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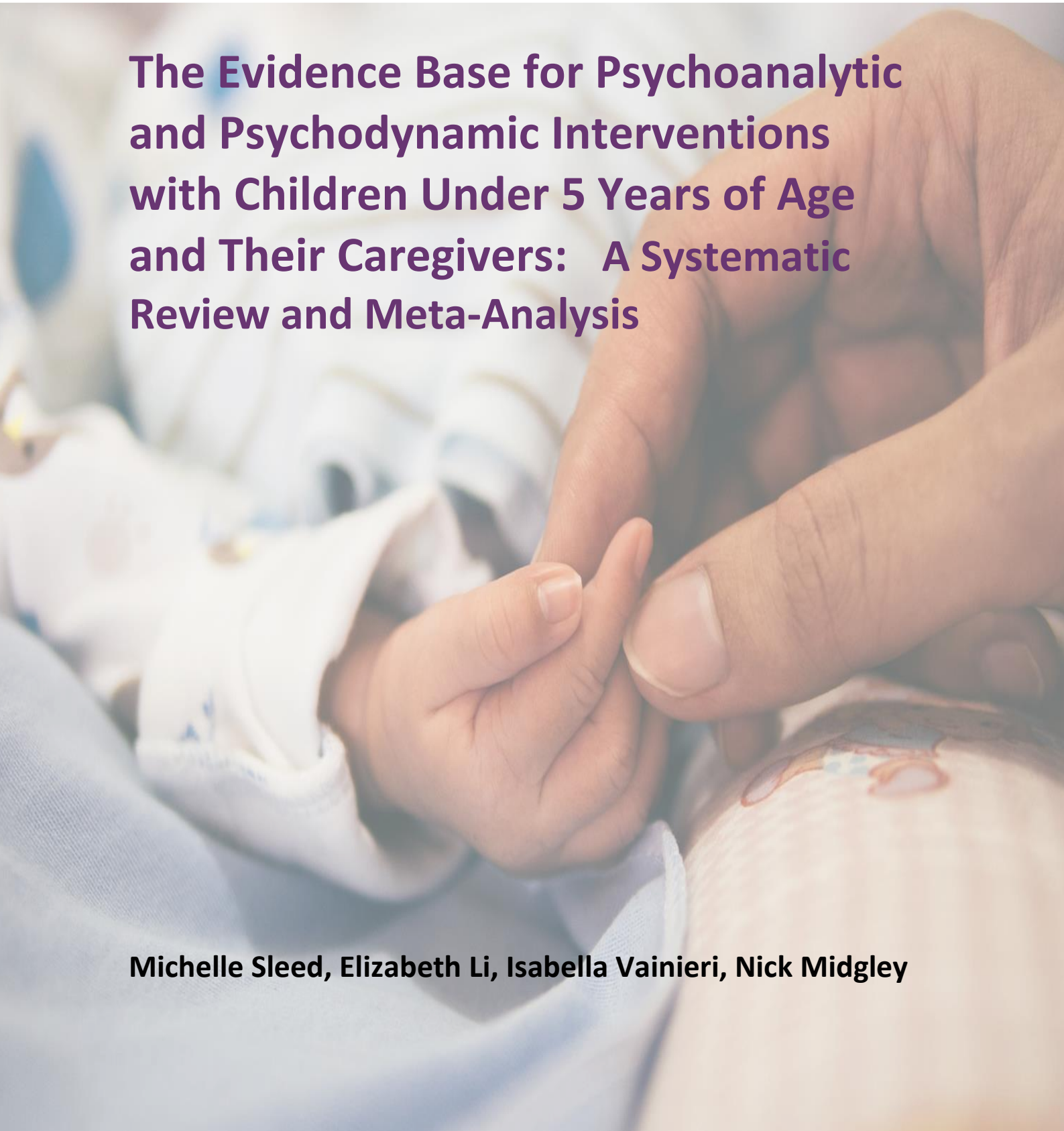

The Evidence Base for Psychoanalytic and Psychodynamic Interventions with Children Under 5 Years of Age and Their Caregivers: A Systematic Review and Meta-Analysis

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Reference

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Foreword

On behalf of the Association of Child Psychotherapists (ACP) we are very pleased to welcome the publication of this systematic review and meta-analysis of the evidence-base for psychoanalytic and psychodynamic interventions with children under five years of age and their caregivers. It provides an important step forward in the development of our knowledge in this field.

The context for this report

The scientific evidence for the crucial importance of the period from before conception through to age five is well known. There is a powerful and well-established case - scientific, moral, and economic - for providing effective services which draw upon best evidence, alongside family voice and clinical experience. Our current understanding of the potentially life-long impacts of early adversity, and of its intergenerational transmission, presents us with real opportunities to improve the wellbeing of parents and babies. We know too that change is possible, so that a challenging start in life does not inevitably result in poor outcomes. Despite this, there continue to be major 'baby blind spots' in current policy and provision[1]. We hope that, by increasing knowledge that effective interventions lead to real change, improvements can be made to the provision of services for all families.

The review illuminates contemporary developments in parent-infant psychotherapy and moves us towards better supporting and investing in parents in order that they can provide the nurturing care needed for children to thrive. It also points to the deep psychoanalytic roots of early intervention. Child and Adolescent Psychotherapists have an important role in delivering and supporting these services, equipped as we are to hold the baby in mind and to navigate the complex interrelationships between parental and infant mental health, and between physical and mental states. As frontline clinicians, working in a wide range of settings with families, we recognise the central importance of the early years of a child's life as being vital to their ongoing physical, mental and emotional health and development. We know the developmental benefits of often brief interventions at crucial times in families' lives when the transition to parenthood brings opportunities and motivation to engage. We also recognise the challenges inherent in services touching parents and babies' lives, sometimes fleetingly and sometimes at depth, where difficulties may be severe, complex and intergenerational.

In the UK, we are at a cross-roads in relation to providing effective early intervention for families with babies and young children. Initiatives such as Family Hubs have the potential

to improve service integration and access. The recommendations of the independent review of children's social care could enable a step-change in the availability and quality of early help. An increase in the provision of timely and effective interventions during early parent-child relationships offers the opportunity to improve the quality of these foundational relationships which are strongly associated with later psychosocial outcomes. As the aftershocks of the Covid-19 pandemic continue to be felt, and as further adversities are heralded by a cost-of-living crisis, this is a crucial time for shining a light on the importance of nurturing care and the wellbeing of parents and their young children.

Key findings from the report

We are very grateful to Michelle Sleed and her colleagues at the Anna Freud National Centre for Children and Families for their thorough and impressive work in completing this clear and accessible review. The review is the first of its kind focussing on psychoanalytic and psychodynamic interventions available to children under five and their caregivers and, as such, little systematized information was previously available about the effectiveness of such approaches. It was therefore important to ask questions about whether, and to what extent, there is evidence for the effectiveness of these approaches. This is achieved in this report which systematically reviews, synthesises, and critically appraises 77 studies, across 22 different intervention types/programmes, comprising 5,660 caregivers as participants.

The review shows that the majority of interventions have an impact on a range of validated outcome domains, including parental reflective functioning, parental depression, infant socio-emotional and behavioural wellbeing, infant attachment, and parent-infant interactions and parenting stress. When outcomes were systematically compared to a control intervention, psychoanalytic and psychodynamic interventions were significantly more effective at helping caregivers and infants in most of these same outcome domains, with the largest differential impact for infant attachment. Although effect sizes were generally small, these findings have real-world significance as a positive shift in the developmental trajectory of the infant or very young child which may have wide-reaching and longstanding benefits to the child, the family and society.

There are other welcome aspects of the findings, in particular that families who participated in the interventions were ethnically and socially diverse. Many studies had higher numbers of parents and children from minoritized ethnic backgrounds than is representative of those country populations. As many of the interventions specifically targeted socially disadvantaged groups, these families were also well represented in the research. There is a trend for more recent studies to have greater diversity and targeted interventions for socially disadvantaged groups than earlier ones, suggesting an increased focus and relevance of these approaches to all parts of the community. It is encouraging that many psychodynamic or psychoanalytic interventions are seeking to address persistent

inequalities in outcomes for children from disadvantaged backgrounds, but more work needs to be done to ensure services are reaching different communities.

A continuum of early years support, from universal provisions to specialist services, is necessary to meet the needs of all families with young children, identifying issues as they arise and intervening in a timely way. This support must be sufficiently intensive when families are experiencing significant and ongoing challenges. A further positive finding in this review therefore was that studies mostly showed better outcomes for those with more severe parental or parent-infant relational difficulties at the outset. This is helpful in making the case for ensuring access to appropriately resourced specialist services for all families experiencing severe and complex difficulties, and for psychoanalytic and psychodynamic interventions to be a central component of this response. These interventions have been implemented in a broad variety of settings and for a broad range of problems and as such have real-world applications. They clearly demonstrate the ways in which young children and their caregivers can be supported to build resilience and develop core skills enabling a more positive developmental trajectory.

The need for further research

It is important to recognize the limitations of the studies presented here. One of the most significant limitations is that there are, as yet, very few high-quality studies in the field. Given the limited investment in research in this area this is not entirely surprising. Further randomized controlled trials that adhere to good practice reporting guidelines are needed. As the review only included studies where an empirical evaluation had been published it does not cover the full range of psychodynamic and psychoanalytic interventions that have been developed for use with children under five. We know of promising interventions within the psychoanalytic field that would not have been identified in the literature search and which could be the subject of future high quality empirical research.

We hope that this report contributes to an increased confidence that interventions for children under five years of age and their caregivers, from a wide range of social and ethnic backgrounds, with often severe and complex difficulties, are not only essential but can be effective in improving outcomes. Child and Adolescent Psychotherapists must have an increasing role in providing psychoanalytic and psychodynamic interventions for parents and infants, in the provision of training and in supervising others, as well as in evaluating the outcomes of these interventions.

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On behalf of the Association of Child Psychotherapists, childpsychotherapy.org.uk

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Introduction

The first five years of a life play a critical role in psychological and social development. The human brain develops most rapidly during the perinatal period and first years of life, and the social environment is essential for shaping the areas of the brain involved in self-regulation and psychological resilience (Parsons et al., 2010; Schore, 2002). The psychoanalyst Donald Winnicott (1964) once famously stated: "There's no such thing as a baby" (1977, p.99), implying that the infant is entirely reliant on someone to take care of their fundamental survival needs and only exists within the relational environment with their caregivers. Thus, these early parent-child relationships provide the context in which this important phase of development occurs, and the quality of these relationships is strongly associated with later psychosocial outcomes (Shonkoff et al., 2009).

Impingements on this phase of development can have broad and longstanding consequences for subsequent development. The deleterious outcomes from adverse childhood experiences -in terms of later mental health, employment and educational attainment, and susceptibility to physical illness - are well documented (Felliti, 2009; Hughes et al., 2017; Kalmakis & Chandler, 2015). Risk factors for suboptimal infant mental health development include social disadvantage and poverty (Sameroff & Seifer, 1995), parental psychopathology including depression and trauma (Goodman et al., 2011; Roubinov et al., 2022), and intergenerational parenting difficulties and maltreatment (Assink et al., 2018). These risk factors are often associated with each other, and the cumulative effect of multiple risk factors is most predictive of later difficulties for the child (Gach et al. 2018; Sameroff & Rosenblum, 2006).

Effective perinatal and early years interventions have the potential to significantly change the child's developmental trajectory and long-term outcomes. There is widespread recognition that preventative early interventions in the perinatal, postnatal and preschool years can be powerful and cost-effective for improving the wellbeing and development of the child, and there are many interventions available (Lyons-Ruth et al., 2017).

Early intervention has deep historical roots in psychoanalytic and psychodynamic psychotherapies. From the beginning, psychoanalysis saw the roots of psychological well-being in early infantile experiences, and from the 1920s there was already a growing interest in the application of psychoanalytic ideas to the treatment of children (Geissmann & Geissmann, 1997; Salomonsson, 2014). However, it was only in the years after the Second World War that the development of parent-infant psychotherapy took off, inspired by the work of Selma Fraiberg, John Bowlby, Esther Bick, D.W. Winnicott and others (Salomonsson, 2014). Therapists showed an interest from the start in integrating understanding from attachment theory and developmental psychology (e.g. A. Freud, 1965), and in more recent

years from developmental neuroscience (e.g. Jurist, Slade & Bergner, 2008; Music, 2016; Schore, 1994). However, as with psychoanalysis more generally, the links with empirical researchers were limited, and it was only since the 1990s, with the increased focus on evidence-based practice, that there has been any systematic evaluation of these ways of working.

A recently updated systematic review of psychodynamic and psychoanalytic interventions for children and adolescents evaluated the evidence of these interventions for a broad range of mental health difficulties (Midgley et al., 2021). This review showed that both the quantity and quality of research in this field has increased substantially in recent years. However, it did not include studies of interventions for children under three years of age. Several systematic reviews have evaluated the evidence of early interventions for infants and their caregivers, but these have either focused on particular modalities such as parent-infant psychotherapy (Barlow et al. 2016), or on particular difficulties such as depression (Letourneau et al., 2017) or maltreatment (Mikton et al., 2019). No review has systematically described the broad range of psychodynamic or psychoanalytic[i] interventions available to children under five and their caregivers, and the evidence of the effectiveness of such approaches has not been systematically evaluated and synthesised.

The current study

The aim of this work is to systematically review, synthesise, and critically appraise evidence for the efficacy (i.e., the performance of an intervention under ideal and controlled circumstances) and/or effectiveness (i.e., the performance of an intervention under 'real-world' conditions) of psychoanalytic and psychodynamic interventions for children under five years of age and their caregivers. Our primary review question is: To what extent are psychoanalytic and psychodynamic interventions effective/efficacious in the prevention and treatment of mental health difficulties in children under 5 years of age and their caregivers? Our secondary review questions are: What models of psychoanalytic or psychodynamic oriented intervention or specific programmes are available for children under 5 years of age and their caregivers? What are the populations and presenting difficulties that these interventions target? What is the quality of research done in this area?

[ii] https://www.apa.org/monitor/2017/12/psychoanalysis-psychodynamic

Methods

Search strategy

This systematic review and meta-analysis protocol was registered with the PROSPERO systematic review database (2021 - CRD42021285407) and carried out in line with PRISMA guidance (see Appendix 1 for PRISMA Checklist). The database search was conducted based on the Population Intervention Comparison Outcome Model (PICO: Schardt, Adams, Owens, Keitz & Fontelo, 2007) for health-related research. The target population for this search were children under 5 years of age and their caregivers as well as those in the prenatal period. However, no limit was placed on age for the initial search in order to maximize the chance of identifying relevant studies. The interventions searched for were those based on psychodynamic or psychoanalytic psychotherapy including those based on attachment theory and contemporary psychodynamic approaches such as mentalization-based treatments, where aims might include promoting reflective-functioning or maternal mind-mindedness. No limits were placed on what outcome data were reported. In order to increase the sensitivity of the search, key researchers in the field were contacted to ask for recommendations and several pilot database searches were undertaken. Based on above criteria, the following Boolean operators were used in the search strategy:

> ("early years" OR infan* OR baby OR babies OR toddler* OR child* OR mother* OR father* OR parent* OR maternal* OR paternal* OR caregiver* OR pregnan* OR prenatal OR famil* OR carer* OR dyad*) **AND** (psychoanaly* OR psychodynamic* OR mentaliz* or mentalis* OR "reflective function*" OR "parent-infant psychotherapy" OR "parent-toddler psychotherapy" OR "parent-child psychotherapy" OR "infant-parent psychotherapy" OR "toddler-parent psychotherapy" OR "child-parent psychotherapy") **AND** (psychotherap* OR therap* OR intervention OR treatment OR prevention) **AND** (evidence OR efficacy* OR effective* OR trial* OR experiment* OR empirical* OR investigate* OR outcome* OR measur* OR evaluat*)

Database searches

Ten databases were searched: CINAHL, EMBASE, PsychInfo, Scopus, Web of Science, MEDLINE, PubMed, Science Citation Index, Sociological Abstracts, and The Cochrane Library. The range of databases was mostly informed by previous reviews of psychodynamic or psychoanalytic oriented interventions for children and caregivers (e.g., Barlow et al., 2016; 2021; Midgley et al., 2021; Midgley & Kennedy, 2011). The specified terms were searched

for in titles, abstracts and keywords of database items published between 1990 and 30 September 2021.

Inclusion/exclusion criteria

The inclusion criteria for items were a) the study was peer-reviewed and published in English Language; b) the study was published from 1990 onward; c) the study included the description of intervention explicitly stating that the approach is informed by psychoanalytic or psychodynamic theories, or the approach was defined as psychoanalytically or psychodynamically informed by the first authors who were contacted by the research team when review of the paper left it unclear; d) the study's primary target of intervention was children under 5 years of age and their caregivers as well as those in the prenatal period, or the majority of children in the study sample fell within the 0-5 age group; e) the study was primarily concerned with evaluating treatment outcomes, using any form of treatment (e.g., individual, dyadic, family, group etc.) and any design involving quantitative measurement of outcomes (e.g., Randomised Control Trial, quasi-randomised controlled trials, cohort study, observational study etc.).

No restrictions were placed on gender or ethnicity or on the child or caregiver's presenting condition. Studies that did not designate the model of intervention as psychodynamic or psychoanalytic or did not use descriptive terms derived from these theoretical models were excluded even if in practice the model or parts of the intervention resembles that of psychodynamic psychotherapy (e.g., the Brazelton Neonatal Behavioral Assessment; Brazelton, 1978). As this review aimed to capture the full range of studies evaluating this type of therapy, we included studies with or without a comparator or control group, including studies with a waiting list or treatment as usual control group, as well as studies with any type of active comparator or control intervention.

While inclusion criteria remained relatively broad to include the full spectrum of mental health difficulties and types of evaluation design, the following items were excluded: a) theoretical, clinical, qualitative, measurement, review, or single-case papers; b) interventions not centrally informed by psychoanalytic or psychodynamic theories; c) studies focusing on the process rather than outcome of psychotherapy; and d) grey literature, including dissertations, conference abstracts, pre-registered clinical trials.

Data extraction

Using the CADIMA systematic review software, the titles and abstracts of studies identified by the searches were screened by two review authors to assess whether they met the inclusion criteria. Full text of papers that appeared to meet the inclusion criteria were

double screened by the same authors. Data extraction was then carried out for all eligible studies, including the following: 1) Authors, 2) Number of participants, 3) Participant demographics (age, gender, and ethnicity), 4) Location (country/area), 5) Type of problem, 6) Study design, 7) Control group (where applicable), 8) Description of therapy (including type and format of psychoanalytic/psychodynamic therapy, length, frequency and intensity), 9) Treatment delivery setting, 10) Primary outcome measures, 11) Secondary outcome measures, 12) Key findings, 13) Effect sizes (where reported), and 14) Mediators or moderators of outcomes (where applicable). For all studies that meet the inclusion criteria, a descriptive data synthesis was undertaken, and key study characteristics were summarised, appraised and presented in tables. Where multiple papers described secondary analysis from the same study, papers were grouped together. Disagreements and uncertainties were resolved by consultation with a third review author.

Quality Assessment

In all cases a critical appraisal of each included study was undertaken, focusing on potential sources of bias in the design and conduct of the study, and in this way the 'quality of evidence' was taken into consideration when reporting overall findings. The quality of the studies was assessed using the NIH's Quality Assessment Tools, available from https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools. Two separate quality assessment tools were used, one for controlled intervention studies and one for naturalistic pre-post studies without a control group. Independent ratings were carried out by two of the authors. Consensus were reached on how to apply the criteria before separately rating the remaining papers. Differences and uncertainties in ratings were resolved by consultation with a third review author.

Measures of effect

We combined the effect sizes from the studies to assess post-intervention effects on different intervention outcomes in meta-analyses using a random effects model (rma.uni function of the *metafor* package in R with the method set to 'REML'). Only case-control studies using similar populations as cases and controls (e.g. not healthy controls), with information on mean and standard deviations for the relevant outcomes were included in the meta-analyses. Studies without a control group, and those that reported pre- and post-intervention data only were excluded from the meta-analysis to avoid biased outcomes (Cuijpers et al., 2017). Outcomes included parental reflective functioning (PRF), maternal depression, infant behaviour, attachment, parent-infant interaction and parental stress. There were only two controlled studies that reported infant development outcomes, so this domain was excluded from the meta-analyses. Between-group standardised mean differences (SMDs) with 95% confidence intervals for post-intervention effects are

presented for continuous data, risk ratios with 95% confidence intervals for post-intervention effects were used for dichotomous data. To quantify the heterogeneity in effect sizes across studies, we used I^2, which represents the percentage of variation across studies that is due to heterogeneity.

Results

Included Studies

The PRISMA flow chart (see **Figure 1**) shows that a total of 9587 records were identified following removal of duplicates. After screening of titles and abstracts, 776 studies proceeded to full-text assessment, which led to a final number of 77 studies to be included in the current review. Studies that met inclusion criteria for the review are presented in **Table 1.** Where multiple papers described results from the same study, these were grouped together, resulting in 68 discrete studies of 22 different intervention types/programmes.

Figure 1. Paper selection flow chart.

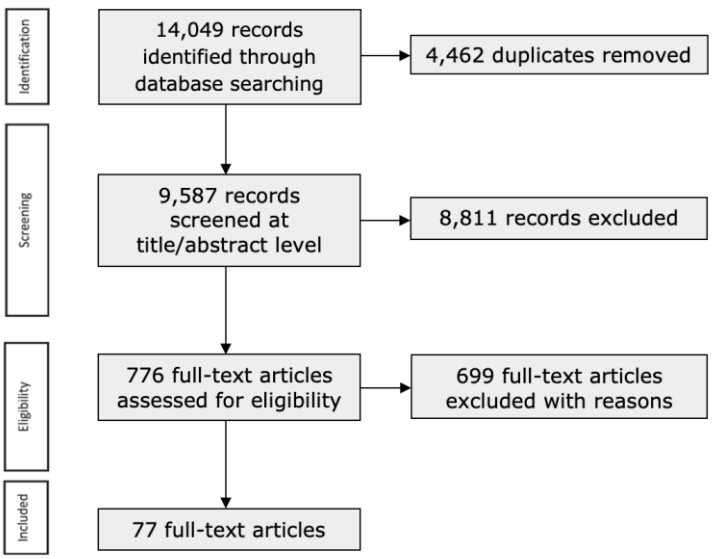


Table 1. **Final included papers grouped by intervention model.**

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Mentalization based interventions							
Attachment & Child Health (Attach)							
Anis et al. (2020) & Letourneau et al. (2020), Canada	Mothers (N=30)	57% Caucasian; low SES	<36 months	Controlled (N=10); RCT (N=20)	Socially disadvantaged/ high risk families	ATTACH 10 sessions with mother and therapist. Coparenting support person joining 2-3 sessions	Home-based
Mothering from the inside out (MIO)/ Mothers and toddlers program (MTP)							
Suchman et al. (2008), USA	Mothers (N=14)	72% Caucasian, 14% Hispanic, 14% African American; 71% unemployed; 64% either married or cohabiting with a partner, 21% were separated or divorced, and the remaining 15% had never been married	M=26.4 months (SD=8.02)	Cohort	Parental substance abuse	Mothers and Toddlers Programme 12 session individual therapy with parent	Outpatient
Suchman et al. (2010, 2011, 2012), USA	Mothers receiving MTP (N=23) or parent education (N=24)	70.8% Caucasian, 20.8% African American, 38.3% Hispanic or Latino; 87% unemployed	M=18.54 months (SD=12.27)	RCT	Parental substance abuse	Mothers and Toddlers Programme As above	Outpatient
Suchman et al. (2016), USA	Mothers (N=17)	44.4% Caucasian, 33.3% Hispanic or Latina, 22.2% African American; 55.6% had never been married; 94.1% living independently	M=38 months (SD=23.51)	Cohort	Parental mental health	Mothering from the Inside Out (MIO) 12 session individual therapy with parent	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Suchman et al. (2017), USA	Mothers receiving MIO (N=40) or parent education (N=47)	77% Caucasian, 13.8% African American, 3.4% Hispanic or Latino, 5.7% mixed race; 42.5% had never been married; 69.8% living independently	M=27.62 months (SD=14.73)	RCT	Parental substance abuse	Mothering from the Inside Out (MIO) As above	Outpatient
Minding the baby							
Condon et al. (2021), USA	Mothers (N=97)	33% Black, 62% Hispanic, 5% other	M=6 years	RCT	Socially disadvantaged/ high risk families	MTB Weekly-biweekly home visits from pregnancy – 2 years, delivered by paediatric nurses and social workers	Home-based
Ordway et al. (2014), USA	Mothers (N=50)	22% Hispanic, 15% White, 5% Black, 1% Native Hawaiian/Pacific Islander, 3% Other	M=51.8 months; age ranges from 3 to 5 years	Cohort	Socially disadvantaged/ high risk families	MTB As above	Home-based
Ordway et al. (2018), USA	Mothers receiving MTB (N=106) or in the control group (N=95)	77.2% Hispanic, 5.4% White, 14.1% African American, 1.1% Native Hawaiian and/or Pacific Islander	M=38.5 weeks (SD=2.9)	RCT	Socially disadvantaged/ high risk families	MTB As above	Home-based
Sadler et al., (2013), USA	Mothers receiving MTB (N=60) or TAU (N=45)	28% Black, 62% Latina, 10% Other; 83.8% never married or single	M=39 weeks (SD=2.4)	RCT	Socially disadvantaged/ high risk families	MTB As above	Home-based

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Slade et al. (2020), USA	Mothers receiving MTB (N=77) or in the control group (N=79)	67% Hispanic or Latino, 24% African American, 5% White, and 4% Other; 84% single or never married, 16% ever married or engaged	MTB: M=38.8 weeks (SD=2.6) Control group: M=39.2 weeks (SD=1.4)	RCT	Socially disadvantaged/ high risk families	MTB As above	Home-based
Infant mental health home visiting (IMH-HV) – "the Michigan Model"							
Rosenblum et al. (2020), USA	Mothers (N=78)	55% White, 45% Black or African American, 4% American Indian or Alaskan Native, 5% Hispanic or Latina, and 1% as Native Hawaiian or Pacific Islander; low SES	M = 9.8 months (SD = 8.4); age ranges from prebirth to 24 months	Cohort	Socially disadvantaged/ high risk families	IMH-HV 1-2 hours of home visiting/ week by trained home visitor; from pregnancy to 3 years, intensity dependent on needs of family	Home-based
Stacks et al. (2019), USA	Parents (N=16)	75% Black; 68.8% female; 50% were in foster care as children; 43.8% had not completed high school; 81.3% single parents; low SES	M=18.57 months (SD=7.10); age ranges from 7 to 32 months	Cohort	Socially disadvantaged/ high risk families	IMH-HV Weekly sessions with parent(s) and child(ren) and court IMH-HV therapist	Home-based
Stacks et al. (2021), USA	Parents (N=75)	57.30% White, 42.70% Black; 77.33% not married; low SES	M=9.64 months (SD=8.39)	Cohort	Socially disadvantaged/ high risk families	IMH-HV 1-2 hours of home visiting/ week by trained home visitor; from pregnancy to 3 years.	Home-based

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Developmental Individual-Difference, Relationship-Based/Floortime (DIR/FT)							
Sealy & Glovinsky (2016), Barbados	Caregivers receiving DIR/FT (N=20) or in the control group (N=20); fathers (N=5) mothers (N=33), grandmother (N=1), aunt (N=1)	45% high school, 32.5% university, 17.5% college, 5% primary school	Age ranges from 2 to 6 years 11 months	RCT	Child symptoms (neuro-developmental disability)	DIR/FT 24 hours of individual therapy with trained therapist over average of 12 weeks	Outpatient
The Clinician Assisted Videofeedback Exposure Session (CAVES)							
Schechter et al. (2006), USA	Mothers (N=32)	88% Hispanic, largely of Dominican or Puerto Rican origin, 12% African American; 61% immigrants; 52% had less than a high-school education; 75% received public assistance or were eligible for it; 67% single mothers	M=32 months; age ranges from 8 to 50 months	Cohort	Parental mental health	CAVES Single session of video-feedback and semi-structured interview with clinician-researcher	Outpatient
Nurture And Play (Nap)							
Salo et al. (2019), Finland	Mothers receiving NaP (N=24) or TAU (N=21)	NaP: 50% low educational level, 17.4% single TAU: 71.4% high educational level, no single mother	Age ranges from 1 to 12 months	RCT	Parental mental health	NaP 4 biweekly pregnancy groups + 7 weekly postnatal groups (1.5 hours each)	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Mentalization Based Ultrasound Sessions							
Jussila et al., (2021), Finland	Mothers (N=90)	41% low SES	Prenatal	RCT	Parental substance abuse	Mentalization-based intervention ultrasound sessions 3 ultrasound sessions + mentalization focused diary	Outpatient
Lighthouse Parenting Programme							
Byrne et al. (2019), UK	Parents (N=16)	88% white, 12% other; 81% unemployed	<2 years	Observational	Socially disadvantaged/ high risk families	Lighthouse Parenting Programme 20 weekly parent 90 min group sessions and 10 fortnightly 60 min individual MBT sessions	Outpatient
DUET Parenting Model							
Menashe-Grinber et al. (2021), Israel	Mothers (N=30)	28% low SES	M=4.3 years; age ranges from 1 to 6 years	Cohort	Community sample	DUET 12 session group intervention	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Attachment-Based Interventions							
Banking Time							
Williford et al. (2017), USA	Teachers (N=183)	53% White, 41% Black, 6% other	M=4 years; age ranges from 3 to 4 years (N=470)	RCT	Community sample (schools)	Banking Time One-to-one meetings (10-15 minutes) between teacher and child, 2-3 times per week for 7 weeks.	School
Mom Power (MP)							
Muzik et al. (2015), USA	Mothers (N=99)	48.4% Caucasian, 44.1 % African American, and 7.5 % Biracial/Hispanic; 73 % reported direct interpersonal trauma; low SES	M=21.5 months (SD=17.2)	Cohort	Parental mental health	MP 13 sessions (3 individual, 10 group) with trained community clinicians	Home-based
Rosenblum et al. (2018), USA	Mothers receiving MP (N=42) or in the control group (N=33)	31% White, 61.9% Black, 4.8% mixed, 2.4% other; over a half single; over a half exposed to interpersonal trauma; low SES	MP: M=15.07 months (SD=12.22); Control: M=21.50 months (SD=19.26)	RCT	Socially disadvantaged/ high risk families	MP As above	Outpatient
Parental Training for Lone Mothers Guided By Educators (PALME)							
Franz et al. (2011), Germany	Lone Mothers (N=88)	Single mothers (unmarried, separated, or divorced); low SES	Age ranges from 3 to 6 years	RCT	Socially disadvantaged/ high risk families	PALME 20 weekly group sessions (90 minutes)	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Weihrauch et al. (2014), Germany	Lone Mothers completed intervention N=26), completed control condition (N=35)	Single mothers (unmarried, separated, or divorced); about a half are unemployed	Age ranges from 4 to 6 years	RCT	Socially disadvantaged/ high risk families	PALME As above	Outpatient
Circle Of Security Parenting (CoS-P)							
Huber et al. (2015a, 2015b), Australia	Biological parents (N=73), foster or adoptive parents (N= 5), kinship carers (N= 5)	39% single parents; 24% from culturally or linguistically diverse backgrounds; 4% indigenous Australians	M=47 months; age ranges from 13 to 88 months	Controlled	Community sample	COS 20 weekly parent group sessions of 90 minutes	Outpatient
Kohlhoff et al. (2016), Australia	Mother (N=15)	100% married or in a relationship, 66% university or tertiary education; 50% moderate to high income	< 24 months	Cohort	Community sample	COS-P 8 weekly parent group sessions, 90-120 minutes each.	Outpatient
Maupin et al. (2017), USA	Mothers (N=117), other relatives (N=3), adoptive mother (N=1), others (N=10)	44% Hispanic, 29% Caucasian, 13% African American or Black, 2% Asian, and 12% other; 60% low SES	M=4.11 years; age ranges from 0 to 6 years	Observational	Socially disadvantaged/ high risk families	COS-P As above	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Maxwell et al. (2021), Australia	Mothers (N=221)	81% Australian; 67% high SES	<72 months	Controlled	Community sample	COS-P As above	Outpatient
Sadowski et al. (2021), Australia	Parents receiving GCCOS-P (N=7) or IHCOS-P (N=7)	71.4% single parents; 78.5% born in Australia; 71.4% had less than a university certificate	N/A	Observational	Community sample	COS-P Group center-based COS-P (GCCOS-P)- 8 sessions Individual home-based COS-P (IHCOS-P), 8 -14 sessions)	Outpatient and home-based
Video-Feedback Intervention- Representations (VIPP-R)							
Velderman et al, (2006), Netherlands	Mothers (N=55)	The majority are at low educational level	M=6 months	Cohort	Community sample	VIPP (including VIPP-R) 4 home visits of 3 hours	Home-based
Psychodynamic/Psychoanalytic Psychotherapy							
New Beginnings							
Bain (2014), South Africa	Mothers receiving treatment (N=16) or in the control group (N=6)	Black population; low SES	Age ranges from 9 days to 2 years and 6 months	RCT	Socially disadvantaged/ high risk families	New beginnings 12-session group parent-infant psychotherapy	Temporary accommodation

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Sleed et al. (2013b), UK	Mothers receiving treatment (N=88) or in the control group (N=75)	Intervention group: 43.2% White, 42% Black, 4.8% Asian, 8% Mixed Control group: 68% White, 20% Black, 5.3% Asian, 5.3% Mixed, 1.3% Other	Intervention group: age ranges from 2 to 23 months, (M=4.9, SD=4.5) Control group: age ranges from 1 to 18.5 months, (M=4.4, SD=4.6)	RCT	Socially disadvantaged/ high risk families	New beginnings 8-session group parent-infant psychotherapy delivered over 4 weeks	Temporary accommodation (prisons)
Child–Parent Psychotherapy (CPP)							
Ghosh Ippen et al. (2011), USA	Mothers (N=75)	38.7% mixed ethnicity (predominantly Latino/White), 28% Latino, 14.7% African American, 9.3% White, 6.7% Asian, and 2.6% other; low SES	Age ranges from 3 to 5 years old	RCT	Socially disadvantaged/ high risk families	CPP Weekly mother-child sessions with therapist for 50 weeks.	Outpatient
Hagan et al. (2017), USA	Parents (N= 199)	54.0% Hispanic, 19.7% Caucasian, 9.1% African American, 7.6% Asian American, 5.6% multiracial, 3.5% other; low SES	M=49.14 months	Observational	Socially disadvantaged/ high risk families	CPP Weekly hour-long mother-child sessions with therapist, average 21 sessions.	Outpatient
Lavi et al., (2015), USA	Mothers (N=64)	86% Latina; low SES	<6 months	Observational	Parental mental health	Perinatal CPP Weekly hour-long parent sessions antenatally, followed by weekly parent-infant sessions with therapist, average 27 sessions.	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Lieberman et al. (2005, 2006), USA	Mothers (N=75)	38.7% mixed ethnicity (predominantly latino/white); 28% Latino; 14.7% African American; 9.3% white; 6.7% Asian; 2.6% other ethnicity; low SES	M=4.06 years; age ranges from 3 to 5 years	Observational	Socially disadvantaged/ high risk families	CPP Weekly mother-child sessions with therapist for 50 weeks.	Outpatient
Paris et al. (2015), USA	Mothers (N=66)	79% Caucasian, 17% African American, 22% Hispanic, 2% Native American, 1% Asian American; low SES	M=21.05 months	Observational	Parental substance abuse	CPP + additional support (Project BRIGHT) 6-22 sessions, 1- 1.5 hours with therapist and mother or mother-infant	Temporary accommodation (Residential treatment)
Toth et al. (2015), USA	Mothers receiving CPP (N=44), PPI (N=34), community services (N=27), or in a non-maltreated comparison group (N=52)	An ethnic minority, high-risk, and low-income population	M=13.30 months (SD=0.80)	RCT	Socially disadvantaged/ high risk families	CPP Mother-child sessions with therapist over 12 months	Home-based
Stronach et al. (2013), USA	Mothers (N=189)	74.6% from minority ethnic groups, 12.7% married. The majority (79.4%) reported that they had been maltreated when they were children, 89.9 % reported experiencing at least one traumatic event.	M=13.31 months (SD=0.81)	RCT	Socially disadvantaged/ high risk families	CPP Weekly home visits for 12 months by a trained master's level therapist	Home-based

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Waters et al. (2015), USA	Pregnant women (N=52)	86.5% Latina; 48.1% single, separated, or divorced; low SES	M=6.57 months (SD=0.72); age ranges from 4.53 to 8.28 months	Cohort	Socially disadvantaged/ high risk families	CPP Average of 5 prenatal and 14 postnatal sessions with therapist	Outpatient
Zarnegar et al. (2016), USA	Adoptive caregivers (N=16)	80% Caucasian	M=35 months; age ranges from 10 to 53 months	Cohort	Child symptoms (fetal alcohol spectrum disorder)	CPP + mindful parenting education Twice weekly sessions with parent and child for 6-12 months	Outpatient
Toddler-Parent Psychotherapy (TPP)							
Cicchetti et al. (1999), USA	Mothers (N=63)	95% Caucasian; 74% high SES	M=20.4 months	RCT	Parental mental health	TPP Joint mother-child sessions with therapist over approximately 12 months	Outpatient
Cicchetti et al. (2000), USA	Mothers (N=158)	92.4% Caucasian; 73.4% high SES	M=20.47 months	RCT	Parental mental health	TPP As above	Outpatient
Toth et al. (2006) & Guild et al. (2021), USA	Mothers with depression receiving TPP (N=130) ,non-depressed comparison group (N=68)	72.7% high SES; 54.5% college graduates; 92.9% European American ethnicity; 87.9% married.	M=20.34 months (SD=2.50)	RCT	Parental mental health	TPP As above	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Parent/Mother–Infant Psychotherapy (PIP/ MIP)							
Fonagy et al. (2016), UK	Mothers (N=76)	58% White; 40% low SES	<12 months	RCT	Parental mental health	PIP Joint mother-child sessions with therapist over approximately 12 months	Outpatient
Ransley et al. (2019), UK	Mothers (N=61)	62% white British, 15% Black, 13% Asian, 7% Mixed-race, 3% Arabic; 57% low SES	M=4.29 months	Observational	Parental mental health	PIP As above	Outpatient
Salomonsson et al. (2011a, 2011b, 2015a, 2015b), Sweden	Mothers receiving MIP (N=38) or CHCC (N=37)	MIP: 11% immigrant; 5% single CHCC: 22% immigrant; 8% single	MIP: M=4.4 months (SD=2.4) CHCC: M=5.9 months (SD=3.8)	RCT	Parental mental health	MIP Average of 29 sessions with mother, infant and therapist	Outpatient
Tambelli et al. (2015), Italy	Intervention involving both parents (N = 22), and involving only the mother (N = 22)	88% middle SES; 92% intact family groups in which the child was the firstborn for both parents; 91% Caucasian; 71% more than one income	Age ranges from 3 to 12 months	RCT	Parental mental health	Relationship-based PIP with mother and baby or mother, father, and baby 15 hour-long sessions, twice a month	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Dyadic Group Psychotherapy							
Belt et al, (2012), Finland	Mothers (N=101)	Low SES	<12 months	Cohort	Parental substance abuse	Mother-infant group psychotherapy 20-24 weekly 3-hour group sessions starting prenatally	Outpatient
Meschino et al. (2016), Canada	Mothers (N=70)	92.3% married	Age ranges from 6 to 12 months	Observational	Parental mental health	Mother-infant dyadic group therapy 12 weekly 2-hour group sessions	Outpatient
Sleed et al. (2013a), UK	Mothers in the PIP Hostel (N=30) or in the Comparison Hostel (N=29)	32.2% White, 39% Black, 25.4% Asian, 3.4% Other ethnicity; 57.7% GCSE or less, 7.7% high school, 21.2% NVQ; 13.5% higher education	PIP Hostel: M=7.5 months (SD=3.9); comparison group: M=9.4 months (SD=4.7)	Controlled	Socially disadvantaged/ high risk families (Homeless)	PIP group Weekly drop-in parenting group in homeless hostel, facilitated by parent-infant psychotherapist	Temporary accommodation
Brief Mother/Parent–Infant Psychotherapy (Brief-MIP/PIP)							
Cohen et al. (1999), Canada	Mothers receiving PIP (N=33) or WWW (N=34)	Low-medium SES	M=21 months	Controlled	Child symptoms OR parental mental health (Functional and behavioural disturbances)	Brief PIP & Watch, Wait & Wonder Average 14-15 weekly 1-hour sessions with parent, infant and therapist	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Cohen et al. (2002), Canada	Mothers receiving PIP (N=31) or WWW (N=26)	Low-medium SES	Age ranges from 10 to 30 months	Controlled	Child symptoms OR parental mental health (Functional and behavioural disturbances)	Brief PIP & Watch, Wait & Wonder Average 14-15 weekly 1-hour sessions with parent, infant and therapist	Outpatient
Cramer et al. (1990), Italy	Mothers (N=38)	22% professional, 41% employed, 35% laborers	<30 months	RCT	Child symptoms (Functional and behavioural disturbances)	Brief-MIP Up to10 one-hour sessions with parent-infant and therapist	Outpatient
Georg et al. (2021), Germany	Mothers (N=154)	86.36% German origin; 77.92% married; 73.37% had high school or higher education	Age ranges from 4 to 15 months	RCT	Child symptoms (Early regulatory disorders)	Focused- PIP One 90-minute session and three 50-minute sessions with one or both parents and infant	Outpatient
Murray et al. (2003), UK	Mothers (N=193)	30% low SES	<18 weeks	RCT	Parental mental health	Brief psychodynamic psychotherapy 10 weekly sessions with trained therapist	Home-based

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Nanzer et al. (2012), Switzerland	Mothers receiving PCP (N=40) or in the control group (N=88)	16% non-European origin in the treatment group and 8% in the control group; 68% with employment in the treatment group and 83% in the control group	<6 months	Cohort	Parental mental health	Psychotherapy centred on parenthood (PCP) 4 individual sessions- two antenatal and two postnatal	Outpatient
Pozzi-Monzo et al. (2012), UK	Mothers (N=7), fathers (N=7)	N/A	M=45 months	Observational	Child symptoms (Referred to CAMHS)	Brief -MIP Up to 5 weekly sessions with mother, infant and therapist	Outpatient
Robert-Tissot et al. (1996), France	Mothers (N=75)	Majority Caucasian; 58% medium-high SES	M=15.6 months	Observational	Parental mental health	Brief-MIP Average 5-6 weekly sessions with mother, infant and therapist	Outpatient
Salomonsson et al. (2021), Sweden	SPIPIC: mothers (N=100), fathers (N=59) Norm group (nonclinical): mothers (N=81), fathers (N=60)	SPIPIC: 14% immigrant; M=15 (SD=2.8) education years Norm group: 6% immigrant; M=15 (SD=2.5) education years	SPIPIC: children's age ranged from 1 to 23 months, with a mean of 4.8 months (SD=4.5) Norm group: a mean of 5.2 months	Controlled	Parental mental health	Short-term Psychodynamic Infant–Parent Interventions at Child Health Centers (SPIPIC) 4 weekly or biweekly 45-minute therapy sessions with mother and (optionally) infant and/or father	Outpatient

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Other Psychodynamic/Psychoanalytic Psychotherapies							
Kurzweil (2008a), USA	Mothers (N=14)	99% Caucasian; 100% lower to upper middle-class SES	Age ranges from 5 months to 3 years	Observational	Parental mental health	PLAYSPACE Open-ended, minimum 6 months of bi-monthly sessions, parallel parent group and infant group	Outpatient
Kurzweil (2008b), USA	Mothers (N=49)	Majority are Caucasian; middle-class SES	<6 months	Observational	Parental mental health	Relational-Developmental psychodynamic therapy Open-ended, minimum 6 months of bi-monthly sessions, parallel parent group and infant group	Outpatient
Kurzweil, (2012), USA	Mothers (N=58)	70% Caucasian; middle-class SES	<7 years	Observational	Parental mental health	Psychodynamic therapy Psychotherapy for mother; Average 4 hours/month over average of 17 months	Outpatient
Lowell et al. (2011), USA	Mothers (N=157)	57% Latino, 32% African American, 9% Caucasian, 1% Other; 65% unemployed	Age ranges from 6 to 36 months	RCT	Child symptoms (social/ emotional/ behavioural problems)	Child FIRST Weekly visits from clinician and/or care coordinator, average 22 weeks	Home-based

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Muller et al. (2015), Germany	Mothers (N=185)	30.9 % completed 9 years of secondary school, 39.7 % completed 10 years of secondary school, and 24.3 % completed 12–13 years of school	M=4.33 years	Observational	Child symptoms (Children with psychiatric disorders)	Multi-modal behavioural and psychodynamic treatment Average 51 treatment days in hospital, delivered in intensive blocks 3 days at a time	Outpatient
Rosen et al. (1994), USA	N/A	All Caucasian and from middle- or upper-middle-class families	Age ranges from 4 to 6 years (N=14)	RCT	Community sample	Psychodynamic child psychotherapy Weekly 30-minute session with child and therapist for 8 weeks	Outpatient
Target & Fonagy (1994), UK	Not reported	Not reported	Age ranges from 2 to 5.11 years (N=127)	Observational	Child symptoms (Children with mental health problems)	Child psychotherapy Delivered 1-5 times/week for an average of 1.6 years.	Outpatient
Thome et al. (2005), Iceland	Mothers (N=33), fathers (N=30)	About one third (39.4%) of mothers worked at home during the daytime, 15.2% worked all day outside the home, and the rest had part-time jobs or were unemployed; most (83.3%) fathers worked all day outside the home	Age ranges from 6 to 23 months (N=33)	Cohort	Child symptoms (Infant sleep disorders)	Family-centered intervention for infant sleep 4 family sessions (2-3 hours each) delivered by paediatric nurses	Inpatient

Characteristics of families

As shown in Table 1, the included 77 studies comprise 5660 caregivers as participants, most of whom were mothers. Ten studies (Stacks et al., 2019; Stacks et al., 2021; Sealy & Glovinsky, 2016; Byrne et al., 2019; Huber et al., 2015a, 2015b; Maupin et al., 2017; Hagan et al., 2017; Zarnegar et al., 2016; Tambelli et al., 2015; Thome et al., 2005) involved fathers, foster or adoptive parents, kinship carers, or other caregivers in addition to mothers. One study (Williford et al., 2017) was delivered by teachers in schools, and two studies (Target & Fonagy, 1994; Rosen et al., 1994) evaluated psychoanalytic psychotherapy that was delivered primarily to the child alone.

Most interventions were delivered postnatally, usually when the children were under 3 years of age. One intervention was delivered during pregnancy (Jussila et al., 2021), and ten studies evaluated perinatal interventions that began in pregnancy and then continued into the postnatal period (Belt et al., 2012; Condon et al., 2021; Lavi et al., 2015; Nanzer et al., 2012; Ordway et al., 2014; 2018; Rosenblum et al., 2020; Sadler et al., 2013; Salo et al., 2019; Slade et al., 2020; Stacks et al., 2019; 2021; Waters et al., 2015).

The reasons why the participants were invited/referred to take part in the treatment were diverse. Many intervention programmes targeted high-risk families with high external stress (e.g., chronic poverty, minoritized ethnic groups, social and educational disadvantage, family disruption such as separation, abandonment, trauma, maltreatment concerns, community and domestic violence) (N=23). Other target populations included parents with mental health conditions (mostly depression, anxiety, and PTSD) (N=22), parents with substance abuse (e.g., drug and/or alcohol) difficulties (N=6), and children with social, behavioural, emotional, regulatory or neurodevelopmental difficulties (N=11). Only a small group of programmes were universal interventions serving community samples (N=8).

Most studies were conducted in Western countries, including the United States (N = 34), Europe (N=23), Australia (N=4) and Canada (N=4). One study took place in Israel, one in South Africa, and one in Barbados. Despite this over-representation of research from Western countries, the families who participated in the interventions were ethnically and socially diverse. Many studies had higher numbers of parents and children from minoritized ethnic backgrounds than is representative of those country populations. As many of the interventions specifically targeted socially disadvantaged groups, these families were also well represented in the research. Only a small handful of studies reported having primarily Caucasian and upper to middle class families in the sample. More recent studies appeared more likely to have more diversity and targeted interventions for socially disadvantaged groups than those conducted less recently.

Description of interventions

Interventions varied with regard to their setting, their target group and their theoretical underpinnings. With regards to setting, the interventions identified in this review were mostly delivered in outpatient (e.g., clinic-based) settings (N = 46) or were home-visiting programmes delivered in the families' own homes (N = 15). Four interventions were delivered in temporary accommodation settings (prisons and hostels), one intervention was delivered in a hospital inpatient setting (Thome et al., 2005), and one intervention was provided in schools (Williford et al., 2017).

Most interventions were trans-diagnostic and aimed to improve a range of outcomes for children and their caregivers. The results are therefore presented by therapeutic technique rather than by presenting problems.

Psychoanalytic and psychodynamic interventions are grounded in a range of theoretical models, some of which also draw on ideas from other disciplines, including developmental psychology, neuroscience and attachment theory. The interventions roughly fell into three categories: contemporary psychodynamic, mentalization-based interventions; psychodynamically-informed attachment-based interventions; and dyadic (or triadic) psychoanalytic and psychodynamic psychotherapies. The results are presented in these clusters, although it is important to highlight that they are not mutually exclusive and many interventions could fall into all three clusters.

Contemporary psychodynamic, mentalization-based interventions

Mentalization-based treatment (MBT) is a contemporary psychodynamic approach, which was originally developed for the treatment of adults with borderline personality disorder, focusing on addressing difficulties identifying personal thoughts and feelings, as well as those of others (Fonagy and Bateman, 2007). With a strong developmental model, drawing on attachment theory and Anna Freud's concept of 'developmental lines', MBT was quickly adapted for the treatment of children and young people (Midgley & Vrouva, 2013), with a particular focus on early interventions targeting the parent-child dyad, where the focus is on promoting the parent or carer's capacity to mentalize the child. The capacity to mentalize is an awareness of mental states in oneself and in others, particularly in explaining people's behaviours (Bateman & Fonagy, 2013). The mentalization-based approach has been used to inform a range of interventions, with a range of formats, and delivered by a wide range of professionals.

A widely implemented type of mentalization-based intervention found in this review was home visiting programmes. The Michigan model of infant mental health home visiting (IMH-HV, Rosenblum et al, 2020; Stacks et al, 2019; 2021) is one approach that has been delivered by community mental health services in Michigan for the last 40 years and is built

on a comprehensive and multifaceted framework that has informed many other programmes worldwide. The model is delivered by trained infant mental health therapists in the families' homes. A central focus of the intervention is the relationship between parents and infants and between parents and practitioners. A key goal of this programme is to strengthen and support the caregivers' capacity to mentalize. Infant-parent psychotherapy is provided alongside a package of other types of support, including the provision of material needs, life-course planning, and guidance on infant development. It has been implemented in high-risk community samples and integrated successfully in baby/toddler courts where there are parental maltreatment concerns. Minding the Baby (Condon et al., 2021; Ordway et al., 2014; 2018; Sadler et al., 2013; Slade et al., 2020) is also an intensive home visiting programme for first time parents. Families receive weekly visits from a trained paediatric nurse and a social worker starting in the third trimester of pregnancy to the end of the child's first year, then biweekly until the child is two years old. To date, the intervention has mostly been delivered to socially deprived and ethnically diverse communities. The overarching aim of the intervention is to strengthen the parent's capacity to mentalize and provide sensitive caregiving. The evaluations have focused on parental mentalizing, child attachment and parenting behaviour, but have also shown promising outcomes in reducing childhood obesity (Ordway et al., 2014). A less intensive home visiting model is the Attachment and Child Health (ATTACH) programme (Anis et al., 2020; Lertournou et al., 2020). This is a structured programme of psychoeducation and experiential support to enhance parental mentalizing, delivered in ten sessions at the family's home.

A brief mentalization-based intervention which is delivered on an outpatient basis is Mothering from the Inside Out (Suchman et al., 2016; 2017), initially known as the Mothers and Toddlers Programme (Suchman et al., 2008; 2010; 2011; 2012). This is a 12-session manualised programme that explicitly aims to improve parental mentalizing, i.e., the parent's capacity to notice and make sense of their own and their child's internal emotional and cognitive experiences. It has mostly been used to support parents with substance misuse disorders and ultimately aims to strengthen the attachment relationship.

Some programmes make use of video feedback techniques to strengthen parental mentalizing. The Developmental Individual Difference-Floor Time (DIR/FT; Sealy & Glovinsky, 2016) is a programme for toddlers with neurodevelopmental disorders. The therapist aims to help the parent tune-in to their own and their child's sensory, motor and emotional experiences. Parents' mentalizing capacities are targeted through video-feedback of play sessions where the parent is encouraged to reflect on the child's internal experiences. Clinician-assisted video feedback (CAVES) is another intervention that aims to improve parental mentalizing by applying parent-infant psychotherapy techniques while using video-feedback (Schechter, 2006). This intervention, developed specifically for mothers with violence-related post-traumatic stress disorder (PTSD), also introduces

controlled exposure to child separation distress as a potential trigger for posttraumatic stress via video feedback, followed by the modelling and stimulation of parental mentalizing with the therapist. It is delivered in a single session which is both the intervention and a follow-up data collection.

Several mentalization based interventions are delivered in group settings. For example, Nurture and Play (NaP, Salo et al.; 2019) is a brief manualised intervention for expectant mothers with depressive symptoms. It begins in pregnancy and continues until the infant is around 7 months old. The programme is very structured and designed to be easily taught to frontline practitioners, including psychologists, nurses and family workers. A key focus of the intervention is to support parental mentalizing and sensitive parent-infant interactions. The DUET parenting programme is a structured group-based programme that aims to improve parental mentalizing. It has been delivered and evaluated in a non-clinical community parent population. The Lighthouse Parenting Programme (Byrne et al., 2020) similarly aims to enhance parental mentalizing capacities through a combination of psychoeducation, group discussion and exercises. This manualised group programme has been developed specifically for parents who have the involvement of child protection services and are considered at risk of maltreating their children. The theoretical underpinning is that child maltreatment always occurs in the context of mentalizing failures. The course introduces concepts of attachment and mentalization and gradually helps parents to consider how their own attachment experiences may influence their mentalizing capacity, their ability to regulate their affect and their parenting.

A novel approach to support expectant mothers with substance use disorders is to provide 4D ultrasound scans and a pregnancy diary specifically to promote mentalizing (Jussilla, 2020). This work is supported by infant mental health specialists and aims to evoke the mother's interest in the child and their perspective and to support mother-foetus attachment.

Psychodynamically-informed attachment-based interventions

The pioneering work of John Bowlby, Mary Ainsworth, and others has put attachment theory at the heart of most early interventions for very young children and their caregivers. Many programmes highlight the importance of strengthening the child's attachment security and the quality of the parent-child attachment. Not all such "attachment-based" interventions self-define as psychoanalytic and psychodynamic, and often the focus is on improving parental behaviour (usually maternal sensitivity) rather than working with internal working models of attachment. Examples of such interventions include VIPP (Juffer) and Attachment and Biobehavioral Catch-up (Dozier). However, a cluster of attachment-based interventions that were explicitly defined as psychoanalytic or psychodynamic were included in the review. These tend to be very structured, manualised psychoeducational

programmes that have some “teaching” element, but they also address intergenerational attachment experiences and parents’ own internal working models of attachment that play a role in their parenting.

The Circle of Security (CoS) is one of the most widely implemented attachment-based interventions (Marvin et al., 2002). It is a structured manualised group programme, originally delivered over 20 sessions. The CoS-Parenting (CoS-P) is an 8-session version of the model which can be delivered in a group setting or can be home-based. The programme provides video clips of parent-child interactions and handouts to demonstrate child attachment behaviour and teach the fundamentals of attachment. Guided reflection and group discussion encourages parents to apply these principles to their own child and their relationship with them (Huber et al., 2015a; 2015b; Kohlhoff et al., 2016; Maupin et al., 2017; Maxwell et al., 2021; Sadowski et al., 2021).

Similarly, Mom Power (Musik et al., 2015; Rosenblum et al., 2018) is a multifamily attachment-theory focused group intervention. The attachment-based parenting curriculum is provided alongside peer support, self-care practice, guided parent-infant interactions, and connecting to other services. PALME (Weihrauch et al., 2014) is a structured, group-based parental training program, specifically developed for single mothers and their preschool children. The 20-week programme, which is delivered by trained qualified kindergarten teachers or social workers, is based on attachment theory and psychodynamic-interactional approaches. The structured programme is focused on mobilising affect and the emotional interactions between mother and child, using psychodynamic techniques and moderate regression.

Video-Feedback Intervention to Promote Positive Parenting (VIPP) has become a widely used tool in infant mental health support services (Juffer et al., 2018). As the intervention is primarily focused on behavioural interactions between parents and their babies, most studies would not be considered psychoanalytic and did not meet inclusion criteria for this review. However, VIPP with a representational focus (VIPP-R) is an elaboration of the model that explicitly aims to affect the parent’s attachment representations (Velderman et al., 2006). The parent watches back selected video-recorded interactions with their infant alongside the clinician. In this model, the parent is also invited to have further discussions with the clinician to reflect and make links between their own attachment representations, their representations of their infant, and their parenting.

A different approach to strengthening the child’s attachment relationships with significant adults is Banking time (Williford et al., 2017), an original intervention delivered by teachers within early years school settings. Teachers are trained and supervised to provide support to the pupils in their class. They have brief one-to-one meetings with the preschool children over several weeks where they observe and narrate/ label the child’s behaviours and emotions and make relational links to strengthen the quality of teacher-child relationships.

Dyadic (or triadic) Psychoanalytic Psychotherapies

The mentalization-based and attachment interventions described above tend to be integrative, drawing on psychodynamic and psychoanalytic ideas, whilst integrating them with other traditions of thought. These interventions tend to be flexible in their settings, their format (e.g., mixing experiential and psychoeducational elements) as well as who delivers the intervention. Another set of studies identified in this review positioned themselves more directly as psychoanalytic or psychodynamic therapies, and tended to be delivered in more traditional therapeutic formats, by practitioners with a core psychoanalytic or psychodynamic therapy training background. Whilst some of these are more long-term, there are also adaptations described, below, which are briefer interventions, sometimes adapted to be delivered in non-clinical settings.

A range of psychoanalytic psychotherapies were identified in this review that share common underlying theories and intervention techniques. Child-parent psychotherapy, toddler-parent psychotherapy, and parent-infant psychotherapy are all psychoanalytic approaches that target the parent-child relationship as the focus of treatment. The approaches build upon on the early work of Selma Fraiberg and her colleagues (1975) and incorporate the premise that the parent's own childhood attachment experiences can play an important role in the current parent-child relationship. The interventions tend to be non-didactic and the focus is on the parent and child free play interactions in the sessions and concerns brought by the parent. The therapist attends simultaneously to the behavioural interactions between parent and child, and the parental representations. They may also make links to help the parent understand the influence of their own childhood experiences on their parenting. Through empathic observation and linking, the therapist aims to help the parent to better notice, make sense of and respond sensitively to the child's needs. The interventions tend to be offered mostly to mothers and their unborn baby or infant/toddler/child, although co-parents may also join in the sessions.

There are more similarities than differences in the theoretical underpinnings and therapeutic techniques of these various interventions. However, there may be subtle differences in orientation to the infant/child. For example, mother-infant psychotherapy, as described by Salomonsson (2014), involves direct work between the analyst and the infant in the presence of the mother. Another slightly more infant-focused intervention is Watch, Wait and Wonder (WWW; Cohen et al., 1999; 2002). In this approach, the first half of the session is dedicated to allowing the baby to take the lead in the interaction while the parent observes and responds in a non-directive way. In the second half of the session, the therapist and parent discuss their observations. At this stage, as with other parent-infant psychotherapies, links are made with the parent's representations and observations in the session.

These interventions are primarily offered to families where there are complex difficulties. For example, the included studies include work with parental trauma (e.g. Gosh Ippen et al., 2011; Lavi et al., 2015), parental psychopathology (Fonagy et al., 2016), the risk of maltreatment (e.g. Toth et al., 2015), parental substance misuse disorders (Paris et al., 2015), and families with adopted children with Fetal Alcohol Syndrome Disorder (Zarnegar, 2016). In accordance with the complexity of difficulties addressed with these approaches, the interventions tend to be open-ended and relatively intensive, with most therapies being offered weekly for at least six months and often up to a year or beyond.

However, brief versions of the model have been developed (Robert-Tissot, 1996; Pozzi-Monzo, 2012). In these brief therapies, the therapist works with the parent and baby to identify and name the core relationship conflicts, maternal representations and projections, and similar conflicts in the parent's own childhood. The brief model has been adapted for specific populations, such as depressed women in the perinatal period (Nanzer et al., 2012) and dyads where the infant has early regulatory disorders (Georg, 2021). A similar approach has been developed for supporting parents and infants in universally available child health clinics in Sweden (Salomonsson et al., 2021). Specialist psychodynamic psychotherapists are based within these centres and provide brief (4 session) interventions for mothers identified by nurses as needing additional support. Nurses are also given supervision to support perinatal mental health in these settings. All of these brief approaches share the same principles and techniques as the more intensive mother/parent-infant/toddler/child psychotherapies, but they remain relatively focused on singling out and quickly addressing the core difficulties in the dyad.

The dyadic psychodynamic psychotherapies have also been adapted for different settings and populations to provide accessible and acceptable parent-infant support for families who may not attend individual therapy in traditional clinic or home settings. For example, parenting groups which are facilitated by experienced parent-infant psychotherapists have been developed for parents living in homeless hostels (Bain, 2014; Sleed et al., 2013a) and in mother-baby units in prisons (Sleed et al. 2013b). Others have also adapted the model to be delivered in multifamily groups to support parents with depression (Meschino et al., 2016) or substance misuse disorders (Belt et al., 2012). These group-based adaptations facilitate peer support within communities and facilitate accessibility when parents come from different cultural and language backgrounds. Although they have a very different mode of delivery and intensity, these adapted interventions also aim to help parents to recognise and respond sensitively to their babies' cues, and also to make links with their own experiences and how these influence their parenting.

Two slightly different programmes are multimodal hospital-based interventions that draw on psychodynamic principles alongside other clinical interventions. These include a brief 4-day inpatient intervention for infant sleep problems in Iceland (Thome et al., 2005) and an intensive and multifaceted hospital outpatient treatment in Germany (average 51 hospital

days) for infant psychiatric disturbances (Muller et al., 2015). Although both interventions are informed by behaviourist and/or social learning approaches, they also apply psychoanalytic techniques to address the parents' representations of their infant and their difficulties.

Outcomes of interventions

Most studies evaluated outcomes in at least one of these domains: Parent-infant interaction, parental reflective functioning, parental depression, infant development, infant social/emotional/behavioural functioning, infant attachment, and parenting stress. The direction of the outcomes (improvement over time, no/ mixed effect over time/ deterioration over time) on these domains is presented in **Table 2**. These are assessed pre- to post-intervention for all studies. As not all studies had control groups, the outcomes reported here pertain only to the psychoanalytic/psychodynamic intervention groups.

The outcomes in all domains being measured showed change in a positive direction. Parental Reflective Functioning, a measure of the parents' capacity to mentalize, was primarily assessed with Reflective Functioning coding scale applied to the Pregnancy Interview or the Parent Development Interview (Slade et al. 2004; 2007) and a small number of studies used the Parental Reflective Functioning Questionnaire (Luyten et al., 2017). Nineteen of the 27 (70%) studies that measured this outcome reported positive changes, with the remaining showing no significant changes in either direction.

The quality of parent-infant interactions was measured in 27 studies, using many different measures, mostly coding systems applied to video-recorded interactions between parent and infant. Twenty of these studies (74%) reported positive changes, with the remaining studies showing no significant change.

Parental depression was assessed in 26 studies through self-report questionnaires, most often the Beck Depression Inventory, the Edinburgh Postnatal Depression Scale, or the Centre for Epidemiological Studies Depression Scale. Of these, nineteen (73%) showed positive changes, one study (Bain, 2014) reported a deterioration with maternal depression increasing over time, and the remaining studies showing no change in either direction. Similarly, parental stress levels were usually assessed through self-reported questionnaires such as the Parenting Stress Index. Out of the fifteen studies measuring this outcome, eleven (73%) showed positive changes and the rest reported no significant change.

Despite the clinical importance placed on infant attachment in relation to their caregivers, only seven studies measured this. This may be due to the resource intensive nature of the gold standard procedure for assessing attachment, the Strange Situation Procedure (Ainsworth, Blehar, Waters, & Wall, 1978). Of these studies, five (71%) showed improved

attachment security and/or decreased attachment insecurity and disorganization over time, and two studies showed no significant changes.

Children's social, emotional and behavioural wellbeing, most often measured through parent-report questionnaires such as the Child Behavior Checklist, was measured in twelve studies. Of these, ten (83%) showed positive change, and two found no significant changes. Infant development (cognitive, motor and/or language) was measured in 10 studies, seven (70%) of which showed positive change and the rest reporting no significant change in either direction.

Very few studies explicitly examined potential mediators or moderators of change, although some controlled for some socioeconomic variables in their analyses (e.g., Fonagy et al., 2016, Menashe-Grinberg et al., 2021), suggesting that outcomes may not be equivalent for all participants of the studies. Where potential mediators or moderators of change were investigated, studies mostly showed better outcomes for those with more severe parental or parent-infant relational difficulties at the outset (e.g., Huber et al., 2015a; 2015b; Slade et al., 2020; Suchman et al., 2017). One exception is the study by Schechter and colleagues (2006) which showed that better outcomes were associated with higher maternal reflective functioning at baseline.

As the full range of studies included in this review were of varying quality and many did not report effect sizes, only the controlled studies were selected for the meta-analysis synthesising outcomes in the key domains.

Table 2. **Summary of the outcomes by grouped by intervention model description.**

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Mentalization Based Interventions									
Attachment & Child Health (Attach)									
Anis et al. (2020) & Letourneau et al. (2020), Canada	"+"	"+"	"0"	"0"	n/a	n/a	"+"	n/a	n/a
Mothering From The Inside Out (MIO)/ Mothers And Toddlers Program (MTP)									
Suchman et al. (2008), USA	"+"	"0"	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Suchman et al. (2010, 2011, 2012), USA	"+"	"+"	n/a	n/a	n/a	n/a	n/a	n/a	Maternal Reflective Functioning
Suchman et al. (2016), USA	"+"	"0"	"+"	n/a	"+"	n/a	n/a	n/a	n/a
Suchman et al. (2017), USA	"+"	"+"	n/a	"0"	n/a	n/a	"0"	Addiction severity	n/a
Minding The Baby									
Condon et al. (2021), USA	"n/r"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Ordway et al. (2014), USA	"0"	n/a	"0"	n/a	n/a	"+"	n/a	n/a	n/a
Ordway et al. (2018), USA	"0"	n/a	"0"	n/a	"0"	n/a	n/a	n/a	n/a
Sadler et al., (2013), USA	"+"	"+" (in teen mothers only)	"0"	"+"	n/a	n/a	n/a	n/a	n/a

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Slade et al. (2020), USA	"n/r"	"n/r"	"n/r"	"n/r"	n/a	n/a	n/a	Disrupted communica-tion	n/a
Infant Mental Health Home Visiting (IMH-HV) – "The Michigan Model"									
Rosenblum et al. (2020), USA	"+"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Stacks et al. (2019), USA	"+"	"+ partial"	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Stacks et al. (2021), USA	n/a	"0"	n/a	n/a	n/a	n/a	"+"	n/a	n/a
Developmental Individual-Difference, Relationship-Based/Floortime (DIR/FT)									
Sealy & Glovinsky (2016), Barbados	"+"	n/a	n/a		n/a	n/a	n/a	n/a	n/a
The Clinician Assisted Videofeedback Exposure Session (CAVES)									
Schechter et al. (2006), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Higher baseline RF was associated with better outcomes	n/a
Nurture And Play (Nap)									
Salo et al. (2019), Finland	"+"	"+"	"+"	n/a	n/a	n/a	n/a	n/a	n/a

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Mentalization Based Ultrasound Sessions									
Jussila et al., (2021), Finland	n/r	n/a	n/r	n/a	n/a	n/a	n/a	n/a	n/a
Duet Parenting Model									
Menashe-Grinberg et al. (2021), Israel	"+"	"+"	n/a	n/a	n/a	"+"	n/a	SES, child sex, and parental well-being	n/a
Lighthouse Parenting Programme									
Byrne et al. (2019), UK	"0"	"0"	"0"	n/a	"+"	n/a	n/a	n/a	n/a
Attachment Based Interventions									
Banking Time									
Williford et al. (2017), USA	n/a	"+"	n/a	n/a	n/a	"+"	n/a	n/a	Quality of the teacher–child interactions
Mom Power (MP)									
Muzik et al. (2015), USA	"+"	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a
Rosenblum et al. (2018), USA	"+"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Parental Training For Lone Mothers Guided By Educators (PALME)									
Franz et a. (2011), Germany	n/a	n/a	n/a	n/a	n/a	"+"	n/a	n/a	n/a
Weihrauch et al. (2014), Germany	n/a	n/a	n/r	n/a	n/a	n/r	n/a	n/a	n/a
Circle Of Security Parenting (CoS-P)									
Huber et al. (2015a, 2015b), Australia	"+"	n/a	n/a	"+"	n/a	n/a	n/a	Severity of baseline presenting problems	n/a
Kohlhoff et al., 2016, Australia	"0"	n/a	n/a	n/a	"+"	n/a	n/a	n/a	n/a
Maupin et al. (2017), USA	"0"	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a
Maxwell et al. (2021), Australia	"+"	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a
Sadowski et al. (2021), Australia	"+"	n/a	n/a	n/a	"+"	n/a	n/a	n/a	n/a
Video-Feedback Intervention- Representations (VIPP-R)									
Velderman et al, (2006), Netherlands	n/a	n/r	n/a	n/r	n/a	n/r	n/a	n/a	Maternal Sensitivity

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Psychodynamic/Psychoanalytic Psychotherapy									
New Beginnings									
Bain (2014), South Africa	"0"	"+"	"-"	n/a	n/a	n/a	"+"	n/a	n/a
Sleed et al. (2013b), UK	"+"	"+ partial"	"0"	n/a	n/a	n/a	n/a	n/a	n/a
Child–Parent Psychotherapy (CPP)									
Ghosh Ippen et al. (2011), USA	n/a	n/a	n/a	n/a	n/a	"+"	n/a	n/a	n/a
Hagan et al. (2017), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lavi et al., (2015), USA	n/a	n/a	"+"	n/a	n/a	n/a	n/a	Maternal-fetal attachment, dosage	n/a
Lieberman et al. (2005, 2006), USA	n/a	n/a	n/a	n/a	n/a	"+"	n/a	n/a	n/a
Paris et al. (2014), USA	"+ partial"	n/a	n/a	n/a	n/a	"+ partial	n/a	n/a	n/a
Toth et al. (2015), USA	n/a	n/a	n/a	n/a	"+"	n/a	n/a	n/a	n/a
Stronach et al. (2013), USA	n/a	n/a	n/a	"+"	n/a	"0"	n/a	n/a	n/a

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Waters et al. (2015), USA	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Zarnegar et al. (2016), USA	n/a	n/a	n/a	n/a	"+"	n/a	"+"	n/a	n/a
Toddler-Parent Psychotherapy (TPP)									
Cicchetti et al. (1999), USA	n/a	n/a	"+"	"+"	n/a	n/a	n/a	n/a	n/a
Cicchetti et al. (2000), USA	n/a	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a
Toth et al. (2006) & Guild et al. (2021), USA	n/a	n/a	"+"	"+"	n/a	n/a	n/a	n/a	n/a
Parent/Mother–Infant Psychotherapy (PIP/MIP)									
Fonagy et al. (2016), UK	"0"	"0"	"+"	"0"	"+"	n/a	"0"	n/a	n/a
Ransley et al. (2019), UK	"+"	"+"	"0"	n/a	"0"	n/a	n/a	n/a	Treatment expectation
Salomonsson et al. (2011a, 2011b, 2015a, 2015b), Sweden	n/a	"+"	"+"	n/a	"0"	"0"	n/a	Infant and maternal types	n/a
Tambelli et al. (2015), Italy	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Dyadic Group Psychotherapy									
Belt et al, (2012), Finland	n/a	"+"	"+"	n/a	n/a	n/a	n/a	n/a	n/a
Meschino et al. (2016), Canada	n/a	n/a	"+"	n/a	"0"	n/a	n/a	n/a	n/a
Sleed et al. (2013a), UK	n/a	"0"	n/a	n/a	n/a	n/a	"+"	n/a	n/a
Brief Mother/Parent–Infant Psychotherapy (Brief-MIP/PIP)									
Cohen et al. (1999), Canada	n/a	"+"	"+"	"+"	"+"	n/a	"+"	n/a	n/a
Cohen et al. (2002), Canada	n/a	"+"	"+"	"+"	"+"	n/a	"+"	n/a	n/a
Cramer et al. (1990), Italy	n/a	"+"	"+"	n/a	n/a	n/a	n/a	n/a	n/a
Georg et al. (2021), Germany	"0"	"0"	"+"	n/a	"+"	n/a	n/a	n/a	n/a
Murray et al. (2003), UK	n/a	"+"	n/a	"0"	n/a	n/a	"0"	n/a	n/a
Nanzer et al. (2012), Switzerland	n/a	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a
Pozzi-Monzo et al. (2012), UK	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Author, country	Intervention effectiveness of pre-post intervention in the treatment group							Moderator	Mediator
	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant develop-ment		
Robert-Tissot et al. (1996), France	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Salomonsson et al. (2021), Sweden	n/a	n/a	"+"	n/a	n/a	"+"	n/a	n/a	n/a
Other Psychodynamic/Psychoanalytic Psychotherapies									
Kurzweil (2008), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kurzweil (2008), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kurzweil, (2012), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lowell et al. (2011), USA	n/a	n/a	"+"	n/a	"+"	"+"	n/a	n/a	n/a
Muller et al. (2015), Germany	n/a	n/a	n/a	n/a	n/a	"+"	n/a	n/a	n/a
Rosen et al. (1994), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Target & Fonagy (1994), UK	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Thome et al. (2005), Iceland	n/a	n/a	"0"	n/a	"+"	n/a	n/a	n/a	n/a

Notes: "+" = Statistically significant improvement over time; "0" = No or Mixed effect over time; "–" = Statistically significant deterioration over time; "n/r" = Outcome collected but pre-post data not reported; "n/a" = Outcome in this domain not collected

Comparison with control interventions - meta-analysis results

Meta-analyses were conducted in order to explore any differences in effectiveness between the psychodynamic/psychoanalytic interventions and those in the 'control' groups who were offered an alternative intervention. In most cases the interventions were compared with active control conditions, either "usual care" involving locally available services, or specified alternative therapeutic interventions. Only a small handful of studies compared the interventions to "no treatment" or waiting list control conditions.

The meta-analyses showed statistically significant effects of the psychoanalytic and psychodynamic interventions, compared to control interventions, on a range of outcomes, including parental reflective functioning (95%CI -0.68 to -0.06, p = 0.02; I^2 = 82%; SMD = -.37), maternal depression (95%CI 0.13 to 0.45, p<0.000; I^2 = 44%; SMD = -.29), infant behaviour (95%CI 0.00 to 0.43, p=0.04; I^2 = 35%; SMD = -.22), and infant attachment (95%CI -0.95 to -0.19, p<0.00; I^2 = 49%; SMD = -.57). There was a moderate effect size for infant attachment, and all other significant results showed relatively small effect sizes (SMD < .50) Although psychodynamic interventions showed improved parent-infant interactions relative to controls, these differences were not statistically significant (95%CI -0.56 to 0.03, p=0.08; I^2 = 71%; SMD = -.26). No statistically significant differences between psychodynamic interventions and control interventions were found on parental stress (95%CI -0.09 to 0.31, p = 0.26; I^2 = 0%; SMD = -.11) (See Figures 2-7).

Figure 2 Forest plot of comparison: intervention vs control group on parental reflective functioning

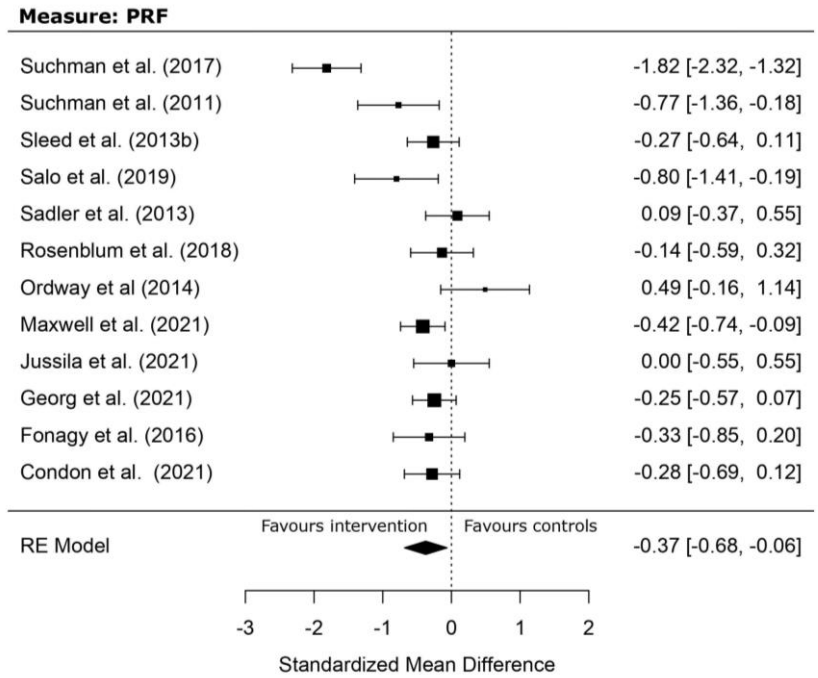


Figure 3 Forest plot of comparison: intervention vs control group on maternal depression

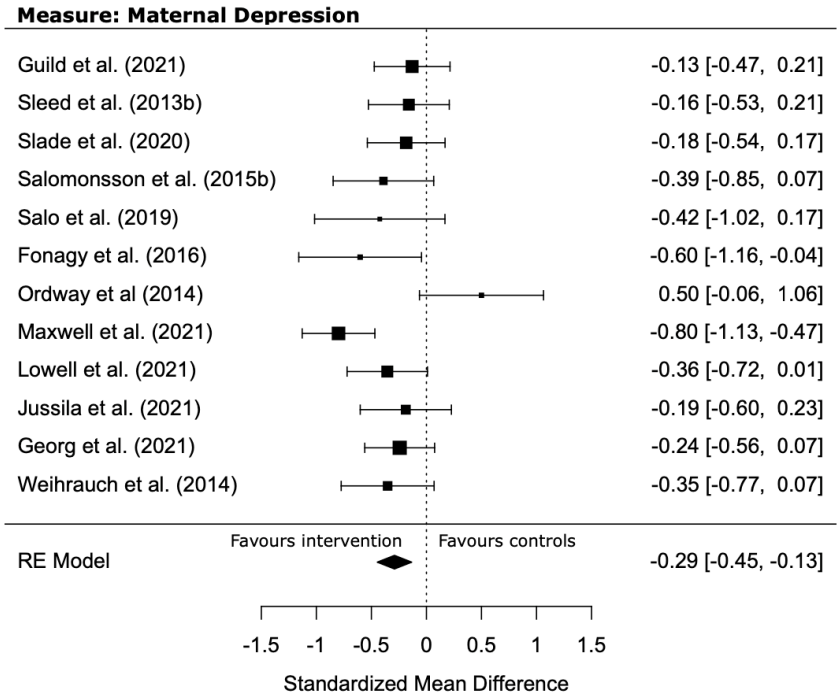


Figure 4 Forest plot of comparison: intervention vs control group on infant behaviour

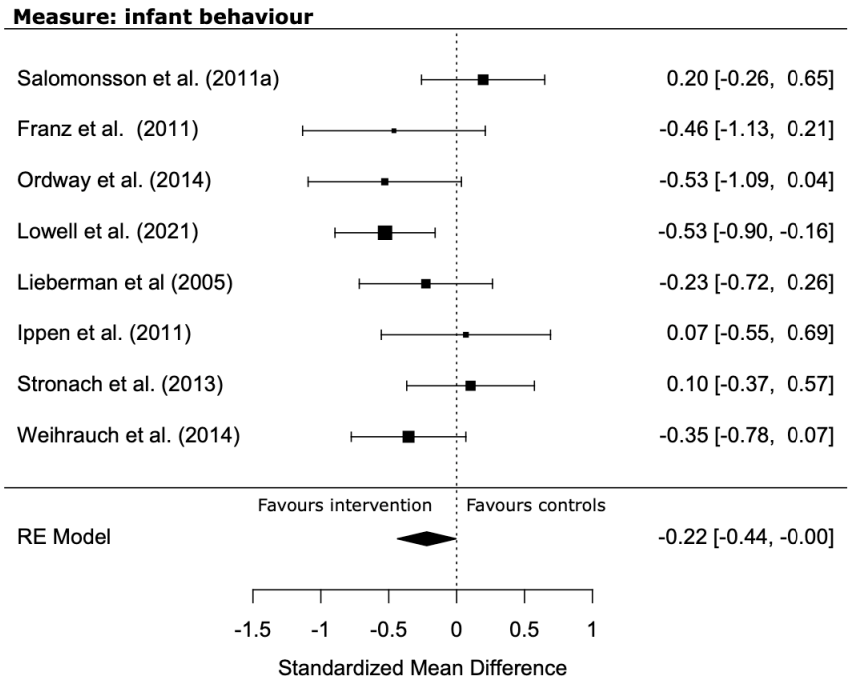


Figure 5 Forest plot of comparison: intervention vs control group on infant attachment security

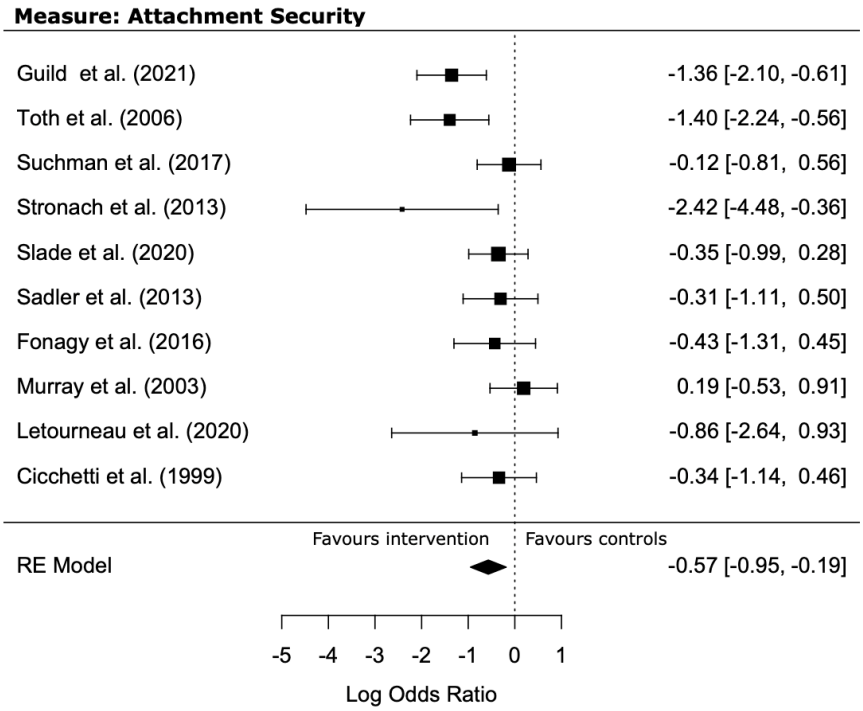


Figure 6 Forest plot of comparison: intervention vs control group on parent-infant interaction

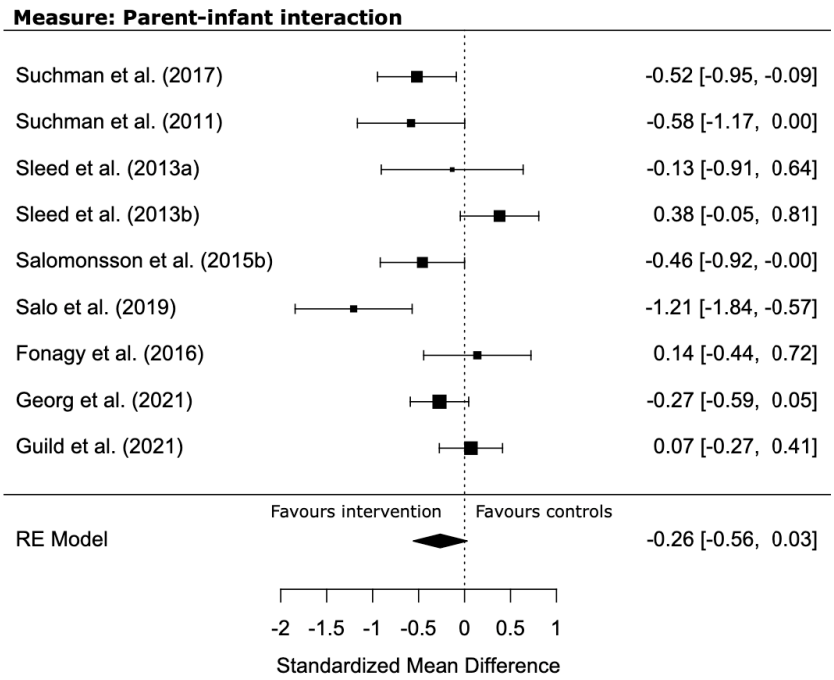
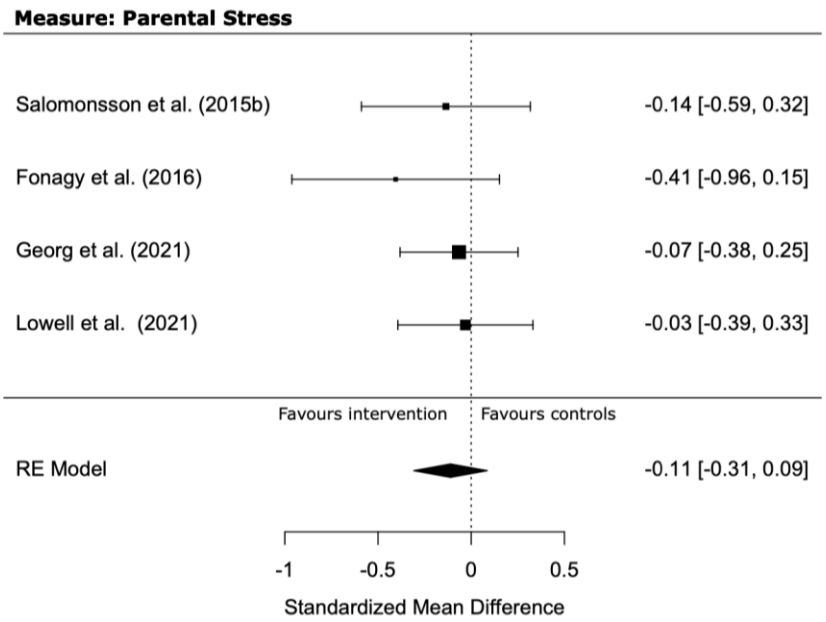


Figure 7 Forest plot of comparison: intervention vs control group on parental stress



Study Quality

The quality assessment ratings showed that less than half of the studies demonstrated good quality design and reporting (see **Table S3** and **Table S4** in the supplementary material). Of the 33 controlled studies (i.e., 27 RCTs and 6 quasi-experimental studies), only 8 were rated as “good” and 15 as “fair”, and the remaining 10 were rated as “poor”. The most common problems identified through the quality assessments were high drop-out rates, lack of descriptions of therapists’ adherence to the intervention, lack of reporting on whether or not intention-to-treat analysis was used and, most notably, insufficiently powered studies (i.e., the number of participants was too small to have complete confidence in the results). Of the 15 pre-post evaluations (where the psychodynamic therapies were evaluated, but the outcomes not compared to a ‘control’ group), 7 were rated as “good”, 3 as “fair” and 5 as “poor". Although the quality of these studies was generally higher than the controlled studies the lack of control group means that we cannot be sure to what degree the outcomes identified can be attributed to the psychodynamic intervention.

Discussion

This is the first systematic review and meta-analysis summarizing the evidence for psychoanalytic and psychodynamic interventions for children under 5 and their caregivers. The review identified 77 studies, comprising 5660 caregivers as participants, most of whom were mothers. Most interventions were delivered for children aged under three, in a wide range of settings using different formats. Interventions could broadly be identified as one of three types: contemporary psychodynamic, mentalization-based treatments; psychodynamically-informed attachment interventions; and dyadic (or triadic) psychodynamic and psychoanalytic psychotherapies.

Overall, the review showed that the majority of these interventions demonstrated impact on a range of validated outcome domains, including parental reflective functioning, parental depression, infant socio-emotional and behavioural wellbeing, and infant attachment, parent-infant interactions or parenting stress. When outcomes were systematically compared to a control intervention, a small but significant effect size in favour of the psychoanalytic and psychodynamic interventions for was shown for most of these same outcome domains, with the largest differential impact for infant attachment; however no significant differences were found when comparing psychodynamic treatments to control interventions for parent-infant interaction or parenting stress. It should be highlighted that the parent-infant interaction quality was assessed using a wide range of different measures,

some of which are not widely used and have little psychometric validation. Future studies should ensure that assessments of parent-infant interaction quality are made by trained and reliable coders of well-validated instruments. The lack of significant effects on parenting stress is interesting given that other caregiver-specific outcomes such as parental depression and parental reflective functioning did improve. However, none of the studies explicitly stated this to be a primary target of the interventions. It may be that at least some moderate parental stress is expectable in the perinatal period and this may not impinge on other important relational outcomes for the infant and their caregiver.

Although the effect sizes for the positive findings are moderate to small, when compared to other interventions in the studies, they indicate that psychodynamic and psychoanalytic interventions can help young children and their caregivers make important shifts that can lead to a number of downstream improvements in their lives. For example, the long-term benefits of early parent-infant attachment security and the risks of early attachment disorganization are now well documented (Lyons-Ruth et al., 2016; Waters et al., 2000). Similarly, the alleviation of depressive symptoms in the postnatal period can not only help new parents cope with the demands of parenting, but can offset a range of detrimental outcomes for the infant in the longer-term (Sanger et al., 2015).

The synthesis of all evaluations (of all quality) indicated that most studies reported positive outcomes in relation to the key parental and child domains. Where pre- to post-intervention outcomes on any one of the key domains were measured, they were reported to be positive for 70-80% of the studies. However, most studies did not have a control condition and these improvements could be accounted for by any number of factors, not least rapid changes that happen in the early perinatal period regardless of intervention. However, the fact that the meta-analyses of controlled studies found similarly positive findings suggest that the interventions do seem to be effective in helping young children and their caregivers.

Despite these encouraging findings, certain cautions do need to be kept in mind. The quality of most studies, those with control groups and those without, was relatively low. The most common methodological limitation was the small sample sizes for almost all studies, which led to low statistical power. This means that the synthesis of results may be distorted by random error and the effect sizes detected in the meta-analyses were relatively small.

However, we believe this review provides a significant step forward in the development of our knowledge in this field. This review not only synthesised evidence for the effectiveness of psychoanalytic and psychodynamic interventions supporting infants and their caregivers, but it also provided the first integrated view on the range of such interventions available (at least those that have published some type of systematic outcome evaluation). Interventions varied in terms of their theoretical underpinning, their format and intensity, as well as in the type of practitioner delivering the intervention and the target population. Despite the diversity in how the programmes are delivered, most were underpinned by the principle

that the infant's wellbeing is best understood in the context of their social environment, and particularly their relationships with their primary caregivers or other significant adults. For this reason, most interventions were aimed at either strengthening the parent-infant/child relationship and/or overcoming parental risk factors (for example, mental health problems, intergenerational trauma, social adversity, substance misuse) to prevent any impact of these factors on the infant.

Some individual interventions are clearly designed to address specific target problems - for example parental depression, maltreatment, substance misuse or specific child problems. However, most approaches were transdiagnostic and many have been implemented in a broad variety of settings and for a broad range of problems. This is perhaps unsurprising given the relational and intergenerational foci of most programmes, but it is helpful when thinking about the real-world implementation of these interventions. For example, maternal depression may be the main referral criterion to an intervention. However, the theory underpinning the intervention model might suggest that maternal depression can be related to early relational and social difficulties in the mother's history, and these early experiences and current depressive symptoms can relate to relational difficulties with the infant or young child, which may in turn relate to regulatory, social, emotional, and behavioural difficulties in the infant; these issues might be further compounded by biopsychosocial risk factors. Using a psychodynamic or psychoanalytic approach appears to lead to changes across a wide range of these domains. Thus, many of the interventions described in this review are relevant to supporting families where there are complex difficulties. Infant mental health is understood in the context of the child's relationships with their primary caregivers, which are – in turn - understood in the context of past and current relational and social factors.

Similarly, despite the differences outlined above, there are many theoretical and technical overlaps between the different interventions described in this review. Most interventions were informed by certain core psychodynamic principles, such as the impact of early experience on later development; the way in which 'ghosts in the nursery' can inform the relationship between parents and their children; and the way in which unconscious dynamics may get played out both in the parent-infant relationship and within the therapeutic setting (Salomonsson, 2014; Raphael-Leff, 2019). In all interventions, the relational world of the young child is prioritised, and the internal representations that the caregivers have of their infants – which are influenced by their own attachment experiences - play a key role in their capacity to provide sensitive and "good enough" caregiving that can foster attachment security. The caregiver's capacity to see and make sense of their baby's/ young child's internal experiences and understand their emotions, i.e., their ability to mentalize - is thought to be one of the key mechanisms by which attachment security can develop. Thus, many interventions explicitly or implicitly target parental mentalizing as a mechanism of change and/or important outcome. As the representational world of

caregivers and infants are the focus of most of this work, the interventions set out here generally draw on psychoanalytic techniques whereby the therapist facilitates the identification and working through of current and past defences and conflicts.

An encouraging finding of the review was that the many of the psychodynamic or psychoanalytic interventions being delivered and evaluated worldwide are reaching disadvantaged and diverse communities. Cumulative risk factors - including socioeconomic deprivation and racial discrimination - have a powerful influence on infant mental health and developmental outcomes, and any intervention should not dismiss these influences on families' lives. Flexible and creative approaches have been taken to make programmes accessible to disadvantaged communities. This includes training and supervising community members to deliver programmes, providing home-based support, and delivering the psychotherapeutic interventions as part of a wider package of social, economic, and psychoeducational support. However, it is noteworthy that almost all studies included in this review were conducted in Westernised countries.

Although some studies (10 of the 77) included fathers and other caregivers in the interventions and studies, almost all of them were clearly targeting biological mothers and their infants or young children as the primary recipients. Recent research has highlighted the important role of fathers in the young child's development (Amodia-Bidakowska et al., 2020). Future research should actively address the exclusion of fathers who may also experience mental health difficulties in the perinatal period (Fisher et al., 2021). Certainly there is a burgeoning focus on fathers in the more recent clinical literature (Baradon et al., 2019), but evaluations of such father-oriented interventions are still lacking.

There are some limitations to this review. Firstly, as we only included studies where some form of empirical evaluation has been published, the review does not cover the full range of psychodynamic and psychoanalytic interventions that have been developed for use with infants and young children under five. Empirical research within the psychoanalytic field is still relatively under-developed, including among child psychotherapists (Midgley et al., 2009), so many promising interventions would not have been identified in the literature search conducted here. Furthermore, the inclusion of studies was based on study authors' definitions of whether or not an intervention should be considered psychoanalytic or psychodynamic. This means that some interventions were excluded, even if in practice they are very similar and employ some of the same clinical techniques to those that were included. The exclusion of some well-established but behaviourally-focused attachment-based interventions, whilst other psychodynamically-informed attachment interventions were included, is particularly arguable. In contrast, other studies that self-defined as psychoanalytically-informed may have made limited use of psychoanalytic techniques in practice. The review includes some extremely brief - sometimes even single session - interventions as well as highly intensive programmes that are delivered over a year or even longer. Similarly, some programmes were delivered by lay-practitioners with very little

psychological training, while others were delivered by highly trained, experienced, and supervised psychoanalytic psychotherapists. Thus, the heterogeneity of interventions is also a limitation that makes generalization difficult.

As well as variation with regard to intervention design, there was significant variation on how research studies were conducted. There were not enough high-quality studies with large enough sample sizes for us to do secondary analyses of particular types or features of interventions (such as intensity or practitioner experience) in relation to outcome. Similarly, very few studies examined mediators or moderators of treatment effects and this review could not extract rich information about what works best *for whom*. In general, the intervention models are complex and varied and the families that they aim to help have complex difficulties. Thus, it is difficult to disentangle specific intervention techniques that are effective for specific problems. This is a common feature of complex interventions (Datta & Petticrew, 2013) and highlights the depth of psychoanalytic psychotherapy and the ability for therapists to be able to work with and untangle complexity.

One of the most significant limitations of the review and meta-analysis is that there are very few high-quality studies in the field. More randomized controlled trials that adhere to good practice reporting guidelines are needed. Future studies should especially focus on the recruitment of much larger numbers of families and retaining them in longer term follow-ups. As the evidence base builds, future systematic reviews and meta-analyses could focus on particular types of interventions and/or presenting difficulties to unpick the most effective ways of working with different populations and can help us understand the longer-term impact of such interventions on children.

Despite these limitations, this review is the first of its kind and has demonstrated that psychodynamic and psychoanalytic interventions may be effective in improving outcomes for very young children and their caregivers, across a range of outcome domains. Although effect sizes, when compared to a control intervention, were generally small, this does not lessen the real-world significance of these findings; a positive shift in the developmental trajectory of the young child may have wide-reaching and longstanding benefits to the child, the family and society.

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Supplementary material

Table S3. **Quality Assessment of Controlled Intervention Studies**

Author, country	Item														Quality Rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Mentalization Based Interventions															
Anis et al. (2020) & Letourneau et al. (2020)	Y	Y	Y	N	Y	Y	Y	Y	NR	Y	Y	NR	Y	Y	Poor
Suchman et al. (2010, 2011, 2012), USA	Y	Y	Y	N	Y	NR	Y	Y	Y	Y	Y	NR	Y	NR	Poor
Suchman et al. (2017), USA	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	NR	Y	Y	Good
Ordway et al. (2014), USA	Y	Y	Y	N	Y	N	Y	Y	NR	Y	Y	NR	Y	NR	Fair
Ordway et al. (2018), USA	Y	Y	Y	N	NA	Y	N	Y	NR	Y	Y	NR	Y	Y	Fair
Sadler et al., (2013), USA	Y	Y	Y	N	Y	Y	N	Y	NR	Y	Y	NR	Y	NR	Fair
Slade et al. (2020), USA	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	NR	Y	Y	Fair
Sealy & Glovinsky (2016), Barbados	Y	Y	Y	N	Y	Y	Y	Y	NR	Y	Y	NR	NR	NR	Fair
Salo et al. (2019), Finland	Y	Y	Y	N	NR	Y	Y	Y	NR	Y	Y	NR	Y	NR	Poor
Jussila et al., (2021), Finland	Y	Y	Y	N	NR	Y	Y	Y	NR	Y	Y	NR	Y	Y	Good
Attachment Based Interventions															
Williford et al. (2017), USA	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Good
Rosenblum et al. (2018), USA	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	N	Y	NR	Fair
Franz et al. (2011), Germany	Y	Y	Y	N	NR	N	N	N	Y	Y	Y	NR	N	Y	Poor

Author, country	Item														Quality Rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Weihrauch et al. (2014), Germany	Y	Y	Y	N	Y	N	N	N	Y	Y	Y	N	Y	NR	Fair
Huber et al. (2015a, 2015b), Australia	N	N	N	N	Y	N	Y	Y	Y	Y	Y	NR	Y	NR	Poor
Maxwell et al. (2021), Australia	N	N	N	N	N	N	N	N	Y	Y	Y	NR	Y	N	Fair
Psychodynamic/Psychoanalytic Psychotherapy															
Bain (2014), South Africa	Y	N	N	N	N	Y	N	N	N	NR	Y	N	NR	N	Poor
Sleed et al. (2013b), UK	Y	Y	N	N	Y	N	N	N	NR	Y	Y	NR	NR	Y	Fair
Lieberman et al. (2005, 2006) & Ippen et al. (2011), USA	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Fair
Toth et al. (2015), USA	Y	Y	Y	N	NR	Y	Y	Y	Y	Y	Y	NR	Y	Y	Good
Cicchetti et al. (1999), USA	Y	Y	Y	N	Y	N	N	N	Y	Y	Y	NR	Y	NR	Fair
Cicchetti et al. (2000), USA	N	Y	Y	N	Y	Y	N	N	Y	Y	Y	NR	Y	NR	Fair
Toth et al. (2006) & Guild et al. (2021), USA	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	NR	Y	Y	Good
Fonagy et al. (2016), UK	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Fair
Georg et al. (2021), Germany	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Good

Author, country	Item														Quality Rating
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Sleed et al. (2013a), UK	N	N	N	N	Y	Y	Y	Y	NR	Y	Y	NR	Y	NR	Poor
Cramer et al. (1990), Italy	N	N	N	N	N	Y	Y	Y	NR	Y	Y	NR	N	NR	Poor
Salomonsson et al. (2011a, 2011b, 2015a, 2015b), Sweden	Y	Y	Y	N	Y	NR	Y	Y	Y	Y	Y	NR	Y	Y	Fair
Salomonsson et al. (2021), Sweden	N	N	N	N	N	N	Y	Y	N	Y	Y	NR	N	NR	Poor
Lowell et al. (2011), USA	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	NR	Y	Y	Good
Murray et al. (2003), UK	N	Y	Y	N	Y	NR	Y	Y	NR	Y	Y	NR	Y	NR	Good
Rosen et al. (1994), USA	N	Y	Y	N	Y	NR	Y	Y	Y	Y	Y	NR	N	NR	Poor
Cohen et al. (1999, 2002), Canada	N	Y	Y	N	Y	Y	Y	Y	NR	Y	Y	NR	Y	N	Fair

Notes: **The 14 items for Quality Assessment of Controlled Intervention Studies**

1. Was the study described as randomized, a randomized trial, a randomized clinical trial, or an RCT?

2. Was the method of randomization adequate (i.e., use of randomly generated assignment)?

3. Was the treatment allocation concealed (so that assignments could not be predicted)?

4. Were study participants and providers blinded to treatment group assignment?

5. Were the people assessing the outcomes blinded to the participants' group assignments?

6. Were the groups similar at baseline on important characteristics that could affect outcomes (e.g., demographics, risk factors, co-morbid conditions)?

7. Was the overall drop-out rate from the study at endpoint 20% or lower of the number allocated to treatment?

8. Was the differential drop-out rate (between treatment groups) at endpoint 15 percentage points or lower?

9. Was there high adherence to the intervention protocols for each treatment group?

10. Were other interventions avoided or similar in the groups (e.g., similar background treatments)

11. Were outcomes assessed using valid and reliable measures, implemented consistently across all study participants?

12. Did the authors report that the sample size was sufficiently large to be able to detect a difference in the main outcome between groups with at least 80% power?

13. Were outcomes reported or subgroups analyzed prespecified (i.e., identified before analyses were conducted)?

14. Were all randomized participants analyzed in the group to which they were originally assigned, i.e., did they use an intention-to-treat analysis?

Quality Rating (Good, Fair, or Poor)

*CD, cannot determine; NA, not applicable; NR, not reported

Table S4. **Quality Assessment for Pre-Post Studies with No Control Group**

Author, country	Item												Quality Rating
	1	2	3	4	5	6	7	8	9	10	11	12	
Mentalization Based Interventions													
Suchman et al. (2008), USA	Y	Y	Y	Y	N	N	Y	NR	N	Y	N	NA	Poor
Suchman et al. (2016), USA	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	NA	Poor
Rosenblum et al. (2020), USA	Y	Y	Y	N	Y	Y	Y	N	N	Y	N	NA	Good
Stacks et al. (2019), USA	Y	Y	Y	Y	N	Y	Y	N	NR	Y	N	NA	Poor
Stacks et al. (2021), USA	Y	Y	Y	N	Y	Y	Y	Y	NR	Y	N	NA	Good
Schechter et al. (2006), USA	Y	Y	Y	N	N	Y	Y	NR	NR	Y	N	NA	Fair
Attachment Based Interventions													
Muzik et al. (2015), USA	Y	Y	Y	N	Y	Y	Y	Y	NR	Y	N	Y	Good
Kohlhoff et al. (2016)	Y	Y	Y	Y	N	Y	Y	NR	Y	Y	N	NA	Poor
Velderman et al, (2006), Netherlands	Y	Y	Y	NR	Y	Y	Y	Y	NR	Y	N	NA	Good
Psychodynamic/Psychoanalytic Psychotherapy													
Waters et al. (2015), USA	Y	Y	Y	N	N	Y	Y	NR	NR	Y	N	NA	Good
Zarnegar et al. (2016), USA	Y	Y	Y	N	N	Y	Y	Y	NR	Y	N	NA	Poor
Belt et al, (2012), Finland	Y	N	Y	NR	N	Y	Y	Y	NR	Y	N	NA	Good
Menashe-Grinber et al. (2021), Israel	Y	N	Y	NR	Y	Y	Y	Y	NR	Y	N	Y	Fair
Nanzer et al. (2012), Switzerland	Y	Y	Y	NR	N	Y	Y	NR	NR	Y	N	NA	Fair
Thome et al. (2005), Iceland	Y	Y	Y	NR	N	Y	Y	NR	NR	Y	N	NA	Good

Notes: **The 12 items for Quality Assessment Tool for Before-After (Pre-Post) Studies with No Control Group**

1. Was the study question or objective clearly stated?

2. Were eligibility/selection criteria for the study population prespecified and clearly described?

3. Were the participants in the study representative of those who would be eligible for the test/service/intervention in the general or clinical population of interest?

4. Were all eligible participants that met the prespecified entry criteria enrolled?

5. Was the sample size sufficiently large to provide confidence in the findings?

6. Was the test/service/intervention clearly described and delivered consistently across the study population?

7. Were the outcome measures prespecified, clearly defined, valid, reliable, and assessed consistently across all study participants?

8. Were the people assessing the outcomes blinded to the participants' exposures/interventions?

9. Was the loss to follow-up after baseline 20% or less? Were those lost to follow-up accounted for in the analysis?

10. Did the statistical methods examine changes in outcome measures from before to after the intervention? Were statistical tests done that provided p values for the pre-to-post changes?

11. Were outcome measures of interest taken multiple times before the intervention and multiple times after the intervention (i.e., did they use an interrupted time-series design)?

12. If the intervention was conducted at a group level (e.g., a whole hospital, a community, etc.) did the statistical analysis take into account the use of individual-level data to determine effects at the group level?

Quality Rating (Good, Fair, or Poor)

*CD, cannot determine; NA, not applicable; NR, not reported