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

Michelle Sleed, Ph.D., Elizabeth T. Li, M.Sc., Isabella Vainieri, Ph.D., and Nick Midgley, Ph.D.

ABSTRACT

Experiences in the first years of life can shape a range of outcomes throughout the lifespan. Effective early interventions have the potential to offset negative outcomes associated with early adversity. A broad range of psychodynamic interventions are available to children under five and their caregivers but there is a lack of research synthesizing the current evidence for their effectiveness. This paper presents a systematic review and meta-analysis of the evidence for the effectiveness of psychodynamic interventions for children under 5 years of age and their caregivers. Following a systematic search of 10 databases and screening for eligibility, 77 papers were included in the review. Most studies reported positive outcomes on a range of parent and infant domains. The meta-analyses of controlled studies found significant effects of psychodynamic interventions compared to control conditions on parental reflective functioning, maternal depression, infant behavior, and infant attachment. No significant differences between psychodynamic and control interventions were found for parental stress, and parent-infant interactions. Very few studies were rated as good quality and further high-quality research is needed.

Introduction

Experiences in the first years of life lay the foundation and set the trajectory for psychological and social development throughout the lifespan. 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 (Schore, 2002). Impingements on early development can have broad and longstanding consequences that can continue into adulthood

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and even across generations (Hughes et al., 2017). 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 (Sameroff & Rosenblum, 2006).

Effective perinatal and early years interventions have the potential to significantly change the child's developmental trajectory and long-term outcomes. Early intervention has deep historical roots in psychoanalytic and psychodynamic psychotherapies. From the beginning, psychoanalytic theory emphasized how early infantile experiences are critical in shaping psychological development, and from the 1920s there was a growing interest in the application of psychoanalytic ideas to the treatment of children (Geissmann & Geissmann, 1997). From the mid–20th century the development of parent-infant psychotherapy took off, inspired by the work of Selma Fraiberg, John Bowlby, Esther Bick, Donald Winnicott and others (B. Salomonsson, 2014). Therapists showed an interest in integrating understanding from attachment theory and developmental psychology (e.g. Freud, 1965), and in more recent years from developmental neuroscience (e.g. Music, 2016). 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 evaluated the evidence of psychodynamic interventions for children and adolescents (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 3 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 (N. L. Letourneau et al., 2017) or maltreatment (Mikton & Butchart, 2009). No review has systematically described the broad range of psychodynamic or psychoanalytic interventions available to children under five and their caregivers, and the evidence of the effectiveness of such approaches has not been systematically evaluated and synthesized.

The current study

The aim of this work is to systematically review, synthesize, and critically appraise evidence for the efficacy and/or effectiveness of psychodynamic interventions for children under 5 years of age and their caregivers. The term "psychodynamic" is used here to cover a range of approaches informed by psychoanalytic and psychodynamic models.

Methods

Search strategy

The study protocol was registered with the PROSPERO systematic review database (2021 - CRD42021285407) and carried out in line with PRISMA guidance. The database search was conducted based on the Population Intervention Comparison Outcome Model (PICO: Schardt et al., 2007). The target population for this search were children under 5 years of age and their caregivers as well as those in the prenatal period. The interventions included were those based on psychodynamic or psychoanalytic psychotherapy. No limits were placed according to the outcome data 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 to test the search strategy.

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 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 were that the study a) was peer-reviewed and published in English Language; b) was published from 1990 onward; c) included a description of intervention explicitly stating that the approach is informed by psychoanalytic or psychodynamic theories, or, when this was unclear, was defined as such by the first authors when contacted by the researchers; d) primarily targeted 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) was primarily concerned with evaluating treatment outcomes, using any design involving quantitative measurement of outcomes.

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) gray literature, including dissertations, conference abstracts, pre-registered clinical trials.

Data extraction

Using the CADIMA systematic review software, two review authors first independently screened the titles and abstracts of studies and then double screened full texts. For all eligible studies meeting the inclusion criteria we extracted the following: Authors, number of participants, participant demographics, location, type of problem, study design, control group, intervention description, delivery setting, outcome measures, findings, effect sizes, and mediators or moderators of outcomes. We conducted a descriptive data synthesis, summarizing and appraising key study characteristics. Where multiple papers described analyses from the same study, papers were grouped together. Disagreements and uncertainties were resolved by consultation with a third review author.

Quality assessment

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 for controlled and uncontrolled studies. 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. 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 (Cuijpers et al., 2017). The selected outcomes were the most commonly measured domains assessed in all studies. Between-group standardized 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 (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/programs.

Characteristics of families

As shown in Table 1, the included 77 studies comprise 5660 caregivers as participants, most of whom were mothers. Ten studies also involved fathers, foster or adoptive parents, kinship carers, or other caregivers. One study (Williford et al., 2017) was delivered by teachers in schools, and two studies

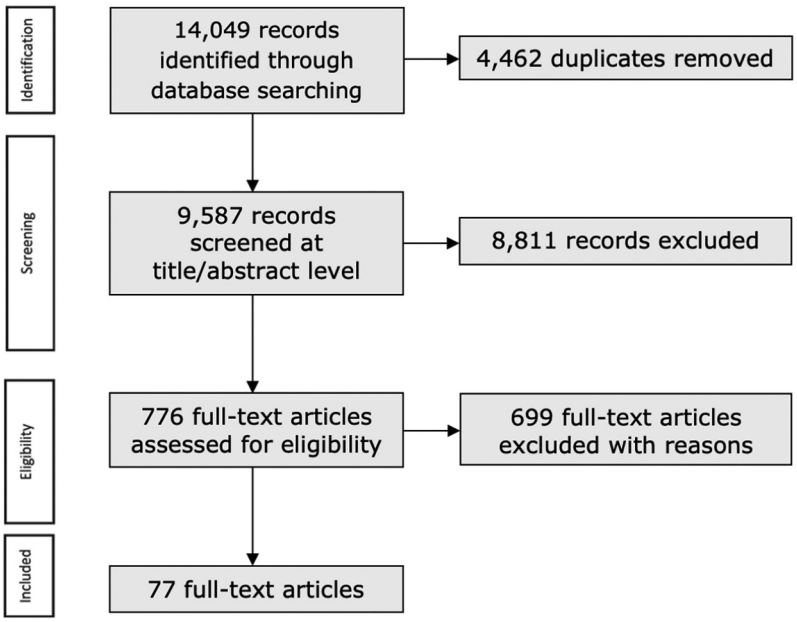

Figure 1. Flow diagram of the study.

Table 1. Paper selection flow chart.

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Mentalization based interventions							
Attachment & Child Health (Attach)							
Anis et al. (2020) and N. 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)							
N. Suchman et al. (2008), USA	Mothers ($N = 14$)	72% Caucasian, 14% Hispanic, 14% African American; 71% unemployed; 64% married or cohabiting	$M = 26.4$ months (SD = 8.02)	Cohort	Parental substance abuse	Mothers and Toddlers Program 12 session individual therapy with parent	Outpatient
N. E. 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 Program As above	Outpatient
N. E. 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) As above	Outpatient
N. E. Suchman et al. (2017), USA	Mothers receiving MIO ($N = 40$) or parent education ($N = 47$)	77% Caucasian, 13.8% African American, 3.4% Hispanic/ Latino, 5.7% mixed race; 42.5% 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. (2022), 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 pediatric 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

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Ordway et al. (2018), USA	Mothers in MTB ($N = 106$) and control group ($N = 95$)	77.2% Hispanic, 5.4% White, 14.1% African American, 1.1% Native Hawaiian/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
Slade et al. (2020), USA	Mothers in MTB ($N = 77$) or control group ($N = 79$)	67% Hispanic or Latino, 24% African American, 5% White, and 4% Other; 84% single or never married	MTB: $M = 38.8$ weeks (SD = 2.6)	RCT	Socially disadvantaged/ high risk families	MTB As above	Home-based
Infant mental health home visiting (IMH-HV) – "the Michigan Model"							
K. L. Rosenblum et al. (2020), USA	Mothers ($N = 78$)	55% White, 45% Black or African American, 4% American Indian or Alaskan Native, 5% Hispanic/ Latina, 1% as Native 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 hour home visit/ week by trained home visitor; pregnancy to 3 years	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. (2022), 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
Developmental Individual-Difference, Relationship-Based/Floortime (DIR/FT)							
Sealy and Glovinsky (2016), Barbados	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)							

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Schechter et al. (2006), USA	Mothers ($N = 32$)	88% Hispanic, 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	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
Mentalization Based Ultrasound Sessions							
Jussila et al. (2021), Finland	Mothers ($N = 90$)	41% low SES	Prenatal	RCT	Parental substance abuse	Mentalization-based ultrasound 3 ultrasound sessions + mentalization focused diary	Outpatient
Lighthouse Parenting Program							
Byrne et al. (2019), UK	Parents ($N = 16$)	88% white, 12% other; 81% unemployed	<2 years	Cohort	Socially disadvantaged/ high risk families	Lighthouse Parenting Program. 20 weekly parent 90 min group sessions and 10 fortnightly 60 min individual MBT sessions.	Outpatient
DUET Parenting Model							
Menashe-Grinberg et al. (2022), Israel	Mothers ($N = 30$)	28% low SES	$M = 4.3$ years; range 1–6 years	Cohort	Community sample	DUET 12 session group intervention	Outpatient
Attachment-Based Interventions							
Banking Time							

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
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, 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
K. 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);	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
Weihrauch et al. (2014), Germany	Lone Mothers intervention ($N =$ 26) control ($N =$ 35)	Single mothers (unmarried, separated, or divorced); about a half 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	Cohort	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

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Maupin et al. (2017), USA	Mothers ($N = 117$), other relatives ($N = 14$)	44% Hispanic, 29% Caucasian, 13% Black, 2% Asian, and 12% other; 60% low SES	$M = 4.11$ years; age ranges from 0 to 6 years	Cohort	Socially disadvantaged/ high risk families	COS-P As above	Outpatient
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. (2022), 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	Cohort	Community sample	COS-P Group center-based (GCCOS-P)– 8 sessions; Individual home-based (IHCOS-P) 8–14 sessions)	Outpatient and home-based
Video-Feedback Intervention- Representations (VIPP-R)							
Klein 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
Dyadic/Triadic Psychodynamic/Psychoanalytic Psychotherapy							
New Beginnings							
Bain (2014), South Africa	Mothers receiving treatment ($N = 16$), control ($N = 6$)	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
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)	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	Cohort	Socially disadvantaged/ high risk families	CPP Weekly hour-long mother-child sessions with therapist, average 21 sessions.	Outpatient

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Lavi et al. (2015), USA	Mothers ($N = 64$)	86% Latina; low SES	<6 months	Cohort	Parental mental health	Perinatal CPP Weekly hour-long parent sessions antenatally, followed by weekly parent-infant sessions with therapist, average 27 sessions.	Outpatient
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	Cohort	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	Cohort	Parental substance abuse	CPP + additional support (Project BRIGHT) 6–22 sessions, 1–1.5 hours with therapist and mother-infant	Temporary accommodation (Residential treatment)
Toth et al. (2015), USA	Mothers receiving CPP ($N = 44$), PPI ($N = 34$), community services ($N = 27$), non-maltreated 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. 79.4% maltreated when they were children, 89.9% experienced 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
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

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
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
Guild et al. (2021) & Toth et al. (2006), USA	Mothers with depression receiving TPP ($N = 130$),non-depressed ($N = 68$)	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
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 and Sandell, 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

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
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 & baby or mother, father, and baby 15 hour-long sessions, twice a month	Outpatient
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
de Camps Meschino et al. (2016), Canada	Mothers ($N = 70$)	92.3% married	Age ranges from 6 to 12 months	Cohort	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 behavioral disturbances)	Brief PIP & Watch, Wait & Wonder Average 14–15 weekly 1-hour sessions with parent, infant and therapist	Outpatient
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 behavioral disturbances)	Brief PIP & Watch, Wait & Wonder As above	Outpatient
Cramer et al. (1990), Italy	Mothers ($N = 38$)	22% professional, 41% employed, 35% laborers	<30 months	RCT	Child symptoms (Functional and behavioral disturbances)	Brief-MIP Up to10 one-hour sessions with parent-infant and therapist	Outpatient

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
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
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% employed in treatment group and 83% in the control group	<6 months	Cohort	Parental mental health	Psychotherapy centered 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	Cohort	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	Cohort	Parental mental health	Brief-MIP Average 5–6 weekly sessions with mother, infant and therapist	Outpatient
B. Salomonsson et al. (2021), Sweden	SPIPIC: mothers ($N = 100$), fathers ($N = 59$) Norm group: 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: Range 1 to 23 months, mean 4.8 months (SD = 4.5)	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
Other Psychodynamic/Psychoanalytic Psychotherapies							
Kurzweil (2008b), USA	Mothers ($N = 14$)	99% Caucasian; 100% lower to upper middle-class SES	Age ranges from 5 months to 3 years	Cohort	Parental mental health	PLAYSPACE Open-ended, minimum 6 months of bi-monthly sessions, parallel parent group and infant group	Outpatient

(*Continued*)

Table 1. (Continued).

Author, country	Caregiver	Demographic	Infant	Study design	Presenting problem	Therapy	Delivery setting
Kurzweil (2008a), USA	Mothers ($N = 49$)	Majority are Caucasian; middle-class SES	<6 months	Cohort	Parental mental health	Relational-Developmental psychodynamic therapy Open-ended, minimum 6 months of bi-monthly sessions, parallel parent and infant group	Outpatient
Kurzweil (2012), USA	Mothers ($N = 58$)	70% Caucasian; middle-class SES	<7 years	Cohort	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/behavioral problems)	Child FIRST Weekly visits from clinician and/or care coordinator, average 22 weeks	Home-based
Müller 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	Cohort	Child symptoms (Children with psychiatric disorders)	Multi-modal behavioral and psychodynamic treatment Average 51 treatment days, delivered in intensive 3 day blocks	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 and Fonagy (1994), UK	Not reported	Not reported	Age ranges from 2 to 5.11 years ($N = 127$)	Cohort	Child symptoms (Children with mental health problems)	Child psychotherapy Delivered 1–5 times/week for an average of 1.6 years.	Outpatient
Thome and Skuladottir (2005), Iceland	Mothers ($N = 33$), fathers ($N = 30$)	15.2% mothers worked full-time outside the 83.3% fathers worked full-time 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 sessions (2–3 hours each) delivered by pediatric nurses	Inpatient

(Rosen et al., 1994; Target & Fonagy, 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.

The reasons why the participants were invited/referred to take part in the treatment were diverse. Many intervention programs 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, behavioral, emotional, regulatory or neurodevelopmental difficulties (N = 11). Only a small group of programs 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 and many studies had high numbers of parents and children from minoritized ethnic backgrounds.

Description of interventions

Interventions varied with regard to their setting, their target group and their theoretical underpinnings. With regards to setting, the interventions were mostly delivered in outpatient (e.g., clinic-based) settings (N = 46) or were home-visiting programs 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 & Skuladottir, 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.

The interventions roughly fell into three categories: mentalization-based interventions; 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.

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 (Fonagy & Bateman, 2007) and has since been adapted for other groups, including parent populations. The capacity to mentalize is an awareness of mental states in oneself and in others, particularly in explaining people's behaviors (Bateman & Fonagy, 2013), and is considered key to effective parent-child relationships.

The review included several studies of home visiting programs focused on supporting parental mentalizing. The Michigan model of infant mental health home visiting (IMH-HV, K. L. Rosenblum et al., 2020; Stacks et al., 2019, 2022) 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 programs worldwide. The model is delivered by trained infant mental health therapists in the families' homes. A key goal of this program 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., 2022; Ordway et al., 2014, 2018; Sadler et al., 2013; Slade et al., 2020) is also an intensive home visiting program for first time parents. Families receive weekly visits from a trained pediatric 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 2 years old. The overarching aim of the intervention is to strengthen the parent's capacity to mentalize and provide sensitive caregiving.

A less intensive home visiting model is the Attachment and Child Health (ATTACH) program (Anis et al., 2020; N. Letourneau et al., 2020). This is a structured program of psychoeducation and experiential support to enhance parental mentalizing, delivered in ten sessions at the family's home.

A brief mentalization-based intervention is Mothering from the Inside Out (N. E. Suchman et al., 2016, 2017), initially known as the Mothers and Toddlers Programme (N. E. Suchman et al., 2010, 2011, 2012; N. Suchman et al., 2008). This 12-session manualised outpatient program explicitly aims to improve parental mentalizing to strengthen the attachment relationship. It has mostly been used to support parents with substance misuse disorders.

Some programs make use of video feedback techniques to strengthen parental mentalizing. The Developmental Individual Difference-Floor Time (DIR/FT; Sealy & Glovinsky, 2016) is a program for toddlers with neurodevelopmental disorders. 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 et al., 2006). This single-session intervention is developed specifically for mothers with violence-related post-traumatic stress disorder.

Several mentalization based interventions are delivered in group settings. For example, Nurture and Play (NaP, Salo et al., 2019) is a brief manualised intervention delivered by frontline practitioners for expectant mothers with depressive symptoms. It begins in pregnancy and continues until the infant is around 7 months old. The DUET parenting program (Menashe-Grinberg et al., 2022) is a structured group-based program 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., 2019) similarly aims to enhance parental mentalizing capacities through a combination of psychoeducation, group discussion and exercises. This manualized group program 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 and the course gradually helps parents to consider how their own attachment experiences may influence their mentalizing capacity 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, 2021). 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-fetus attachment.

Attachment-based interventions

Attachment theory is central to most early interventions and many programs 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 or psychodynamic, and often the focus is on improving parental behavior rather than working with internal working models of attachment. 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 programs 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; Marvin et al., 2002) is a structured manualised group program, 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 program provides videos and handouts to demonstrate 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., 2022).

Similarly, Mom Power (Muzik et al., 2015; K. 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 20-week structured, group-based parental training program, specifically developed for single mothers and their preschool children. The program is delivered by trained qualified kindergarten teachers or social workers, and is focused on mobilizing affect and the emotional interactions between mother and child using psychodynamic techniques.

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 behavioral 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 (Klein Velderman et al., 2006). The parent watches back selected video-recorded interactions with their infant with the clinician, and is invited to have further discussions to reflect and make links between their own attachment representations, their representations of their infant, and their parenting.

Dyadic (or triadic) psychoanalytic psychotherapies

Child-parent psychotherapy, toddler-parent psychotherapy, mother-infant psychotherapy and parent-infant psychotherapy are all psychoanalytic approaches that focus on the parent-child relationship. The approaches build upon on the early work of Fraiberg et al. (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 interactions in the sessions and concerns brought by the parent. The therapist attends simultaneously to the behavioral 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. 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.

These interventions are primarily offered to families where there are complex difficulties. For example, the included studies include work with parental trauma (e.g. Ghosh 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 et al., 2016). In accordance with the complexity of difficulties being addressed, 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 (Pozzi-Monzo et al., 2012; Robert-Tissot, 1996). 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 et al., 2021). A similar approach has been developed for supporting parents and infants in universally available child health clinics in Sweden (B. Salomonsson et al., 2021). Specialist psychodynamic psychotherapists are based within these centers 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.

Dyadic psychodynamic psychotherapies have also been adapted 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 (de Camps 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.

Two slightly different programs 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 & Skuladottir, 2005) and an intensive and multifaceted hospital outpatient treatment in Germany (average 51 hospital days) for infant psychiatric disturbances (Müller et al., 2015). Although both interventions are informed by behaviorist 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/behavioral functioning, infant attachment, and parenting stress. The direction of the outcomes on these domains is presented in Table 2. As not all studies had control groups, the outcomes reported here pertain only to the pre-post outcomes psychodynamic intervention groups.

The outcomes in all domains 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. 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, was assessed through self-reported questionnaires and showed positive changes for eleven (73%) of the 15 studies where this was measured while the rest reported no significant change.

Despite the clinical importance placed on infant attachment, only seven studies measured this using the Strange Situation Procedure (Ainsworth et al., 1978). Five (71%) of these studies 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 behavioral 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., 2022), 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,

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

	Intervention effectiveness of pre-post intervention in the treatment group								
Author, country	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant development	Moderator	Mediator
Mentalization Based Interventions									
Attachment & Child Health (Attach)									
Anis et al. (2020) and N. 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)									
N. Suchman et al. (2008), USA	"+"	"0"	n/a	n/a	n/a	n/a	n/a	n/a	n/a
N. E. Suchman et al (2010, 2011, 2012), USA	"+"	"+"	n/a	n/a	n/a	n/a	n/a	n/a	Maternal Reflective Functioning
N. E. Suchman et al. (2016), USA	"+"	"0"	"+"	n/a	"+"	n/a	n/a	n/a	n/a
N. E. Suchman et al. (2017), USA	"+"	"+"	n/a	"0"	n/a	n/a	"0"	Addiction severity	n/a
Minding The Baby									
Condon et al. (2022), 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	"+"	"+" (teen mothers only)	"0"	"+"	n/a	n/a	n/a	n/a	n/a
Slade et al. (2020), USA	"n/r"	"n/r"	"n/r"	"n/r"	n/a	n/a	n/a	Disrupted communication	n/a
Infant Mental Health Home Visiting (IMH-HV) – "The Michigan Model"									
K. L. 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. (2022), 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 and 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 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
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									

(*Continued*)

Table 2. (Continued).

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 development		
Menashe-Grinberg et al. (2022), Israel	"+"	"+"	n/a	n/a	n/a	"+"	n/a	SES, child sex, and parental well-being	n/a
Lighthouse Parenting Program									
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
K. Rosenblum et al. (2018), USA	"+"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Parental Training For Lone Mothers Guided By Educators (PALME)									
Franz et al. (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	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. (2022), Australia	"+"	n/a	n/a	n/a	"+"	n/a	n/a	n/a	n/a
Video-Feedback Intervention- Representations (VIPP-R)									
Klein Velderman et al. (2006), Netherlands	n/a	n/r	n/a	n/r	n/a	n/r	n/a	n/a	Maternal Sensitivity
Dyadic/Triadic 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

(*Continued*)

Table 2. (Continued).

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 development		
Paris et al. (2015), 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
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 expectations
Salomonsson and Sandell, (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
Dyadic Group Psychotherapy									
Belt et al. (2012), Finland	n/a	"+"	"+"	n/a	n/a	n/a	n/a	n/a	n/a
de Camps 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
Robert-Tissot et al. (1996), France	n/a	"+"	n/a	n/a	n/a	n/a	n/a	n/a	n/a
B. Salomonsson et al. (2021), Sweden	n/a	n/a	"+"	n/a	n/a	"+"	n/a	n/a	n/a
Other Psychodynamic/Psychoanalytic Psychotherapies									
Kurzweil (2008a), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Kurzweil (2008b), USA	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

(*Continued*)

Table 2. (Continued).

	Intervention effectiveness of pre-post intervention in the treatment group								
Author, country	PRF	Parent-infant interaction	Parental depression	Infant Attachment	Parenting Stress	Infant social-emotional-behavioural	Infant development	Moderator	Mediator
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
Müller 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 and Fonagy (1994), UK	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Thome and Skuladottir (2005), Iceland	n/a	n/a	"0"	n/a	"+"	n/a	n/a	n/a	n/a

"+" = 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.

2015b; N. E. Suchman et al., 2017; Slade et al., 2020). One exception is the study by Schechter et al. (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 synthesizing outcomes in the key domains.

Meta-analysis results

Meta-analyses were conducted to explore the differences in outcomes for families in the intervention and control groups. 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 psychodynamic interventions, compared to control interventions, on a range of outcomes, including parental reflective functioning (95%CI −0.68 to −0.06, $p = .02$; $I^2 = 82\%$; SMD = −.37), maternal depression (95%CI 0.13 to 0.45, $p < .000$; $I^2 = 44\%$; SMD = −.29), infant behavior (95%CI 0.00 to 0.43, $p = .04$; $I^2 = 35\%$; SMD = −.22), and infant attachment (95%CI −0.95 to −0.19, $p < .00$; $I^2 = 49\%$; 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, $p = .08$; $I^2 = 71\%$; SMD = −.26). No statistically significant differences between psychodynamic interventions and control interventions were found on parental stress (95%CI −0.09 to 0.31, $p = .26$; $I^2 = 0\%$; SMD = −.11) (See Figures 2–7).

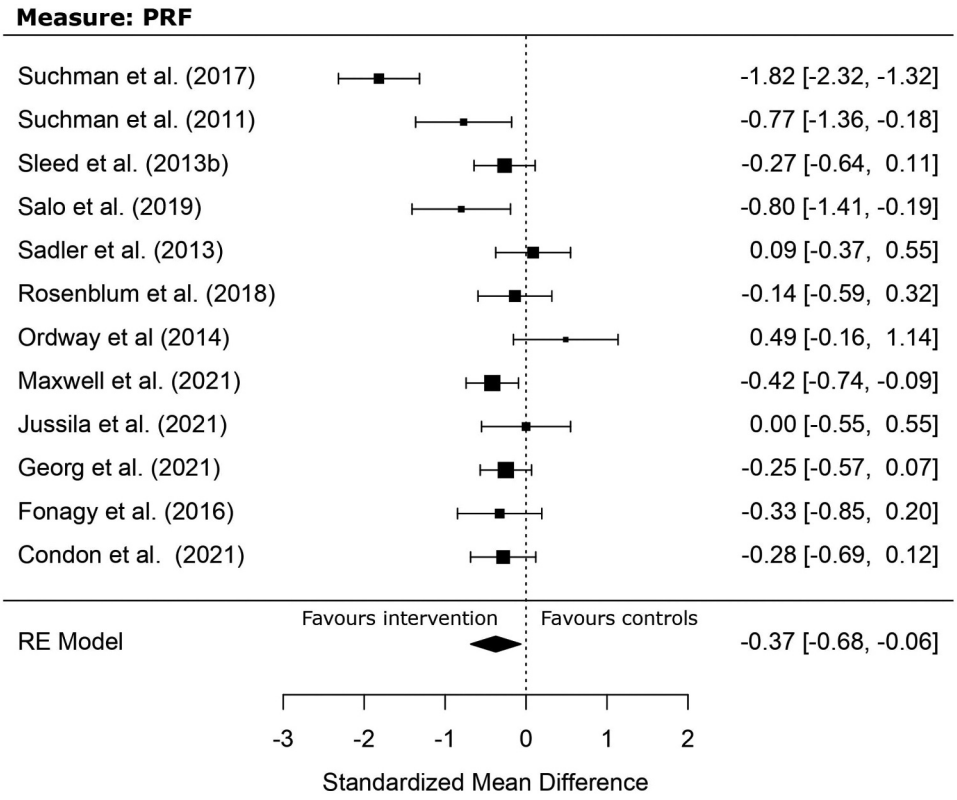

Figure 2. Forest plot of comparison: intervention vs control group on parental reflective functioning.

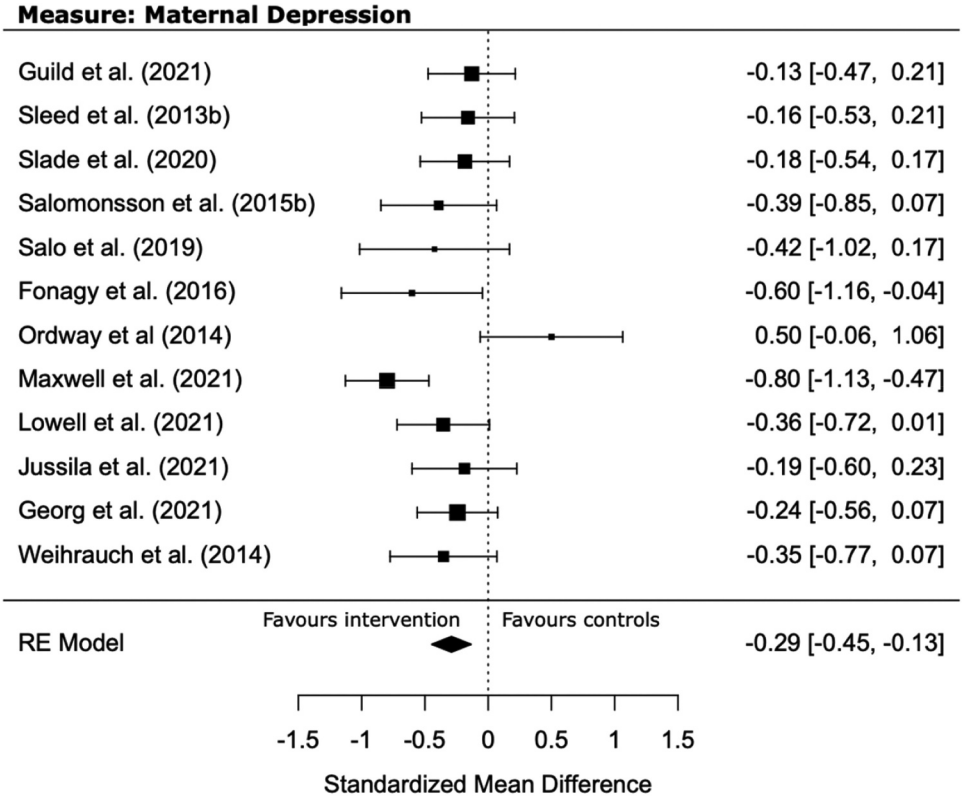

Figure 3. Forest plot of comparison: intervention vs control group on maternal depression.

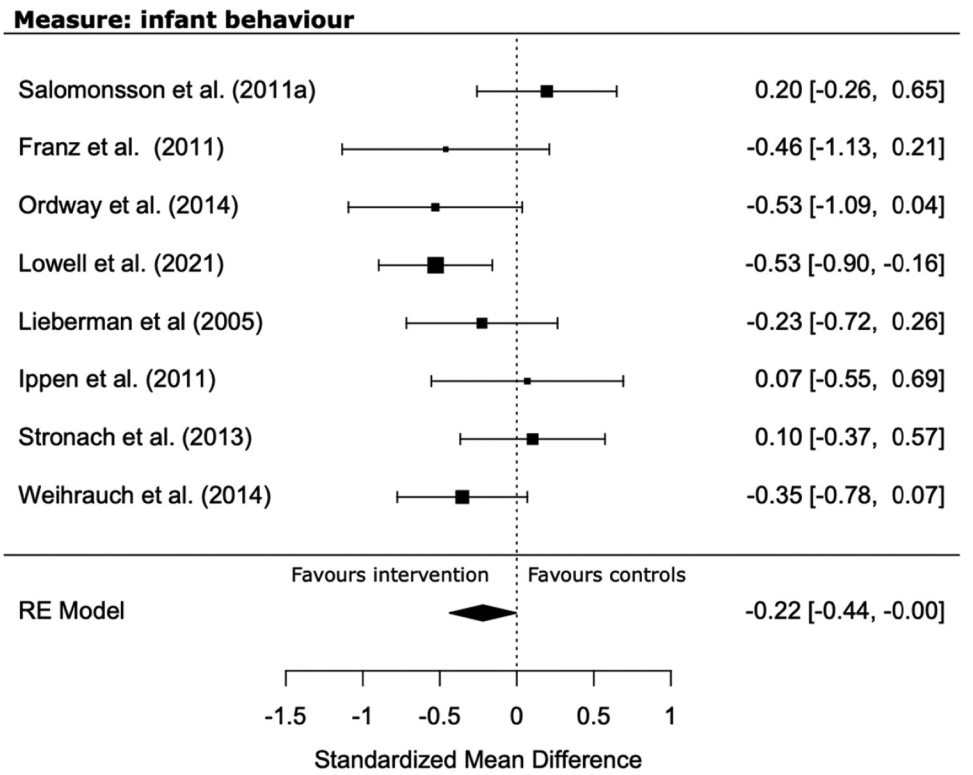

Figure 4. Forest plot of comparison: intervention vs control group on infant behaviour.

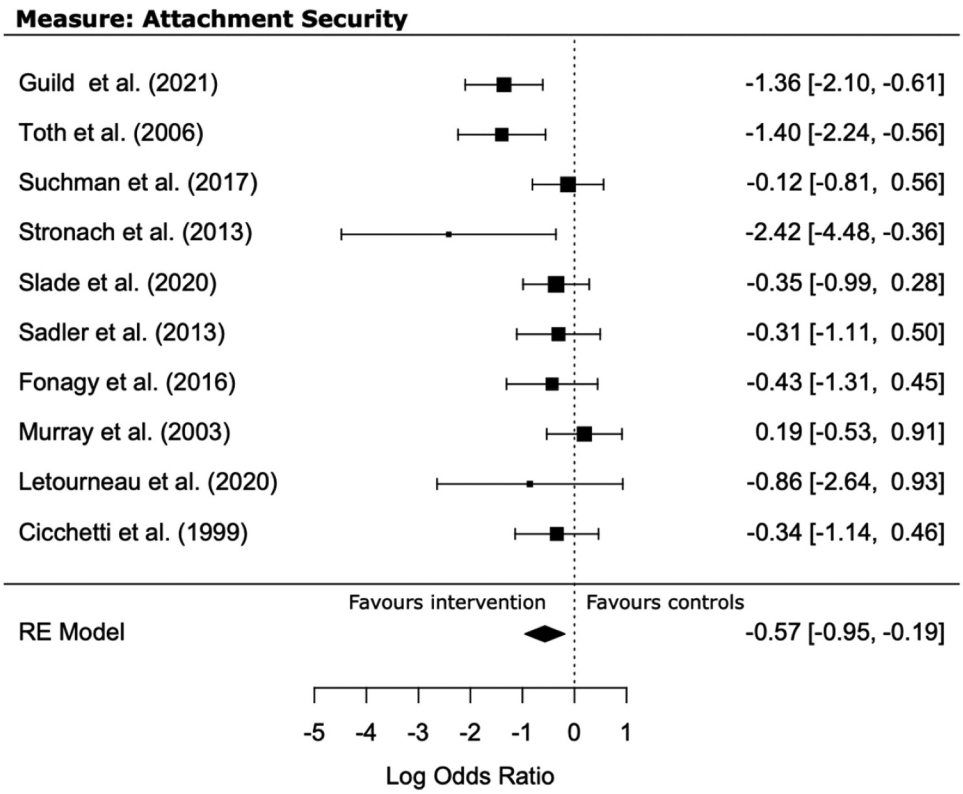

Figure 5. Forest plot of comparison: intervention vs control group on infant attachment security.

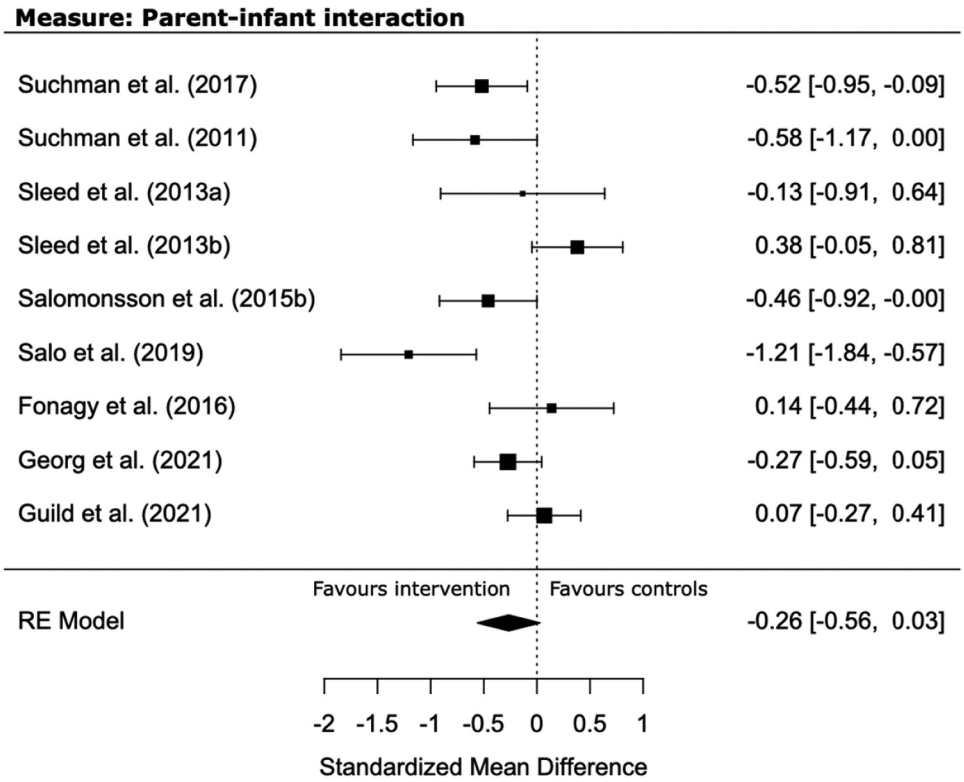

Figure 6. Forest plot of comparison: intervention vs control group on parent-infant interaction.

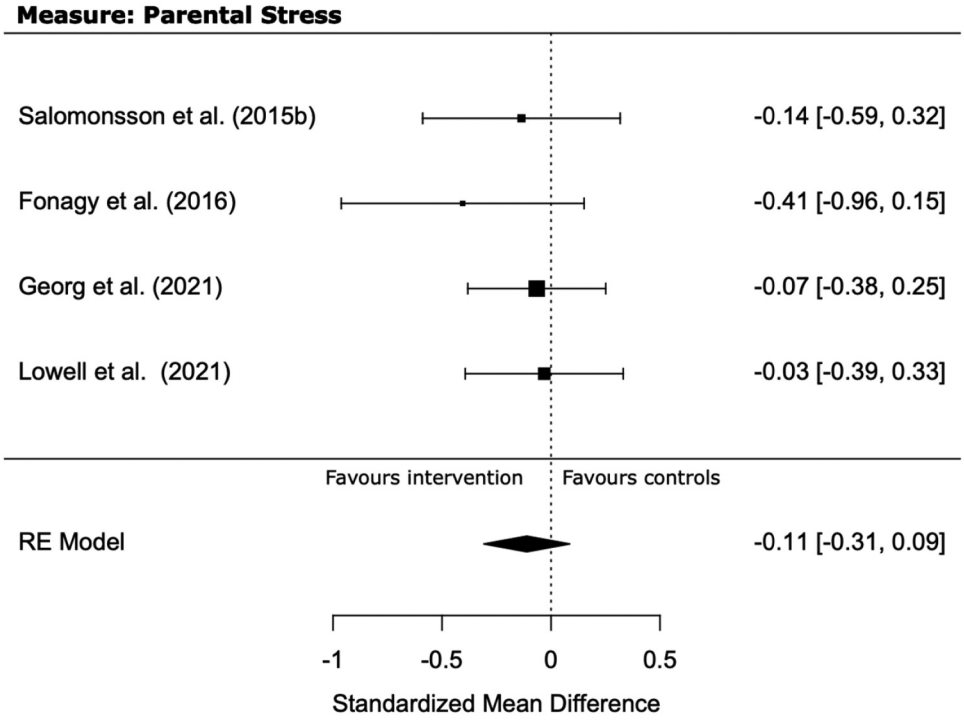

Figure 7. Forest plot of comparison: intervention vs control group on parental stress.

Study quality

Quality assessment ratings showed that less than half of the studies demonstrated good quality design and reporting (see Tables 3 and 4). 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 were high drop-out rates, lack of descriptions of therapists' adherence to the intervention, lack of reporting on whether or not intent-to-treat analyses were 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 31 pre-post evaluations (not controlled), 18 were rated as "good", 8 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 the strength of evidence is intrinsically limited.

Discussion

This is the first systematic review and meta-analysis summarizing the evidence 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: mentalization-based treatments; attachment interventions; and dyadic (or triadic) psychodynamic 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 behavioral wellbeing, and infant attachment, parenting behavior/parent-infant interactions or parenting stress. When outcomes were systematically compared to a control

Table 3. Quality assessment of controlled intervention studies**.

	Item*														
Author, country	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Quality Rating
MENTALIZATION BASED INTERVENTIONS															
Anis et al. (2020) and N. Letourneau et al. (2020)	Y	Y	Y	N	Y	Y	Y	Y	NR	Y	Y	NR	Y	Y	Poor
N. E. Suchman et al (2010, 2011, 2012), USA	Y	Y	Y	N	Y	NR	Y	Y	Y	Y	Y	NR	Y	NR	Poor
N. E. 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 and 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															
Steele et al. (2019), USA	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	NR	Fair
Williford et al. (2017), USA	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Good
K. 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
Weihrauch et al. (2014), Germany	Y	Y	Y	N	Y	N	N	N	Y	Y	Y	N	Y	NR	Fair
Maxwell et al. (2021), Australia	N	N	N	N	N	N	N	N	Y	Y	Y	NR	Y	N	Fair
DYADIC/TRIADIC 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). & Ghosh 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
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 and Sandell, (2011a, 2011b, 2015a, 2015b), Sweden	Y	Y	Y	N	Y	NR	Y	Y	Y	Y	Y	NR	Y	Y	Fair
B. 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

*** 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% 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?

**Y = Criterion met; *N* = Criterion not met; CD = cannot determine; NA = not applicable; NR = not reported.

intervention, a small but significant effect size in favor of the psychodynamic interventions for was shown for most of these same outcome domains, with the largest differential impact for infant attachment. Although the effect sizes for the positive findings are modest, when compared to other

Table 4. Quality assessment** for pre-post studies with no control group.

	Item*												
Author, country	1	2	3	4	5	6	7	8	9	10	11	12	Quality Rating
MENTALIZATION BASED INTERVENTIONS													
N. Suchman et al. (2008), USA	Y	Y	Y	Y	N	N	Y	NR	N	Y	N	N/A	Poor
N. E. Suchman et al. (2016), USA	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	N/A	Poor
K. L. Rosenblum et al. (2020), USA	Y	Y	Y	N	Y	Y	Y	N	N	Y	N	N/A	Good
Stacks et al. (2019), USA	Y	Y	Y	Y	N	Y	Y	N	NR	Y	N	N/A	Poor
Stacks et al. (2022), USA	Y	Y	Y	N	Y	Y	Y	Y	NR	Y	N	N/A	Good
Schechter et al. (2006), USA	Y	Y	Y	N	N	Y	Y	NR	NR	Y	N	N/A	Fair
Byrne et al. (2019), UK	Y	Y	Y	NR	N	Y	Y	Y	NR	Y	N	N/A	Fair
Menashe-Grinberg et al. (2022), Israel	Y	N	Y	NR	Y	Y	Y	Y	NR	Y	N	Y	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	N/A	Poor
Klein Velderman et al. (2006), Netherlands	Y	Y	Y	NR	Y	Y	Y	Y	NR	Y	N	N/A	Good
Huber et al., (2015a, 2015b), Australia	Y	Y	Y	NR	Y	Y	Y	Y	Y	Y	N	N/A	Good
Maupin et al. (2017), USA	Y	N	N	NR	Y	Y	Y	NR	NR	Y	N	N/A	Fair
Sadowski et al. (2022), Australia	Y	Y	Y	NR	N	Y	Y	Y	NR	NR	Y	N/A	Fair
PSYCHODYNAMIC/PSYCHOANALYTIC PSYCHOTHERAPY													
Hagan et al. (2017), USA	Y	Y	Y	Y	Y	Y	Y	NR	NR	Y	N	N/A	Good
Lavi et al. (2015), USA	Y	Y	Y	NR	Y	Y	Y	NR	NR	Y	Y	N/A	Good
Lieberman et al (2005, 2006), USA	Y	Y	Y	NR	Y	Y	Y	Y	NR	Y	Y	N/A	Good
Paris et al. (2015), USA	Y	N	Y	NR	Y	Y	Y	NR	NR	NR	Y	N/A	Fair
Waters et al. (2015), USA	Y	Y	Y	N	N	Y	Y	NR	NR	Y	N	N/A	Good
Zarnegar et al. (2016), USA	Y	Y	Y	N	N	Y	Y	Y	NR	Y	N	N/A	Poor
Ransley et al. (2019), UK	Y	Y	Y	Y	Y	Y	Y	NR	NR	Y	Y	N/A	Good
Belt et al. (2012), Finland	Y	N	Y	NR	N	Y	Y	Y	NR	Y	N	N/A	Good
de Camps Meschino et al. (2016), Canada	Y	Y	Y	NR	N	Y	Y	NR	NR	Y	Y	N	Fair
Nanzer et al. (2012), Switzerland	Y	Y	Y	NR	N	Y	Y	NR	NR	Y	N	N/A	Fair
Pozzi-Monzo et al. (2012), UK	Y	Y	Y	Y	Y	Y	Y	NR	NR	Y	Y	N/A	Good
Robert-Tissot et al. (1996), France	Y	N	Y	NR	Y	Y	Y	Y	NR	Y	Y	N/A	Good
Kurzweil (2008b), USA	Y	N	Y	NR	Y	Y	Y	NR	NR	Y	N	N	Good
Kurzweil (2008a), USA	Y	N	Y	NR	Y	Y	Y	NR	NR	Y	N	N	Good
Kurzweil (2012), USA	Y	N	Y	NR	Y	Y	Y	NR	NR	Y	N	N	Good
Müller et al. (2015), Germany	Y	Y	Y	NR	Y	Y	Y	NR	NR	Y	Y	N/A	Good
Target and Fonagy (1994), UK	Y	Y	Y	N	Y	Y	Y	NR	NR	Y	Y	N/A	Good
Thome and Skuladottir (2005), Iceland	Y	Y	Y	NR	N	Y	Y	NR	NR	Y	N	N/A	Good

*** Items for Quality Assessment Tool for 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)?

**Y = Criterion met; *N* = Criterion not met; CD = cannot determine; NA = not applicable; NR = not reported.

interventions, they indicate that psychodynamic 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). 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).

No significant differences were found when comparing psychodynamic treatments to control interventions for parent-infant interaction or parenting stress. However, 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.

The synthesis of all evaluations 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.

This review provides a significant step forward in the development of our knowledge in this field. This review not only synthesized evidence for the effectiveness of psychodynamic interventions supporting infants and their caregivers, but it also provided the first integrated view on the range of such interventions available. Interventions varied in terms of 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 programs 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 programs, 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 behavioral difficulties in the infant; these issues might be further compounded by biopsychosocial risk factors. Using a psychodynamic 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 (B. Salomonsson, 2014; Raphael Leff, 2019). In all interventions, the relational world of the young child is prioritized, 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 defenses and conflicts.

An encouraging finding of the review was that the many of the psychodynamic 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 were taken to make programs accessible to disadvantaged communities. This includes training and supervising community members to deliver programs, providing home-based support, and delivering the psychotherapeutic interventions as part of a wider package of social, economic, and psychoeducational support. However, almost all studies included in this review were conducted in Westernized countries and little is known about the effectiveness of these interventions in other contexts.

Only a small number of studies included fathers in the interventions and evaluations. 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 (T. E. Baradon et al., 2019), but evaluations of such father-oriented interventions are still lacking.

There are some limitations to this review. Firstly, we only included studies where some form of empirical evaluation has been published and 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 did not come up with the search terms, or were excluded, even if in practice they are very similar and employ some of the same clinical techniques to those that were included. For example, the Group Attachment Based Intervention (GABI; Steele et al., 2019) is a promising evidence-based intervention that is very similar to those included in this review, but that did not come up in the search.

The review includes some extremely brief – sometimes even single session – interventions as well as highly intensive programs that are delivered over a year or even longer. Similarly, some programs were delivered by lay-practitioners with very little psychological training, while others were delivered by highly trained, experienced, and supervised clinicians. Thus, the heterogeneity of interventions is also a limitation that makes generalization difficult.

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. 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.

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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