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Descriptive Title: Improving access to mental health interventions for children from birth to five years: A Scoping Review

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Abstract

Background: In spite of infants and children aged 0-5 years experiencing mental health difficulties being estimated to be in the range of 6-18% globally, the mental health care needs for this age group are often overlooked in the design of specialist mental health services. Although there is increasing recognition of the importance of infant mental health services and treatments for younger children, access remains a barrier. Mental health services specifically designed for children 0-5 years are vital; however, little is known about how these services ensure access for infants at risk of mental health difficulties and their families. This scoping review seeks to address this knowledge gap.

Methods: A scoping review methodology framework was used to search for relevant articles published between January 2000 and July 2021, identified using five databases: MEDLINE, CINAHL, PsycINFO, SocIndex and Web of Science. The selection of studies was based on empirical research about access to infant mental health services and models of care. A total of twenty-seven relevant articles met the eligibility criteria for inclusion in this review.

Results: Findings can be summarised under five broad themes: (1) accessibility for at-risk populations (2) the importance of early detection of infants in need of mental health services and interventions; (3) the promotion of culturally responsive services and interventions; (4) ensuring the sustainability of IMH services and programs; and (5) the integration of innovative interventions to improve existing practice models.

Conclusions: The findings from this scoping review highlight barriers to access and provision of infant mental health services. Future infant mental health service design, informed by research, is

needed to improve access for infants and young children with mental health difficulties and their families.

Key Practitioner Message

What is known?

- Poor infant mental health can significantly impact an individual's social and emotional development throughout life.
- The prevalence of infant mental health disorders is estimated to be in the range of 6-18% globally, yet mental health services for 0–5-years of age are often overlooked.
- Adequate, easily accessible infant mental health services are lacking and as a result, many infants and their caregivers do not have access to, or engage with appropriate, timely support when there are infant mental health concerns present.

What is new?

- There is little evidence specifically addressing how access to infant mental health services can be improved.
- Common barriers to the access and provision of infant mental health services include lack of coordinated services; stigma attached to mental illness; lack of trained health professionals and difficulties engaging vulnerable families where there is an increased risk of infant mental illness.

What is significant for clinical practice?

- There are significant gaps in current knowledge to inform the design of infant mental health services to improve access for infants at risk of infant mental health difficulties and their families.

- The design of future infant mental health services needs to overcome barriers identified by this review through delivering flexible and varied modes of therapeutic clinical practice, offering specialist training for infant mental health practitioners, and co-locating mental and physical paediatric health services to increase accessibility at intake and reduce stigma.
- Evaluating trials of infant mental health service delivery is an important direction for further research to develop an evidence base on how best to increase service accessibility.

Key words

Infants, mental health, access, intervention

Main Text

Introduction

Infant mental health services and interventions focus on the social and emotional wellbeing of infants and young children from birth to five years. Ideally, these services are designed to support optimal 'infant mental health'; that is, optimal social and emotional development witnessed through the child's ability to regulate emotions, form relationships, and explore the environment (1). Given social and emotional development during infancy is closely tied to the caregiving environment (2, 3), it is important to engage families in infant mental health interventions. Infant mental health services, therefore, need to ensure access for families of infants most at risk of developing mental health difficulties to interventions that are appropriate, acceptable and sustainable.

The need for mental health support for infants and young children

Globally, the prevalence of children aged 1-3 years with mental health disorders is estimated to range between 7.3% to 12-16%. Epidemiological studies among children aged 1-5 years reveal a prevalence of 6-18% among children with 8-9% being severely affected (4). Several psychosocial factors may contribute to the prevalence of infant mental health disorders, including community disadvantage, harsh parenting practices, parental mental illness and/or substance abuse issues, and separation from caregivers (5, 6). Any combination of these factors may impact parent capacity to fulfil the social and emotional developmental needs of their infant.

Infants are inherently dependent upon their caregivers, the caregiving environment has the potential to shape the development of infants' psychosocial, emotional, and cognitive capacities (7, 8). Social competence, emotional regulation, and self-reliance during adolescence

and adulthood are most likely to develop through secure attachment with caregivers during infancy (9). The mental health of caregivers, consequently, impacts infant mental health outcomes. Maternal depression has been shown to be associated with disrupted infant-caregiver attachment and bonding (10-12) and an increased risk of maltreatment (13). In another study, the infants of caregivers with mental illness were less likely to achieve a healthy weight and experience a greater number of health problems than those without (14). These outcomes may be a result of a parent's mental health disturbing the tasks and responsibilities of the infant-caregiver relationship and lack of attunement to the needs of the infant. All these factors give rise to a complex navigation for families and service providers to appropriate infant mental health interventions.

Psychosocial factors that can contribute to poor infant mental health disproportionately affect culturally and linguistically diverse communities (15, 16). These groups are more likely to experience social disadvantage such as economic insecurity, housing insecurity, and food shortages; all factors that directly impact the health and development of infants (17, 18). For example, in Indigenous communities within Australia, complex social issues stemming from intergenerational traumas experienced as a result of neo-colonial social policies can further disadvantage infants (15). In developing countries, the social and emotional development of infants may be considered a low priority due to more pressing concerns regarding access to material necessities (16).

Disruption to mental health in infancy can have a significant impact on later life. Early experiences of adversity, trauma, or neglect negatively impact an individual's social and emotional development (2, 19). Mental illness during adolescence and adulthood is often rooted in adverse early experiences (20, 21). Moreover, adverse experiences in childhood are related to

the development of chronic physical illness (22, 23), as well as social consequences such as adolescent and adult delinquency and unemployment (24-26).

The challenges of infant mental health service provision

The potential consequences of adverse early life experiences may be mitigated through targeted and early mental health interventions (27-30). However, access to services that deliver these interventions is often a significant barrier. Despite advocacy for infant mental health services over several years (31) services for the 0–5-year age range are often overlooked (32). For example, as diagnostic categories for infant mental disorders are less clearly defined, it is often dependent on the capacity of caregivers to notice and raise concerns about particular behaviours (33). Unfortunately, it is common for infant mental disorders to go undiagnosed and untreated as caregivers may not either recognise concerns and/or know where or how to seek help. There also continue to be longstanding issues relating to the availability of suitably qualified and trained mental health practitioners who are able to assess and provide intervention to infants with mental health difficulties (34-37). Consequently, even where families do present to services, the clinicians may not be suitably equipped to support infants and caregivers. For infants and young children from culturally and linguistically diverse groups, there is a further gap in access to mental health services due to the lack of funding and trained staff to engage and deliver culturally appropriate and accessible treatment (38, 39).

Many mental health services lack infant mental health trained clinicians. In adult mental health interventions, a clinician often works only with the individual patient. In contrast, infant and child interventions employ a systemic framework. It is imperative for infant mental health clinicians to consider an infant's family and social environment when assessing and treating mental illness. Fostering the infant-caregiver relationships and the promotion of secure

attachment relationships are important tenets of infant mental health interventions (40-44). Interventions are often delivered in the family home to increase accessibility (45-48) and addressing complex social problems is often part of the infant mental health service response (49-51). This therapeutic approach differs from the typical adult service delivery model and thus clinicians require specialist infant health knowledge, and skills to assess risk and provide culturally safe therapeutic spaces and interventions. Further, the efficacy of infant mental health intervention is dependent on the clinician engaging and developing rapport with the caregivers.

Although broadly there is growing recognition of infant mental health, and more specifically that the early years of a child's life are critical to their long-term health, wellbeing, and development, 0–5-year-olds have often been overlooked by the mental health service sector. While it is a positive that a range of infant mental health intervention initiatives have emerged over the past 20 years, the barriers to accessing the services that provide such interventions for those most at risk still remain (52).

Overcoming the barriers to accessing infant mental health services

To overcome barriers to access, the Child and Youth Mental Health Service (CYMHS) at Eastern Health Melbourne Australia developed a new and innovative 'Infant Access Program' (IAP). The IAP circumvents the usual barriers for families of young children in need of specialist mental health services and interventions by employing a partnership model with Maternal and Child Health (MCH) services. MCH services are a free, universal primary health service available for all families in Victoria, Australia with children from birth to school age (53). A key component of this service is the Enhanced MCH (EMCH) nursing role (54). The EMCH role

delivers targeted services to families of children born prematurely, infants with low birthweight or disability or where parental mental illness is identified. Assessment for family violence risk and referral of women to specialist supports is also part of the EMCH role. CYMHS recognises that the EMCH eligibility criteria is closely aligned with the predictive factors often associated with poor infant, child and adolescent mental health outcomes. The IAP builds upon the existing engagement of the family with the EMCH nurse and brings together the expertise of EMCH and CYMHS services, to deliver timely, early detection of mental health difficulties and a pathway into specialist mental health services.

Given the complexity involved in designing accessible, appropriate and effective infant mental health services and interventions to infants most at risk, clinicians at Eastern Health CYMHS are interested to understand the extent and nature of published literature on infant mental health services to inform the further enhancement of the IAP model of care. This scoping review aimed to systematically map the available empirical research, and to identify any existing gaps in the current knowledge. Our second aim was to distil the research evidence to inform IMH service design to improve access for infants and their families. The following research question was formulated: *How do infant mental health services improve access for infants and children (aged 0-5 years) who are identified as at-risk of mental health difficulties?*

Methods:

Given the focus of this review was specific to access in relation to mental health service provision for infants and children (aged 0-5 years), a scoping review was chosen as the most appropriate method of synthesis (55, 56). Methodologically, this study was guided by the predominant literature on the conduct of scoping reviews (55, 57, 58) with findings reported

following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRIMSA-ScR) (59, 60). This scoping review was not registered.

Population, concept, *and context*

Population

Infants and young children aged 0- to 5- years old and their caregivers accessing infant mental health (IMH) services.

Concept

For this review, the Osofsky and Thomas, Zero to Three (2012) definition of IMH was used:

> "developing capacity of the infant and young child to experience, express, and regulate emotions; form close and secure relationships; and explore the environment and learn, all in the context of the caregiving environment that includes family, community, and cultural expectations'. (61)

In addition to the IMH definition, this review used the term 'mental health difficulties' to describe a range of mental health problems in infancy and early childhood. Mental health difficulties include social, emotional and behavioural issues that deviate from the expected developmental milestones caused by unmet attachment needs. For example, regulatory disturbances such as eating difficulties, toileting difficulties, lack of vocalizing and minimal language development may also be indicative of infant mental health difficulties (62). 'Mental health difficulties' was chosen by the researchers as it is terminology typically used in clinical practice settings.

Context

The field of IMH describes "multidisciplinary approaches to enhancing the social and emotional competence of infants in their biological, relationship, and cultural context". (1, 63)

Eligibility Criteria

This scoping review included articles needed to focus on infants and young children (aged 0-5) who may be experiencing mental health difficulties or diagnosed with a mental health disorder. Studies whose sample included >50% of children aged 0-5, or with samples in which the mean age was <5 years were included. Studies included were published between January 2000 and July 2021, written in English, with a focus on empirical research (case studies; qualitative studies; systematic reviews or other syntheses which include at least one empirical study) and published in peer-reviewed journals. Articles relating to maternal health were included provided they also related to infant health, either through the sample, intervention, or concept. See Table 1 for detailed information about the inclusion and exclusion criteria.

INSERT TABLE 1: INCLUSION/EXCLUSION CRITERIA

Information sources

To identify potentially relevant articles, the following bibliographic databases were searched: CINAHL, MEDLINE, PsycINFO, SocIndex, and Web of Science. The search strategies were drafted by an experienced research librarian and refined through research team discussions. The search strategy for CINAHL is available in Appendix S1.

Search

The final search results were exported into ENDNOTE X9, and duplicates were removed by one author (LCH). The final reference list was then exported to COVIDENCE to undertake the screening review process.

Selection of Sources of Evidence

Four reviewers (TN, HL, JE and LCH) screened a sample of the same thirty publications to ensure consistency between raters, interpretation of definitions and concepts and inclusion/exclusion criteria was applied. The reviewers discussed the results and amended the screening and data extraction manual to label the study designs, population or concept that were 'out of scope' before screening commenced. All identified articles were independently screened at the title and abstract level by two authors (HL &TN) to minimize potential bias. Consistency between raters was 97% (115 conflicts). Conflicts were reviewed by LCH and resolved through discussion and consensus with HL & TN, when needed. Subsequently, articles meeting the eligibility criteria based on the first-stage, title and abstract level, screening process were each independently reviewed in full text by three authors (TN, HL &JE). At the full text review process, one author (LCH) was allocated to resolve any conflicts when disagreements occurred between review decisions. After the full-text review, consensus was achieved on all articles by all four reviewers (LCH, TN, HL and JE) that met the inclusion criteria .

Data Charting Process

Three authors (LCH, HL & TN) developed a data charting form specifying which variables to extract. Four authors participated in the data charting process (LCH, TN, HL & JE) of the included texts. Two authors (TN & HL) independently charted the data, discussed the results, and updated the data-charting form in an iterative process. This was followed by further review

of the extracted data by two authors (LCH & JE). Disagreements on data extraction were resolved by consensus within the four members of the reviewing team (LCH, TN, HL & JE), and discussion with other authors, when required. The charting form captured key study characteristics (e.g., authors, title, year of publication, country of study and sample characteristics) and detailed information that related to infants and young children (aged 0-5 years) who may be experiencing or diagnosed with mental health issues. The charting also enabled the identification of themes related to mental health programs, interventions, and models of care.

Results

Study selection

After duplicate removal, 3006 references were identified from searches of the electronic databases and through handsearching reference lists of review articles. Based on the title and abstract screening process, 2916 articles were excluded. Of the ninety full-text articles retrieved and reviewed, sixty-three were excluded (Figure 1).

INSERT FIGURE 1: PRISMA FLOWCHART OF THE SCOPING REVIEW PROCESS

Following full-text review, twenty-seven articles met the inclusion criteria. Twenty-five of these articles related to empirical research studies and two articles related to non-empirical journal articles (Table 2). The empirical studies differed in methodological approaches including quantitative (9 studies), mixed method (7 studies), case series (4 studies), qualitative (3 studies), case study (2 studies).

INSERT TABLE 2: SUMMARY OF INCLUDED STUDIES

Population

The majority (77%) of included studies were conducted among families and child-caregiver dyads. Eighteen of the articles reported on samples of infants and children across the 0- to 6-year age range (64-80). The study samples of infants and children under six years ranged from 1 to (65) to 237 (73). Parents and/caregivers and families sample sizes ranged from 14 (81) to 102 (74). One study was conducted with caregivers independent of their children (82) and one study was conducted among children aged 2- to 7- years of age (81).

Of the twenty-seven included articles, the samples included mental health clinicians, families and service providers based in primary and tertiary level healthcare settings. Eight studies were conducted with clinicians (study sample range: 1-131) (83-90); three focused on the experiences of service providers (46, 87, 91); one was conducted with both families and clinicians (71); and two were conducted with both clinicians and service providers (46, 87).

Concept

Thirteen articles (64, 66-68, 70, 71, 73-75, 77, 78, 80, 81) examined infant and child mental health and behavioural outcomes based on the results of screening or assessment procedures conducted within multidisciplinary medical clinics or during home visits, which would typically be within the scope of practice for mental health nurses and other allied health professionals. Articles included both prospective and retrospective data. The remaining 14 articles (46, 65, 69,

76, 79, 82, 84-87, 89-91) focussed on practices and research aimed at improving infant mental health.

Context

The majority of included studies were conducted in the United States (71-74, 76, 78-82, 86, 88, 89), followed by South Africa (64, 65, 69, 85), Australia (46, 87, 90), the United Kingdom (75, 77), Canada (66, 91), Italy (70), Japan (68), and New Zealand (84).

The majority (70%) (64-75, 77, 78, 80-82, 85, 90) of the study samples in the retrieved articles involved children and caregivers enrolled in infant or child mental health-based programs or services. Ten (64-66, 69, 70, 77, 78, 81, 82, 85) of these services were offered in clinical environments and six (67, 68, 71-74) were offered as home visits. Of the remaining children and caregiver-based studies, two offered tele-health services (79, 90), one offered a combination of in-clinic and home visit services (75), and one offered services within a community paediatric medical home (80).

Of the 19 studies involved with families and child - caregiver dyads, 14 studies (64-67, 69, 71-74, 77, 78, 80-82) were conducted among populations experiencing higher-than-average exposure to poverty or violence.

Nine studies (46, 71, 84-90) included the perspectives of clinicians were based on those clinicians' experience in providing infant and child mental health-based programs interventions to families. Three studies (76, 79, 91) sought to identify, describe, and evaluate infant or child mental health-based programs through other means.

Synthesis of results

In seeking to understand the IMH services that improve access for infants and children (aged 0-5 years), the thematic analysis identified five broad themes: (1) accessibility for at-risk populations (46, 66, 78-81, 90); (2) the importance of early detection of infants in need of mental health services and interventions (64, 68, 73-76, 82, 87, 89, 91); (3) the promotion of culturally responsive services and interventions (65, 69, 84, 85); (4) ensuring the sustainability of IMH services and programs (67, 73, 76, 82, 86-89); and (5) the integration of innovative interventions to improve existing practice models (70-72, 77).

1. *Accessibility for at-risk populations*

The first thematic finding was the importance of accessibility for at-risk populations. Seven articles (46, 66, 78-81, 90) discussed findings surrounding specific IMH service accessibility and engagement barriers for these at-risk populations.

One study (46) found that infant physical and psychological wellbeing services were often independent of one another, resulting in a lack of integration among available services. Eighteen key paediatric service providers such as child protection, maternal and child health services, paediatric tertiary hospital), who regularly come into contact with infants at risk of mental health difficulties identified this as a common problem. The authors suggested that accessibility is likely to improve through the establishment of collaborative and cohesive systems that can deliver holistic IMH services and interventions (46). Another study evaluated the efficacy of the 'Warm Connections' program. The pilot implementation of this program met its intended aims of reducing caregiver stress, increasing parenting efficacy and increasing perceptions of adequate support and connection to community resources. It showed that IMH

service accessibility and acceptability for at-risk populations may be improved through co-locating existing services that are already utilised by these groups for other purposes (78). IMH support through the integration of the program into IMH-based telehealth programs was also found to promote accessibility among populations who were unable to access services in-person for a variety of reasons; this allowed participants access and visibility to previously restricted expertise (79, 90). Analysis of retrospective demographic and diagnostic data of 264 children aged 0-5 years collected using tele-psychiatry consultations showed its potential for a pathway to IMH services; however, it also highlighted that resources need to be available to meet the level of demand (79).

The stigma involved in engaging with IMH services is another barrier to access for families within an immigrant community at higher risk of postpartum depression. One study creatively addressed this stigma through emphasising a well-known and universal infant behaviour intervention in the service's name i.e. The Crying Clinic (66). Although parents in this study did not initially report any significant mental health difficulties for their children, screening indicated that 70% were at-risk of developmental concerns. Fostering a positive and ongoing relationship between caregivers and IMH practitioners was also key to the success of one IMH service delivering the Massachusetts Project Launch program to at-risk populations in the context of home-visits and live-in care (80). Using a longitudinal study design, children of families (n=225) enrolled in the program who scored in age-specific clinically significant ranges of social, emotional and behavioural problems at baseline (enrolment), scored in the normal range at twelve months (post-enrolment).

IMH consumer attrition was found to be a notable barrier in service accessibility and engagement in one study, with the authors highlighting the need for practitioner diligence in

identifying barriers to treatment interventions and consumer engagement "continued diligence in the identification of treatment barriers and methods of engagement" (81).

2. The benefits of early detection of infant mental health needs

The second thematic finding asserted the benefits of early detection and access to infant mental health services and interventions to promote lasting positive mental health outcomes. Eleven articles (64, 68, 73-76, 82, 87, 89, 91) provided evidence-based findings from empirical research into how early detection and staff trained in this area can lead to engagement with IMH services and access to interventions that may deliver positive outcomes for the infant, their families and the community.

There literature described the use of early IMH interventions to strengthen infant-caregiver relationships (64, 68, 75) to overcome barriers preventing parental emotional investment (64), and improve infant and young child behaviour and compliance with requests from caregivers (74). In addition to these studies, one article used two case studies to describe how access to early IMH interventions is likely to have a positive influence on infant health outcomes while simultaneously reducing societal and economic costs (91).

This 'first access' was often reliant upon the detection of infant mental health difficulties by health professionals who were involved with infants and their families in paediatric service contexts. The research emphasised the importance of training primary healthcare workers to both recognise and address emotional responses among infants and young children (64, 75, 91). This may be particularly important in contexts where quality parental involvement is lacking (74).

The early detection of infant mental health difficulties by IMH services was beneficial in overcoming barriers to access and ensure timely interventions for infants most in need. In five

studies (73, 76, 82, 87, 89) the importance of utilising trained professionals capable of recognising and addressing mental health issues in young children was identified as key to improving access. One study examined parents (n=36, 29.3% of study sample) who initiated mental health treatment for their children and did not attend the first mental health treatment session. The findings indicated the need for better strategies to support early identification of barriers (adverse psychosocial circumstances) to IMH services and flexible assessment interventions that can reduce wait times for families (82).

3. The promotion of culturally responsive IMH services and interventions

The third thematic finding was the importance of promoting culturally responsive services and interventions designed to improve access for families of infants with mental health difficulties from diverse backgrounds (65, 69, 84, 85). While the research evidence on this topic is limited to case studies of infants, perceptions of practitioners and expert opinion, these four papers highlighted that, in culturally diverse settings, building strong partnerships between clinicians and families were critical for the success of IMH interventions (65, 69, 84, 85).

One study suggested that requiring an interpreter when working with culturally diverse clients should not be considered a barrier or inconvenience, but instead be viewed as an opportunity to develop a culturally responsive partnership with a "cultural broker" (65). Through this lens, a sense of shared knowledge and understanding is likely to develop between practitioners to better serve the infant and their family (65). Similarly, one study described that pairing culturally accustomed practitioners with psychotherapists increased caregivers' capacity to attend to their infants (85). Another study found that practitioners who integrated

psychological theory alongside local knowledge systems were able to assist consumers find "symbolic meaning" relating to their presenting issue (69).

IMH services and interventions need to understand the cultural norms within communities. In a study conducted in the pacific region, the IMH services and researchers recognised that infants within these communities have multiple parties. This cultural knowledge enabled the IMH practitioners to look beyond the "dyadic observations" and instead emphasised interventions which were inclusive of communities and collectives (84).

4. Ensuring the sustainability of IMH services and programs

The fourth thematic finding highlighted the importance of sustainable IMH services and programs, identified in three studies (67, 76, 86). To maximise the access and reach of IMH services to infants with mental health difficulties and families, these articles argued for high quality evidence based IMH interventions and specialist training for the IMH workforce. The papers also outlined key considerations for IMH services striving to achieve sustainability.

One study (86) examined the usual practices in IMH interventions and found the most used strategies were directed to the parent in reference to the infant (parent coping, parent psychoeducation and communication skills), infant and parent (engagement) and relationship building and rapport. Even though there was a wide range of IMH intervention strategies and programs, few had supporting evidence (86). Similarly, another study described the effective use of a workforce, development, implementation and evaluation of evidence-based practices to provide an effective structure and multi-year process to train IMH clinicians. This framework stresses the importance of training practitioners to effectively assess, select, train, and evaluate

evidence-based practices interventions employed within their IMH services (76). Despite the lack of positive findings for a IMH program that sought to improve mother-infant interactions, the authors of an evaluation study argued that IMH services need to build in quality improvement processes that are self-sustaining and promote a continuous stream of feedback and adaptation (67).

An Australian need-based workforce model identified the integration of IMH clinical competencies for clinicians to improve practice with infants facing family-related adversities (87). Reflective supervision training improved reflective practice and supervisory knowledge among a sample of participating IMH practitioners (89). Increased reflective practice among practitioners was also correlated with increased self-efficacy and job satisfactions, as well as reduced burnout (88).

5. The integration of innovative interventions to improve existing practice models

The fifth thematic finding examined the integration of innovative interventions to improve existing practice models (70-72, 77). These innovations, often borne out of a need to increase IMH service reach to infants in at-risk populations. The findings of these pilot interventions show promise; however, further research needs to evaluate and establish efficacy.

Video-based therapies were highlighted by two studies (70, 77), that found the integration of these therapies into paediatric settings addressed an "often unmet need" of caregivers being able to discuss the emotional and relational components of parenting with paediatric practitioners (70). This intervention was found to support interactions and strengthen relationships between parents who had been traumatised during childhood and their own young children (77). These

therapies were found to be relatively easy and inexpensive to administer alongside existing practice settings (70) and therefore, overcome some of the barriers characteristic of face-to-face interventions.

Integrating relational play therapies into existing practice settings was also found to be an innovative way for IMH services to address the complex needs of infants and caregivers deemed at-risk (72) as well as positively affecting both parental involvement and the practitioner-caregiver partnership (71).

Discussion

This scoping review sought to examine the empirical research evidence for IMH services that seek to improve access for infants and children aged 0-5 years with mental health difficulties. The primary aim of this review was to assist in identifying ways in which the Eastern Health CYMHS IAP model of care, and other infant mental health services internationally might be enhanced along, in terms of providing accessible mental health interventions. The secondary aim was to synthesize the research evidence to inform a framework for sustainable IMH service design that improves initial access and intake processes and maintains engagement with infants at risk of mental health difficulties and their families.

The research evidence in this review identified the common barriers that IMH services are likely to face when seeking to improve access for infants at risk of mental health difficulties and their families. These barriers included a lack of coordinated services, family and community negative perceptions of the stigma attached to mental illness and ongoing engagement of families at risk. Barriers also included difficulties of ongoing engagement of families receiving the IMH

intervention and lack of trained primary health professional staff to identify emerging mental health difficulties in an infant or young child. The need for culturally specific training for IMH clinicians was identified to overcome barriers for families of infants from culturally diverse backgrounds.

A range of solutions to overcome these barriers is outlined in the literature of this review, however, the degree to which these solutions would be sustainable and acceptable to IMH services and families of infants with mental health difficulties remains unclear. IMH models of care need to consider innovative ways of engaging family members if access for infants at risk of mental health difficulties to specialist mental health services are to be achieved. In this review, it was identified that IMH services which were integrated into a paediatric and/or health practice pathway, and which targeted parents/caregivers and infants and young children, achieved improved access and reduced the stigma experienced by families seeking mental health support. The integration of IMH interventions into existing mental health services were also viewed as positive attempts to increase the access and reach of mental health support to infants and their families in at-risk populations. It was clear from the research evidence that IMH services and interventions are geared towards early detection and intervention to prevent poor longer term mental health outcomes. Access to early IMH interventions has been identified as critical and further research is needed on how IMH services can be designed to maximize the engagement of infants with mental health difficulties and their families.

The research evidence also explored the sustainability beyond the initial intake and assessment phase of an IMH program intervention of IMH services that seek to engage at-risk infants and their families. The studies in this scoping review stressed the importance of training health professionals, to be able to identify IMH in order to increase the likelihood of early

detection of emerging problems in an infant's presentation; in particular, those clinicians who work in primary health. IMH clinicians must also possess specialist mental health knowledge and undertake ongoing training and quality appraisal activities that inform practice and build on the existing evidence base. In addition to this specialist knowledge, the research demonstrated that an IMH clinician's ability to develop a positive rapport was highly valued by the families and consequently was more likely to result in ongoing engagement in the IMH intervention. IMH clinicians also need to be trained in culturally sensitive practices to engage with families from diverse communities. Understanding the meaning attributed to mental health in families and communities can assist the practitioner to engage and tailor the IMH intervention in the appropriate culturally sensitive manner. Overall, an IMH practitioners' ability to identify service and treatment intervention barriers among at-risk groups was found to promote service engagement, a consideration that requires greater attention.

Sustainability also needs to be examined at a programmatic level as this is linked to the accessibility and acceptability of IMH services. Processes of regular program assessment and evaluation based on consumer feedback or outcomes, as well as the ability to make use of additional tools or therapies within existing practice settings to ensure that unmet needs are addressed are required. Without these, services and programs run the risk of falling short of delivering appropriate or effective interventions for at-risk groups.

The research also provided insights into how health practitioners can identify known factors such as poverty, family violence and other forms of social or economic disadvantage that may impede access for infants and young children in need of mental health services. While screening tools, for example, may help practitioners develop a surface level understanding of the types of disadvantages faced by certain groups, additional tools may be necessary to provide

pathways to care that are inclusive of a range of psychosocial and material factors that promote healthy and nurturing caregiving environments. Looking toward holistic paediatric services may provide opportunities in this regard.

The research evidence found in this review suggests that IMH services need to deliver flexible and innovative ways to create pathways to specialist mental health clinicians for at-risk children and their families. As outlined in this review, this presents significant challenges for IMH services with limited specialist workforce and models of care reliant on clinic-based, structured appointment schedules and referral waiting lists to manage demand on their services. To improve access for infants with mental health difficulties and their families, IMH services will need to continue to grapple with these challenges and consider ways of integrating flexible approaches to early assessment and engagement with specialist services that are sustainable and fully integrated into the overall IMH model of care.

Implications for IMH service design to improve access for infants and their families

This scoping review revealed a significant gap in our current understanding of IMH service design to overcome barriers to access for infants with mental health difficulties and their families. However, in accordance with the secondary aim of this review, the authors believe that the research evidence provides important insights into the key considerations that can inform future IMH service design. These insights are summarised in Table 3.

INSERT TABLE 3 HERE

Limitations

This scoping review was focused on how IMH services improve access for infants and young children identified as at risk of mental health difficulties. In conducting a comprehensive review of this topic, a broad search strategy which examined the research evidence on IMH services and models of care was used. Although there were limitations with such a broad search, this scoping review aimed to identify how IMH services have addressed issues of access within their models of care. In keeping with this broad search of research evidence, studies that examined access for family members of infant at-risk of mental health difficulties were also included.

Most of the studies in this review originated from countries that are English-speaking and/or economically advantaged. While several studies consider access to IMH services for culturally diverse communities, the IMH models are underpinned by the conceptual and contextual factors specific to these countries. Greater representation of IMH research from countries from non-English speaking countries and economically developing countries is needed.

A scoping review methodology was chosen as the authors anticipated there would be a paucity of evidence that specifically focused on how IMH services have sought to improve access for infants and their families. In this context, an appraisal of the quality of the evidence was not deemed appropriate for this review. However, by a scoping review methodology, we were able to highlight important insights into IMH service design that may improve access for infants and their care givers.

Conclusion

This scoping review established that infants with mental health difficulties and their families may experience significant challenges when accessing IMH services and support. It reinforced

that it is incumbent upon IMH services to consider innovative ways to ensure the early identification of IMH needs, improve access and intake processes through shared care models and deliver sustainable services that are evidence based. To that end, further examination of IMH service model design is needed.

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Ethical Information

No ethical approval was required for this review.

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Supporting Information

Additional supporting information may be found in the online version of this article.

Appendix S1. Search Terms and strategy (CINAHL)

References

1. Zeanah C, Zeanah P. Infant mental health. In: Zeanah C, editor. Handbook of infant mental health. New York: The Guilford Press; 2019. p. 5-24.
2. Achtergarde S, Postert C, Wessing I, Romer G, Müller JM. Parenting and child mental health: Influences of parent personality, child temperament, and their interaction. The Family Journal. 2015;23(2):167-79.
3. Vernon-Feagans L, Garrett-Peters P, Willoughby M, Mills-Koonce R, The Family Life Project Key Investigators. Chaos, Poverty, and Parenting: Predictors of Early Language Development. Early Childhood Research Quarterly. 2012;27(3):339-51.
4. Lyons-Ruth K, Todd Manly J, Von Klitzing K, Tamminen T, Emde R, Fitzgerald H, et al. The worldwide burden of infant mental and emotional disorder: Report of the Task Force of the World Association for Infant Mental Health. 2017;38(6):695-705.
5. Bayer JK, Ukoumunne OC, Lucas N, Wake M, Scalzo K, Nicholson JM. Risk factors for childhood mental health symptoms: National Longitudinal Study of Australian Children. Pediatrics. 2011;128(4):e865-e79.
6. Garner A, Shonkoff J. Early childhood adversity, toxic stress, and the role of the pediatrician: translating developmental science into lifelong health. Pediatrics. 2012;129(1):e224-31.
7. Cooper J, Masi R, Vick J. Social-emotional development in early childhood. What every policymaker should know.: Mailman School of Public Health, Columbia University; 2009.
8. Stern D. The Motherhood Constellation: A Unified View of Parent–Infant Psychotherapy. New York: Basic Books,Inc.; 2009.
9. Sroufe L. Attachment and development: a prospective, longitudinal study from birth to adulthood. Attachment & Human Development. 2005;7(4):349-67.
10. Hairston I, Solnik-Menilo T, Deviri D, Handelzalts J. Maternal depressed mood moderates the impact of infant sleep on mother-infant bonding. Archives of Women's Mental Health. 2016;19(6):1029-39.
11. Papiasvili E, Mayers L. Postpartum depression and attachment: Is anybody here? International Forum of Psychoanalysis. 2017;26(1):22-8.
12. Cicchetti D, Rogosch F, Toth S. Maternal depressive disorder and contextual risk: contributions to the development of attachment insecurity and behavior problems in toddlerhood. Development and Psychopathology. 1998;10(2):283-300.
13. Plant D, Pariante C, Sharp D, Pawlby S. Maternal depression during pregnancy and offspring depression in adulthood: role of child maltreatment. British Journal of Psychiatry. 2015;207(3):213-20.
14. Gress-Smith J, Luecken L, Lemery-Chalfant K, Howe R. Postpartum depression prevalence and impact on infant health, weight, and sleep in low-income and ethnic minority women and infants. Matern Child Health Journal. 2012;16(4):887-93.
15. Adams E, Tongs J. Starting a perinatal and infant mental health service at Winnunga Nimmityjah. Australasian Psychiatry : Bulletin of Royal Australian and New Zealand College of Psychiatrists. 2011;19 Suppl 1:S20-2.
16. Berg A. Beyond the dyad: Parent-infant psychotherapy in a multicultural society - Reflections from a South African perspective. Infant Mental Health Journal. 2003;24(3):265-77.
17. Braveman P, Acker J, Arkin E, Bussell J, Wehr K, Proctor D. Early Childhood is Critical to Health Equity. New Jersey, USA: Princeton; 2018.
18. Haine-Schlagel R, Walsh N. A review of parent participation engagement in child and family mental health treatment. Clinical Child and Family Psychology Review. 2015;18(2):133-50.

19. Zero to Three M. Planting seeds in fertile ground: Actions every policymaker should take to advance infant and early childhood mental health.; 2016.
20. George L. Life-Course Perspectives on Mental Health. In: Aneshensel C, Phelan J, Bierman A, editors. Handbook of the Sociology of Mental Health. Dordrecht: Springer Netherlands; 2013. p. 585-602.
21. National Scientific Council on the Developing Child (NSCDC). Establishing a Level Foundation for Life: Mental Health Begins in Early Childhood. Working Paper 6. Updated Edition.; 2008/2012.
22. Mäntymaa M, Puura K, Luoma I, Salmelin R, Davis H, Tsiantis J, et al. Infant–mother interaction as a predictor of child's chronic health problems. Child: Care, Health & Development. 2003;29(3):181-91.
23. Straatmann V, Lai E, Law C, Whitehead M, Strandberg-Larsen K, Taylor-Robinson D. How do early-life adverse childhood experiences mediate the relationship between childhood socioeconomic conditions and adolescent health outcomes in the UK? Journal of Epidemiology and Community Health. 2020;74(11):969-75.
24. Batchelor S, Carr A, Gordon E, Freiberg K, Hay I, Homel R, et al. The Pathways to Prevention project: doing developmental prevention in a disadvantaged community. Trends & issues in crime and criminal justice no. 323. Canberra Australian Institute of Criminology.; 2006.
25. Adjei N, Schlüter D, Straatmann V, Melis G, Fleming K, McGovern R, et al. Impact of poverty and family adversity on adolescent health: a multi-trajectory analysis using the UK Millennium Cohort Study. The Lancet Regional Health - Europe. 2021:100279.
26. Felitti V, Anda R, Nordenberg D, Williamson D, Spitz A, Edwards V, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. American Journal of Preventative Medicine. 1998;14(4):245-58.
27. Blackman J. Early intervention: A global perspective. Infants and Young Children. 2002;15(2):11-9.
28. Sved Williams A. Perinatal and infant mental health in Australia: moving forward towards REAL prevention and early intervention - can we do it? Australasian Psychiatry : Bulletin of Royal Australian and New Zealand College of Psychiatrists. 2017;25(3):274-6.
29. Heffron M. Clarifying concepts of infant mental health -- promotion relationship-based preventive intervention, and treatment. Infants & Young Children: An Interdisciplinary Journal of Early Childhood Intervention. 2000;12(4):14-21.
30. Nash J. Incorporating Infant Mental Health Strategies Into Early Intervention Practice. Developmental Disabilities Special Interest Section Quarterly. 2014;37(6):1-4.
31. Barrows P. Making the case for dedicated infant mental health services. Psychoanalytic Psychotherapy. 2000;14:111 - 28.
32. Morgan B, Palfrey N, Price-Robertson R, Guy S, Masters J. Introducing the National Workforce Centre for Child Mental Health: Improving the lives of infants, children and families. Family Matters. 2018(100):51-9.
33. Rosenblum K. Defining Infant Mental Health: A Developmental Relational Perspective on Assessment and Diagnosis. In: Sameroff A, McDonough S, Rosenblum K, editors. Treating Parent-Infant Relationship Problems: Strategies for Intervention. New York, USA: The Guilford Press; 2004.
34. Johnston K, Brinamen C. Integrating and adapting infant mental health principles in the training of consultants to childcare. Infants & Young Children: An Interdisciplinary Journal of Early Childhood Intervention. 2005;18(4):269-81.
35. Delaney K, Karnik N. Building a Child Mental Health Workforce for the 21st Century: Closing the Training Gap. Journal of Professional Nursing 2019;35(2):133-7.
36. Finello K, Poulsen M. Unique system of care issues and challenges in serving children under age 3 and their families. American Journal of Community Psychology. 2012;49(3-4):417-29.

37. Harmon R. The administration of programs for infants and toddlers. Child and Adolescent Psychiatric Clinics of North America. 2002;11(1):1-21.
38. Sundar P, Todd S, Danseco E, Kelly L, Cunning S. Toward a Culturally Responsive Approach to Child and Youth Mental Health Practice: Integrating the Perspectives of Service Users and Providers. Canadian Journal of Community Mental Health. 2012;31(1):99-113.
39. Jain S, Reno R, Cohen A, Bassey H, Master M. Building a culturally-responsive, family-driven early childhood system of care: Understanding the needs and strengths of ethnically diverse families of children with social-emotional and behavioral concerns. Children and Youth Services Review 2019;100:31-8.
40. Cassidy J, Shaver P. Handbook of attachment: Theory, research, and clinical applications. Cassidy J, Shaver P, editors. New York, NY, US: The Guilford Press; 1999.
41. Erickson N, Julian M, Muzik M. Perinatal depression, PTSD, and trauma: Impact on mother–infant attachment and interventions to mitigate the transmission of risk. International Review of Psychiatry. 2019;31(3):245-63.
42. Steinhardt K, Kissgen R. Promoting maternal sensitivity in support of the emerging mother-infant attachment: results from a brief in-home intervention. Infant Mental Health Journal. 2010;31(3):120.
43. Puckering C, Webster J, Wilson P. Secure mother-infant attachment and the ABC programme: a case history. Community Practitioner. 2011;84(1):35-7.
44. O'Connell M, Boat T, Warner K. Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities. O'Connell M, Boat T, Warner K, editors. Washington, DC, US: The National Academies Press; 2009.
45. Aronen E, Kurkela S. Long-term effects of an early home-based intervention. Journal of the American Academy of Child & Adolescent Psychiatry. 1996;35(12):1665-72.
46. Macdonald E, Mohay H, Sorensen D, Alcorn N, McDermott B, Lee E, et al. Current delivery of infant mental health services: are infant mental health needs being met? Australasian Psychiatry : Bulletin of Royal Australian and New Zealand College of Psychiatrists. 2005;13(4):393-8.
47. Armstrong K, Morris J, Fraser J, Dadds M. Promoting secure attachment, maternal mood and child health in a vulnerable population: a randomized controlled trial. Journal of Paediatrics & Child Health. 2000;36(6):555-62.
48. Sadler L, Slade A, Close N, Webb D, Simpson T, Fennie K, et al. Minding the Baby: Enhancing Reflectiveness to Improve Early Health and Relationship Outcomes in an Interdisciplinary Home-Visiting Program. Infant Mental Health Journal. 2013;34(5):391-405.
49. Kozhimannil K, Trinacty C, Busch A, Huskamp H, Adams A. Racial and ethnic disparities in postpartum depression care among low-income women. Psychiatric Services. 2011;62(6):619-25.
50. Perry D, Conners-Burrow N. Addressing Early Adversity Through Mental Health Consultation in Early Childhood Settings. Family Relations. 2016;65(1):24-36.
51. Sellström E, Bremberg S. The significance of neighbourhood context to child and adolescent health and well-being: a systematic review of multilevel studies. Scandinavian Journal of Public Health. 2006;34(5):544-54.
52. McLuckie A, Landers A, Curran J, Cann R, Carrese D, Nolan A, et al. A scoping review of mental health prevention and intervention initiatives for infants and preschoolers at risk for socio-emotional difficulties. Systematic Reviews. 2019;8(1):183.
53. Department of Health and Human Services. Maternal and Child Health Service Guidelines. Melbourne, Australia, Department of Health and Human Services; 2019.
54. Department of Health and Human Services. Enhanced Maternal and Child Health Program Guidelines. Melbourne, Australia, Services DoHaH; 2019.

55. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. International Journal of Social Research Methodology. 2005;8(1):19-32.
56. Munn Z, Peters M, Stern C, Tufanaru C, McArthur A, Aromataris E. Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. BMC Medical Research Methodology. 2018;18(1):143.
57. Aromataris E, Munn Z. JBI Systematic Reviews 2020 [Available from: https://synthesismanual.jbi.global/.
58. Levac D, Colquhoun H, O'Brien K. Scoping studies: advancing the methodology. Implementation Science. 2010;5(1):69.
59. Tricco A, Lillie E, Zarin., O'Brien K, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Annals of Internal Medicine. 2018;169(7):467-73.
60. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. 2021;372:n71.
61. Osofsky J, Thomas K. What is Infant Mental Health? Washington, D.C, USA: Zero to Three; 2012. Contract No.: 2.
62. Frankel K, Gleason M-M, Lieberman A, Egger HL, Zeanah CH. DC:0-5TM Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood: An Overview. Journal of the American Academy of Child & Adolescent Psychiatry. 2018;57(10, Supplement):S333.
63. Zeanah C, Zeanah P. Definition of infant mental health. Washington D.C, USA: Zero to Three.; 2001.
64. Berg A. Infant-parent psychotherapy at primary care level: establishment of a service. South African Medical Journal 2012;102(6):582-4.
65. Berg A. Reflective Practice in Infant Mental Health - A South African Perspective. Infant Mental Health Journal. 2016;37(6):684-91.
66. Bohr Y, Bimm M, Misbah KB, Perrier R, Lee Y, Armour L, et al. The Crying Clinic: Increasing accessibility to Infant Mental Health services for immigrant parents at risk for peripartum depression. Infant Mental Health Journal. 2021;42(1):140-56.
67. Brophy-Herb H, Schiffman R, McKelvey L, Cunningham-DeLuca M, Hawver M. Innovations in practice. Quality improvement: lessons learned from an infant mental health-based Early Head Start program. Infants & Young Children: An Interdisciplinary Journal of Early Childhood Intervention. 2001;14(2):77-85.
68. Cheng S, Kondo N, Aoki Y, Kitamura Y, Takeda Y, Yamagata Z. The effectiveness of early intervention and the factors related to child behavioural problems at age 2: a randomized controlled trial. Early human development. 2007;83(10):683-91.
69. Dawson N, Richards J, Frost K. The Ububele Baby Mat Service - A primary preventative mental health intervention in a culturally diverse setting. Journal of Child and Adolescent Mental Health. 2017;29(1):85-97.
70. Facchini S, Martin V, Downing G. Pediatricians, Well-Baby Visits, and Video Intervention Therapy: Feasibility of a Video-Feedback Infant Mental Health Support Intervention in a Pediatric Primary Health Care Setting. Front Psychol. 2016;7:179.
71. Farley J, Whipple E, Riebschleger J. Integrating play therapy into early childhood mental health treatment services: clinician and parent perspectives. Social Work in Mental Health. 2020;18(3):331-48.
72. Farley J, Whipple E. Expanding Infant Mental Health Treatment Services to at-risk pre-schoolers and their families through the integration of relational play therapy. Infant mental health journal. 2017;38(5):669-79.
73. Fox R, Mattek R, Gresl B. Evaluation of a university-community partnership to provide home-based, mental health services for children from families living in poverty. Community mental health journal. 2013;49(5):599-610.

74. Fox R, Holtz CA. Treatment outcomes for toddlers with behaviour problems from families in poverty. Child & Adolescent Mental Health. 2009;14(4):183-9.
75. Hunter R, Glazebrook K, Ranger S. The Leeds Infant Mental Health Service: early relationships matter. Journal of Reproductive and Infant Psychology 2020.
76. Kadik F, Shaff J, Okeke J, Berger S. Integrating evidence-based practices into early childhood mental health clinics: A dynamic approach to strengthening the resilience of children birth to five and families. Journal of Family Social Work. 2020;23(2):164-76.
77. Kennedy H, Ball K, Barlow J. How does video interaction guidance contribute to infant and parental mental health and well-being? Clinical Child Psychology & Psychiatry. 2017;22(3):500-17.
78. Klawetter S, Glaze K, Sward A, Frankel KA. Warm Connections: Integration of Infant Mental Health Services into WIC. Community Mental Health Journal. 2020;57:1130-41.
79. Marcus S, Malas N, Quigley J, Rosenblum K, Muzik M, LePlatte-Ogini D, et al. Partnerships with Primary Care for the Treatment of Preschoolers. Child and Adolescent Psychiatric Cinics of North America. 2017;26(3):597-609.
80. Molnar B, Lees K, Roper K, Byars N, Méndez-Peñate L, Moulin C, et al. Enhancing Early Childhood Mental Health Primary Care Services: Evaluation of MA Project LAUNCH. Maternal & Child Health Journal. 2018;22(10):1502-10.
81. Lyon A, Budd K. A community mental health implementation of Parent-Child Interaction Therapy (PCIT). Journal of Child & Family Studies. 2010;19(5):654-68.
82. Ofonedu M, Belcher H, Budhathoki C, Gross D. Understanding Barriers to Initial Treatment Engagement among Underserved Families Seeking Mental Health Services. Journal of Child and Family Studies 2017;26(3):863-76.
83. Macdonald E, Mohay H, Sorensen D, Alcorn N, McDermott B, Lee E. Current delivery of infant mental health services: are infant mental health needs being met? Australasian Psychiatry. 2005;13(4):393-8.
84. Masoe P, Bush A. A Samoan perspective on infant mental health. Pacific Health Dialog. 2009;15(1):148-55.
85. Preston N, Amod Z, Frost K. Practitioners' Perceptions and Experiences of the Baby Mat Mental Healthcare Intervention. Child Care in Practice. 2019;25(3):310-25.
86. Rodriguez G, Garcia D, Blizzard A, Barroso N, Bagner D. Characterizing Intervention Strategies Used in Community-Based Mental Health Care for Infants and Their Families. Administration and Policy in Mental Health. 2018;45(5):716-30.
87. Segal L, Guy S, Leach M, Groves A, Turnbull C, Furber G. A needs-based workforce model to deliver tertiary-level community mental health care for distressed infants, children, and adolescents in South Australia: a mixed-methods study. The Lancet Public Health. 2018;3(6):e296-e303.
88. Shea S, Jester J, Huth-Bocks A, Weatherston D, Muzik M, Rosenblum K, et al. Infant mental health home visiting therapists' reflective supervision self-efficacy in community practice settings. Infant mental health journal. 2020;41(2):191-205.
89. Shea S, Goldberg S, Weatherston D. A community mental health professional development model for the expansion of reflective practice and supervision: Evaluation of a pilot training series for infant mental health professionals. . Infant mental health journal. 2016;37(6):653-69.
90. Taylor M, Kikkawa N, Hoehn E, Haydon H, Neuhaus M, Smith A, et al. The importance of external clinical facilitation for a perinatal and infant telemental health service. Journal of Telemedicine and Telecare. 2019;25(9):566-71.
91. Marcellus L, Shahram S. Starting at the Beginning: The Role of Public Health Nursing in Promoting Infant and Early Childhood Mental Health. Nursing Leadership (Toronto, Ont). 2017;30(3):43-53.

Table 1: Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
Infants and young children (aged 0-5 years) who may be experiencing or diagnosed with mental health issues. Studies that have sample of children aged 0-5 years >50% or mean age <5 years Maternal health - only if it has infant health included in some way - either sample or intervention or concept Mental Health Programs, Mental health Interventions, Models of Care	Children aged 6 years and over. Children in OOHC/Foster care Maternal mental health (solely) Paternal mental health (solely) Outcome measures (solely) Acute or tertiary hospital care
Empirical studies; case studies; qualitative studies; Systematic Reviews or other syntheses which include at least one empirical study	Narrative reviews, reflections, conceptual studies, study protocol papers, opinion piece or commentaries. Conference papers, reviews, reflections Dissertations, Conference papers and abstracts; submissions (e.g., to enquiries or commissions)
Peer-reviewed journals	Published before 2000
Published 2000-2021	Languages other than English
Grey literature	Inaccessible online
English Language	
No geographic limitation	

Author, Year	Type of study	Study title	Aims/ purpose	Study population and context	Sample size	Methodology/methods	Relevant outcomes (including infant mental health)

Berg, A. (a) 2012	Empirical research study - quantitative	Infant-parent psychotherapy (IPP) at primary care level: Establishment of a service	To establish a mental health (MH) service for children aged 0 - 3 years (yrs.), for delivery of IPP in a community setting.	Infants 0-3 yrs. (referred 1 to 41 months (mo.) [M=15.6]) attended MH service delivering IPP (2006 to 2010) from Xhosa speaking families in Khayelitsha, South Africa (SA).	N = 179 infants (male N = 80, female N = 99).	<u>Treatment Intervention:</u> • Children presenting for immunisations weighed at every clinic visit. • Infants who demonstrated faltering weight on growth monitoring chart referred to IPP service after medical screening to exclude acute physical pathology. • Information from initial interviews formed basis for short-term multimodal IPP intervention targeted at identified stressors. • Additional psychotherapeutic sessions scheduled as required, depending on patient load and individual need. <u>Measures:</u> • DC:0-3R Classification MH and Development Disorders of Infancy and Early Childhood - Diagnosis and standard multi-modal IPP for short-term interventions.	Primary reason for referral: faltering weight. Most frequent psychiatric disorder was 'feeding disorder of caregiver-infant reciprocity'. 75% proved compliant with treatment. 78% improvement in relationship between caregiver and child. 76% age-appropriated functioning of the infant. Mothers and infants who had greatest number of ongoing sessions either achieved or maintained their optimal functioning. IPP was effective and readily accepted by the community.
Berg, A. (b) 2016	Case series	Reflective practice in infant MH- A South African perspective	To highlight importance of culturally informed observation through a case example.	Infant male age 9 mo. who attended infant MH service at Cape Town clinic, SA.	N = 1	Case example used to describe the use of reflective practice in intercultural settings.	Importance of the observation of detail and the reflections brought about by the conversation between the clinician and community counsellor.
Bohr, Y. et al. 2021	Program evaluation mixed	The Crying Clinic (CC): Increasing accessibility to infant MH services for immigrant parents at risk for peripartum depression (PPD)	Designed to reduce the barriers and stigma related to the use of traditional infant MH services for immigrant parents deemed at high risk of PPD.	Infants (and mothers) attended the CC March 2014 to August 2016. Infant age range at first visit, 1 to 47 mo. 19 reported cultural background: Asian (75%) (Southeast Asian [25%], South Asian [25%], East Asian [14%], West Asian 11%]), 18%	N = 44 infants (N= 28 male, N=19 female)	<u>Treatment Intervention:</u> • The CC is one session walk-in service acting as gateway to traditional existing infant MH offerings. • The CC offers stand-alone interventions for families and provides timely solution-focused assessment and brief relational and psychoeducational intervention for infant and toddler behaviours (such as crying). <u>Measures:</u>	72% of 36 self-reporting clients had not received MH services. Most clients referred by diverse community agencies. Crying and behavioural issues were most frequently reported and rated as relatively serious (most ranging 7-10 seriousness). 39 parents completed MHST and 97% did not report significant MH issues for children.

				"Canadian" and 7% Caribbean. The CC is in Scarborough, Canada.		• Client Questionnaire - general information about infant, previous involvement of received services, source of referral. • Client Statement - parents report concerns and rate seriousness of concerns (1-10 Likert scale), family strengths, cultural considerations, and parents desired changes for child. • MH Screening Tool (MHST) - broad evaluation of child's MH. • Nipissing District Developmental Screen (NDDS) –overview of child's development (13 checklists) • Edinburgh Postnatal Depression Scale (EPDS) – screening tool for (10 item). • Patient Health Questionnaire-2 – screening tool for depression – not diagnostic tool • Generalized Anxiety Disorder 7-Item Scale (GAD-7) – assesses generalised anxiety. • NCAST Network Survey – amount/quality of professional support in client social network • Client Evaluation – client experience of the CC	Based on 33 responses to the Developmental Screen - 70% reported as at risk of developmental concerns. Based on 25 parent responses on EPDS 48% reached the clinical threshold for concern of PPD. 100% clients reported high satisfaction with the service - reporting that their individual and cultural needs were met. 91% would recommend to friend/relative. The CC met goal of increasing accessibility to infant MH services for community of immigrant parents (72% had not sought support before, 80% referred to other MH services) and was successful in enhancing agency and coping skills based on feelings of empowerment. The ability of CC program to reduce stigma and attract new immigrant parents (82% clients had never tried MH services for their presenting concerns).
Brophy-Herb, H. et al. 2001	Program evaluation - quantitative	Quality improvement: lessons learned from an infant MH-based early head start program	To examine growth in the quality of parent-infant interactions and child development as a function of program services and parents' satisfaction with	Infants (mean age at baseline 14.4 mo. [SD= 13.6, Range= 1.5-32.9 mo.]) enrolled in the Infant MH Model in Early Start Program and mothers (mean age 23.9 years [SD=5.3, Range=15-43 yrs.]) United States of America (USA)	N= 126 (infants)	Measures: • Nursing Child Assessment Teaching Scale (NCATS) - 73-item binary-scored instrument to assess the quality of parent-infant interactions during structured teaching task. NCATS, which consists of 6 subscales (4 parents, 2 infant) - mother and infant behavioural contributions to the interactions. • Ages and Stages Questionnaire (ASQ) - developmental outcomes	Parent-infant interactions: Mothers' scores tended to increase over time, although maternal scores in general were not as positive as infants' scores. Infants' scores continued to stay above the worrisome range across assessment periods. Satisfaction scores were high for parents engaged in program from first assessment.

			relationships with service providers			• Working Alliance Inventory (WAI) Client version - parent-home visitor relationship. Administration of measures: • (T1) NCATS and facilitations of parent completed ASQ. • NCATS, ASQ, and WAI were administered every 6 mo. In a 24-mo. period.	
Cheng, S. et al. 2007	Randomised Control Trial (RCT) - quantitative	The effectiveness of early intervention and the factors related to child behavioural problems at age 2: A randomized control trial.	1) To assess the effectiveness of early home-based intervention as a community health service. 2) To evaluate the influence of both early maternal depression and mother-infant relationships on child behavioural problems at age 2 yrs. in a longitudinal study.	Mother-infant pairs enrolled in early home-based intervention delivered by the Tatomi Health Care Centre in Yamanashi Precetur, Japan.	N= 95 (N= 48 intervention group, N= 47 control group)	95 mother-infant pairs were recruited to participate in baseline assessment. Randomly assigned to intervention group or control group. Treatment intervention: *Control Group:* received standard centre-base service including education regarding parenting, infant nutrition, development, physical health, other services and infant medical check-ups. *Intervention Group*: received standard care plus monthly specific home visits by public health nurse for 5 mo. To enhance the affective interaction between mother and infant (between 4 and 9 mo.). Nurses received special training aimed at improving the quality of mother-infant relationships. Measures: • Centre for Epidemiological Studies Depression Scale (CES-D) and demographic characteristics. • Mother-infant observation (and recording) for 10 mins while playing with standard set of toys in laboratory playroom. • Parent-Infant Relationship Global Assessment Scale (PIRGAS) - Assessment of mother-infant recording Administration of measures:	The intervention had no significant impact on child behavioural problems. However, for mothers with a disturbed relationship with their infants, the rate of improvement in the quality of the relationship was higher in the intervention group.

						(T1) at infant medical check-up at 4 mo., (T2) infant at 10 months, (T3) child at 2 yrs.	
Dawson, N. et al. 2017	Case series	The Ububele Baby Mat Service (UBMS) – A primary preventative MH intervention in a culturally diverse setting	To explore how the UBMS and practitioners' position and locate themselves in a culturally diverse community setting, where multiple meaning systems are drawn on for making sense of health concerns.	Mothers and infants who received the UBMS in Alexandra. SA.	Not Reported (NR)	Case notes used to describe the UBMS model. Treatment intervention: • UBMS is a community-based clinic, primary-prevention level MH intervention. Self-referral. • Mat is co-facilitated by a pair of Baby Mat practitioners who represent diversity in the team whether it is cultural background, race, or background knowledge. The multi-lingual co-therapist works with the infant-parent dyad to promote health in care-giver attachments. • Sessions (90 minutes (min.) duration. Sessions with up to 2-6 dyads. Intervention with each dyad can last between 15 and 60 min. and occur in full view of the other mothers and nurses in the clinic.	The UBMS was well-received in a culturally diverse setting. However, some caregivers did not return to the UBMS in fear of being humiliated, disempowered, or stigmatized as not a 'good enough' mother.
Facchini, S. et al. 2016	Case Series	Paediatricians, Well-Baby Visits (WBV), and Video Intervention Therapy (VIT): Feasibility of a Video-Feedback Infant MH Support Intervention in	To evaluate feasibility and acceptability of behavioural/cognitive psychological intervention in paediatric primary care WBVs. Intervention aims to support caregivers' sensitivity and mentalization to	Infants 0-8 mo. and families attending a paediatric primary care community office part of larger primary care paediatric centre, part of the Italian National Health Service. They were enrolled in study within 30-day period June–July 2014. Italy	N= 4	Treatment intervention: • Short video-feedback intervention (Primary Care – VIT, an adaptation of George Downing's VIT to primary care) conducted by paediatrician. Measure: • Parent-infant interaction recording (5 min.) and the video-feedback session were performed during the same WBV and in the same paediatrician's office where the physical examination was conducted. Administration of measure:	Primary Care – VIT shown to be a promising new tool for paediatric providers to respond to IMH issues on a practical level. Preliminary findings indicate VIT has strong acceptability by parents and paediatrics in identifying IMH issues.

		a Paediatric Primary	promote infant MH (IMH).			• 6 video-feedback sessions were performed for each baby at different ages (1, 2, 3, 4, 6, 8 mo.). • A series of different interactional situations were filmed and discussed: touch, cry, affective matching, descriptive language, feeding, separation and autonomy.	
Farley, J & Whipple, E. 2017	Case series	Expanding IMH Treatment Services (IMHTS) to at-risk pre-schoolers and their families through the integration of relational play therapy (RPT)	To explore similarities/differences between IMHTS and RPT in literature. To report on 2 case studies to highlight the five-phase clinical treatment process and provide insight into how IMH clinicians integrate RPT models and maintain adherence to IMH treatment approach.	Pre-school age children receiving extended IMHTS home-based program in Michigan, USA.	N = 2 (4 yrs. and 5 yrs.)	Case studies used to describe 5-phase clinical treatment process. <u>Treatment Intervention</u>: • Phase 1 - check-in period for parent and clinician to explore previous week's events and/or stressors • Phase 2 - Prep time: clinicians provide psychoeducation about treatment process, the importance of play and parental involvement within play sessions • Phase 3 – implemented a RPT model, child-parent-clinician play session • Phase 4 - clinicians meet with mothers to explore and examine their own reactions to the play and its processes • Phase 5 - post-session activity assigned by the clinician to support the parent-child dyad.	The integration of RPT increased the scope of specialized play and art techniques specific to pre-school developmental abilities, which improves clinical ability to tailor treatment services and engage and treat the family as a system.
Farley, J., et al. 2020	Sequential exploratory mixed method design	Integrating play therapy into early childhood MH treatment services: clinician and parent perspectives.	To explore how early childhood clinicians, integrate play therapy into early childhood MH treatment services with high-risk pre-	1) Low-income parents/caregivers of young children (3-6yrs.) enrolled in a community home-based MH program in the Midwest. 2) Clinicians that provided direct clinical	Qualitative Phase: N = 20 parents of children 3- 6 yrs.; N = 4 clinicians	<u>Treatment intervention:</u> • Phase 1 - check-in: explore previous week's events and/or concerns and provide support • Phase 2 – play preparation: clinicians prepare the parent for their role in play session • Phase 3 – Parent-child play session	<u>Qualitative:</u> A parallel process for the clinicians and parents identified five distinctive phases of the integrative treatment process all of which heightened parental involvement during home visits: 1) Supportive clinician-parent relationship influenced parent confidence; 2) empowerment and

			school children and their families.	services to the young child, parent and/or family in same program. USA	Quantitative phase: N =327 checklists (on 81 families)	• Phase 4 – parental reflection on play session and parental responses with clinician support • Phase 5 – post-session tasks assigned for parent to complete with child in upcoming week <u>Method:</u> • Clinicians and parents' semi-structured interviews with open-ended questions (qualitative data). • Results from interviews informed the development of a Service Provider Checklist. • Service Provider Checklist developed by research team, reviewed by supervisor and clinicians • Service Provider Checklists completed by clinicians • Results from the interviews and the Service Provider Checklist were triangulated to allow for understanding of data and to enhance the rigor of the study	ability to advocate for their child to friends and family; 3) improved familial understanding of child emotions and behaviours; 4) natural supports; and 5) reduced feelings of isolation. <u>Quantitative:</u> Clinicians reported using interventions including Play Therapy (PT) (Non-Directive; Directive/Non-Directive; or Directive), Early Childhood MH (ECMH) models: Child Parent Psychotherapy and Parent-focused Psychotherapy, Trauma-Focused Cognitive Behavioural Therapy or Bibliotherapy. Overall PT models used more often (49% of the time), than ECMH models (34% of time).
Fox, R., & Holtz, C. 2009	Quantitative	Treatment outcomes for toddlers with behaviour problems from families in poverty.	To examine the effectiveness of a treatment program for toddlers with behaviour problems further complicated by living in poverty.	Children referred to a MH clinic that specialised in providing home-based services for families of toddlers with developmental delays and significant behaviour problems. USA	N= 102 families of children (59 boys; 43 girls) referred for the treatment program. Children 1 to 5 yrs. (M = 2.66 yrs., SD = 0.74 yrs.)	<u>Treatment Intervention:</u> • Parent management training adapted from the Parenting Young Children Program (Fox & Nicholson, 2003) introducing a play component; 2) clinician training in the treatment modality. • Families received the treatment program (12 weekly sessions approx. 60 to 90 mins). <u>Measures:</u> • Parent- child interactions: 15-20 min observations measuring dimensions relating to child and parent's behaviour. • Child's compliance: parents asked to give child 5 standard requests to assess	The quality of parent-child interactions and reciprocity improved from pre-to post-treatment based on direct observations of the parents and children in their homes. Children's compliance to parental requests also increased significantly. The parent treatment program was associated with significant reductions in the frequency and severity of the child's behaviour problems.

						how well child listened. A compliance percentage was applied. • Parent Behaviour Checklist (PBC). • Eyberg Child Behaviour Inventory (ECBI). • Parent-Child Relationship Scale. • Psychiatric Diagnosis - The Kiddle Schedule for Affective Disorders, Schizophrenia for School-Aged Children (K-SADS-PL) • Family Satisfaction Survey.	
Fox, R., et al. 2013	Pilot Evaluation (2 Years)	Evaluation of a university-community partnership to provide home-based, MH services for children from families living in poverty.	To implement an evidence-based treatment program in the homes of an at-risk population of children with significant emotional and behaviour problems further complicated by developmental delays. To combine the resources of a university and a community-based agency to address the MH needs of very young children living in	Children under 6 yrs. with significant behavioural/ emotional issues (no other significant health issues) who were referred over 2-year period and participated in university-community partnership clinic that was developed specifically to address MH issues in young children, from large urban, midwestern city. USA	N= 237 children	<u>Treatment intervention</u> • Parenting Young Children (PYC) which focuses on the following: a) strengthening the child/parent relationship through non-directive play; b) addressing parents' developmental expectations for the child; c) strengthening child's pro-social d) establishing home routines and limit setting and instruction strategies. • Initial 2 hr intake evaluation conducted, review of available records and comprehensive parent interview (history and environmental factors). <u>Measures</u> • Two clinician's independent observations of child's rates of compliance to parent during non-directive play (31 separate observations) and assessment of the overall quality of the parent–child relationship was recorded.	356 Children referred for treatment. 109 (30%) Did not complete evaluation 247 completed evaluations 10 did not meet eligibility 237 started treatment programs 99 terminated programs early Completing parents were older, less likely married, and fewer children living in their home than non-completing parents. Children in both groups one or more developmental delays, speech and language delays most common for completers (51%) and non-completers (44%). At intake, children from families who completed treatment received lower challenging behaviour scores on the ECBS, as well as lower scores on the ECBI's intensity scale than children who did not complete treatment. Primary referral concerns: aggression for children (completers 46.4%, non-completers groups 54.6%), and serious

			poverty in their home settings.			• DSM4 - overall evaluation of behaviour/emotional. • Childhood Behaviour Screen (ECBS) and the Parent Behaviour Checklist (PBC) used to measure parental responses to child and child's behaviour. Implementation: 1st session within 1 week of intake and 4-6-week follow-up intervals. Session = 1.5 hours with pre-test and post-test. Final evaluation 1-year post treatment completion. Parent self-report measures applied at beginning and end of intervention and 1-year post follow-up. Method: Children referred over 2-year period to the university/community clinic and recruited into study. Comparisons made between treatment completers and non-completers. Subject attrition, potential subject selection bias, and the generalizability are addressed.	tantrums (completers 37%, non-completers 34.3%). Most children in both groups received a psychiatric diagnosis in addition to having a developmental disability. Diagnosis - Oppositional Defiant Disorder for children of (completers 71.0%, non-completers 75.8%). Children's pro-social behaviours increased and their challenging behaviours decreased following treatment.
Hunter, R., et al. 2020	Evaluation - quantitative	The Leeds Infant MH Service: early relationships matter	To evaluate the effectiveness of the Leeds Infant MH Service in providing early intervention to infants under 2 yrs. and their caregivers, where there are concerns about attachment relationship.	Children under 2yrs, and families receiving Leeds IMH service part of 'Best Start Plan' city initiative. IMHS is managed by consultant clinical psychologist and 8 staff team including specialist health visitors, infant MH practitioners, assistant psychologist, and team administrator. Initiative provides different levels (community, universal,	N = 487 evaluations of reflective case discussions of children's centre practitioners and health visitors since April 2012 N = 77 Parents accessing the 'Understanding your baby' short course	Method: • Reflective case discussion • Evaluation data and consultation evaluation collected from clinicians working with families. • Quantitative feedback from parents and carers about their experience of the short course. • Data collected each week over a 4-week period. • Parent responses provided on the experience of the service questionnaire (developed by the research team). • All data collected from April 2012 to March 2019.	The service has trained over 2500 professionals. Over 500 reflective case discussions and 200 case consultations have been delivered to practitioners, many of whom work with vulnerable infants. A screening tool has been developed to enable health visitors to identify infants at risk of developing poor attachment relationships with their caregivers. Direct therapeutic work has been completed with over 531 families, the majority (71%) before the infant was 6 months. Caregivers and professionals are positive about the service.

				targeted and specialist) of service across Leeds, UK.			
Kadik, F. et al. 2019	Evaluation - mixed	Integrating evidence-based practices into early childhood MH clinics: A dynamic approach to strengthening the resilience of children birth to five and families	To describe the process related to workforce development, implementation and evaluation of evidence-based practices (EBPs) within an early childhood MH network (ECMH) serving children from birth to 5 yrs. and their families.	Clinical service providers within a New York City ECMH network that serves families with children aged 0-5 yrs. USA	Not Applicable (N/A)	N/A	Considerations to note are that the few EBPs available for this birth to 5 yrs. population are costly, have a limited number of trainers, may not have a train-the-trainer model, and rarely have these EBPs been evaluated in multi-lingual or diverse U.S. communities. The success of implementing a multi-year cycle in NYC lies in having a funded training centre closely linked to the workforce.
Kennedy, et.al. 2017	Explanatory paper and case study	How does video interaction guidance contribute to infant and parental MH and well-being?	To describe the contribution of video interaction guidance (VIG) to the development of infant and parental and VIG practitioners' MH and well-being. To support parents to achieve attuned interaction with their baby or child.	N/A 1500 VIG practitioners/trainees from social work, health, education and the third sector, and work with pre-birth age to young adults with wide range of educational levels. UK	N = 1 - case study of infant and mother	<u>Treatment Intervention</u> The aim is to capture moments of 'better than usual' interaction on video by prompting or encouraging if necessary. VIG starts engaging parents in a possible change process by helping them form questions about how to improve their relationship with their infant. A filming session captures the best possible interactions achievable at that time. The VIG practitioner then takes 5–10 minutes of video of the parent interacting with their child. VIG practitioner edits the video, selecting a few very short clips of successful interaction that link to the parent's goals for change.	A meta-analysis of 29 studies showed that VIG feedback produced statistically significant improvement in parenting sensitivity (effect size: 0.49), parenting behaviour and attitudes (effect size: 0.37) and child development (effect size: 0.33) for children aged 0–8years (Fukkink, 2008).

Klawetter, S. et al. 2020	Exploratory - quantitative	Warm Connections: Integration of Infant MH Services into WIC	Evaluate the results from the pilot implementation of 'Warm Connections',(WC) an integrated behavioural health program that aims to reduce caregiver distress, increase caregiver confidence, increase identification of perinatal mood symptoms and improve access to the early childhood system of care by offering just-in-time behavioural health support and linking participants to community resources.	Low-income families in pilot phase of WC program in 2 Special Supplemental Nutrition Programs for Women, Infants and Children (WIC) clinics in Denver-Metropolitan area. USA	N= 68	Treatment Intervention Behavioural health services (delivered by IECMH nurses) are integrated into WIC clinics. WIC staff refer clients to the WC specialist, self-referrals also occur. WC specialists deliver both single session and longer interventions within the WIC clinic. Method Data collected during pilot phase of WC to evaluate program. WC participants completed pre-post intervention surveys at start and end of their interaction with WC. Secondary data analysis of WC pre-post survey administered over 10-month period to answer questions regarding participants' reduced distress, increased efficacy and satisfaction with program.	Warm Connections may reduce distress and increase parenting efficacy among low-income mothers and support further research of this program's feasibility.

Lyon, A., & Budd, K. 2010	Pilot Study - quantitative	A community MH Implementation of Parent-Child Interaction Therapy (PCIT)	To test the efficacy of PCIT in the context of a community MH setting with primarily low-socioeconomic status, urban, ethnic minority youth and their families. Parent training models rely on their engagement	Clinically referred children 2-7 yrs. demonstrating externalising behaviour and their family's seeking treatment at an urban community MH centre located on a university campus. USA	N = 14	The families of 14 clinically referred children aged 2–7 years and demonstrating externalizing behaviour completed PCIT initial assessment, and 12 began treatment. <u>Measures:</u> Child and Parent Functioning: • Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000; 2001) • Eyberg Child Behavior Inventory (ECBI; Eyberg & Pincus, 1999) • Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995) • Dyadic Parent-Child Interaction Coding System III (DPICS III; Eyberg, Nelson, Duke,& Boggs, 2005) Attendance and Adherence: • Session attendance • Homework completion • Dropout Satisfaction and Barriers: • Therapy Attitude Inventory (TAI; Eyberg, 1993): • Barriers to Treatment Participation Scale (BTPS; Kazdin, Holland, Crowley, & Breton,1997) Procedure: • Initial and Post-Treatment Assessment • PCIT • Treatment Integrity • Reduction of Treatment Barriers	4 families completed PCIT treatment. Families demonstrated clinically significant change on observational and self-report measures of parent behaviour, parenting stress, and child functioning. Although treatment dropouts demonstrated more attenuated changes, observational data and parent-reported problems across sessions indicated some improvements with lower doses of intervention.
Macdonald, E. et al. 2005	Qualitative	Current delivery of infant MH services: are infant MH needs being met?	To identify services supporting the wellbeing of infants and their families in an area of South Brisbane,	Staff from 18 services offering antenatal services, or programs primarily focused on children under the age of 2 yrs. and/or their families, including 5	N = 18 individual staff members or groups of staff, from each of the service providers included in the study	Semi-structured interviews were conducted with staff from 18 service providers with aim of identifying the precise nature of services offered, problems encountered and perceived gaps in service provision, and potential strategies for improving service delivery.	Shortage of funding and resources and lack of necessary training and skills. As a result, there was relatively little emphasis on the provision of infant MH services, such as early relationship assessment/support or infant–parent psychotherapy, and more emphasis on parenting knowledge and skills and the

			Australia, highlight problems of accessing these services and recommend strategies to make them more readily available.	government (govt) (child protection, maternal and child health, and developmental), 2 non-govt/consumer organisations, 5 Mater Mothers' Hospital/Mater Children's Hospital clinics, 4 specialist family support programs and 2 Maternal Child and Youth MH Services. Australia		The interviews were tape recorded and transcribed. The data coded thematically to provide a comprehensive overview of the pattern of service providers' responses (limitations in services, concerns of service providers, suggestions for improving services). The development of themes was crosschecked against the views of an experienced child development clinician and researcher (second author, HM) and an infant MH specialist (fourth author, NA).	infant's physical health development and safety. A lack of funding also produced lengthy waiting lists, the lack of comprehensive services for multi-need families, and the discontinuity of antenatal/postnatal care prohibiting effective monitoring of parents and infants.
Marcellus, L., & Shahram, S. 2017	Case Series	Starting at the beginning: The role of public health nursing (PHN) in promoting infant and early childhood MH.	To describe the concept of infant and early childhood MH, identifies key national policies, and explores the role of PHNs in supporting mental wellness for infants and families, in keeping with health equity and Indigenous perspectives.	Nurse-Partnership home visitation program – Hamilton & The Mother's Story - Vancouver Island, Canada	NR	Two case studies used to exemplify value of infant and early childhood MH.: <u>Therapeutic Intervention:</u> • The Nurse-Family Partnership© home visitation program: evidence-based intensive maternal and child health home visiting intervention that provides socially and economically disadvantaged young first-time mothers with knowledge and support through the pregnancy, continuing until children reach two yrs. • The Mother's Story approach to perinatal care: the philosophy incorporates language, values and beliefs into a way of working with families that is strengths-based, respectful and culturally safe.	The Nurse-Family Partnership© home visitation program: improve pregnancy outcomes, child health, development and economic self-sufficiency. Partnering first-time mothers with PHNs empowers them to create a better life for children and themselves. The Mother's Story approach to perinatal care: care is relational, culturally safe, trauma-informed and woman-centred. Moves away from the biomedical model of care towards client-centred and driven care.
Marcus, S. et al. 2017	Program evaluation/case study	Partnerships with primary care for the treatment of pre-schoolers	To describe access issues in child psychiatry and how access impacts the appropriate	Preschool children referred to Michigan Child Collaborative Care Program (MC3) & Primary care providers (PCPs) in 19	N = 92 (aged 0-5 yrs.) who received MC3 and phone consultations of a total of 264	Retrospective demographic and diagnostic data collected from pre-school children referred to the MC3 program - Telepsychiatry consultations. <u>Treatment intervention:</u>	N=264 referred to BHC in PCP. 36% of these centred on referral information and parenting/behavioural support. Pre-schoolers most frequently referred to behavioural health consultants (BHCs) and child psychiatrists in the

			diagnosis and treatment of preschool children.	community health regions & 5 school-based programs between 2012-2016. Michigan, USA	children referred to behavioural health consultant (BHC) in PCP.	• MC3 programs allow preschool children access to psychiatry, can assist diagnostic clarification, and assist PCPs to develop nuanced approach to the diagnosis and management. Measures: • Reason for referral to behavioural consultant for pre-schoolers • Parent interview – Working Model of the Child Interview • Parent-child interactions observations using a modified structured interactive task – Crowell Problem Solving Procedure • Child attachment assessment – Strange Situation • Infant-Toddler Social and Emotional Assessment (ITSEA) • Child Behaviour Checklist (CBCL) • Social Communication Questionnaire (SCQ) • Trauma Symptom Checklist for Young Children (TSCYC)	MC3 for diagnostic clarification, referral information and pharmacotherapy expertise. Phone consultation outcomes: N= 21 (23%) of pre-schoolers are on psychotropic prescription medication. ADHD and nonspecific disruptive behaviours are most common diagnoses may be driving pharmacotherapy decisions. N= 20 (21%) Trauma Telepsychiatry consultation in MC3 program: N= 7 (5 males, 2 female) disruptive behaviour disorders were often diagnosed with co-occurring anxiety, traumatic, language, sensory, or mood disorders. The MC3 consultation can assist further diagnostic clarification and assist PCPs in developing more nuanced approach to the diagnosis and management. PCPs appropriately used BHCs to assist in finding MH referral resources. BHCs reported frustration in finding appropriate trauma-informed evidence-based programs for young children.
Masoe, P., & Bush, A. 2009	Case Series	A Samoan perspective on infant MH	To explore the benefits and practical application of the collaboration between a Pacific home visiting progra m and child and adolescent MH	Pacific communities and a Pacific home visiting program based at Taeaomanino Trust in Porirua, Aotearoa/New Zealand (NZ) and child/adolescent MH service clinicians.	N/A	Description of background to development of new field of IMH and importance for Pacific communities in Aotearoa/NZ. This partnership has interest in IMH, to further develop IMH understandings and practices in this early intervention service. Discussion of Samoan concepts and research that could inform IMH theory and practice. Author's personal reflection on Samoan Experience, relevance of attachment ideas to family relationships and work with Pacific families.	Through collaboration between Taeaomanino Trust Family Start service and clinicians from a Pacific CAMHS service, it has been possible to nurture the development of infant MH ideas and reflective thinking in the context of this Pacific home visiting early intervention program. Yet, the acceptability of infant MH therapeutic methods for Pacific people have not been established.

			service clinicians.				
Molnar, B. et al. 2018	Program evaluation - quantitative	Enhancing early childhood MH primary care services: Evaluation of MA Project LAUNCH	To evaluate the efficacy of an innovative early childhood MH intervention, Massachusetts Project LAUNCH.	Children and caregivers at 3 treatment sites that participated in LAUNCH 201i to 2015: 2 community health centres, 1 hospital-based paediatric clinic. Participants primarily low-income residents surrounding Boston, USA.	N = 225	A longitudinal study design was used to test the hypotheses that (1) children who received services would experience decreased social, emotional, and behavioural problems over time and (2) caregivers' stress and depressive symptoms would decrease over time. Children and caregivers were assessed at three time points: baseline (T1), 6 months (T2), and 12 months (T3) after enrolment using various screening tools.	Analyses showed that LAUNCH children who scored in age-specific clinically significant ranges of social, emotional, and behavioural problems at T1 scored in the normal range on average by T3. Caregivers' stress and depressive symptoms also declined across the three time points. Results support hypotheses that the LAUNCH intervention improved social and emotional health for children and caregivers.
Ofonedu, M. et al. 2017	Mixed methods qualitative	Understanding barriers to initial treatment engagement among underserved families seeking MH services	To examine barriers to first treatment attendance for parents who initially sought MH services for their child but did not attend the first treatment session.	Parents of children 2-5 yrs. from dominantly low-income, African American population who initiated MH service between 2012-2015 (and enrolled in initial study) and those who did not attend first treatment session at urban children's MH centre. USA.	N = 123 parents enrolled in initial study N = 36 (parents did not attend first MH treatment)	<u>Measures:</u> • Child Behaviour Checklist 1½ -5 - 99-item parents report of child's internalizing/externalising problems • Parenting Stress Index Short Form (Abidin 1995) – 36-item measure parenting stress • Centre for Epidemiologic studies Depression Scale-Revised- 20-item measure parental depression • Social Risk Index-created for study based on Popp et al. (2008) to measure social adversity using demographics using 11 indicators • Length of Treatment Delay-number of days between intake and 1st treatment session scheduled <u>Method:</u> • A convergent mixed methods design was used (Creswell and Plano Clark 2010). • Quantitative strand examined the associations among socio-demographic and psychosocial risk, parent stress, severity of child's behaviour problems,	Of 123 parents who initiated MH treatment 36 (29.3%) never attended their child's 1st treatment session. Socio-demographic characteristics, parenting stress, depression, severity of child behaviour problems, and length of treatment delay from intake to first scheduled treatment session were compared for families who did and did not attend their first treatment session. Those parents who did not attend their child's first treatment session were more likely to have younger parent age, higher levels of depressive symptoms and living with more than 4 adults and children in the home. Findings consistent with previous studies point to level of social adversity, fear of stigma and needing help but not knowing what to expect as barriers.

						length of treatment delay, and likelihood of the parent attending the child's first MH treatment session. • Qualitative strand used semi-structured interviews with parents who did not attend their child's first MH treatment session to understand their perspectives on why they did not bring their child back for treatment.	
Preston, N., et al. 2019	Program evaluation - Qualitative	Practitioners' Perceptions and Experiences of the Baby Mat (BM) MH-care Intervention	To explore perceptions of practitioners delivering Baby Mat (BM) community-based, parent–infant MH-care intervention offered at primary healthcare clinics. This intervention aims to foster secure attachments between mothers/caregivers and infants, shaping a healthy foundation for future holistic well-being.	A purposive sampling technique was used. BM practitioners were registered psychologists or lay practitioners, selected based on specific criteria of interest to researchers (Ritchie & Lewis 2003): having undergone IMH training at community organisation, had delivered BM intervention for at least 1 yr. and attended weekly BM sessions at clinic in Alexandra Township, South Africa.	N = 12	Method: • The research followed a qualitative mode of inquiry. A qualitative descriptive exploratory research design using an interpretivist paradigm was applied to facilitate the collection, thematic analysis and understanding of rich interpretative data (Hsieh & Shannon, 2005). • 2 focus groups (7 and 4 participants respectively) and 3 individual semi-structured interviews were conducted. The use of this research design aided the exploration of the perceptions and experiences of the practitioners.	The practitioners' perceptions highlighted that their demonstrated skills of reflective functioning promote caregiver–infant attachment. The supportive disposition of the BM practitioners was suggested as an essential characteristic that mirrors caregivers' experiences of *umdlezane*. This Nguni term refers to the post-partum period when the caregiver–infant relationship is prioritised by the support of other women in the family/community. The culturally diverse co-facilitating practitioners were understood to support the therapeutic alliance and thus enrich the applicability of the BM intervention within the targeted community context.
Rodriguez, G., et al. 2018	Mixed methods	Characterizing intervention strategies used in community-based MH	To address knowledge gap on infant MH usual care practice by characterising	Community MH clinicians who provide usual MH care for infants and their families within Infant MH program from:	Phase 1: N= 5 Phase 2: N= 126	Measures: • Adapted Hawaii CAMHD measure – list of intervention strategies to select, rate use, time, and factors influencing choice of each strategy Method:	Of the intervention strategies endorsed by most participants, three were used directly with the parent in reference to the infant (i.e., parent coping 96.1%, parent psychoeducation 91.3%, and communication skills 89.4), one was

		care for infants and their families	via descriptive data on intervention strategies and programs most utilised.	Phase 1: a community MH agency. Phase 2: Florida and other surrounding states USA		• Phase I: 5 community MH clinicians contributed to adaptation of a measure of intervention strategies and the development of an online survey describing current practices in infant MH. • Phase 2: a separate sample of 126 community MH clinicians completed the online survey and provided information about the range of practices they use.	used with the infant and parent together (i.e., family engagement 87%), and one was a general strategy (i.e., relationship/rapport building 95.5%). The factors most clinicians identified as influential in their choice of intervention were family culture (91.3%), caregiver/child cognitive ability (83.7%), and clinician knowledge of intervention (88%)
Segal, L. et al. 2018	Mixed methods	A needs-based workforce model to deliver tertiary-level community MH care for distressed infants, children, and adolescents in South Australia: a mixed-methods study	To estimate the workforce needed to deliver tertiary level community MH care to all infants, children, adolescents, and their families in need using a generalisable model, applied to South Australia (SA).	0-17yrs and families including mothers in perinatal period in need of community MH services in the state of SA	N / A	<u>Method:</u> • Used population data from SA Department of Planning, Transport, and Infrastructure and 2016 workforce and budgetary data from SA Child and Adolescent MH Services (CAMHS). • Reviewed clinical and policy documents (2016 Model of Care, infant, child, adolescent MH workforce competency documents for Australia, NS, UK and USA and best practice guidelines/literature reviews, Enterprise Bargaining Agreements SA Department of Health). • Interviewed MH sector workers to understand types of clinical presentations, 3 focus groups of 14 professionals, 3 further focus groups of 29 participants SA CAMHS teams (2 metro, 1 rural). • Meetings with clinicians, consulted with expert clinical advisory group and formed 2 expert advisory groups. • Workforce estimates determined using model building on Segal's needs-based health workforce planning model. • Clinical need was established using data from the Longitudinal Study of	Full Time Equivalent Staffing (FTE) of approximately 947 people and a clinical budget of $127 million is needed. These estimates are roughly five times the existing service levels of SA CAMHS, indicating high unmet need - an outcome consistent with observations of untreated or undertreated child and adolescent distress in the LSAC and other studies. A strength of this approach is the generation of robust workforce and budget estimates reflective of real-world case complexity.

						Australian Children (LSAC) and the Young Minds Matter survey. • Care requirements were derived by workshopping clinical pathways with multi-professional panels, testing derived estimates through an online survey of clinicians.	
Shea, S., et al. 2016	Evaluation - quantitative	A community MH professional development model for the expansion of reflective practice and supervision: Evaluation of a Pilot training series for infant MH professionals	To develop and refine a specialised curriculum for IMH supervisors and staff and determine whether this training increased both IMH supervisors' and supervisees' reflective practice capacities, knowledge, skills and increased their sense of self-efficacy regarding supervision tasks and skills.	IMH supervisors and their supervisees who participated in reflective supervision training series, recruited from community MH agencies serving families at high risk, many with histories of complex trauma. To be eligible, supervisors were required to be actively supervising IMH practitioners or interns in a community MH setting, Michigan, USA.	N = 29 participants (13 supervisors and 16 IMH supervisees) for initial evaluation N = 23 participants (13 same supervisors and 10 same IMH supervisees) for 8-10-month follow up evaluation	Measures: • Reflective Supervision Rating Scale (Ash 2010) -assess supervisees' experiences 17-items • Reflective supervision Rating Scale for supervisors–adapted from Supervision Log (Weatherston 2021) piloted for this evaluation 16 items • Reflective Supervision Case Vignettes for Supervisors/Supervisees-piloted for evaluation • Reflective Supervision Self-Efficacy Scale for Supervisors/Supervisees–piloted in evaluation 17-item Method: • 8 training modules were developed to meet the reflective supervision training needs of IMH supervisors and supervisees. • Pre/post-test data collected to assess changes in knowledge, skills, and sense of self-efficacy regarding their use of reflective practice. • 8-10month follow-up data collected to determine the degree changes were sustained following completion of training. • Knowledge and skills were measured by rating scales specific to supervisee/er experiences in reflective supervision and specifically designed case vignettes. Self-efficacy regarding reflective	Most supervisees and supervisors demonstrated adequate or above-adequate knowledge of reflective practice and supervision skills in a case vignette application, suggesting capacity to apply reflective practice and supervision skills and knowledge. These post-test findings were sustained according to the 8–10 month follow-up. Supervisors continued to report higher level of self-efficacy regarding reflective supervisory tasks 8-10 months following completion of the training series, as compared to pre-test results. This indicates that the positive impact the training series had on supervisors' sense of self-efficacy regarding reflective supervision was a sustained growth and did not simply reflect an immediate post-test improvement.

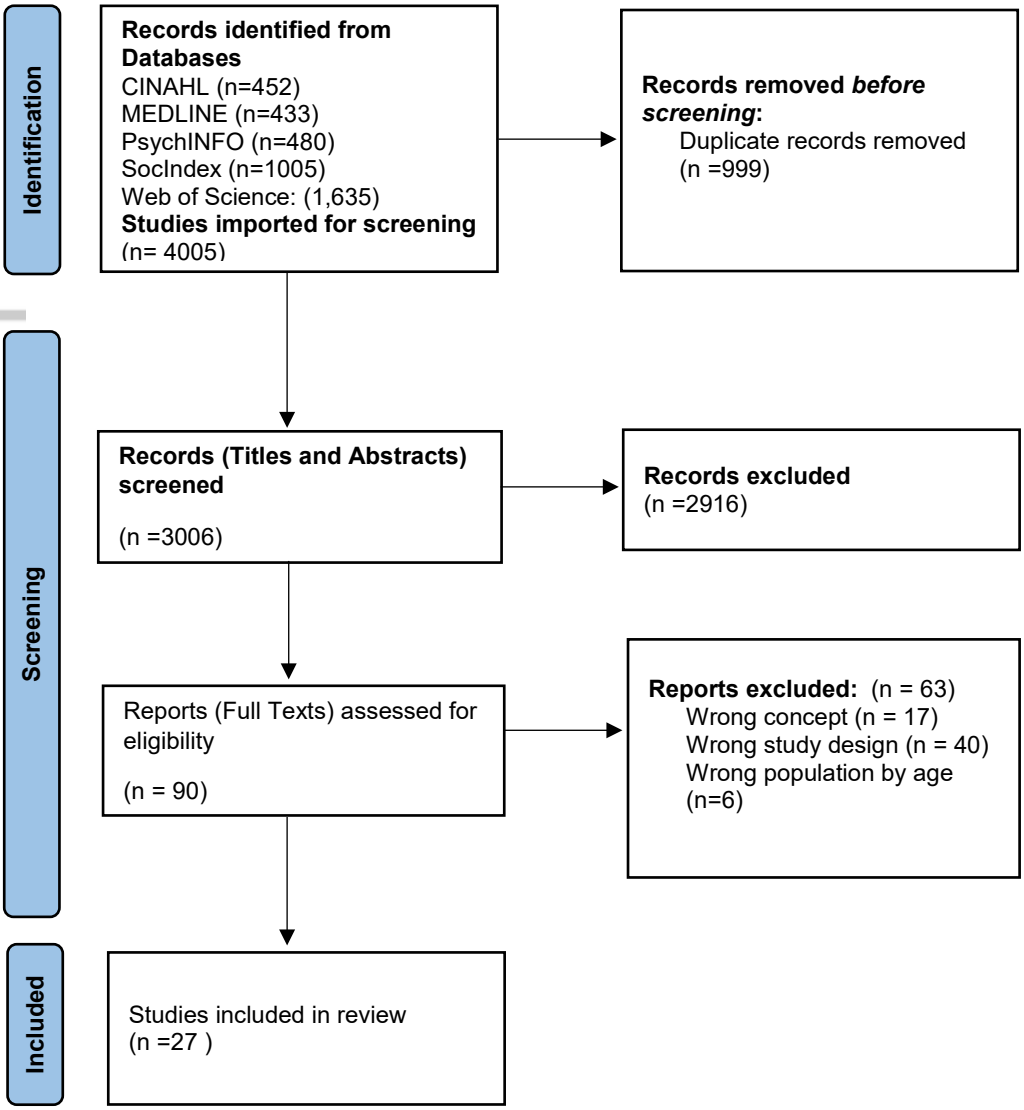
						practice and supervision was measured using new tools piloted.	
Shea, S. et al. 2020	Evaluation	Infant MH home visiting therapists' reflective supervision self-efficacy in community practice settings	Study 1: To explore properties of the Reflective Supervision Self-Efficacy Scale for Supervisees (RSSESS) including factor structure and reliability. Study 2: To examine the relationship between reflective practice self-efficacy and Infant MH-Home Visiting (IMH-HV) therapists' experience of their work.	Study 1: IMH-HV Therapists employed in Community MH Services Programs (CMHSP) settings in Michigan, USA, providing home-based IMH to caregivers and children birth -3yrs. Study 2: IMH-HV therapists who completed RSSESS at least once during 12-month study period working in 12 CMHSP Home-based services in mid- and southeaster Michigan, USA.	Study 1:(N = 116 (5 samples IMH-HV therapists combined) Study 2: N = 56	Measures: • RSSESS – 17-items and 5-point rating scale self-report measure designed to assess perceived reflective practice self-efficacy • Clinician Profile Form – assess therapist characteristics Method: • Study 1: RSSESS administered to participants for evaluations of reflective supervision training series and included the initial administration of RSSESS for IMH-HV therapists in the Michigan IMH-HV evaluation. A principle components factor analysis conducted using Oblimin rotation. Cronbach's alpha calculated to assess reliability and Bivariate correlations assessed associations between subscales. • Study 2: MH-HV therapists completed the RSSESS at 4 time points over a 12-month period and completed a Clinician Profile Form that included questions about their IMH background and their work experience, including job satisfaction and burnout.	Study 1: 4 components, use of supervisory relationship, use of reflective practice skills with families, use of observational skills and use of self-awareness. Study 2: Overall IMH-HV therapists described high levels of job satisfaction IMH-HV therapists demonstrated growth in their use of reflective practice skills with families and their observational skills over the 12-month period. Results indicated correlations between reflective supervision self-efficacy and job satisfaction as well as burnout. Results indicate RSSESS is valid and reliable tool to measure change in IMH-HV confidence and reflective practice skills.
Taylor, M. et al. 2019	Qualitative	The importance of external clinical facilitation for a perinatal and infant tele-MH service	To explore the role of clinical facilitation in implementing and sustaining the telehealth service to support perinatal and infant MH in regional, rural and	Remote site medical officers, social workers, nurses, MH clinicians, managers and health promotion workers (26-62yrs.) who use Qld Centre for Perinatal and Infant MH telehealth service (e-PIMH) in Qld, Australia.	N = 14	Method: • Semi-structured interviews were conducted with staff who were involved with e-PIMH at the remote sites The interviews were carried out between November 2018–April 2019 and had an average duration of approximately 20 min (range of 13–32 min). • Interviews were analysed using thematic analysis.	Two dominant themes of 'unmet need' and 'service visibility' emerged. Confirms the usefulness of telehealth as way to address unmet need for specialist MH services in regional, rural, and remote areas. Provides evidence to support clinical facilitation in a telehealth service with intermittent demand, to keep the service visible to remote-site clinicians and maintain awareness of the service as a referral option.

			remote areas of Qld.				

Table 3: Implications for IMH service design to improve access for infants and their families

Initial Access/Intake	Maintaining Engagement	Sustainability of IMH services
• Integration of physical and mental paediatric health services: cohesion and co-location	• Flexible and varied intervention modes through co-location and shared care models	• Use of high-quality evidence base
• Reduction of perceived stigma through: o engagement with well-established and trusted services name of service o appropriate naming and location of service o understanding the meaning attributed to mental health in families and communities	• Cultural sensitivity	• Quality improvement including consumer feedback and outcomes
• Flexible practice to improve accessibility by identifying and overcome barriers for at-risk groups	• Additional tools (e.g., video and therapies within existing practice settings	• Reflective practice and supervision to increase clinician capacity and outcome
• Health practitioner training (and use of specific tools) for the identification and early detection of IMH needs and psychosocial or material risk factors	• Specialist trained IMH clinicians	• Mental Health workforce development strategy to ensure availability of suitability trained IMH clinicians
• Other specific strategies to address barriers in specific at-risk groups e.g., translated information	• Maintain positive rapport	

Figure 1: Prisma Flow Diagram of the Scoping Review Process



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71