Scottish Government
Riaghaltas na h-Alba

Infant Mental Health Evidence Review

HEALTH AND SOCIAL CARE

social research

Infant Mental Health Evidence Review

Contents

Abbreviations

AIMH	Association of Infant Mental Health
ACEs	Adverse Childhood Experiences
ASQ	Ages and Stages Questionnaire
CAMHS	Child and Adolescent Mental Health Services
CBCL	Child Behaviour Checklist
DC:0-5	Diagnostic Classification: 0-5
IMH	Infant Mental Health
ITSEA	Infant-Toddler Social-Emotional Assessment
NIM	New Orleans Intervention Model
PNIMH Programme Board	Perinatal and Infant Mental Health Programme Board
SDQ	Strengths and Difficulties Questionnaire
WAIMH	World Association of Infant Mental Health

Executive Summary

This report covers the key findings of a small sample rapid literature review of research on perinatal and infant mental health within UK contexts as well as brief interviews undertaken with members of the clinical teams in NHS Fife and NHS Lanarkshire. This report contributes to the Evaluability Assessment of the perinatal and infant mental health programme (PNIMH) for which Public Health Scotland were commissioned by the Perinatal and Infant Mental Health programme board in 2020.

It is important to caveat that the literature review covered a small sample of varied research report types which predominantly focussed on clinical use and validation of measures. To address the gap in evidence on how infant mental health (IMH) measures are being used in practice in Scotland, brief interviews were carried out with members of the clinical teams in NHS Fife and NHS Lanarkshire. These boards were chosen as they were the recipients of the PNIMH programme board "Wave 1" funding.

While the findings presented in this report are generally considered to be from reliable sources of evidence, a rapid literature review can only provide a small amount of information and the interviews do not cover the full scope of Scotland. Therefore, it is recommended that further reading be undertaken for a deeper understanding of the larger infant mental health context.

Key Findings:

Definitions of infant mental health vary

- Prevalence rates of IMH have been reported between 16% to 18%, which are similar to that of older children and adolescents. This suggests the need to identify and treat mental health needs at the earliest stages of life.
- Definitions of IMH vary, with conceptualisations falling into two main categories of 0-3 years and 0-5 years. However, the notable majority of organisations and researchers define IMH as up to three years age, due to the differences in stages of development between 0-3 years and 3-5 years.
- IMH should be considered in contexts of secure relationships, safe and stimulating environments, emotion regulation, clinical diagnosis, and social determinants of health.

Considerations for measuring infant mental health

- Accessibility is important when working sensitively with parents and families to ensure successful identification and intervention of IMH issues. The language that is used should convey mental health promotion, rather than stigmatisation. In the case of IMH, this may mean measuring the infant's competencies as well as difficulties, which can encourage family buy-in.

- IMH measures will vary across age and domains. Due to the developmental nature of small children, not all measures cover the same ages or domains. Measures which do range from birth to childhood often measure different domains across time in order to capture developmental sensitivity, but this can make it harder to track progress over time.
- Some tools which are used with toddler and older children are being tested for use with infants. As infants are prelinguistic, these tools have been shown to be better at screening for externalising behaviours. It is difficult to screen for internalising behaviours as parents can only guess at what their young infant is thinking and feeling.
- Importantly for clinicians, the use of some measures may be constrained by time, cost, or access barriers. Measures that are brief, easy to score, and free are more widely used in clinical practice, however this use of simplified measures may mean compromising on assessment sensitivity.

The current development of infant mental health services in Scotland

- Interviews showed that the overarching aim for all measures put into practice are to “keep the baby in mind”.
- Quantitative measures which are in place include the Ages and Stages Questionnaire (NHS Fife) and the Observational Indicator Set (NHS Lanarkshire). These measures are considered as providing multidisciplinary teams with scales of easily observable behaviour for ease of referral criteria.
- A qualitative measure is in place with both boards is the Hopes and Expectations Form. This allows parents to highlight 3 areas of development they would like to see by the end of the intervention period.
- A number of challenges have been highlighted in developing new services for IMH needs including;
    1) Engagement with parents, particularly during the pandemic,
    2) Ensuring that children are not lost in the gaps between services (for example, the gaps and overlaps that occur between infant meant health and early childhood (3-5) mental health services), and
    3) Developing new services in the context of a global pandemic. COVID-19 restrictions have meant that staff are developing services and offering training opportunities in virtual workspaces. There is also a concern for staff overwhelm as health visitors and family nurses work to learn new systems during this time.
- Future successful delivery of IMH services can be achieved through increased awareness and understanding of what IMH is, how to recognise IMH issues, and what to do about it. Strategies for increasing awareness may include additional training opportunities for staff, championing multidisciplinary teams, and joined up communication across statutory and third sector services.

Introduction

Policy context

In May 2020, Public Health Scotland were commissioned by the PNIMH Programme Board to conduct an Evaluability Assessment of the Scottish Government's Perinatal and Infant Mental Health programme (Public Health Scotland, 2021). The Evaluability Assessment is a systematic and collaborative process that is undertaken to inform whether and how to create an evaluation plan (What Works Scotland, 2018). The Evaluability Assessment set out recommendations for seven studies to be carried out, one of which was a literature review of perinatal and infant mental health, with potential focusses including appropriate pathways and/or interventions for infant mental health (IMH). This report is intended to contribute to the evaluation process as outlined in the Evaluability Assessment.

Prevalence rates of infant mental health

Considering assessment issues, worldwide prevalence rates of mental health issues among infants are more difficult to determine than in older children or adults (Lyons-Ruth et al., 2017). It has been suggested, however, that such prevalence rates for infants are likely comparable to those of older children and adolescents and may similarly sit somewhere between 16% and 18% of the general population (Skovgaard, 2010; von Klitzing, 2015). These numbers suggest that the early identification of IMH issues is critical for effective intervention at the earliest possible time. Additionally, current events regarding the COVID-19 pandemic have increased difficulties in access to health services. A survey across the UK showed that 30% of respondents reported that health visitor drop-in clinics were no longer operating in their area, and 28% reported all health visitor appointments being carried out remotely, either via telephone or online (Home-Start.org, 2021). Lack of access to in-person health visitor appointments could have a knock-on effect for identifying additional mental health issues in infants as well as their parents. Considering the large number of risk factors, and that the mental health needs of infants are often easily overlooked (Parent-Infant Foundation, 2021), it is important to determine what the most appropriate measures of IMH are.

Aims and underlying questions

The primary aim of this research is to review the literature regarding appropriate measures for identifying IMH issues. The following research questions underpin this review:

- What factors are considered when choosing appropriate measures of infant mental health?
- What measures for identifying infant mental health issues are currently being used in Scotland?
- How have Covid-19 pandemic restrictions affected the identification of infant mental health issues across Scotland?

Methods

A rapid literature review on IMH and its measurement was conducted. Databases were searched for peer-reviewed literature, government, and third sector publications, as well as unpublished papers such as dissertations. The search was conducted through a number of established databases, including APA PsycInfo, Pubmed and Medline. Additionally, an extended search request was submitted to the Scottish Government Library, where specialist librarians conducted a search through recognised trusted databases (see Annex A for full details of search terms). All searches were limited to English language, research conducted within the UK, and a time period of 2016-2021. This time limit was set for two reasons – firstly, a search going back five years was expected to yield enough literature for a rapid review, and secondly, the DC:0-5 (ZERO TO THREE, 2016), a diagnostic manual for mental health in infancy and early childhood, was most recently revised and updated in 2016.

Reliability of the evidence base

The database search retrieved 18 papers that were used in the rapid review. The literature included published, peer-reviewed journal articles, Government reports, and an unpublished Doctoral thesis. Two evidence based reviews (both peer reviewed) which have been recently undertaken (Foreman, 2015; Szaniecki & Barnes, 2016) are also included in this report.

The evidence for definitions of and factors associated with IMH is largely compiled from peer reviewed journal articles from the UK, Europe, and North America, as well as Government reports, and prominent infant mental health organisations, such as the Association for Infant Mental Health (AIMH). These papers would generally be considered reliable sources of evidence.

The evidence for considerations of appropriate mental health measures is largely compiled from evidence based reviews and so it is recommended that for a deeper understanding of the individual measures, further reading should be undertaken. Trials concerning downward extensions of measures with psychometric validation are also included and reported on. These were retrieved in the form of peer reviewed journal articles and an unpublished thesis. The sample sizes of these trials vary in size (n=93, Patel et al., 2021; n=1112, Eneberi, 2017) and are made up of predominantly white, well-educated parents, which could create a risk of bias. Overall, these literature sources are generally considered to be reliable, however extending the literature search to include international evidence, particularly in regions that are comparable to the UK, such as North America, Europe, and Australasia would increase the robustness of the evidence base in future reports.

Where papers reported measures that are in use in Scotland, communication with relevant organisations was undertaken to ensure that this information is still up to date.

Evidence gaps

The literature review returned research on IMH and its measurement are, by majority, clinical research publications and third sector reports, however little evidence concerning real-world practice of IMH assessments is available. This means that while there is evidence that measures have construct validity and reliability within experimental research, there is little to no evidence of the impact that the early assessment of IMH might have on infant mental health in clinical and health settings across the country. Part of this issue may stem from the fact that dedicated infant mental health services are currently relatively undeveloped in the UK, as evidenced by the Scottish Government report titled “Delivering Effective Services” (2019). To address this evidence gap, desk research was carried out to explore what measures are currently being developed for use in Scotland.

In 2019, the Scottish Government dedicated funding for investment in perinatal and infant mental health services, and an IMH delivery plan was created to develop integrated services for infants and families across Scotland (Scottish Government, 2020). In 2019 – 2020, the PNIMH Programme Board allocated funds to two health boards: NHS Fife and NHS Lanarkshire, as a “First Wave” project to support initial service development (Scottish Government, 2020). Interviews were held with clinical practitioners at both NHS Fife and NHS Lanarkshire to understand what IMH measures are being put into place in Scotland, the challenges that they are facing and their recommendations for successful roll out of services across the country.

Key Findings

Definitions of infant mental health vary

This report has been informed by the Scottish Government PNIMH Programme Board (2020) and the report defines infant mental health as: *The child's ability to develop socially and emotionally from conception up to the age of three.*

It is important to note however that definitions of infant mental health vary, with differences in conceptualisation falling mostly under two main categories:

a. social and emotional development up to the age of three (AIMH, n.d.) and
b. social and emotional development up to the age of five (Clinton et al., 2016).

However, the majority of prominent organisations, such as AIMH and ZERO TO THREE, as well as notable mental health theorists (e.g., Zeanah et al., 2005; Lyons-Ruth et al., 2017) tend to define infant mental health as social and emotional development up to the age of three.

The complexities of developmental sensitivity of infants and young children can pose difficulties in defining a suitable age range – for example, toddlers are often classified as both infants and/or young children. This is evidenced by publications such as the Mental Health of Children and Young People Survey (NHS, 2018) which reported prevalence rates of mental health disorder in preschool children, defined as 2-4 year olds.

While ZERO TO THREE (n.d.) define infant mental health as social and emotional development from birth to three, they also use the term "infant and early childhood mental health (IECMH)" (2016) to describe social and emotional development from birth up to the age of five, implying that while there is some relevant overlap, there are clearly notable differences between these two unique stages of development (ie. infancy; 0-3 years, and early childhood; 3-5 years). This concept is also supported by WAIMH who have argued that "there are unique considerations regarding the needs of infants during the first three years of life" (2016, pg3).

Research identifies a number of factors as contributing to IMH which fall under a few key categories:

- Secure relationships

Infants and young children are dependent on the people who take care of them. The predictability that comes from a secure attachment with at least one caregiver can lead to stress and emotion regulation in infancy and beyond, which in turn can contribute to a sense of mental wellbeing across the lifespan (Doyle & Cicchetti, 2017; Naughton et al., 2019). It is important to note that the majority of research suggests that promoting IMH can be best achieved by promoting positive

relationships between infants and young children and their caregivers (Clinton et al., 2016; Love & McFadyen, 2021).

- Safe and stimulating environments

Infants and young children are at risk of developing poor mental health if the environment they are living in is unsafe or stressful. Adverse childhood experiences (ACEs) and a traumatic environment can lead to a child developing anxiety and depression, PTSD, as well as other negative externalising and internalising behaviours, such as aggression or social withdrawal (Lyons-Ruth et al., 2017). Environments affected by neglect, poverty, or violence are not only risk factors for a child's physical and emotional development, but are also likely to put a strain on the developing relationship between baby and caregiver (Clinton et al., 2016).

- Emotion regulation

ACEs have also been shown to impact on the child's temperament (McDonald et al., 2019). While a child's temperament will have an impact on their internalising and externalising behaviours, the way that a caregiver is sensitive to the needs of the infant can mitigate self-regulation problems as the child develops (Lyons-Ruth et al., 2017). Interactions between infant and caregiver that allow the infant to regulate their behaviour in a safe and exploratory manner will lead to positive mental health trajectories and a developed sense of self (Housman, 2017).

- Clinical diagnoses

While it may be more difficult to identify symptoms associated with mental health disorders in infants (Szaniecki & Barnes, 2016), it has been suggested that extended periods of irregular sleep patterns, feeding problems, and excessive crying may all be indicators of mental health disorder in infants, independent of maternal mental health risks (Olsen et al., 2019). Additionally, into toddlerhood, it is also possible to screen for more explicit clinical diagnoses, such as pervasive developmental disorders (PDD), autism spectrum disorders (ASD), and hyperactivity and inattention disorders (ADHD).

- Social determinants of health

As noted above, the infant is wholly dependent on the caregivers they are living with and the environment that they are living in, and so when measuring IMH it is also important to consider social determinants of health pertaining to the whole family, as well as the particular situation and the mental health of caregivers (Lyons-Ruth et al., 2017). Ethnicity and social economic status have both been identified as social determinants of health associated with parental and child mental health (Klawetter & Frankel, 2018), and research has long held that families living in disadvantaged circumstances are often forced to contend with the compounding effect of multiple socio-political risk factors (Sameroff & Seifer, 1995). Many infant mental health issues, such as irregular sleep patterns as well as feeding and eating disorders are associated with social determinants of health (Hvelplund et al., 2016).

Considerations for measuring infant mental health

As previously noted, this report defines infant mental health as *the child's ability to develop socially and emotionally from conception up to the age of three.* As per the report's definition of infant mental health, measures were only included in this review if they are validated for use with children under 3 years old. However it should be noted that a number of the measures that have been identified in this report are used with children with an age range of 0 – 66 months. Across the 18 papers, 11 measures were identified that are validated for use in screening for IMH issues within the defined scope of the report (see Annex B for details of the measures identified).

The measures identified within this review are mainly structured as checklists and questionnaires (see Annex B for more detail). While a number of observational measures which take the relationship between infant and caregiver into account are available, such as the Parent-Infant Interaction Observation Scale (Naughton et al., 2019), the Strange Situation Procedure (Ainsworth et al., 1978) and the CARE-Index (Crittenden, 1981), these are lengthy processes, both in terms of training and application, and as such are normally reserved for academic research rather than healthcare practice (Sleed et al., 2021) and so have been excluded from this report.

A number of factors were identified as possible considerations when deciding whether a measure is appropriate for use in clinical and health settings. These factors include:

a) accessibility,
b) measurement across domains and age ranges,
c) screening for internalising and externalising behaviours at an early age, and
d) time, cost, and access constraints.

- Accessibility

Accessibility is important when working with parents to promote the mental health needs of their child. How measures are worded can make a difference, and simple wording such as that in the Ages and Stages Questionnaire (ASQ; Squires et al., 2015) allows parents to engage with the measure in a meaningful way (Szaniecki & Barnes, 2016). Additionally, the content of the questionnaire may need to be designed differently to that of an adult mental health measure. Parents may feel anxious about labelling their child as having behavioural problems (Eneberi, 2017) and so measuring competencies as well as difficulties can lead to mental health promotion rather than mental health stigmatisation (Szaniecki & Barnes, 2016).

- Measurement across domains and age ranges

The current research shows that there are a number of measures available to use across domains and age ranges. Trying to capture the sensitivity of development at such an early age means that a number of different behaviours may need to be observed in a very short space of time. For example, problematic behaviour in a 4-year-old could often be classified as normal behaviour for that of a 2-year-old. This

may mean that different measures are employed as children progress throughout infancy and into toddlerhood. Using different measures may therefore mean that domains are tested differently, which can result in difficulties in identifying and tracking developmental problems over time (Eneberi, 2017; Patel et al., 2021).

- Screening for internalising and externalising behaviours at an early age

Some measures, such as the Child Behaviour Checklist (CBCL; Achenbach & Rescorla, 2001) and Strengths and Difficulties Questionnaires (SDQ; Goodman, 1997) have been validated for a larger age range and thus may have more longitudinal sensitivity (Patel et al., 2021). The SDQ, however is only validated for use in children aged 2 years and over. In an attempt to screen younger children, adaptations and downward extensions of the SDQ:2-4 have been trialled to validate the measure for use with infants aged 12-24 months (Eneberi, 2017; Patel et al., 2021). While there has been some success within the trials, it has been suggested that using the SDQ with children under 2 years old may be better at screening for externalising rather than internalising behaviours (Patel et al., 2021). One of the reasons for this could be that measuring internalising behaviours in infants is more difficult as parents will need to employ more guesswork to infer their baby's behaviours and intentions (Eneberi, 2017).

- Time, cost, and access constraints

All of these factors are important when considering what measures should be used in clinical and health settings. Additionally, in real world settings, there are time and resource constraints placed on practitioners which cannot be ignored. Structured checklists can be filled out more quickly and long form questionnaires are likely to provide more sensitive screening of IMH issues in the general population. However, adapted brief measures may be more relied upon in settings where time is limited. Practitioners may also not have the time to invest in long periods of training which are necessary for some measures (Naughton et al., 2019). Cost and access issues can also cause barriers, with a number of measures considered as 'gold standard' held under copyright (for example, CBCL, ITSEA. ASQ). Potentially, practitioners may need to compromise on sensitivity in exchange for a time and cost effective measure (Szaniecki & Barnes, 2016).

Measures in use in Scotland

Within the papers retrieved for this report, only two reported the current use of measures in Scotland and across the UK:

The Ages and Stages Questionnaires (ASQ) is a measure of children's emotional and behavioural development. This measure has been developed for children from 1 month to 6 years, with nine age-appropriate versions (2, 6, 12, 18, 24, 30, 36, 48, and 60 months). The ASQ is designed to be filled out by parents and measures difficulties and strengths across ages and developmental domains (Squires et al., 2015). Szaniecki & Barnes (2016) report that the ASQ is routinely used by health visitors and family nurses in the Family Nurse Partnership programme across Scotland and the UK[1].

The New Orleans Intervention Model (NIM) is a method of assessment and concurrent intervention that has been developed for child aged 6 months to 6 years in foster care. The model is a relational assessment, and uses structured interviews, observations, and questionnaires to explore the relationships between a child and their caregivers. The results of these assessments are used to inform placement decisions and intervention needs (Minnis et al., 2010). Baginsky et al. (2017) report that NIM has been offered as part of the NSPCC's service delivery in Glasgow since 2011, under the name Glasgow Infant and Family Team (GIFT), and the services are being assessed as part of the BeST? Trial[2]. NIM is also being trialled in areas of London through the London Infant and Family Team (LIFT).

NHS Board engagement to understand current development of IMH measures

To find out more about the development of infant mental health services in Scotland, brief interviews were conducted with clinical practitioners from NHS Fife and NHS Lanarkshire (for interview topic guide see Annex C). There are 14 NHS boards currently in operation across Scotland, however due to the approach of the PNIMH board to provide funding in waves, many of the boards are still considered to be in the planning phase of service development. Both NHS Fife and NHS Lanarkshire boards were recipients of the "Wave 1" funding, and as such are considered to be developing and delivering services at this time. It is for this reason that these two boards were chosen for engagement and brief interviews.

Thematic analysis of the interviews was used to understand what was deemed most important to practitioners when deciding which measures to use for infant mental health needs. The thematic analysis identified three broad themes:

a) "Keeping the baby in mind" - the overarching aim of all measures

[1] Correspondence with NHS Fife and NHS Lanarkshire confirmed that ASQ is still used by health visitors.

[2] Correspondence with Best? trial team confirmed that NIM is still in use and is being run as an RCT compared to services as usual. Trials will conclude in 2024.

b) Challenges to service delivery, and
c) Ensuring successful delivery through increased awareness and understanding of IMH.

- "Keeping the Baby in Mind": the overarching aim of all measures

“Keeping the baby in mind” was a concept that surfaced multiple times throughout both interviews. This phrase was alluded to in conversations regarding the importance of ensuring that the infant is always being considered when working with at-risk families, when the immediate needs of older members of the family may be more apparent.

> “It’s about counteracting the invisibility of infants when connecting with at risk families. Older children may be referred to CAMHS but infants are often left behind … It’s about being an ally for infants to promote their needs early on”
> – NHS Lanarkshire

When considering what measures to use to ensure an infant centred response, there were clear issues concerning a lack of appropriate or validated method of measurement. Team members from both boards discussed the need for the development of infant mental health measures that could be used effectively.

> “Historically there is a problem that there are very few measures available”
> – NHS Fife

> “Many measures are useful in some domains but there is nothing available to encompass all areas”
> – NHS Lanarkshire

As the boards develop the rollout of their infant mental health services they have chosen to use different measures as their primary tool for referral criteria.
Due to a lack of measures deemed appropriate across all domains, the team at NHS Lanarkshire have developed the Observational Indicator Set (NHS, 2021). They believe that these tools are infant centred, and purposefully designed to promote observation across all areas of functioning in order to indicate the degree of concern. In practice alongside the Observational Indicator Set are the Observational Scales designed for use with infants aged 0-12 months, 13-24 months, and 25-36 months. When using these scales, NHS Lanarkshire clinicians will work in pairs to ensure that there is a level of inter-rater agreement on the outcome scores. The scales are designed to collect similar observations to the Observational Indicator Set. Secondary measures have also been identified for use to ensure high levels of sensitivity, for example, Health Visitors have been encouraged to use the Observational Indicator Set alongside the ASQ, which are already in use, and

clinicians will also use the Brockington Postpartum and Bonding Instrument as part of their baseline assessments.

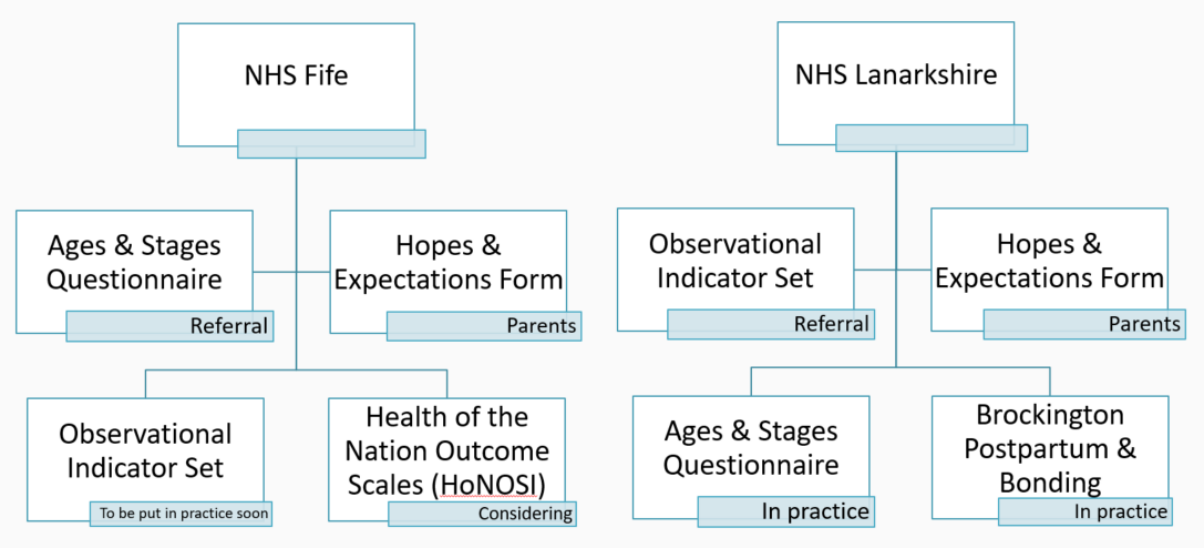
NHS Fife are currently using the ASQ as the primary measure for referral criteria. One of the reasons they have chosen this measure is that Health Visitors are already well versed in its use. The team at NHS Fife believe that the ASQ is useful as both a measureable indicator of who needs to be seen, as well as a tool that enables practitioners to notice improvements moving forward. The intention is to develop a cycle of intervention that delivers assessment, therapy, and review with punctuation points to ensure progress. The team at NHS Fife are currently considering secondary measures that they will employ to ensure levels of sensitivity, for example they are likely to put the NHS Lanarkshire Observational Indicator Set into practice. They are also interested in learning more about the Health of the Nation Outcome Scales for children and adolescents (HoNOSCA) which are currently being developed for use with infants (HoNOSI) in Australia (Brann et al., 2021).

Both NHS boards are also using the Hopes and Expectations Form in an attempt to understand the needs of parents and families. The Hope and Expectations Form is a qualitative measure which encourages parents to record three areas that they would like to see addressed for their child. This enables families and clinicians to create shared goals. Both teams were eager to employ a qualitative measure which they saw as a more holistic approach to working with families, giving parents and carers the opportunity to take part in the intervention process. This opinion is similar to that seen in the literature regarding the concept of using accessible language to ensure that parents and carers have ‘bought in’ to the services on offer.

> “Do [parents] have the capacity to reflect on their own relationship with their infant, especially at the start of the intervention … filling out questionnaires might not be appropriate for parents”
> – NHS Lanarkshire

> “This is delicate work and [we] need to be sensitive when working with parents … attending to what parents think they need, rather than being told what they need for their baby”
> – NHS Fife

- Figure 1: Measures in use in NHS Fife and NHS Lanarkshire



Challenges to Service Delivery

In developing a new service, there are likely to be a number of challenges. One such challenge concerns engagement with families who would benefit from the service, which was described as "getting parents through the door". While NHS Lanarkshire did emphasise that their IMH services are provided within family households and so they were still able to visit households who had been referred, the team at NHS Fife voice concerns about parents accessing resources that would allow them to make initial contact with the services that they needed.

> "Parents' isolation has meant engagement has been more difficult, particularly with the pandemic. … The usual structures and ways of getting help are not always being provided"
> – NHS Fife

There is also a need to be aware of the age groups to whom the service provision will be delivering. As within the literature, there are clear challenges to defining the age range that should be included within infant mental health. For example, NHS Fife are currently working with children aged 0-4 years but are aiming to move to 0-3 years at a later date. Additionally, with the overlaps between infant mental health, early childhood mental health, and CAMHS, it is important to ensure that children do not get overlooked as they move between different services.

Possibly one of the most significant challenges to the development of infant mental health services across both boards is attributed to the impact of Covid-19 on service delivery. Both teams were conscious of the way that pandemic restrictions had affected the way they communicated and worked together. Setting up teams during the pandemic meant that staff members were working out of virtual workspaces which had challenged staff collaboration and staff training opportunities.

> "We are a virtual team due to the pandemic – there is no physical base set up yet … The team members are isolated and haven't really been able to meet up in person"
> – NHS Fife

> "Online training and briefing sessions make it harder to connect with Health Visitors"
> - NHS Lanarkshire

The pandemic has caused challenges for all frontline workers and teams from both boards talked about the concern for staff who might be feeling overwhelm or burn-out.

> "We are aware of how overwhelmed health visitors currently are. The training is adding to the workload now but [we] expect that this will settle as health visitors get used to using the new tools"
> – NHS Lanarkshire

- Ensuring successful delivery through increased awareness and understanding of IMH

Training

When asked about short term goals for successful delivery, both teams discussed the need for an increased awareness of IMH. It was suggested that greater education of what IMH is, how to recognise IMH issues, and what can be done to promote IMH would be the most effective way of ensuring successful service development and maintenance. One way to do this is to provide meaningful training opportunities to staff teams. For example, NHS Lanarkshire were enthusiastic about the training that they are offering to upskill health visitors, family nurses, social workers, early years practitioners, as well as members of third sector organisations. Further, NHS Fife particularly reinforced the need to ensure accessibility of these training opportunities was examined.

> "The larger perinatal events tend to be very psychologically driven - dialogue is usually based in psychology. [We need] more events giving voice to multidisciplinary team members … Being able to talk about the different ways that services are developing"
> – NHS Fife

Championing multidisciplinary teams

Following on from the training of staff, there were discussions about the ways in which championing multidisciplinary teams would ensure the success of service delivery. It was clear from discussions with both teams that the workload is seen as a shared responsibility, not just for clinicians and psychologists, but for all adults who

come into contact with the family and the infant. This could include health visitors, General Practitioners, early years practitioners, family nurses and more.

> "[There is a] need for multidisciplinary work to ensure systemic success. It is a core part of work for therapeutic services … multidisciplinary teams need to be securely funded to ensure they are big enough and stable enough to work"
> - NHS Fife

Communication across NHS Health Boards

In connection to a number of the challenges above and the considerations for successful set up of services throughout Scotland, discussion arose concerning the nature of communication across NHS boards and national third sector organisations. Both teams talked about the usefulness of joined up thinking across the country, and were enthused by recent events held by large third sector organisations such as AIMH (Scotland Hub) and the Parent-Infant Foundation which had allowed for the sharing of ideas and resources. There was also an indication that other NHS boards who are still in the planning phase of development are looking to the Wave 1 funded boards for a guide on how to move forward.

> "We are all still in the early stage of figuring out how the mental health services will be rolled out. There has been some interest from other boards in the Indicator Set"
> - NHS Lanarkshire

Conclusions and Recommendations

A number of considerations should be undertaken before applying infant mental health measures within clinical practice. The need for accessibility, sensitive and reliable measurement, as well as time, cost and access constraints are all important factors for choosing an appropriate measure. Evidence from both the literature and 'on the ground' interviews suggest that IMH services are gaining momentum and engagement with families is progressing somewhat successfully. The main conclusions of this report and recommendations for future consideration are listed below and fall under four main headings.

Increase awareness and understanding of infant mental health across the wider public, and particularly among families and clinical and social care staff
Infant mental health is a relatively new area of psychology clinical practice, as the current development of new services demonstrates. An understanding of what IMH is and how to recognise IMH issues is critical to ensuring successful engagement with families and infants who would benefit from the services on offer. A shared language that is easy to understand and accessible to all is one way to support this aim, for example, the language used within the Getting it Right for Every Child (GIRFEC; Scottish Government, n.d.) approach encompasses mental health language that is easy to understand. Engagement with families, as well as other adults who are routinely in contact with families is critical to spreading a shared understanding of IMH issues.

Support communication across statutory and third-sector services
Interviews with the IMH clinical teams at NHS Fife and NHS Lanarkshire have evidenced that different approaches are being taken across Scotland in developing IMH services. While both teams have reported potential achievements in their own approach, nonetheless they did support the idea of joined up communication across Scotland, allowing the flow of ideas and resources to be shared. Partnerships between statutory services and charities can be useful in bringing teams together to produce a picture of what development looks like across the nation.

Support communication with child mental health services (e.g., 3-5 years) as well as 5+ (e.g., CAMHS)
The foundation of all mental health trajectories starts in infancy (Cicchetti & Rogosh, 1996) and so an understanding of IMH issues is important in understanding child and adolescent mental health. An awareness of developmental needs will ensure that mental health issues in infancy and beyond are approached correctly. Supporting communication between child mental services at all ages will provide families with critical support as their children grow and will ensure that children are not lost in the gaps between different service providers.

Revisit NHS boards regularly to clarify how service development is proceeding and what impact it has had on IMH priorities

Service development is currently underway across all NHS boards in Scotland. Regular meetings to hear updates on the development and maintenance of these services is critical in ensuring that the services are successful. Challenges will always arise – some will be temporary whereas others may continue to be a problem. Revisiting boards to understand what measures they are using, and importantly why they believe these measures are appropriate can highlight both the challenges and successes within the service, leading to greater support where it is needed most. Meaningful evaluation processes should be developed to ensure that boards are measuring outcomes that are beneficial to staff and families.

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Annex A. Search terms used in extended literature search

#1 **Infant**	#2 **Mental Health**	#3 **Measurement**
Infant	Mental health	Measure*
Baby	Mental wellbeing	Tool*
Toddler	Mental well-being	Instrument*
Preschool	Mental illness	Screen*
Early years	Mental disorder	Observation*
Newborn	Psychological	Diagnos*
Early childhood	Social development	Identif*
Child	Emotional development	Assess*
	Attachment	
	Relationships	
	ACEs	
	Adverse Childhood Experiences	
	Bond*	
	Childhood adversity	
	Interaction	
	Behaviour	
	Distress	
	Psychiatric	
	Trauma	

PsycInfo search: ab("Infant mental health") AND (measure* OR tool* OR instrument OR screen* OR observ* OR diagnos* OR assess* OR identif*)

Pubmed/Medline search: “infant mental health”[tiab] AND measure*[tiab] OR tool*[tiab] OR instrument[tiab] OR screen*[tiab] OR observ*[tiab] OR diagnos*[tiab] OR assess*[tiab] OR identif*[tiab].

Annex B. Table 1: Identified measures of infant mental health

Measure	Domains assessed	Structure	Age Range	Free Access	Brief/easy to score	Competencies assessed	Comments
ARR	-Parent-infant relational assessment	Structured interviews / Observations	0 – 18 months			3	-Intensive and time consuming -Can be used with high-risk families -Under development
BITS	-Developmental including social-emotional	Checklist / Questionnaire	0 – 24 months	3	3	3	-Need additional resources -Time consuming to train
ASQ	-Social-emotional / Behavioural	Checklist / Questionnaire	0 – 66 months		3	3	-Difficult to compare across ages
NIM	-Relational assessments	Structured interviews / Observations / Questionnaire	6 – 60 months	3	3	3	-Use with looked after children -Intensive and time consuming
ITSC	-Regulatory / sensory issues -Emotional-behavioural issues	Checklist / Questionnaire	7 – 30 months		3		-Difficult to compare across ages
ITSEA	-Social-emotional / Behavioural	Checklist / Questionnaire	12 – 36 months			3	
BITSEA	-Social-emotional / Behavioural	Checklist / Questionnaire	12 – 36 months		3	3	-Better for children over 24 months
TBSI	-Problem behaviours -Regulatory issues	Checklist / Questionnaire	12 – 40 months		3		
CBCL 1.5-5	-Externalising / internalising behaviours	Checklist / Questionnaire	18 – 60 months				-Can assess for a large number of behaviours

	-DSM oriented scales									
SDQ 2-4	-Social-emotional / Behavioural	Checklist / Questionnaire				24+ months	3	3	3	-Endorsed on CORC -Attempts for downward extension for 12-24 months
PAPA	-DC:0-5 diagnoses	Structured interview				24+ months				-Time consuming to train -Certification needed

ARR	Assessment of Representational Risk	Sleed et al. (2021)
BITS	Brigance Infant and Toddler Screen II	Brigance & Glascoe (2002)
ASQ	Ages and Stages Questionnaires	Squire et al. (2002)
NIM	New Orleans Intervention Model	Zeanah et al. (1998)
ITSC	Infant-Toddler Symptom Checklist	DeGangi et al. (1995)
ITSEA	Infant-Toddler Social-Emotional Assessment	Carter et al. (2003)
BITSEA	Brief Infant-Toddler Social-Emotional Assessment	Briggs-Gowan et al. (2004)
TBSI	Toddler Behavior Screening Inventory	Mouton-Simien et al. (1997)
CBCL 1.5-5	Child Behaviour Checklists	Achenbach & Rescorla (2000)
SDQ 2-4	Strengths and Difficulties Questionnaire 2-4	Goodman (1997)
PAPA	Preschool Age Psychiatric Assessment	Egger & Arnold (2004)

Compiled from Eneberi (2017); Foreman (2018); Gov.UK (2017); Patel et al. (2021); Sleed et al. (2021); Szaniecki & Barnes (2016).

Annex C. NHS Boards Interview Topic Guide

Introduction

Introduce myself and give context about the project and the literature review. Explain that there is little evidence of measures in practice and so I am hoping to understand how measures are being used “on the ground”

Interview Questions

1. What measures have you chosen to use in the development of the service?

2. Why did you choose those measures particularly? What do you expect the impact of these measures will be on the detection and promotion of IMH?

3. What have been the biggest challenges to the development of the service?

4. Has COVID-19 created any unique challenges that you weren’t expecting?

5. What are your short term goals for the service development? What would be your recommendations to ensure a successful rollout of IMH services across Scotland?

social research

The views expressed in this report are those of the researcher and do not necessarily represent those of the Scottish Government or Scottish Ministers.

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