexual activity, with perpetrators using force, making threats or taking advantage of victims not able to give consent’ (APA, 2016).

### Search strategy

Few publications specifically focus on the population in question. Therefore publications utilising diverse methodologies (for example, qualitative research as well as randomized controlled trials) and

collected via a range of sources were included. First, the following databases were searched for papers dating from 1970 to June 2016: Medline, Maternity and Infant Health, PsychINFO, PsychArticles, PubMed and the International Bibliography of the Social Sciences (IBSS). Combinations of the following search terms were used: (childhood sexual abuse or child maltreatment) and (pregnancy or perinatal or antenatal or postnatal or postpartum) and (screen or support or interven\* or trial or study), (childhood sexual abuse or maltreatment) and parent\* and (interven\* or programme), childhood sexual abuse and mother\* and interven\*, childhood sexual abuse and father and interven\*. Second, the references of relevant papers, chapters and books were searched both electronically and manually. Third, national and international experts were consulted via e-mail, including consultant psychiatrists, psychologists and social workers in psychotherapy and perinatal psychiatry. Fourth, in acknowledgement of the lack of literature in this area, general web searches were conducted for information on international guidelines, third sector organisations and CSA survivor groups.

#### Eligibility Criteria

Individual primary studies as well as secondary research were utilized. Inclusion criteria were: (i) psychosocial interventions for mothers/and or fathers, not confined to, but taking place at some point within the perinatal period (defined as the beginning of pregnancy until 12 months post-partum), who have experienced CSA with or without other forms of abuse; (ii) monitored changes in one or more outcome domains: psychological distress and/or psychopathology, parent-infant interaction, PTSD following childbirth, service engagement (i.e. attendance at antenatal appointments), other psychosocial variables (for example, family context), social and interpersonal functioning or public health outcomes (for example, physical health); and (iii) samples assessed/screened for CSA or any other abuse type examined alongside CSA. Exclusion criteria were: (i) absence of a description, assessment, or screen for parental CSA; (ii) other forms of abuse, excluding CSA; (iii) interventions that were not delivered or targeted at any point during the perinatal period and (iv) intervention programmes not written in the English language.



## Sample

2870 publications initially identified. From this sample, 2495 publications were excluded by screening titles – and where necessary abstracts. After duplicates, obviously irrelevant, non-English, and unavailable articles were removed; 375 publications remained. These publications were subject to detailed screening of abstracts to ensure that the psychosocial intervention reported was conducted at some point within the perinatal period and that the study included CSA screening. This process led to the identification of 70 publications, which underwent a full text review. Of this sample, a further 27 publications were excluded due to lack of reporting/data on CSA screening or prevalence rates in their study samples. Where there was uncertainty regarding inclusion, publications were discussed and agreed upon by members of the review team and in consultation with experts in the field. Additionally, studies that included obstetric and midwifery care for CSA survivors (n= 28) were excluded from the current review and are reported on elsewhere. Thus, the final sample for the review comprised 16 publications (see Figure 1).

## Results

### Identification of psychosocial interventions

There were no perinatal interventions that considered the needs of survivor fathers. Sixteen publications on 9 psychosocial perinatal interventions suitable for female survivors of CSA were identified (see Tables 1 and 2). These 9 interventions demonstrated evidence of screening for CSA, explicitly included survivors of CSA, and/or reported rates of participants who had experienced CSA. Of note, the intervention models and outcome domains identified and described in this study are not observed exclusively in CSA survivors. Moreover, although all these interventions were conducted at some point within the perinatal period, they were not all confined to the perinatal time-point, with some continuing for longer than 12 months postpartum.

A further subset of publications on 9 interventions were also found but not included in this review. This is because several of these interventions were targeted towards parents who were at high risk of

CSA (a fact acknowledged by the study authors) due to the presence of demographic factors, such as young age, substance abuse and incarceration. However these publications did not explicitly report CSA rates in their samples, nor were their samples screened for CSA. The 9 interventions that were excluded from further evaluation were: Mother and Toddlers' Programme (Suchman, et al., 2010; Suchman, Decoste, McMahon, Rounsaville, & Mayes, 2011), New Beginnings (Sleed, Baradon, & Fonagy, 2013), Nurse Family Partnership (Olds, 2002), Early Start (Fergusson, Grant, Horwood, & Ridder, 2006), Family Nurse Partnership (Robling, et al., 2016), Compassionate Minds (Renshaw, 2015), VoorZorg (Mejdoubi, et al., 2011), Healthy Start Programme Hawaii (Dew & Breakey, 2014; Duggan, Fuddy, Burrell, et al., 2004; Duggan, Fuddy, McFarlane, et al., 2004) and Healthy Families America (Rodriguez, Dumont, Mitchell-Herzfeld, Walden, & Greene, 2010).

#### *Interventions included in the current study*

Nine interventions are included in this review: (i) Survivor Moms Companion (SMC), (ii) Mom Power (MP), (iii) Circle of Security-Perinatal Protocol (COS-PP), (iv) Parent and Infant Relationship Support (PAIRS), (v) Clinician Assisted Video feedback Exposure Session (CAVES), (vi) Trauma Affect Regulation: Guide for Education and Therapy (TARGET), (vii) Child Parent Psychotherapy/Infant Parent Psychotherapy (CPP/IPP), (viii) Relationship Based Intervention on the UCLA Family Development Project and (ix) Minding the Baby (MTB). Table 1 provides an overview of these interventions according to the Template for Intervention Description and Replication (TIDieR) checklist.

#### **Description of publications reviewed**

##### *Study designs and research objectives of individual publications*

Only five interventions were supported by randomized controlled trial (RCT) level evidence. Research designs and study objectives from 16 studies pertaining to the identified 9 interventions are presented in Table 2.

#### **Identification of CSA Survivors**

There were 4 publications (studies of SMC and MP) which used the Life Stressor Checklist. Other tools were: Traumatic Antecedent Questionnaire (Tamar's Children /COS-PP), Life Events Checklist (CAVES), Brief Physical and Sexual Abuse Questionnaire (CAVES), Traumatic Events Screening Inventory (TARGET) and the Child Trauma Questionnaire (CPP/IPP). These are largely self-report tools. There were 3 publications that identified survivors at a baseline interview (UCLA Family Development Project, MTB). The UCLA Family Development Project also used external medical records. There were 3 publications (studying MP, PAIRS and MTB) where it was unclear how a history of CSA was revealed.

### *Rates of CSA*

SMC was most specifically targeted to cater for the needs of CSA survivors in the perinatal period with 90.6% of participants having experienced CSA. The majority of participants in Tamar's Children (55%) and CPP/IPP (54.8%) had experience of CSA. Other studies with a high proportion of survivors in the sample were: MTB (41%) and UCLA Family Development Project (39%). The remaining studies explicitly included CSA survivors but the precise rates were unclear. 46.4% of MP participants reported sexual abuse at some point, as did 44% of TARGET participants. Rates of CSA were unclear for studies on PAIRS and CAVES. The sample of the PAIRS intervention did comprise CSA survivors as this was explicitly stated by the authors and those of CAVES completed a CSA screen.

### **Details of intervention models reviewed (Table 1)**

#### *Theoretical approaches*

A broad range of theoretical and therapeutic approaches were utilized (see Table 1). These included trauma specific treatments such as psychoeducation, emotional regulation and symptom management (SMC, TARGET), video-feedback (CAVES), and relationship focussed interventions utilising attachment theory and psychodynamic/psychoanalytic theories (Tamar's Children/COS-PP, UCLA Family Development Project, MTB, PAIRS, CPP/IPP). Interventions also drew from the influential Nurse Family Partnership programme (Olds, et al., 1997) – UCLA Family Development Project, MTB, comparison group for CPP/IPP.

### *Therapeutic approaches*

Format, intensity, location and timing of interventions (please see Table 1): Interventions were offered in various formats. Two interventions were administered in a group format only (COS-PP, PAIRS), while three comprised individual mothers meeting individual therapists (CAVES, TARGET, IPP). Two interventions were designed for mothers to be seen individually and within a group (UCLA, MP) – also involving the mother-child dyad; while one, i.e. MTB utilized a combination of individual sessions with the mother and the mother-child dyad. In contrast one intervention was designed for both self-study and individual mothers meeting individual therapists (SMC). Generally, interventions were delivered by professionals with backgrounds in nursing, social work or psychology supporting existing evidence (Olds, Sadler, & Kitzman, 2007).

Interventions also varied in intensity and timing with most interventions designed to take place on a weekly basis. The briefest intervention was CAVES with just one session. Also, the vast majority of interventions were time-limited – lasting from 10-12 weeks to 4 years of age across interventions. While location of delivery largely included participants' homes; the community (MP, PAIRS), clinic (CAVES, TARGET) and a secure facility (COS-PP) were additional settings.

SMC was the only intervention offered to women solely in the prenatal period. Others targeted women solely in the postnatal period (MP, TARGET, PAIRS, CPP/IPP and CAVES) or throughout the perinatal period (COS-PP, UCLA Family Development Project, MTB).

Flexibility in implementation: There was a range of flexibility that could be offered to cater to individual needs within the boundaries of the interventions (see Table 1). The relationship focussed interventions (e.g. PAIRS, CPP/IPP, UCLA Family Development Programme and MTB) seemed to offer the most flexibility within sessions as the content was participant driven. MTB was most explicitly flexible and outlined how frequency and length of visits could be tailored to need, as for example, during a crisis.

Follow-up of participants: Follow-up data was limited and ranged from 3 months (TARGET) to 3-4 years (UCLA family development project) – please see Table 2 for individual study follow-up time-points.

Dropout and Withdrawal: Despite the lack of sub-group analysis for CSA survivors per se, the intervention with the highest rate of dropout (i.e. SMC where 44% dropped out; once those who were prevented from completing the Tamar’s Children COS-PP programme due to an administrative decision were removed) also had the highest rates of CSA in their sample (90.6%).

## **Outcomes**

Six outcome domains were identified: (i) maternal functioning, (ii) parent-infant interaction, (iii) infant development, (iv) treatment engagement, (v) feasibility, and (vi) public health. Of note, diverse outcomes and measures were reported across studies (Table 2) and highlighted below in relation to the nine identified perinatal interventions for CSA survivors.

### *Survivor Moms’ Companion (SMC)*

SMC was helpful for managing maternal anger and interpersonal reactivity. Moreover, while completers showed improved PTSD symptom management (Seng, et al., 2011), SMC was less helpful for negative mood improvement – hence the need for an antenatal depression intervention. Non-completers could benefit from an assessment of PTSD exacerbation and the subsequent modification in their treatment, to account for PTSD severity. While SMC helped with dissociation in labour, appraisal of the labour experience and care during labour, it could be tailored and continued postnatally to improve maternal mental health and caregiving quality (Rowe, Sperlich, Cameron, & Seng, 2014). SMC was reported as being safe and acceptable in low-resource settings with high levels of fidelity to the manual (Sperlich, et al., 2011).

### *Mom Power (MP)*

MP improved mental health and parenting skills in teenage mothers (LePlatte, Rosenblum, Stanton, Miller, & Muzik, 2012), high-risk women (Muzik, et al., 2015) and in women with a history of interpersonal violence/trauma randomized to MP (Rosenblum, et al., 2017). RCT level evidence demonstrated high levels of satisfaction (90%) and uptake of the programme (> 66%) together with a dose response effect of MP on care-giving.

#### *Circle of Security Perinatal Protocol (COS-PP)*

COS-PP improved maternal depressive symptoms and sensitivity, as well as infant attachment (70% securely attached post-assessment). Conversely, maternal antenatal experience of close relationships, dissociative experiences, and self-esteem were not influenced by the intervention (Cassidy, et al., 2010).

#### *Parent and Infant Relationship Support (PAIRS)*

Compared to women in the control group, mothers attending PAIRS improved on depressive symptoms, and positive mother-infant attachment – improvements were sustained 12 months post PAIRS. Infants in the intervention group showed enhanced cognitive, motor and behavioural functioning (albeit not statistically significant) and improvements in behavioural functioning remained at the 12-month follow-up (Smith, Cumming, & Xeros-Constantinides, 2010).

#### *Clinician Assisted Video Feedback Exposure Session (CAVES)*

Post CAVES, violence exposed mothers demonstrated significantly less negative attributions directed towards their child (Schechter, et al., 2006). 78% of mothers participated in the single session of clinician assisted video-feedback exposure – the intervention (although emotionally painful for some mothers who see their child's separation distress) may be practically less burdensome.

#### *Trauma Affect Regulation: Guidelines for Education and Therapy (TARGET)*

TARGET lead to improvements in PTSD symptoms and emotional regulation with continued improvements reported at the 3 and 6-month follow-up time-points. Furthermore, positive ratings for

therapeutic alliance and credibility were also reported. However, TARGET did not lead to improvements in maternal physical health (Ford, Steinberg, Moffitt, & Zhang, 2008).

#### *Infant-parent psychotherapy (IPP)*

Post-assessment rates of secure attachment in the IPP group increased from 3.1 to 60.7% (Cicchetti, Rogosch, & Toth, 2006). Contributing factors include: timing of intervention, therapist fidelity, training and experience, low case-loads, extensive patient follow-up and patient motivation to remain in treatment.

#### *Relationship based intervention on the UCLA family development project*

Mothers in the intervention group, when compared to control mothers showed positive partner and family support, and increased responsivity towards the infant (Heinicke, et al., 1999). Furthermore, although the intervention led to an improvement in infant autonomy and task orientation, it did not influence infant cognitive outcomes at 12 months (MDI scores: Intervention group = 109.2 and Control group = 108.3).

#### *Mind the Baby (MTB)*

Mind the Baby did not have an effect on symptoms of maternal depression or psychological distress (Sadler, et al., 2013). However, MTB was effective in improving reflective functioning in mothers with poor levels of mentalization at baseline and significantly improved maternal communication during 4-month mother-infant interactions. MTB also led to an increase in secure infant attachment at 12 months. Also, mothers in the intervention group were significantly more likely to immunize their child at 12 months and less likely to be pregnant at 24 months. There were no group differences in the use of child protection services (MTB group: no open cases; control group: 2 open cases); though both groups had low base rates of referral. High breast feeding rates at birth (73%) were also reported following MTB.

## **Discussion**

This study aimed to identify and describe perinatal psychosocial interventions for mothers and fathers who are survivors of CSA. No interventions included male CSA survivors, and 9 interventions described in 16 publications included female CSA survivors. However, these publications did not report a sub-group analysis of outcomes in CSA survivors, per se. Comparison of studies is hampered by methodological differences; including the theoretical foci and format of interventions, CSA assessment, study setting, sample sizes and diverse outcome domains. Hence, it is not possible to recommend one intervention over another for the target population examined. However, as this is an emerging area of research, some speculative conclusions can be drawn about the potential relevance of available interventions for both females and males. This has been done according to study quality, intervention models and relevance of outcomes.

## **Study Quality**

### *Sample*

Uptake routes, sample size, demographic characteristics, and maternal parity were covered by the vast majority of interventions. Key routes connecting trauma survivors to an available intervention were: (i) standard offering of the intervention to all women who disclose a history of childhood abuse, (ii) referral by a professional following disclosure and / or specific concerns raised and (iii) self-referral. Although standard offering is the route of choice (Sperlich, et al., 2011), referral by a professional following standard CSA screening during maternity care, may also be considered in the future. Furthermore, active decision making by CSA survivors during the enrolment phase of an intervention would be beneficial; given that sharing information and control are key to helping both female and male survivors feel safe during therapeutic encounters (Hovey, Stalker, Schachter, Teram, & Lasiuk, 2011; LoGiudice & Beck, 2016).

Despite relatively small sample sizes high fidelity and satisfaction rates were reported across studies, suggesting the interventions were promising for the most vulnerable high-risk families. However,



future interventions targeting trauma / CSA survivors may need to consider different contexts and sub-groups. For example, refugee and immigrant populations, teenage mothers versus adult mothers (Sarri & Phillips, 2004) and first-time versus multiparous women (Leeners, Richter-Appelt, et al., 2006). So far, all the studies have focussed on low-resource settings; however, CSA survivors from high-income settings may also warrant attention in the current milieu.

#### *Intervention Dropout and Withdrawal*

Reasons for drop-outs and withdrawals varied across interventions. However, common themes included: exacerbation of symptoms, time-constraints or relocation, higher levels of impairment at baseline and decreased motivation corresponding to the need for a lower dose of treatment mid-way. Participants who endorsed high satisfaction with the intervention were also more likely to complete a programme (for instance, MP). It is therefore likely that drop-outs at different stages of a programme have varied requirements. Thus, participant needs could be elicited at the start of a programme and subsequently monitored throughout by both therapist and survivor. For example, SMC utilizes 'stop rules' if medical complications arise or mental health needs take priority (Seng, et al., 2011, p. 114). Qualitative evidence suggests that such flexibility might be particularly suited to CSA survivors (both males and females) who may be unable to tolerate or engage in therapy at a specific time-point (Hovey, et al., 2011).

Referral routes are also likely to impact on participation rates. Participants who self-refer based on knowledge of their history of maltreatment / sexual abuse exposure may be more motivated and in greater control of their treatment options, compared to those who are clinically referred. This may be important to consider, albeit practically challenging, when working with CSA survivors who need to feel they have some sense of control to ensure their comfort when seeing a therapist. Some men have indicated looking for subtle signs that a healthcare provider is aware of CSA and its consequences. Thus, having information about the effects of sexual abuse in a waiting room can signal potential participants towards therapy (Teram, Stalker, Hovey, Schachter, & Lasiuk, 2006).

Interventions incorporated various engagement strategies that could be particularly suitable for CSA survivors. These include: same gender therapists (TARGET), practical help (for instance, meals, transportation, child-care), opportunities to build trusting connections with therapist and peers (for instance during a shared meal), safety and flexibility, development of skills and non-judgemental support. An 'informal approach' rooted in some interventions (for example, COS-PP, PAIRS, MTB) would be particularly helpful for the development of trust, self-esteem and relationship confidence. Involving father and partners, as seen in PAIRS and the UCLA Family Development Project, could be an additional motivation source. However, for CSA survivors this could also be anxiety provoking, particularly for women who are in difficult current relationships.

### **Intervention format**

Interventions which were comprehensive in approach, time-limited, home / community based and delivered within a maternity (population based) versus mental health (diagnostic based) setting were more likely to be feasible for trauma survivors. While time-limited programmes can improve motivation due to the idea that help and improvement are forthcoming (Fisher, 1980), they may not be suitable for all participants as evident in the MP programme (Rosenblum, et al., 2017). Provision for further referrals should be included and monitored for uptake. CSA survivors, in particular, should have a say in any additional referrals.

In order to reduce anxiety, interventions for female CSA survivors could be delivered by females, as most perpetrators are males (Simkin, 1992). Evidence suggests that survivors tend to seek out female health care providers to avoid the pain of their past sexual abuse (LoGiudice & Beck, 2016). On the other hand, parents could be allowed to choose whether they prefer a male or female therapist – for example, 6% of CSA among women is perpetrated by a female (Dube, et al., 2005). It is also possible that a particular location, for instance the home environment, is linked with unpleasant memories, if the perpetrator is a family member. Hence, where possible, CSA survivors should be able to choose a home-based or community based location.

Programmes should preferably be delivered using a combination of individual and group sessions, involving peer support – the latter reduces stigma and social isolation and helps promote qualities of consistency, security and care in a contained setting. This recommendation is based on high levels of satisfaction rates for group work (MP, COS-PP) and feedback from participants on programmes delivered in individual format (SMC). However, for CSA survivors, creating an atmosphere of privacy may be just as important when sensitively educating women in dealing with physical aspects of pregnancy and childbirth.

Furthermore, certain intervention features, for example, viewing separation distress in one's child (CAVES) or hearing the child cry during separate group time (PAIRS) could trigger feelings of helplessness in CSA survivors. Furthermore, for survivors, having to leave their children in someone else's care could also cause anxiety and fear (LoGiudice & Beck, 2016). Hence, these aspects would require further consideration when working with this population.

### **Outcome Relevance**

#### *CSA Trauma Specificity*

Survivor Moms Companion, developed following qualitative work on pregnant women who have a history of childhood maltreatment (Sperlich & Seng, 2008), offers the most specific intervention suitable for CSA survivors in the perinatal period. The model has wide reach and can help identify participants who need more specialized support. The combination of individual and group therapy offered within a primary care setting, does not lead to worsening of symptoms in most women. Self-assessment at the start of the programme in combination with a self-study format may be particularly useful in empowering women and in increasing self-worth and confidence levels. Moreover, women are able to choose aspects of a module for individual discussion with 'a responsive but primarily listening tutor' (Sperlich, et al., 2011, p. 125). Outcomes cover maternal mental and physical well-being and infant bonding. The experience of labour measured as an outcome, may be particularly relevant to CSA survivors.

This intervention is in the early stages of development and requires more evidence before larger roll out can be considered. It has been developed for first-time mothers, and may need additional modules to account for previous childbearing. Future research should include: RCT level evidence, participant sample who are not currently engaged in any other form of psychotherapy, longer term follow-up of mother and infant outcomes and proactive pursuit of those who drop out to explore safety concerns and intervention acceptability.

#### *Maternal Mental Health*

On measures related to maternal mental health TARGET is supported by, comparatively speaking, the highest quality evidence looking at PTSD symptoms and mood regulation both of which are likely to be highly relevant to CSA survivors. However, there is no information on the effect of this improvement on mother-infant interaction. Factors other than maternal mental health must be targets of intervention in order to ameliorate the impact of trauma on infants. It is also unclear how many participants experience CSA alone rather than any other form of abuse. TARGET offers the potential to provide an acceptable, effective non-exposure based, trauma specific therapy for survivors in the perinatal period. Further research should explore this therapy with CSA survivors (including fathers) in the perinatal period and measure parent-infant outcomes.

#### *Infant Outcomes*

IPP, UCLA Family Development Project and MTB provide the highest quality evidence for infant outcomes, all showing significant improvement in infant attachment. All three interventions targeted hard to reach, 'at risk' populations. These interventions were relationship based and both UCLA Family Development Project and MTB required intensive input combining principles of home visiting (from the Nurse Family Partnership) and psychodynamic psychotherapy.

#### *Holistic Outcomes*

The group interventions in this review offered the most holistic approach, targeting both maternal and mother-infant domains. However, several were in an early stage of development. PAIRS provided promising outcomes for maternal mental health and infant attachment when compared to a non-randomized control group. However, the number of sample participants with CSA is unclear and maternal mental health outcomes focus on depression rather than trauma. Therefore, the relevance of this intervention for CSA survivors has yet to be established. MP was rated as a highly acceptable intervention by a group of high risk young mothers who demonstrated significant improvements in PTSD symptoms, depression and parental confidence. However, the precise rates of CSA survivors in the sample are also unclear. The heavy and strategic focus on participant engagement may be useful in developing future, more CSA-specific group interventions. Tamar's children employed a well-established intervention, Circle of Security, in a challenging forensic setting. Significant improvements were seen in maternal depression and the rate of infant attachment was high compared to other groups. However, although there were high rates of CSA in the sample the therapy and outcomes were not trauma specific. Future research should include RCT level evidence which includes mothers and fathers who are CSA survivors, trauma specific therapy and outcome measures and objective parent-infant measures.

### **Future research directions**

Recommendations for future research on perinatal interventions for CSA survivors include:

- i) Consultation with both male and female CSA survivors with lived experience on engagement strategies and elements that may make perinatal interventions more or less acceptable.
- ii) Piloting a currently available perinatal intervention on a sub group of CSA survivors – both males and females.
- iii) The pilot should be followed by an RCT to evaluate intervention efficacy.

- iv) Ideally, outcomes should cover biopsychosocial domains to reflect the diverse consequences of CSA and needs of survivors as informed by the available evidence:
  - Biological markers: e.g. salivary cortisol
  - Psychological measures including those for: PTSD, anxiety, depression, eating disorders, substance abuse
  - Social measures including: (ideally) objective measures of parent-infant interaction and family functioning
  - Infant development
  - Psychological measures linked to labour, birth and breastfeeding.
- v) Intervention trials should include survivor fathers and sub-group analysis made available for their outcomes.
- vi) Collecting data on the safety and acceptability of an intervention, particularly during pregnancy should be prioritised.
- vii) Longer term follow-up data to gauge the lasting impact particularly on infant outcomes

## **Conclusion**

The perinatal period presents the threat of intergenerational transmission of trauma but also offers huge opportunity for intervention and hope. This systematic review identified several currently available interventions that explicitly include survivors of CSA in the perinatal period. However, no sub-group analyses are available on the outcomes of CSA survivors. Available interventions offer a promising start in identifying and catering for a range of needs. They draw from a wide range of theoretical approaches and offer a range of delivery models. This may be helpful for service providers working with various settings, resources, and levels of expertise. However, before these interventions can be safely employed, RCT evidence is required demonstrating their safety and efficacy with this population sub-group. Multi-domain, biopsychosocial outcome measurement is required to target outcomes including: experience of pregnancy, labour and childbirth, maternal mental health, paternal

mental health, parent-infant interaction and infant development. Complex trauma demands a sophisticated, holistic response. Future research must face this complexity.

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Table 1: Description of the nine interventions included in the review

Intervention	Intervention Description Using The Template for Intervention Description and Replication (TIDieR) Checklist
<p><b>Survivor Moms Companion (SMC)</b></p> <p>Seng, J. S., et al. (2011). (USA)</p> <p>Sperlich, M., et al. (2011) (USA)</p> <p>Rowe, H., et al. (2014) (USA)</p>	<p><b>WHY:</b> Content is psycho-educational. Treatment targets are: affect regulation, interpersonal regulation and management of PTSD symptoms. Target outcomes: perinatal mental health and improved dyadic bonding.</p> <p><b>WHAT:</b> Participants are given a 10 module self study manual and phone calls from trained tutors.</p> <p><b>WHO PROVIDED:</b> Tutors were perinatal nurses and social workers trained by specialist psychologists.</p> <p><b>HOW:</b> Delivered as self-help supplemented with telephone calls from tutors</p> <p><b>WHERE:</b> Delivered remotely and designed for use in primary care.</p> <p><b>WHEN AND HOW MUCH:</b> The manual is designed to be completed over 10 weeks with 3 x 30 minute phone calls from tutors.</p> <p><b>TAILORING:</b> The intervention is designed to function as case finding for those who need specialist referral</p> <p><b>MODIFICATIONS:</b> Modifications included a self-assessment module to assess symptom severity.</p> <p><b>HOW WELL:</b> Tutors received 12 hours of training with co-investigators and consultant psychologists. Tutors completed supervised training case and received ongoing clinical supervision. Fidelity was monitored by ongoing monitoring of checklist fidelity reports. Remediation from drift available. Inter-rater agreement on participant and tutor fidelity checklists was 94.1%.</p>
<p><b>Mom Power (MP)</b></p> <p>Leplatte, D., et al. (2012). (USA)</p> <p>Muzik, M., et al. (2015) (USA)</p> <p>Rosenblum, K.L., et al. (2017) (USA)</p>	<p><b>WHY:</b> Content drawn from attachment theory, trauma theory, child-parent psychotherapy, trauma-informed care, solution focused therapy, motivational interviewing, CBT, and DBT. Treatment targets: maternal mental health, parenting competence and treatment engagement. Overall aim is to improve maternal mental health and infant well-being.</p> <p><b>WHAT:</b> Group intervention beginning with a shared meal before separate groups provided for mothers and children, session ends with shared group. Engagement supported by provision of transport, children’s toys and food.</p> <p><b>WHO PROVIDED:</b> Led by 2 trained facilitators at least 1 masters level clinician, other staff included trained community volunteers, psychology students and social work graduate students</p> <p><b>HOW:</b> Face to face group intervention</p> <p><b>WHERE:</b> Community based</p> <p><b>WHEN AND HOW MUCH:</b> 10 weekly group sessions supplemented by 3 individual sessions</p> <p><b>TAILORING:</b> Provided during individual sessions, referral to onward specialized care according to individual needs considered key component of intervention</p> <p><b>MODIFICATIONS:</b> Nil specified</p> <p><b>HOW WELL:</b> Fidelity not explicitly assessed</p>
<p><b>Circle of Security Perinatal Protocol (COS-PP)</b></p> <p>Cassidy, J., et al. (2010) (USA)</p>	<p><b>WHY:</b> Adapted from Circle of Security protocol an attachment-based intervention. Treatment targets: parental understanding of infants emotional cues and needs, observation skills, reflective functioning, emotional regulation, responsiveness. Target outcomes: enhancing secure attachment, reducing disorganized attachment, increasing maternal sensitivity, improving maternal psychosocial functioning.</p> <p><b>WHAT:</b> Therapeutic group intervention. Materials included video clips of mother infant interaction. Participants were also videoed and received feedback in sessions. The group sessions were provided alongside health and social care provision: substance use treatment, mental health treatment, trauma treatment, individual and group psychotherapy, educational enhancement and vocational training.</p> <p><b>WHO PROVIDED:</b> Residential staff received training on attachment theory and psychological trauma. Treatment groups led by 2 therapists PhD or masters level, trained by protocol developers. Therapists received weekly supervision.</p> <p><b>HOW:</b> Face to face group intervention</p> <p><b>WHERE:</b> Residential phase during pregnancy to 6 months post partum. Residence was locked with restricted access. Community phase from 6-12 months with a return to the residence to attend therapy groups.</p> <p><b>WHEN AND HOW MUCH:</b> Closed groups of 6 participants. Groups met twice weekly for 90 minutes from pregnancy</p>

	<p>until infants were 12 months old.</p> <p><b>TAILORING:</b> Mothers could access wrap around health and social care according to need</p> <p><b>MODIFICATIONS:</b> Not explicitly stated</p> <p><b>HOW WELL:</b> Fidelity monitored in weekly supervision with protocol developers</p>
<p><b>Parent and Infant Relationship Support (PAIRS)</b></p> <p>Smith, J. C., et al. (2010) (Australia)</p>	<p><b>WHY:</b> Participants are referred to the group because of PND or bonding difficulties. The groups are psychodynamically orientated and use ‘watch, wait and wonder’ principles. Target outcomes include increasing positive parent-infant interaction, secure attachment, decrease maternal PND and optimal infant development.</p> <p><b>WHAT:</b> Mothers and infants begin with an introduction and reporting on the week there is an interactive time with songs, games or infant massage. The groups split into mother and infant sessions before reuniting for shared time to finish. Partners or other supportive people are invited to some sessions. Food and toys are provided.</p> <p><b>WHO PROVIDED:</b> Experienced infant and adult therapists, training unclear</p> <p><b>HOW:</b> Face to face</p> <p><b>WHERE:</b> Australian programme delivered in several regions in the community</p> <p><b>WHEN AND HOW MUCH:</b> 10 weekly closed sessions lasting 2 hours</p> <p><b>TAILORING:</b> Psychodynamic group sessions driven by content brought by participants</p> <p><b>MODIFICATIONS:</b> Not explicitly stated.</p> <p><b>HOW WELL:</b> Fidelity Not explicitly assessed</p>
<p><b>Clinician Assisted Video Feedback Exposure Session (CAVES)</b></p> <p>Schechter, D. S., et al. (2006) (USA)</p>	<p><b>WHY:</b> Draws on principles from infant-parent psychotherapy, video feedback, exposure therapy and therapies aimed at stimulating parental reflective functioning</p> <p><b>WHAT:</b> Mothers are videotaped during free play with their infants. Pre-selected clips are watched by the mother and therapist. The therapist aims to help the mother think about her infant and supports her during exposure to triggering stimuli.</p> <p><b>WHO PROVIDED:</b> Psychologist or social worker</p> <p><b>HOW:</b> All sessions were delivered face to face.</p> <p><b>WHERE:</b> Hospital based children’s mental health clinic.</p> <p><b>WHEN AND HOW MUCH:</b> Mothers met with a clinician and a research assistant on 3 occasions. Firstly for a maternal assessment visit, secondly, 1-2 weeks later, for an interaction visit and thirdly, 1 month later, for CAVES.</p> <p><b>TAILORING:</b> For each participant video clips were selected from their own interaction but according to set themes: optimal moment, separation, sub-optimal moment</p> <p><b>MODIFICATIONS:</b> Nil explicitly stated</p> <p><b>HOW WELL:</b> Fidelity to the model used for intervention delivery not explicitly assessed. Inter-rater reliability achieved for the coding system to assess maternal reflective functioning.</p>
<p><b>Trauma Affect Regulation: Guidelines for Education and Therapy (TARGET)</b></p> <p>Ford, J. D., et al. (2008) (USA)</p>	<p><b>WHY:</b> The intervention aims to break a cycle of intergeneration trauma and criminal justice involvement. Designed for women who experienced CSA, PTSD, substance abuse and socioeconomic disadvantage. It is focused on managing PTSD symptoms rather than exposure-based therapy.</p> <p><b>WHAT:</b> ‘FREEDOM’ acronym used: self-regulation via focusing (F), trauma processing via Recognising current triggers (R), Emotions and cognitive evaluations (EE) and strength based re-integration by Defining core goals (D), identifying currently effective responses (Options) (O) and affirming core values by Making positive contributions (M). Creative arts activities are also encouraged as part of the therapy.</p> <p><b>WHO PROVIDED:</b> Treatment was delivered by experienced therapists with a doctorate or masters degree</p> <p><b>HOW:</b> Face to face</p> <p><b>WHERE:</b> Presumably clinic based although not explicitly stated</p> <p><b>WHEN AND HOW MUCH:</b> 12 weekly individual sessions</p> <p><b>TAILORING:</b> The intervention was tailored to participant group – gender and pathology specific. The sessions were</p>

	<p>manualised</p> <p><b>MODIFICATIONS:</b> Nil explicitly stated</p> <p><b>HOW WELL:</b> Therapists received 40 hours training and case supervision on the model. Therapy sessions were audiotaped and a sample rated for fidelity and competence. Fidelity assessed at 100%, high competence ratings.</p>
<p><b>Infant Parent Psychotherapy (IPP)</b></p> <p>Cicchetti, D., et al. (2006) (USA)</p>	<p><b>WHY:</b> Based on psychoanalytic principles and trialed with the aim of increasing secure attachment styles</p> <p><b>WHAT:</b> The focus is on understanding the impact of the mothers own childhood experiences on her current parenting style rather than parenting skills provision. The therapist aims to provide a corrective emotional experience and help the mother form a positive internal representation of herself and particularly herself in relations to her infant.</p> <p><b>WHO PROVIDED:</b> Masters level therapists</p> <p><b>HOW:</b> Face to face</p> <p><b>WHERE:</b> Participants home</p> <p><b>WHEN AND HOW MUCH:</b> Weekly sessions for 12 months</p> <p><b>TAILORING:</b> The therapy is non-directed and the content is driven by the individual participant</p> <p><b>MODIFICATIONS:</b> Nil explicitly stated</p> <p><b>HOW WELL:</b> Weekly individual and group supervision for the therapists, fidelity assessed throughout the intervention</p>
<p><b>Relationship based Intervention on the UCLA Family Development Project</b></p> <p>Heinicke, C. M. (1999) (USA)</p> <p>Heinicke, C. M., et al. (2000) (USA)</p>	<p><b>WHY:</b> Based on Nurse Family Partnership and principles from attachment and object relationship theories.</p> <p><b>WHAT:</b> Home visiting was provided alongside a mother – infant group. Treatment targets include: participant/practitioner relationship, maternal communication and personal adaptation, mother/infant relationship, provision of affirmation and support. Target outcomes: maternal adaption and support, maternal responsiveness, infant attachment, infant autonomy, child task involvement, infant development.</p> <p><b>WHO PROVIDED:</b> Experienced mental health professionals with a background in child development and family systems approaches</p> <p><b>HOW:</b> Face to face</p> <p><b>WHERE:</b> Home visiting provided in participants homes, mother-infant group available in the community</p> <p><b>WHEN AND HOW MUCH:</b> Weekly home visiting from 3<sup>rd</sup> trimester – 12 months, fortnightly visits 12-24 months, telephone follow up 3-4 years. Weekly mother-infant group available from 3-15 months.</p> <p><b>TAILORING:</b> Individual needs were explored and responded to within sessions</p> <p><b>MODIFICATIONS:</b> Nil explicitly stated</p> <p><b>HOW WELL:</b> Fidelity assessed by independent monitoring of process notes from visitations, session ratings and weekly individual and group supervision.</p>
<p><b>Minding the Baby (MTB)</b></p> <p>Slade, A., et al. (2005).</p> <p>Case studies (USA)</p> <p>Sadler, L.S., Slade, A., &amp; Mayes, L. (2006). (USA)</p> <p>Sadler, L. S., et al. (2013) (USA)</p>	<p><b>WHY:</b> Combines home visiting programme and mentalisation based therapy, draws from the Nurse Family Partnership and Infant Parent Psychotherapy. Treatment targets: maternal reflective function, Target outcomes: immunisation, subsequent child bearing, referral to social services, attachment style, reflective function</p> <p><b>WHAT:</b> Mothers and infants were visited at home and offered sessions focusing on practical support and mentalisation based therapy</p> <p><b>WHO PROVIDED:</b> Delivered by masters level paediatric nurse practitioner and clinical social worker who received.</p> <p><b>HOW:</b> Face to face</p> <p><b>WHERE:</b> Participants homes</p> <p><b>WHEN AND HOW MUCH:</b> Weekly, 1 hour, visits from 2<sup>nd</sup> trimester, alternating visits from nurse practitioner and social worker until the infant is 12 months old then 2 weekly visits from 12-24 months</p> <p><b>TAILORING:</b> The intervention is manualised with set principles, protocols and guidelines. However, flexible time and frequency of visits according to need, content of sessions also individually tailored.</p> <p><b>MODIFICATIONS:</b> Nil explicitly stated</p>

	<b>HOW WELL:</b> Clinicians received joint weekly psychoanalytically orientated supervision
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Table 2: Description of publications (n=16) encompassing nine interventions suitable for survivors of CSA in the perinatal period

	Publication/Country/ Design/ Aim	Participants	CSA Screen	Outcome domains/ measures	Key Results	Limitations
	<b>Survivor Moms Companion (SMC)</b>	<b>Self-help, psycho-educational intervention for pregnant women exposed to trauma +/- symptoms of PTSD</b>				
1	<p>Seng, J. S., et al. (2011). (USA)</p> <p><b>Design:</b> Phase II Open pilot - single group, pre-test and post-test design</p> <p><b>Study aim:</b> To test an open pilot study of a psycho-education programme with pregnant women experiencing abuse related PTSD. It is anticipated that the results of this study will inform a cluster randomized trial of the psycho-education programme – i.e. The Survivor Mums’ Companion (SMC).</p>	<p>Sample (One group only) enrolled prior to 28 weeks of gestation</p> <p>- Size: N= 32 pregnant women (included in analyses as they completed at least one module from the programme) of which n= 18 completed the course of 10 modules</p> <p>-Socio-demographics: Racially diverse, rural and urban residents, mostly single with high-school or less education.</p>	<p>Baseline interview</p> <p>Life Stressor Checklist (CSA specific)</p> <p>29 (90.6%) disclosed contact/touch CSA prior to age 16</p> <p>19 (65.5%) disclosed penetrative CSA prior to age 16</p>	<p><b>1. Maternal functioning</b></p> <p><u>-Affect regulation:</u> NMRS (negative mood regulation scale)</p> <p><u>-Anger management:</u> STAXI (Anger expression inventory)</p> <p><u>-Interpersonal reactivity:</u> SAS-SR (social adjustment scale self report)</p> <p><u>-PTSD symptoms:</u> MPSS-SR Modified PTSD Symptom Scale Self report</p>	<p><b>Maternal functioning</b></p> <p><u>Completers</u></p> <p>-NMRS (small effect size)</p> <p>-STAXI (moderate effect size) p&lt;0.05</p> <p>-SAS-SR (large effect size) p&lt;0.05</p> <p>-MPSS-SR (large effect size) p&lt;0.05</p> <p><u>Intension to treat sample</u></p> <p>-NMRS (small effect size)</p> <p>-STAXI (moderate effect size) p&lt;0.05</p> <p>-SAS-SR (small effect size) p&lt;0.05</p> <p>-MPSS-SR (small effect size)</p>	<p>Sample size: n = 32</p> <p>Drop-out rate: 14/32 (56% completed)</p> <p>Comparators: Nil</p> <p>Objective measures: Subjective only</p> <p>Other: 7 already engaged in individual psychotherapy, completers more likely to be engaged in current psychotherapy.</p> <p>No longer term follow up</p>
2	<p>Sperlich, M., et al. (2011) (USA)</p> <p><b>Design:</b> Phase I of the open pilot trial of intervention</p> <p><b>Study aim:</b> To examine the feasibility, safety and acceptability of the open pilot of a newly developed psycho-education programme for pregnant women with a history of abuse and PTSD.</p>	<p>Sample (One group only) enrolled prior to 28 weeks of gestation</p> <p>- Size: N= 32 pregnant women (included in analyses as they completed at least one module from the programme) of which n= 18 completed the course of 10 modules</p> <p>-Socio-demographics: Racially diverse, rural and urban residents, mostly single with high-school or less education</p>	<p>Life Stressor Checklist (CSA specific)</p>	<p><b>1. Feasibility</b></p> <p><u>-Mode of referral</u> (Standard offering, vs. provider-referral and self-referral)</p> <p><u>-Target client</u> (High need vs. typical prenatal samples)</p> <p><u>-Logistics</u> of implementation (time spent in tutor session)</p> <p><u>-Fidelity</u> (Tutor and participant scores)</p> <p><u>-Completion rates</u></p> <p><u>-Referral and treatment engagement</u></p> <p>- <u>Achievement</u> of the programmes learning outcomes (subjective appraisal /quiz items)</p> <p><u>-Safety</u> (Subjective Units of Distress (SUD) and Modified PTSD Symptom Self-Report Scale (MPSS-SR))</p> <p><u>-Acceptability</u> (checklist ratings and qualitative evaluation)</p>	<p><b>Feasibility analysis</b></p> <p>-Participation should be offered as a standard option to a women disclosing child maltreatment or sexual trauma.</p> <p>- High-need target clients reached</p> <p>- Average time spent with the tutor was 20 min- i.e. within 30 min.</p> <p>-Fidelity to delivery model achieved –Overall inter-rater agreement testing for fidelity was 94.1%</p> <p>-Drop outs more likely to be deprived, not in psychotherapy and have more severe PTSD symptoms</p> <p>-Achievement assessed by quiz items (ITT sample: 73.8%, Completers: 84.5%)</p> <p>-Most users did not experience distress</p> <p>-Overall satisfaction was high</p>	<p>Sample size (n=32)</p> <p>Many bivariate tests conducted without correcting for multiple comparisons.</p> <p>Data not available for those who dropped out, eligible women who did not make contact and those who obtained information but did not enrol.</p> <p>No longer term</p>

						follow up
3	Rowe, H., et al. (2014) (USA)  <b>Design:</b> Quasi-experimental study comparing women from a single-group, pre test-post test pilot intervention study with women matched from a prospective observational study.  <b>Study aim:</b> To test the effectiveness of a trauma-specific, psychoeducational intervention for pregnant women with a history of childhood abuse on six pregnancy and postpartum psychological outcomes.	17 pilot intervention subjects (out of 32 initially eligible) 43 matched observational study participants (out of 96 initially eligible)  Comparators were observational participants taken from prospective cohort study (STACY) matched on sociodemographic risk factors, history of child maltreatment and lifetime PTSD diagnostic status	Life Stressor Checklist (CSA specific)	<b>1. Maternal functioning</b> <u>Overall labour experience</u> -Dissociation in labour: Peritraumatic Dissociation Experience Questionnaire (PDEQ) -Labour experience: Semantic appraisal of labour experience on 10 point scale -Perception of the quality of care: Perception of Care Questionnaire (PCQ) <u>Post-partum PTSD symptoms</u> -The National Women's Study PTSD Module (NWS-PTSD) <u>Post-partum depression symptoms</u> -The Postpartum Depression Screening Scale (PDSS)  <b>2. Parent-Infant relationship</b> -Postpartum Bonding Questionnaire (PBQ)	<b>Maternal functioning</b> <u>Labour experience</u> -PDEQ (medium effect size) non-significant between groups -Appraisal of labour (medium effect size) non-significant between groups -PCQ (medium effect size) p=0.04 <u>Postpartum PTSD</u> -NWS-PTSD (small effect size) non-significant between groups <u>Post-partum depression symptoms</u> PDSS (small effect size) non-significant)  <b>Parent-infant relationship</b> PBQ (small effect size) non-significant between groups	Sample size: 32  Drop-out rate: 15/32 (53% completed) due to both sample vulnerability and burden of repeated research interviews  Comparators: 43 matched observational study participants  Objective measures: Subjective parent/infant measures only
	<b>Mom Power (MP)</b>	<b>Parenting and self-care group intervention for mothers with children under six who have experienced trauma, mental health problems and socioeconomic deprivation.</b>				
4	Leplatte, D., et al. (2012). (USA)  <b>Design:</b> Pilot intervention (Pre-test, post-test analysis)  <b>Study aim:</b> To highlight core elements and key features of a 10-week group intervention programme for high-risk teenage mothers and their children. Furthermore, the study reports preliminary outcome data for the first 24 participants of the programme; in order to comment on the feasibility, acceptance and effectiveness of the intervention.	Sample (One group only) - Size: n= 24 teenage mothers - Mothers aged 16-21 years with children ranging from newborns to 3-year olds. -Socio-demographics: Predominantly minority teenage mothers, little education, mostly single, low income -High risk: Baseline 10/24 met criteria for PTSD; Baseline 13/24 met criteria for MDD	No specific screen reported for CSA Report each participant experienced 5 traumatic events 40% physically attacked by boyfriend 43% neglected by parent 40% emotionally abused by parent	<b>1. Maternal functioning</b> <u>-PTSD symptoms:</u> Self-rating scales <u>-MDD symptoms:</u> Self-rating scales <u>-Parenting skills</u> (self-evaluation)	<b>Maternal functioning</b> <u>PTSD</u> -PTSD diagnosis criteria met by: 1/24 participants -PTSD symptoms reduced pre and post p<0.05 <u>MDD</u> -MDD diagnosis criteria met by: 7/24 participants -MDD symptoms reduced pre and post p<0.01 <u>Parenting Skills</u> -Self rated as less guilty and less ashamed after intervention p<0.05	Sample size: 24  Drop-out rate: Unclear  Comparators: Nil  Measures: Unclear and outcome measures based on self-rating scales (reporter bias)  Other: Screening technique unclear  No longer term follow up
5	Muzik, M., et al. (2015) (USA)  <b>Design:</b> Pilot uncontrolled open trial  <b>Study aim:</b> To evaluate the effects of	Sample (One group only) - N = 99 women eligible - n= 71 completers	Life Stressor Checklist (specific for CSA) 46.4%	<b>1. Maternal functioning</b> <u>-PTSD symptoms:</u> National Women's Study PTSD Module (NWS-PTSD) <u>-MDD symptoms:</u> Post-partum Depression Screening Scale (PDSS)	<b>Maternal functioning</b> <u>PTSD</u> -Improvement in PTSD diagnosis (p=0.013) and symptoms (p=0.006) <u>MDD</u>	Sample size: 99  Drop-out rate: 28/99 (72% completed)

	Mom Power, a 13-session parenting and self-care skills group program for high-risk mothers (with mental health challenges and social risk factors) and their young children (age <6 years old). The introduction of core elements of Mom Power, and feasibility, acceptability and preliminary outcomes of the intervention are included.	- Mothers had a mean age of 23.7 years, with children of mean age 21.5 months -High risk: 98% reported at least one environmental stressor, 47.5% had a PTSD diagnosis and 55.6% had an MDD diagnosis.	experienced some form of sexual abuse at some point 34% raped at some point	<u>Maternal parenting attitudes</u> - Maternal self-reported helplessness: Caregiving Helplessness Questionnaire (CHQ) <u>Maternal reflective capacity</u> - Maternal representation of parenting and their relationship with their child: Working Model of the Child Interview (WMCI) – standard semi-structured interview <b>2. Intervention engagement</b> - Frequency of participants attending the first group session -Number of participants attending ≥ 7 group sessions <b>3. Feasibility</b> <u>Intervention satisfaction:</u> 28 item survey	-Improvement in depression diagnosis (p=0.029) and symptoms (p=0.003) -Improvement in self rated CHQ (p=0.029) -Improvement in interview rated parenting helplessness scale (p=0.040) -Non significant, albeit at trend level (p= 0.085), improvement in parenting reflectivity scale <b>Intervention engagement</b> - First group session attended by 86 women (87%) - 71 women (72%) were completers <b>Feasibility</b> -85% completers strongly agreed they were satisfied with programme	Comparators: Nil  Objective measures of mother-child interactions are missing  No longer term follow up
6	Rosenblum, K.L., et al. (2017) (USA) <b>Design:</b> Community-based RCT  <b>Study aim:</b> To evaluate the effectiveness of MP, a multi-family parenting intervention in high risk mothers and their children younger than 6 years of age.	Sample comprises two groups: Intervention group (MP) and a control group (weekly mailings of parenting information)  Total sample: N = 122 n= 68 in the intervention group MP, n= 54 control arm – 10 weekly mailings of the MP curriculum + 2 individual sessions  -Socio-demographics: 71% of the sample belonged to ethnic/racial minority group, 39% had < high school.	Life Stressor Checklist (specific for CSA) At baseline: 61% of the sample reported exposure to interpersonal trauma	<b>1. Maternal functioning</b> <u>-PTSD symptoms:</u> National Women’s Study PTSD Module (NWS-PTSD) <u>-MDD symptoms:</u> Post-partum Depression Screening Scale (PDSS) <u>Maternal parenting attitudes</u> - Maternal self-reported helplessness and role reversal: Caregiving Helplessness Questionnaire (CHQ) -Maternal parenting stress: Parenting Stress Index-Short Form (PSI-SF)  <b>2. Intervention engagement</b> - Frequency of participants attending the first group session -Number of participants attending ≥ 7 group sessions  <b>3. Feasibility</b> <u>Intervention satisfaction:</u> 28 item survey rated on a 5-point scale focussing on the helpfulness of the programme	<b>Maternal functioning</b> <u>PTSD</u> -Improvement in PTSD symptoms (p=0.019) in the intervention arm only <u>MDD</u> -Improvement in depression symptoms in the control sample only (p=0.055) <u>Analysis for subset of women with interpersonal trauma only</u> - Improvements on both mental health outcomes in the intervention group – no change in the control group <u>Maternal parenting attitude</u> -Improvement in parenting stress in the intervention group (p=0.069) and in a subset of women with interpersonal trauma – No change in the control sample -No change in caregiving helplessness and role reversal in the intervention group.  <b>Intervention engagement</b> - Increased engagement was associated with greater drop in caregiver helplessness.  <b>Feasibility</b> >90% of women in the intervention group reported that they were satisfied with the programme	14/68 mothers in the intervention arm dropped out at the outset.  Post-intervention assessments for 43 women in the intervention arm and 34 in the control arm.  Objective measures of mother-child interactions are missing. Maternal perception of parenting via self-report only.  No longer term follow-up
	<b>Circle of Security Perinatal Protocol (COS-PP)</b>	<b>Group parenting intervention aimed at women from pregnancy to 12 months post partum trialled with female offenders</b>				
7	Cassidy, J., et al. (2010) (USA)  <b>Design:</b> Experimental Intervention	Mothers 32 years n = 20 Pregnant, non-violent offenders with	Traumatic Antecedents Questionnaire	<b>1. Maternal functioning</b> <u>Maternal psycho-social functioning</u> <u>-Depressive symptoms:</u> Beck Depression	<b>Maternal functioning</b> -Significant improvement BDI scores (p=0.36) -Non significant improvement in DES, RSES, ECR, SSQ	Sample size: 54  Drop-out: 34/54,

	(Pre-test, Post-test analysis) Tamar's Children Programme  <b>Study aim:</b> To evaluate the outcomes of participants in Tamar's Children, a 15-month jail-diversion intervention for pregnant, non-violent offenders with a history of substance abuse.	a history of substance use with complete data -14 prevented from finishing due to administrative decision -18 women dropped out due to drug relapse/disengagement/ geographical relocation/ infant ill health -2 completers did not complete final assessment  -Socio-demographics: Majority 72%, from ethnic minority group, 45% completed high school, and 47% were single.	(TAQ)  -18 (55%) of total sample experienced CSA -11 (34%) of total sample experienced CSA and physical abuse -11 (58%) of completers experienced CSA -7 (50%) of drop outs experienced CSA	Inventory-IA (BDI-IA) <b>-Dissociative behaviour:</b> Self-report Dissociative Experiences Scale (DES) <b>-Self-esteem:</b> Self-report Rosenberg Self-Esteem Scale (RSES) <b>- Maternal Attachment security:</b> Experiences in Close Relationships Scale (ECR) <b>- Maternal Social Support:</b> Social Support Questionnaire (SSQ)  <b>2. Parent-Infant relationship</b> <b>-Maternal sensitivity during free-play:</b> rated using NICHD scales <b>3. Infant development</b> <b>-Infant attachment:</b> Strange Situation Procedure (completed once when infant 12 months old)	<b>Parent-infant relationship</b> -No significant difference in maternal sensitivity between intervention mothers and community control group of 'economically stressed' mothers by the end of the intervention.  <b>Infant development</b> -70% infants securely attached by the end of the intervention. Proportion of infants with secure attachments significantly higher when compare to samples of parents who are depressed ( $p<0.05$ ), socioeconomically deprived ( $p<0.05$ ), substance abusing ( $p<0.0001$ ) and maltreating ( $p<0.0001$ ) Proportion of infants with disorganized attachment significantly lower in intervention group when compared to those in samples of substance abusing mothers ( $p<0.05$ ) and maltreating mothers ( $p<0.001$ ). But not compared to samples of depressed or socioeconomically deprived mothers	41% completed  Objective measures: Yes, strange situation, NICHD scales,  Comparators: No  Other: Difficult to attribute positive effects to the COS-PP protocol alone as mothers also received intensive medical, mental health and social services support, no control group, no baseline attachment measures  No longer term follow up, final time point was group ending when the infant was 12 months old
	<b>Parent and Infant Relationship Support (PAIRS)</b>	<b>10 two-hour weekly, parent infant group intervention for parents and infants under 2 - involving repeated separation from the infant and re-union format</b>				
8	Smith, J. C., et al. (2010) (Australia)  <b>Design:</b> Pre-test post-test study with matched control group  <b>Study aim:</b> To examine maternal mental health, secure attachment and infant development using the PAIRS model of maternal-infant group work.	High risk families referred for PND and bonding difficulties  Infants in intervention arm n=74, aged between 2 weeks to 27 months Infants in the control arm n=32, aged from 2 to 36 months  Long term follow up measures completed on a sub-sample i.e. 14 dyads in the	CSA survivors explicitly included Numbers not reported No screening measures mentioned	<b>1. Maternal functioning</b> <b>-Maternal postnatal depression:</b> Self-report on the EPDS scale  <b>2. Parent-Infant relationship</b> <b>-Mother-infant attachment:</b> coded using the Dyadic Mutuality Code (DMC)  <b>3. Infant development</b> -Bayley Scales of Infant Development  <b>4. Feasibility</b> -Open questions as to what was helpful about the programme and not, including suggestions for change	<b>Maternal functioning</b> -Significant decrease ( $p<0.006$ ) in EPDS in intervention arm, maintained on follow up -Non-significant downward trend in the control group. -Change was maintained at follow up <b>Parent-infant relationship</b> -Positive mother-infant interaction improved significantly in the treatment arm ( $p<0.001$ ) but not in the control arm. Maintained and increased in the longer-term follow up. <b>Infant development</b> -Improvements on the infant behavioural scale in the intervention group (but not in the control group) which became significant on longer term follow up ( $p<0.008$ ). <b>Feasibility</b> -Vast majority of mothers stated that they were highly	Sample size: 106  Drop-out rate: unknown  Comparators: Control arm received routine post natal care  Objective measures: Dyadic Mutuality Code, Bayley Scales of Infant Development,

		treatment arm only after 12 months of the group intervention  Comparator: Routine post natal care and specialist care, i.e. physiotherapy but not relation based therapy			satisfied.	Some longer term follow up data available 12 months after group ending. However only available on 14/74 dyads all from treatment arm – no comparator data
	<b>Clinician Assisted Video Feedback Exposure Session (CAVES)</b>	<b>A single dyadic clinician assisted video-feedback session for mothers exposed to interpersonal violence with infants aged 8-50 months</b>				
9	Schechter, D. S., et al. (2006) (USA)  <b>Design:</b> Brief experimental intervention  <b>Study aim:</b> To investigate whether violence-related PTSD and capacity for self-regulation via reflective functioning, might impact maternal responsiveness to a brief experimental intervention.	Sample (One group only) -Size: 32 interpersonal violence exposed mothers – aged between 19-45 years, with infants aged between 8-50 months  -Socio-demographics: 88% Hispanic – mainly of Dominican or Puerto Rican origin, 61% immigrants, about half, i.e. 52% had less than a high-school education, 75% received public assistance, 67% were single mothers. -High risk: 63% had a diagnosis of PTSD.	Life Events Checklist (LEC) Brief Physical and Sexual Abuse Questionnaire (BPSAQ) (asks about events prior to 16 years old  Rates of CSA not explicit but screened for and included if experienced CSA	<b>1. Parent-Infant relationship</b> - <u>Maternal Negativity</u> : Maternal Attributions Rating Scale - <u>Reflective functioning</u> – i.e. mental representation of the child and the relationship with the child: Working Model of the Child Interview (WMCI) (to assess maternal reflective functioning)	<b>Parent-Infant</b> -Maternal negativity significantly decreased post-CAVES p<0.001	Sample size: 41 Drop-outs: 9 did not return following 2 assessment visits: 78% completed  Objective measures: Yes, WMCI rated using RF scale  No comparison of RF at baseline vs. post intervention – RF linked with maternal negative affect only. No comparison of maternal mental health at baseline and following the intervention session.  No longer term follow up
	<b>Trauma Affect Regulation: Guidelines for Education and Therapy (TARGET)</b>	<b>12 session individual counselling for mothers with PTSD / extensive exposure to psychological trauma who have children younger than 5-years of age.</b>				
10	Ford, J. D., et al. (2008) (USA)  <b>Design:</b> Randomised Controlled Trial Mothers Overcoming and Managing Stress (MOMS) study  <b>Study aim:</b> To determine if two forms of counselling were more effective in	Three groups: wait list-treatment as usual; TARGET; Present-Centered Therapy (PCT)  -Size: 147 women – aged between 18-45	Trauma Events Screening Inventory (CSA specific) 44% history of sexual assault or abuse at some point in	<b>1. Maternal functioning</b> - <u>PTSD symptoms</u> : Clinician Administered PTSD Scale (CAPS) - <u>Depression symptoms</u> : Beck Depression Inventory (BDI) - <u>Anxiety symptoms</u> : State-Trait Anxiety Inventory, State Version (STAI) - <u>Posttraumatic beliefs</u> : Post-Traumatic Cognitions	<b>Maternal functioning</b> -Significant improvement p<0.05 on all measures except SPFC (i.e. physical health functioning) compared to baseline for both treatments when compared to waiting list -Target sig superior to PCT for emotional regulation (NMR p<0.01) and STAI (p<0.05)	Sample size: 147  Drop-out rate: 3/49 intervention arm (53% completed recommended sessions, 39% completed less than

	improving lives and ability to parent than services as usual, in women who had experienced childhood sexual abuse and adults with PTSD.	years.  -High risk: 72% met criteria for at least one anxiety or affective disorder other than PTSD and psychosis  -Completers received at least 8/12 sessions i.e. 2/3 of treatment	time	Inventory (PTCI) <u>-Appraisal of distress-</u> concerning unwanted trauma memories: Interpretation of PTSD Symptoms Inventory (IPSI) <u>-Identification and adaption of negative emotional states:</u> Generalized Expectancies for Negative Mood Regulation (NMR) <u>-Overall self-perceived physical health and well-being:</u> Health-Related Functioning (SPFC)	-Significant numbers of TARGET (p=0.005) and PCT (p=0.025) participants no longer met criteria for PTSD compared to waiting list.  -Large effect sizes for Target on PTSD scores and emotional regulation compared to wait list  -Medium effect sizes for PCT on PTSD and emotional regulation  -Medium to large effect sizes for TARGET & PCT against wait list on STAI, IPSI and PTCI  -Improvements persisted over 6 month follow up period significantly for TARGET (p=0.02)	recommended sessions) 5/53 active control arm (47% completed recommended sessions, 36% completed less than recommended sessions)  Comparators: Yes, Present centred therapy  Objective measures: Mainly the study relied on self-report measures.  Follow up assessments at 3 and 6 months after intervention finished
	<b>Infant Parent Psychotherapy (IPP)</b>	<b>Dyadic therapy trialled on infants and mothers from maltreating families</b>				
11	Cicchetti, D., et al. (2006) (USA)  <b>Design:</b> Randomized preventive intervention trial  <b>Study aim:</b> To study the efficacy of two theoretically informed randomized preventive interventions for maltreating mothers and their 1-year-old infants. Comparisons were drawn between competing models of intervention, with one being more parent-skills oriented and the other being more focused on maternal representation and the mother-child relationship.	-12 month old infants and their mothers, aged between 18-41 years  -Socio-demographics: Overall, 74.6% were minority race/ethnicity, 12.7% women were married, 41.8% had a high school education  -137 dyads from maltreating families n= 32 (initial randomised assignment 53) intervention arm n= 24 (initial randomised assignment 49) in	On baseline Child Trauma Questionnaire (CTQ) CSA found in 54.8% of maltreating mothers	<b>1. Parent-Infant relationship</b> <u>-Infants attachment organization:</u> Strange Situation at 26 months post-intervention	<b>Parent-Infant relationship</b>  -Post intervention significant differences between attachment in maltreated infants in intervention arm (IPP), active comparison arm (PPI), non-maltreated infants (NC) compared to maltreated infant control group (CS) (p<0.001).  -No significant differences between IPP, PPI and NC although highest rate of secure attachment in IPP group (increase from 3.1% to 60.7%). Comparable improvement in IPP/PPI group stable rates in NC group.  -Rates of stable insecure attachment significantly lower in IPP/PPI/NC compared to CS group p<0.001 -Post intervention significantly reduced levels of disorganised attachment in IPP, PPI and NC compared to CS (p<0.01)  -Effects still significant on ITT analysis	Sample size: 189 dyads  Drop-out: 4/32 intervention arm (87.5% who started intervention completed) 2/24 active intervention arm (92% who started intervention completed), 27/54 control arm (67% completed), 8/52 non-maltreating families (85% completed)  Comparators: Yes, psychoeducational

		active comparison arm n =81 (initial randomised assignment 35) in control arm n= 52 dyads				intervention, non-maltreating control, community standard care for maltreating families  Objective measures: Yes, strange situation  No longer term follow up – final time point 26 months after intervention.
	<b>UCLA Family Development Project</b>	<b>Home visiting and mother-infant group relationship based intervention trialled on high risk families</b>				
12	Heinicke, C. M. (1999) (USA)  <b>Design:</b> A randomized-trial-group comparison. UCLA Family Development Project  <b>Study aim:</b> To examine family functioning in the first year of life using a relationship-based intervention with at-risk mothers.	Sample comprises two groups: home visiting intervention group vs. paediatric follow-up  -High socioeconomic risk (including CSA)Adult, first time mothers recruited in third trimester of pregnancy n= 70 families recruited n=31 in intervention sample n=33 in control sample  -In 82% families father was at least sometimes involved in intervention  -Control arm received developmental evaluation and feedback and onward referrals as required. No weekly visits or	Social history interview and medical records 35% CSA in intervention arm 33% in non intervention arm	<b>1. Maternal functioning</b> - <u>Depression symptoms:</u> Beck Depression Inventory (BDI) - <u>Anxiety symptoms:</u> State-Trait Anxiety Inventory, State Version — <u>Maternal support from partner and close family:</u> Maternal Support Interview - <u>Partner support available:</u> Quality and frequency - <u>Family support available:</u> Maternal perception of quality of family support - <u>Inventories measuring partner and general support:</u> Locke-Wallace Marital Inventory and the Cutrona Support Inventory <b>2. Parent-Infant relationship</b> - <u>Mother responsiveness to need and infant security of attachment:</u> Ainsworth Strange Situation/Attachment Q Set/Bayley Scale test situation/Bayley Test Mother -Child Situation/STEEP rating of free play situation - <u>Mother's encouragement of infant autonomy and the infant's autonomy:</u> Bayley Scale Test Situation/STEEP/HOME subscale - <u>Mother's encouragement of task involvement and child task involvement:</u> Bayley Test Situation/STEEP/HOME <b>3. Infant development</b> - <u>Bayley Scale of Infant Development:</u> Mental Development Index and Performance Development Index	<b>Maternal functioning</b> -No significant difference in maternal anxiety and depression scores between groups. -Significant improvement in partner support p=0.016 and family support p=0.0002 in intervention group compared with control group <b>Parent-Infant relationship</b> -Attachment Q set showed intervention group significantly more secure p=0.035 -Ainsworth Strange situation showed intervention group more secure p=0.0209 -In free play situation intervention mothers show more positive affect p=0.0017 -Intervention mothers more encouraging of autonomy p=0.0001 -Intervention infants display increased separate sense of self p=0.0002 -Mothers in intervention group less intrusive p=0.0012 and infants less non-compliant p=0.0046 -Mothers in control group more likely to turn to restriction and punishment p=0.0082 -Mothers in intervention group more frequently and effectively encouraged task involvement p=0.0042 -In free play situation intervention infants showed greater task involvement p=0.0197 -Synchrony of play was greater in the intervention group p=0.0003 -Total HOME scores increased significantly for intervention group p=0.005	Sample size: 70 families  Drop-out rate: 4/31 intervention arm (87% completed) 2/33 control arm (94% completed)  Comparators: Yes, RCT, control arm received developmental feedback and signposting  Objective Measures: Yes, Strange Situation, Bayley Scales  Other: No significant improvement in maternal mental health  Telephone follow up until infant is 3-4

		mother-infant group			<b>Infant Development</b> -Cognitive development scores similar	years old, however assessment data only available for time points up to infant age 12 months
13	Heinicke, C. M., et al. (2000) (USA)  <b>Design:</b> Sub-analysis of factors affecting outcome in the intervention group only in Heinicke et al 1999 UCLA Family Development Project  <b>Study aims:</b> To identify factors (i.e. maternal involvement in the intervention, partner support, personality dimensions, and mother–infant interactions) which may influence variation in 12-month outcome measures in a group of women offered a relationship based intervention.	46 families at high risk of inadequate parenting, young mothers, socioeconomically deprived	Social history interview and medical records 39% experienced CSA	<b>1. Maternal functioning</b> - <u>Personality Disorder Evaluation</u> : Impulsivity, Instability of relationship, trust, self doubt - <u>Maternal Support</u> : Interview <b>2. Parent-Infant relationship</b> - <u>Home observations</u> : maternal responsiveness and infant soothability -Bayley Test Situation -Mothers involvement in the intervention – intervener rated	<b>Maternal functioning</b> -Mothers confidence correlated with ability to connect with home visitor -Mother’s connection with home visitor correlated with mothers ability to work with home visitor -Partner support also correlated with mother’s ability to work with home visitor <b>Parent-infant relationship</b> -Mother’s ability to work with home visitor had partial correlation to her ability to respond to her infants needs -The quality of the mother’s partner support at 6 months had significant partial correlation with both measures of infant security -The mother’s tendency to trust had significant partial correlation with the infant’s expectation of being cared for.	Comparators: N/A
	<b>Minding the Baby (MTB)</b>	<b>Dyadic, relationship based, home visiting and psychotherapeutic mentalisation based intervention</b>				
14	Slade, A., et al. (2005). (USA)  <b>Design:</b> Case studies  <b>Study aim:</b> Mentalization based, multidisciplinary mother-infant intervention programme described.	-Young, underserved, high risk new mothers, thought to be particularly suited to mothers who have experienced trauma.	Case studies includes people who experienced CSA	N/A - The six outcome domains were not applicable in the current publication	Descriptive of two cases to understand the MBT approach	N/A
15	Sadler, L.S., Slade, A., & Mayes, L. (2006). (USA)  <b>Design:</b> Preliminary findings from a pilot RCT	-High risk mothers 14-25 years - standard prenatal, postpartum and paediatric care at community health centre, intervention group receives minding the baby programme as well	41% ‘early’ sexual abuse 27% posttraumatic symptoms	<b>1. Maternal functioning</b> -Maternal reflective function  <b>2. Infant development</b> -Child health -Child attachment style  <b>3. Public health outcomes</b> -Immunizations	<b>Maternal functioning</b> - Maternal reflective function improved <b>Infant development</b> -8% disorganised attachment -0 cases of asthma or dental caries  <b>Public health</b> -High breast feeding rates 73% at birth, 40% at 3 months -100% up to date with immunisations -0 cases of asthma or dental caries	Sample size: 31 intervention, 10 control  Drop-out: unclear  Comparators: Yes, standard community care  Objective measures: Yes



16	<p>Sadler, L. S., et al. (2013) (USA)</p> <p><b>Design:</b> Preliminary findings from the pilot-phase of a randomized control trial.</p> <p><b>Study aims:</b> First, to describe the conceptual framework and delivery mode for Minding the Baby – a home-based, interdisciplinary intervention for infants and their families. Second, to study the impact of the intervention on public health outcome, parenting and attachment outcomes, and maternal reflective functioning in the first two years.</p>	<p>-Pregnancy to 24 months, primiparous young mothers (mean age 19.6 years) -n=60 families in intervention n= 45 in control</p> <p>-Comparators: both groups receive standard prenatal, postpartum and paediatric care at community health centre, intervention group receives MBT as well.</p>	<p>Baseline interview</p>	<p><b>1. Maternal functioning</b> - <u>Depression</u>: Center for Epidemiological Studies Depression Scale (CES-D) - <u>Self-report measure of psychopathology</u>: Brief Symptom Inventory (BSI)</p> <p><b>2. Parent-Infant relationship</b> - <u>Quality of affective communication</u> : Atypical Maternal Behaviour Instrument for Assessment and Classification (AMBIANCE) - <u>Infant attachment quality to care-giver</u>: The Strange Situation Procedure (SSP) - <u>Maternal Reflective Function</u>: Pregnancy Interview (PI) - <u>Maternal representation of relationship</u>: Parent Development Interview (PDI)</p> <p><b>3. Public health outcomes</b> - <u>Child bearing</u> – rapid subsequent childbearing - <u>Birth outcomes</u>: Birth weight, mode of delivery - <u>Immunisation status</u>: 12 months and 24 months - <u>Compliance with child health visits</u>: Paediatric check-ups - <u>Child protection cases</u>: Frequency of open cases</p>	<p><b>Maternal functioning</b> -No significant improvement</p> <p><b>Parent-Infant</b> -Borderline significant improvement in mother-infant communication p=0.05 -Increase of secure infants in intervention group p=0.028 -Decrease in disorganised infant attachment in intervention group p=0.049 -For mothers who demonstrated no reflective function at baseline there was a significant improvement in the intervention group p=0.016</p> <p><b>Public Health</b> -Significantly reduced subsequent child bearing p=0.019 - Birth weight same in both study groups, MBT mothers had a lower caesarean section rate - MBT group were more likely to be up-to-date with immunizations and paediatric checkups, at 12 months. -At 24 months women in the MBT group were significantly (p= 0.019) less likely to be pregnant again (1.6%) compared to the control group (15%). - MBT group had no open cases with child protection services while the control group had 5% open cases – difference was not statistically different (p= 0.1).</p>	<p>Sample size: 60</p> <p>Drop-out: 16/60 intervention arm (73% completed), 14/45 control arm (69% completed)</p> <p>Comparators: Yes, standard community care alone</p> <p>Objective measures: Yes for infant care, attachment and maternal reflective function</p> <p>Other: Data awaited from larger trial</p> <p>No longer term follow up beyond the end of the intervention, 24 months</p>
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Diagram 1

Review Flowchart



