Interim Evaluation Report

Healthy Little Minds

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Introduction

Centre for Mental Health has been commissioned by Small Steps Big Changes (SSBC) to conduct a comprehensive evaluation of the Healthy Little Minds service (HLM), which was launched in September 2022. HLM is one of 46 parent-infant relationship teams in the UK. The evaluation aims to assess the programme's impact and processes directly affecting Nottingham city families and support systems; through literature and surveys, we will review how HLM compares to national standards and best practice.

The report primarily focuses on national literature to provide context for our understanding of early childhood interventions, particularly in relation to parental mental health and parent-infant attachments. The literature review supports the identification of best practices, key measures of success, and common challenges in similar programmes. This enables us to place our findings within a broader context. The report also briefly examines the cost of parental mental health and the impacts of delayed child interventions. It notes the 2016 report by the Early Intervention Foundation (EIF), which estimated that £17 billion was spent annually as a result of late interventions for children and young people, with around one fifth of these costs falling on the National Health Service (NHS). Other documents focus on;

- The Government's 'Best start for life' report
- The World Health Organisation 'Understanding and supporting mental health in infancy and childhood' report
- A very brief overview of the Parent-Infant Foundation report on parent-infant teams

We will be addressing a series of evaluation questions that review the impact of the HLM programme, as well as the processes and broader system impacts within Nottingham City. This report specifically focuses on initial impact scenarios and aims to provide some preliminary answers to these questions. The initial findings show that 82.9% of parents and 85.2% of infants have experienced positive improvements. Among beneficiaries with depression measured as severe in RAG ratings, there was a significant decrease in depression after receiving support from HLM services. Almost three quarters of parents in the programme are white, which is an overrepresentation compared to the local population (70.5% vs 65.9%). Three quarters of the participants engaged in two or more interventions provided by the programme.

Further investigation and analysis will be conducted and presented in the final report. Our initial data analysis has enabled us to examine the types of data being collected, identify any gaps, and consider how we can enhance our understanding of the programmes and the on-going evaluation.

Background; Healthy Little Minds Programme

The Healthy Little Minds Service (HLM) programme is an initiative primarily aimed at strengthening the parent-infant relationship and improving infant wellbeing, with the added impact of enhancing caregiver wellbeing. Launched in September 2022, the programme focuses on the critical first 1,001 days of life, from conception to age two, a period crucial for the development of lifelong emotional and physical health. By supporting and enhancing the mental health and wellbeing of parents and infants in Nottingham City, HLM strives to create a strong foundation for future development. Interventionsinclude:

1. **Consultation Services**: Works with other professionals involved with the family to provide comprehensive support.
2. **Group and Individual Sessions**: Offers tailored therapeutic activities through group or one-on-one sessions, including parent infant psychotherapy (PIP).
3. **Home Visits and Online Support**: Provides support through home visits, online resources, and group meetings.
4. **Baby Massage**: Encourages positive parent-baby interaction through touch and eye contact, helping parents respond to their baby's needs.
5. **Newborn Behavioural Observation**: Assists parents in understanding their baby's communication, strengthening the parent-infant bond.
6. **Parent Infant Relationship Support**: Utilises the Solihull Approach to help parents improve their relationship with their baby, available individually or in groups.
7. **Mellow babies / Mellow Bumps**: Focuses on trust and self-esteem during pregnancy and early parenting to support emotional bonding.
8. **Video Interaction Guidance (VIG)**: Helps parents recognise and enhance their strengths in interacting with their baby, boosting confidence and bonding.

The service supports families with a range of needs, including those experiencing mental health issues and difficulties in bonding with their infants.
We facilitated two stakeholder sessions to aid in the design of the theory of change and evaluation plan. These involved speaking with families, staff and referral partners about what they deemed the main challenges for families and what activities and goals were required to address them.

Challenges affecting healthy parent-infant relationships were discussed, such as lack of support networks, trauma during pregnancy or birth, intergenerational trauma, and societal beliefs. Factors impacting relationships include, among others, parental mental health difficulties, substance/alcohol misuse, societal expectations, and economic factors like poverty.

The programme's objectives were discussed; these include aiming to:

- Reduce stigma around pregnancy expectations
- Raise awareness of infant mental health across all ages
- Develop shared local language for better understanding in professional training
- Enhance parent-infant relationships
- Advocate for mental health provisions from pregnancy to 2 years
- Influence policy and system changes for infant care and support
- Improve social and emotional outcomes for better starts in life

Methodology

The evaluation of the Healthy Little Minds (HLM) programme aims to comprehensively assess the programme's impact on families in Nottingham City and compare its services to national standards and best practices. This involves examining both perceived outcomes and actual impacts, utilizing a mixed-methods approach that includes both quantitative and qualitative data collection and analysis.

The primary objectives are to understand the effectiveness of the HLM programme in enhancing parent-infant relationships and supporting mental health. This involves evaluating the programme's impact on local families, reviewing HLM's processes, and identifying best practices and key success measures from similar programmes.

Quantitative methods use statistical techniques to create a model of what would have happened in the absence of the intervention, often using data from similar groups or time periods. Quantitative data will be analysed using statistical techniques to identify trends, correlations, and patterns, comparing pre-and post-intervention measures to evaluate the HLM programme's effectiveness. Qualitative data will be interpreted through thematic analysis, identifying recurring themes, insights, and areas for improvement. We will examine existing data records from the HLM service, including service usage data, assessments of parent-infant relationships, and local Key Performance Indicators (KPIs).

To complement the quantitative data, qualitative methods will be employed, including surveys, interviews, and focus groups with various stakeholder groups. This includes over 25 interviews and focus groups spanning six stakeholder groups:

- Referral partners (e.g., midwives, health visitors, Children and Adolescent Mental Health Service specialists, commissioners)
- Families (both higher and lower RAG rated families)
- Professionals who have been part of the HLM training
- HLM staff team
- Other Parentinfant support teams nationally.

A purposive sampling strategy will ensure a diverse range of participants, representing different demographics and service usage patterns. The findings from the qualitative work will be presented in the final report.

Qualitative counterfactual methods will involve participants imagining and describing alternative scenarios without the HLM programme, exploring what they believe would be affected and missing.

The findings from both quantitative and qualitative analyses will be integrated to provide a comprehensive understanding of the programme's impacts, addressing the evaluation questions, and supporting ongoing strategic planning. Continuous monitoring and evaluation will be conducted to track changes and impacts over time, ensuring emerging issues are identified and addressed promptly. This robust methodology aims to provide a thorough assessment of the Healthy Little Minds service , offering valuable insights for future strategic planning and programme improvement.

What the literature says

Economic Literature

There is much research into the wider cost benefits of early parent and infant interventions and the longer-term savings such programmes can support.

The World Health Organisation (2018) states that investing in early childhood development (ECD) is one of the most effective strategies for promoting shared prosperity, inclusive growth, and equitable opportunity, ultimately contributing to ending extreme poverty. ECD benefits governments, businesses, communities, parents, and especially children, helping them thrive. It is also highly cost-effective, with potential returns of up to $13 for every $1 invested.

A recent study evaluated the cost-effectiveness of an Irish parent and infant programme through a non-randomised, controlled before-and-after trial involving 163 parent-infant relationships. The programme cost €647 per relationship and demonstrated significant cost-effectiveness, supporting its potential for wider implementation in early parenting support (Crealey et al, 2024). Further research has shown that investing in parent and infant intervention services could save the health service £2.5k per family over 25 years

and over £145k per person in the criminal justice system. These potential savings provide a strong incentive for governments to fund such programs, especially considering the increasing costs of remedial services (Duncan et al, 2017).

The economic and social costs of untreated maternal mental ill health are known to be a significant, yet avoidable, economic burden on health and social care budgets. Early studies have reported an estimate of around £35.7 million per annum in costs for mothers experiencing postnatal depression (Petrou et al., 2002), and more recent studies have further investigated the wider impacts of maternal mental ill health on the outcomes throughout a child's lifetime. For example, in a joint report by Centre for Mental Health and the LSE Personal Social Services Research Unit (2014), maternal depression, anxiety, and psychosis were estimated to carry long-term economic and social costs of approximately £8.1 billion for every one-year cohort of births in the UK. This equates to a cost of almost £10,000 per birth.

Less stable conditions have been shown to negatively impact children's development and are linked to a higher risk of various adverse outcomes throughout their lives.

(Duncan et al., 2017). Examples include, but are not limited to, academic underachievement, experiences of mental health difficulties, behavioural issues, unemployment, and relationship breakdown. The increased risk of negative life outcomes is also likely to perpetuate cycles of generational deprivation.

Using an economics lens, the impact of such cycles of deprivation is severe and costly. In a 2016 report by the Early Intervention Foundation (EIF), an estimate of £17 billion is spent per year as a result of late intervention for children and young people, with around one fifth of these costs falling on the National Health Service (NHS). The EIF highlights the need for the delivery of accessible and effective early intervention programmes for young parents and families to prevent long-term economic and social costs, and to reduce each child's risk of experiencing adverse outcomes throughout their lifetime.

Importantly, there is good evidence to show the value of early parenting interventions. In a systematic review of economic valuations of parenting interventions aimed at vulnerable families, Duncan et al. (2017) found that such interventions can lead to significant long-term savings, while simultaneously improving population health by reducing health inequalities. The authors further reported savings of approximately £2,500 per family in healthcare costs over a 25-year period, as well as savings of over £145,000 for the criminal justice system over the life course of one individual. As such, early parenting interventions are clearly evidenced as a viable pathway not only to reduce economic spending on remedial services, but also to ensure that families are well-supported and equipped to provide the necessary environment for young children to grow and develop.

Literature Review: Parent-infant relationship teams, and baby and infant mental health

Literature review introduction

The evidence for the importance of the first 1,001 days for mental health and wellbeing is robust and well-established (HM Govt, 2021). Within this window of time, from conception to the age of two, the bonds that develop between babies and their caregivers are especially crucial to emotional development (Parent-Infant Foundation, 2019 & 2023). In the UK, specialised parent-infant teams play a key part in supporting and strengthening these relationships.

Parent-infant teams perform two broad roles: to advise on, and champion, parent-infant relationships, and to offer direct support to families (Parent-Infant Foundation, n.d.). The objectives of the direct support also include Parent infant relationship teams improving the mental health of caregivers, and supporting babies' early development and wellbeing (Parent-Infant Foundation, 2023). There are 46 specialised parent-infant teams across the UK, which collectively form the Parent-Infant Network (Parent-Infant Foundation, n.d.).

This literature review will discuss three reports that, taken together, provide an overview of support for babies and families. The Government's 2021 *The best start for life* review offers context for the work of the UK's parent-infant relationship teams. UNICEF's *Understanding and supporting mental health in infancy and early childhood* provides more detail about the connection between caregiver-infant attachment and mental health. Thirdly, the Parent-Infant Foundation's impact report describes and evaluates the work of parent-infant relationship teams across the UK, considering the ways in which their work is making a difference to families.

The best start for life: A vision for the 1,001 critical days (HM Govt, 2021)

The best start for life: A vision for the 1,001 critical days was published by the Government in 2021. Commissioned as part of the Early Years Healthy Development Review, the report brings together findings relating to support for babies and caregivers.

The rationale for focusing on the first 1,001 days – from conception to age two – is rooted in the robust and well-established evidence that this period is when the building blocks for lifelong emotional and physical health are laid down (First 1001 Days Movement, 2021). It is a peak period of brain development and a critical window in which any interventions will have long-lasting effects.

The Review summarises risk factors associated with poorer developmental outcomes. These include:

- Adverse Childhood Experiences (ACEs)
- Parental conflict
- Poor mental health and wellbeing of mothers and fathers partners and carers
- Lower caregiver responsiveness
- Less secure caregiver-infant attachment
- Frequent exposure to high levels of stress

The Review also provides an overview of services and professionals that support families in the England during pregnancy and after the baby is born, as well as relevant clinical guidelines and Government initiatives. These services variously perform roles relating to physical health, mental health, safeguarding, and identifying Special Educational Needs and Disabilities (SEND). Some of these services, such as Perinatal Mental Health Mother and Baby Units are specialised and targeted at one specific area of concern; others, such as support provided by public sector organisations and voluntary and community organisations may provide more holistic support and/or support addressing needs that extend beyond parenting skills (e.g. support with debt and finance, and housing). The Review paints a picture of a landscape of services that, although relatively well-populated and diverse, can be complex and difficult to navigate.

Published in 2021, the Review also highlights what were then emerging concerns about the impact of the coronavirus pandemic on the development and wellbeing of babies. Since lockdowns and restrictions have ended, pre-Covid ways of working have largely resumed, and a majority of the babies conceived and born during the pandemic are now toddlers. However, many families and support services are still coping with ongoing repercussions of this period, with those families who already experienced the greatest disparities – for example, those from racialised, Ethnic minority communities and those experiencing financial hardship – being disproportionately negatively affected.

Based on these findings, the Review concludes with identifying and detailing six 'action areas'. These are:

<u>Ensuring families have access to the services they need</u>

1. Seamless support for families: a coherent joined up Start for Life offer available to all families.
2. A welcoming hub for families: Family Hubs as a place for families to access Start for Life services.
3. Provision of the information families need when they need it: designing digital, virtual and telephone offers around the needs of the family.

<u>Ensuring the Start for Life system is working together to give families the support they need</u>

4. An empowered Start for Life workforce: developing a modern skilled workforce to meet the changing needs of families.
5. Continually improving the Start for Life offer: improving data, evaluation, outcomes and proportionate inspection.
6. Leadership for change: ensuring local and national accountability and building the economic case.

Understanding and supporting mental health in infancy and early childhood: A toolkit to support local action in the UK (UNICEF, 2023)

Central to UNICEF's 2023 Toolkit is the understanding that "[w]hen children are mentally healthy in infancy and early childhood, they develop capacities that support mental health throughout life." The Toolkit goes on to give the example of caregiver-infant attachment: "when babies have sensitive, nurturing relationships with caregivers

who co-regulate their emotions, this supports them to build self-regulation skills, which are key to being mentally healthy throughout life." Drawing on findings from research, the Toolkit elaborates on the importance of this developmental period to a range of lifelong outcomes.

The Toolkit discusses the complexity of defining mental health in infancy and early childhood. It emphasises that mental health is not just about the presence or absence of diagnosable conditions, but a positive state involving the ability to understand and manage emotions, to function well and to build meaningful relationships; it also notes that mental health for all people – especially in infancy and early childhood – is the result of a complex interplay of internal and external factors; and that:

> *"Describing a baby or young child's mental health is not the same as describing a deficit or problem. Understanding mental health is about what is happening for a child and in their world, and how grown-ups and services can support them."*

Based on this understanding, the Toolkit develops a framework for addressing and supporting mental health in infancy and early childhood. The framework includes the following components:

Being and becoming mentally healthy
Being mentally healthy refers to what it means to be mentally healthy now; becoming mentally healthy refers to the capacities that young children need to develop to be mentally healthy in the future.

The different elements of mental health
Mental health is a multi-faceted concept with emotional, social and behavioural aspects, and with significant interplay between these three aspects.

Nurturing care
Babies' and young children's mental health depends on nurturing care, the core elements of which are good health, adequate nutrition, responsive caregiving, safety and security, and opportunities for early learning.

Relationships
Mental health exists in the context of relationships, with very young babies being dependent on the presence of adults who can provide sensitive responsive care and who can support babies to play and learn.

Capacities and competencies
Being mentally healthy is dependent on other sensory, motor, cognitive and language capacities and competencies that develop in early childhood (and throughout life).

Physical health and nutrition
Supporting a child's good physical health, development and nutrition is vital for their mental health.

These aspects of mental health are influenced by a complex system of factors that act at different levels. The Toolkit sets out a socio-ecological model covering the protective factors and the risk factors that exist at the level of the individual child, the caregiver-child relationship, the immediate family and home environment, the wider family and community, and the cultural social and political context in which these interactions take place. The Toolkit's discussion of caregiver-child relationship is the factor that is most directly relevant to the work of parent-infant relationship teams.

The Toolkit states that:

> *"Nurturing relationships, particularly the relationship between the child and their parents or primary caregiver(s), are arguably the most significant protective factor for the mental health of babies and young children."*

It notes that sensitive, responsive, and consistent relationships support wellbeing and development:

- Helping children to learn how to experience, manage and understand their emotions, and feel safe and secure to explore the world around them
- Providing a template for children's expectations in later relationships
- Helping children to develop their sense of self
- Supporting the development of language and cognitive functions
- "Buffering" babies and young children from external adversity in the world around them

Having set out the complex and multi-factorial understanding of mental health in infancy and early childhood, the Toolkit makes the case for a whole-system approach. It describes a continuum of support, starting with promotion of positive mental health and wellbeing, moving onto prevention to address risk factors, and then care for when babies and young children experience adversity. These three aspects of support are optimally provided by integrated work between different agencies and across different sectors.

In order to provide this support, the Toolkit sets out the competencies that the early years workforce needs to foster. These include having:

- An understanding of child development
- An understanding of how to meet the needs of children who have additional needs
- Knowledge of, and ability to, implement evidence-based strategies and practices
- Knowledge, skills and opportunities to tune into the cues and communication of babies and toddlers, and respond sensitively and appropriately to their needs
- An understanding of the importance of parent-child relationships
- Knowledge and skills to observe the quality of this relationship and identify any concerns
- The ability to practice in a relationship-informed and trauma-informed way
- An understanding of other services available to caregivers and infants, and how these can be accessed

- Opportunities to reflect with colleagues and supervisors on what is happening for the child
- Reflective supervision to reflect on the professionals' own wellbeing, culture, values, beliefs, feelings and behaviours
- Opportunities to learn alongside other professionals.

The Toolkit concludes by discussing different ways of evaluating , assessing and observing mental health in infancy and early childhood, including gathering information about the child's mental health, the caregiver-child relationship, and risk and protective factors in the environment.

The impact of parent-infant relationship teams: A summary of the evidence (Parent-Infant foundation, 2023)

In September 2023, Parent-Infant Foundation published a report summarising the evidence relating to parent-infant relationship teams. The report was based on large-scale meta-analyses and systematic reviews of parent-infant relationship interventions typically offered by specialised parent-infant relationship teams, and on practice-based evidence and local service evaluations of specialised parent-infant relationship teams. It also provided case studies of parent-infant relationship teams across the UK.

The three interventions covered by the report were parent-infant psychotherapy, video feedback approaches and parenting groups, specifically the attachment-based programme Circle of Security Parenting. The report found that all three interventions were effective at supporting babies, caregivers and the relationships between them, with positive impacts on domains such as parental reflective functioning, parental depression, parenting stress, infant attachment, and infant socio-emotional and behavioural wellbeing. However, it also notes limitations to the large-scale evidence for interventions. These include a lack of consideration of: how interventions interact with their local context; the long-term impact of the interventions; and what barriers to access are experienced by specific groups of babies and families.

The report also reviews evidence from smaller-scale research into the local impact of parent-infant relationship teams. Findings from these studies and evaluations indicate that, for the services under consideration, the involvement of parent-infant relationship teams were associated with benefits including:

- Positive changes in the quality of the parent-infant relationship
- Improved levels of parental reflective functioning
- Improvements in the mental health of caregivers
- Reductions in child protection status after treatment
- Increased ability to bond with the baby during pregnancy
- Positive impact on the capacity and capability of the wider early years workforce through consultation, supervision and training
- Financial benefits in the form of savings to public costs (e.g. health, social care, education and criminal justice), and personal family expenditure.

However, the report notes the caveat that the small-scale studies were necessarily based on relatively small samples and may have been subject to biases. As a result, the findings should be interpreted with caution.

The report concludes with the following recommendations for further action:

- Growing specialised parent-infant relationship teams
- Growing the evidence base, specifically:
    - More large-scale research into parent-infant focused interventions
    - More research into the local impact and context of specialised parent-infant relationship teams
    - More integration between different types of research.

Discussion

Mental health in babies and infants is understood less in terms of the presence or absence of diagnosable conditions, and more in terms of a positive state, involving the ability to understand and manage emotions, to function well and to build meaningful relationships. It is shaped by the interplay of multiple internal and external factors. Among the most significant of these factors is the caregiver-infant relationship.

Nurturing relationships are ones in which caregivers are able to provide sensitive, responsive, consistent support. They are associated with positive outcomes, including:

- Helping children to learn how to experience, manage and understand their emotions, and feel safe and secure to explore the world around them
- Providing a template for children's expectations in later relationships
- Helping children to develop their sense of self
- Supporting the development of language and cognitive functions
- "Buffering" babies and young children from external adversity in the world around them

Directions for future research in this area include but are not limited to: which families benefit the most from parent-infant relationship teams? how can the support be adapted for families with additional needs? what are the long-term outcomes for those who have worked with parent-infant relationship teams?

Literature review conclusion

The first 1,001 days of life are a time of unique opportunity and vulnerability. It is a period when the building blocks for lifelong emotional and physical health are laid down. Mental health interventions during this period have long-lasting effects. The three reports discussed in this literature review, and the findings on which they are based, make a robust but broad-brush, case for the importance of strengthening caregiver-infant relationships, and the central role that specialised parent-infant relationship teams play in providing this support.

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Answering the evaluation questions; what we know so far

The overarching evaluation questions guiding our data collection and analyses to understand the impacts of Healthy Little Minds service include:

1. How well has the service improved outcomes around parental mental health and parent and infant attachment (directly or indirectly)?

2. What have the initiative and its actions contributed to the observed outcomes, considering both the overall impact (gross outcomes) and the refined impact, accounting for relevant factors (net outcomes)?
3. Have outcomes been stronger for particular beneficiaries, activities or situations and why?

Quantitative Methodology

We will use a mixed methods design to evaluate the Healthy Little Minds programme, combining both qualitative and quantitative methods. We will examine existing data records from the Healthy Little Minds service, to assess the breadth of a programme's reach and its impact on the community, we will also analyse data on the number of referrals and any available pre-and post-intervention measures of parental mental health and parent-infant attachment. Data has been provided to us in a password encrypted Microsoft Excel file. We used Microsoft Excel and SPSS to code and analyse the data.

Quantitative Analysis

In this section of the interim report, we present the findings from the quantitative analysis so far, begin to answer the evaluation questions (questions 1 and 3), and identify what questions we can answer with the data. We will also identify any concerns or challenges, which will be further discussed in the limitations section of the report.

It should be noted that the data analysed in this interim report will be updated by the time of the final report. We have not received data for the Healthy Little Minds training service or for the economic valuation so these analyses will not be included in the interim report.

Reach and Need

Data was provided for beneficiaries referred to Healthy Little Minds between the 29 September 2022 and the 2 April 2024. The sample comprised 162 families, consisting of 202 parents aged 14-45 years (average = 29 years) and 169 infants who were either not yet born (8.8%) or aged 0-4 years (average = 1 year).

Most parents identified as female (80.7%) there were similar proportions of male and female infants, 48.1% and 43.1% respectively (see table 1).

Gender	**Parents**		**Infants**	
	Total	**%**	**Total**	**%**
Female	163	80.7%	69	43.1%
Male	39	19.3%	77	48.1%
Unborn	-	-	14	8.8%
Total	**-**	**-**	**160**	**94.7%**
Unknown	**-**	**-**	**9**	**5.3%**
Total	**202**	**100%**	**169**	**100%**

Table 1: Gender identities of parent and infant beneficiaries recorded between the 29th of September 2022 and the 2nd of April 2024.

We categorized parent and infant beneficiaries using ethnic group classification 8a outlined by the Office for National Statistics (2023b) and presented the figures in table 2 and table 3 below. Over half of parent and infant beneficiaries were White English, Welsh, Scottish, Northern Irish or British (61.5% of parents and 55.3% of infants). In

the parent sample, the second largest ethnic group was Asian British or Asian Welsh, 10.0%, and in the infant sample, the second largest ethnic group were Mixed or Multiple ethnic groups, 19.3%.

Ethnicity	**Parents**	
	Total	**%**
White: English, Welsh, Scottish, Northern Irish or British	123	61.5%
Asian, Asian British or Asian Welsh	20	10.0%
Black, Black British, Black Welsh, Caribbean or African	18	9.0%
White: Gypsy or Irish Traveller, Roma or Other White	15	7.5%
Mixed or Multiple ethnic groups	13	6.5%
Other ethnic group	8	4.0%
White: Irish	3	1.5%
Total	**200**	**99.0%**
Unknown	**2**	**1.0%**
Total	**202**	**100%**

Table 2: Ethnic group proportions of parent beneficiaries recorded between the 29th of September 2022 and the 2nd of April 2024. Note: Ethnicity classification is 8a by the Office for National Statistics.

Ethnicity	**Infants**	
	Total	**%**
White: English, Welsh, Scottish, Northern Irish or British	89	55.3%
Mixed or Multiple ethnic groups	31	19.3%
Asian, Asian British or Asian Welsh	15	9.3%
Black, Black British, Black Welsh, Caribbean or African	12	7.5%
White: Gypsy or Irish Traveller, Roma or Other White	9	5.6%
Other ethnic group	5	3.1%
White: Irish	0	0.0%
Total	**161**	**95.3%**
Unknown	**8**	**4.7%**
Total	**169**	**100%**

Table 3: Ethnic group proportions of infant beneficiaries recorded between the 29th of September 2022 and the 2nd of April 2024. Note: Ethnicity classification is 8a by the Office for National Statistics.

We compared beneficiary ethnic proportions with 2021 Census ethnic proportions in Nottingham (Office for National Statistics, 2023a) – see figure 1. We categorized parent and infant beneficiaries using ethnic group classification 6a outlined by the Office for National Statistics (2023b).

Within the parent sample, beneficiaries who identified as White were overrepresented compared to population statistics (70.5% compared to 65.9%) and beneficiaries who identified as Asian, Asian British, or Asian Welsh were underrepresented compared to population statistics (10.0% compared to 14.9%). Proportions were relatively similar for the remaining ethnic groups.

Within the infant sample, beneficiaries from mixed or multiple ethnic groups were vastly overrepresented compared to population statistics (19.3% compared to 5.9%). The groups underrepresented compared to population statistics were Asian, Asian British, or Asian Welsh (9.3% vs. 14.9%), Black, Black British, Black Welsh, Caribbean or African (7.5% vs. 10.0%), and White (60.9% vs. 65.9%) infants.

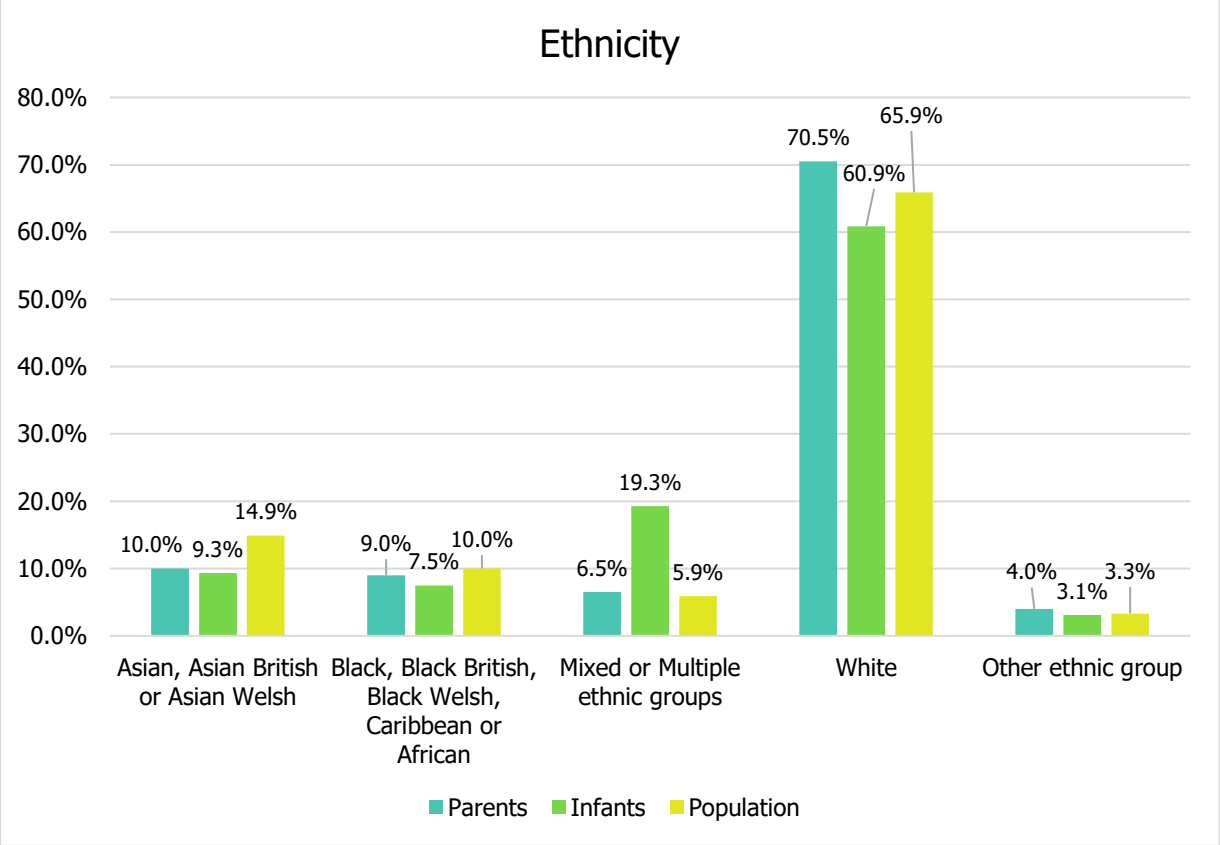

Figure 1: Parent and adult beneficiary ethnic proportions recorded between the 29th of September 2022 and the 2nd of April 2024 and Nottingham population proportions taken from the 2021 Census. Note: Ethnicity classification is 6a by the Office for National Statistics.

A small proportion of parents (6.9%) and infants (0.6%) had a disability. The remaining 93.1% of parents and 99.4% of infants did not have a disability.

Disability	**Parents**		**Infants**	
	Total	**%**	**Total**	**%**
Learning	4	28.6%	0	-
Behaviour	3	21.4%	0	-
Diagnosed with Autism or Aspergers syndrome	3	21.4%	0	-
Communication	1	7.1%	0	-
Hearing - Registered Hearing Impairment	1	7.1%	0	-
Mobility	1	7.1%	1	100.0%
Vision	1	7.1%	0	-
Total	**14**	**6.9%**	**1**	**0.6%**
Unknown	**188**	**93.1%**	**168**	**99.4%**
Total	**202**	**100%**	**169**	**100%**

Table 4: Disability status of beneficiaries recorded between the 29th of September 2022 and the 2nd of April 2024.

Just under half of parents (45.0%) and infants (44.5%) supported by Healthy Little Minds between the 29th of September 2022 and the 2nd of April 2024 lived in the 10% most deprived areas (see figure 1).

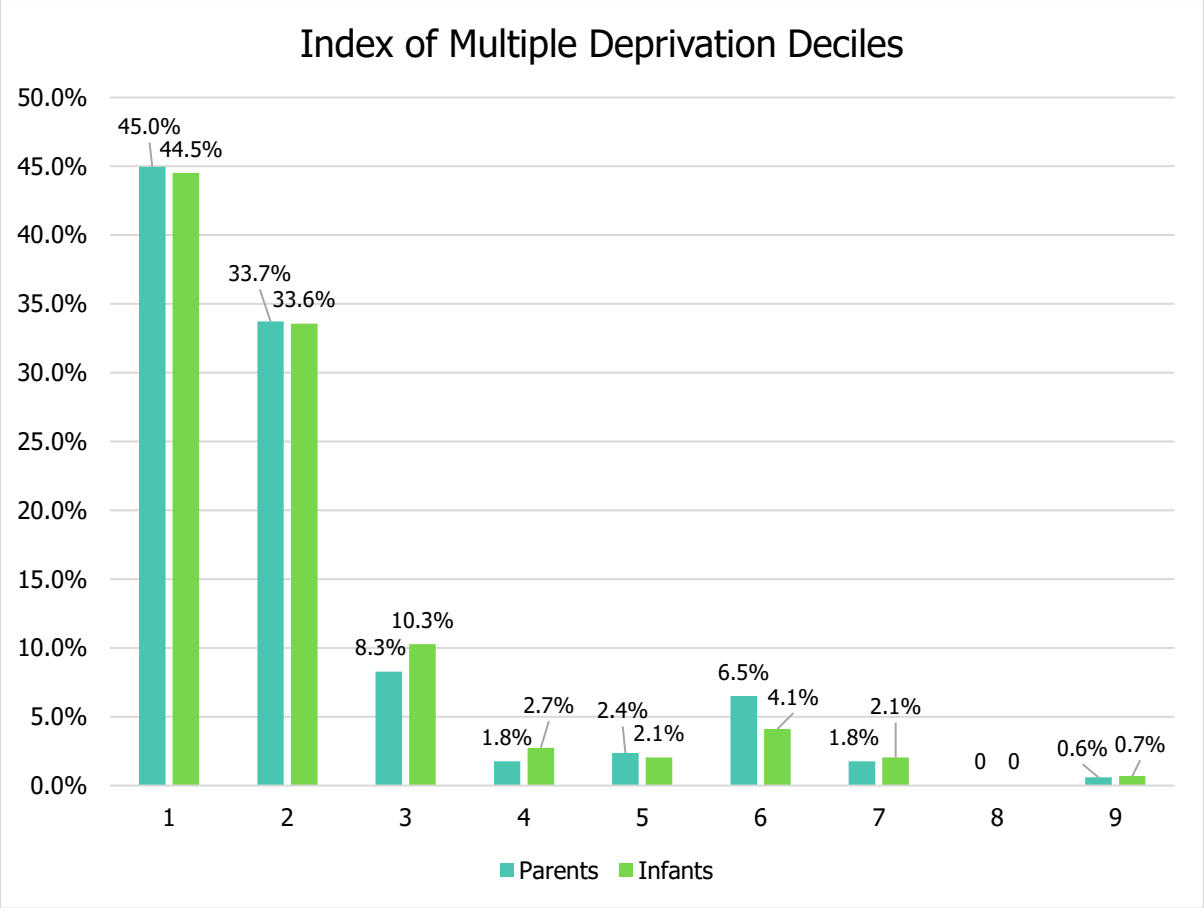

Figure 2: IMD Deciles of parents and infants recorded between the 29th of September 2022 and the 2nd of April 2024. Note: Scores ranged from the 10% most deprived areas (score of 1) to the 10% least deprived areas (score of 10).

A significant percentage (47.5%) of referrals to Healthy Little Minds were due to concerns about the caregiver's mental health. These referrals are accepted based on the understanding that caregiver mental health issues increase vulnerability in the parent-infant relationship (PIR). However, it's important to note that Healthy Little Minds does not directly treat parental mental health difficulties, a common misconception we often need to gently correct with referrers. The second most common reason parent/caregiver and infant beneficiaries were referred to Healthy Little Minds was because of difficulties bonding (17.8% and 16.6% respectively).

Reason for referral	**Parents**		**Infants**	
	Total	**%**	**Total**	**%**
Caregiver's mental health concerns	96	47.5%	82	48.5%
Caregiver difficulties bonding	36	17.8%	28	16.6%
Attachment difficulties	23	11.4%	21	12.4%
Difficulty understanding cues	10	5.0%	10	5.9%
Caregiver trauma experience	8	4.0%	7	4.1%
Other	7	3.5%	6	3.6%
Previous children looked after	5	2.5%	2	1.2%
Care experienced	4	2.0%	3	1.8%
Caregiver and infant trauma experience	4	2.0%	4	2.4%
Child in care/SGO	3	1.5%	2	1.2%
Infant loss	3	1.5%	2	1.2%
Infant trauma experience	3	1.5%	2	1.2%
Total	**202**	**100%**	**169**	**100%**

Table 5: Reasons for referrals of parent beneficiaries to Health Little Minds recorded between the 29th of September 2022 and the 2nd of April 2024.

Around three quarters of parent beneficiaries (74.5%) and infant beneficiaries (78.6%) took part in two or more Healthy Little Minds interventions between the 29th of September and the 2nd of April 2024 (see table 6).

Interventions	**Parents**		**Infants**	
	Total	**%**	**Total**	**%**
Multiple	35	74.5%	33	78.6%
Other	4	8.5%	4	9.5%
Solihull Postnatal	2	4.3%	2	4.8%
Mellow Babies	2	4.3%	1	2.4%
VIG	2	4.3%	1	2.4%
Group Massage	1	2.1%	1	2.4%
NBO	1	2.1%	-	-
Total	**47**	**27.8%**	**42**	**20.8%**
Unknown	**122**	**72.2%**	**160**	**79.2%**
Total	**169**	**100%**	**202**	**100%**

Table 6: Healthy Little Minds intervention engagement between the 29th of September 2022 and the 2nd of April 2024.

The average waiting time between the date of referral and the date of assessment was 17 days and ranged from 1 day to 99 days. In addition, the average time between the date of the assessment and the data of the first intervention was 21 days and ranged from 1 day to 86 days. Lastly, the average length of support, between the date of the first intervention to the closure date was 135 days (19 weeks and 2 days) and ranged from 12 days (1 week and 5 days) to 392 days (56 weeks).

Summary

In summary, the Healthy Little Minds service reached and supported a diverse population of parents and infants between the 29th of September 2022 and the 2nd of April 2024. A total of 162 identifiable families, consisting of 202 parents and 169 infants, were supported by the HLM programme. The majority of parents were female, and the proportions of male and female infants were relatively equal. A total of 14 mothers were pregnant at the time they received support.

Over half of parent and infant beneficiaries were White English, Welsh, Scottish, Northern Irish or British. Parent beneficiaries who identified as White were overrepresented compared to population statistics and parent beneficiaries who identified as Asian were underrepresented compared to population statistics. Infant beneficiaries from mixed or multiple ethnic groups were greatly overrepresented compared to population statistics, whereas Asian, Black, and White infant beneficiaries were underrepresented compared to population statistics.

Only a small proportion of parents and infants had a known disability and just under half of parents and infants supported by the Healthy Little Minds service lived in the 10% most deprived areas.

The majority of parent and infant beneficiaries were referred to the Healthy Little Minds service between the 29th of September 2022 and the 2nd of April 2024 due to concerns for the caregiver's mental health and difficulties with bonding. Around three quarters of beneficiaries took part in two or more interventions. Other interventions included Solihull postnatal support, Mellow Babies, VIG, Group massage, and NBO.

I. How well has the service improved outcomes around parental mental health and parent and infant attachment, both directly and indirectly?

The HLM programme met the needs of 51.9% of parents and 50.6% of infants and positive improvements were observed for 82.9% of parents and 85.2% of infants (see table 7).

Primary Outcomes	Parents		Infants	
	Total	%	Total	%
Close case – needs met	54	51.9%	44	50.6%
Close case – family declined	39	37.5%	33	37.9%
Signposted to other service	8	7.7%	8	9.2%
Case transferred	3	2.9%	2	2.3%
Total	**104**	**51.5%**	**87**	**51.5%**
Unknown	**98**	**48.5%**	**82**	**48.5%**
Total	**202**	**100%**	**169**	**100%**

Table 7: Primary outcomes for parent and infant beneficiaries of the Healthy Little Minds supported between the 29th of September 2022 and the 2nd of April 2024.

A total of 6 measures were used to assess the impact of the HLM programme on parental mental health and parent and infant attachment. Parents were asked to complete these measures at the start and end of the interventions. We compared these start and end scores using t-tests and the non-parametric equivalent Wilcoxon test to highlight any statistically significant changes for parents and infants overall. Our findings are presented in table 8 and outlined in the subsequent sections. Findings should be taken with caution as sample sizes were small which increased the risk of a Type II error or a false-negative. In other words, it is harder to find statistically significant differences between start and end scores with a smaller sample. A non-significant result may have been significant with a larger sample.

1. Ages and Stages Questionnaire: Social/Emotional development (ASQ:SE)

The ASQ:SE (Squires et al., 2001) is used for early identification of social/emotional difficulties in young children including self-regulation, compliance, social-communication, adaptive functioning, autonomy, affect, and interaction with people. Lower scores suggest that an infant is at less risk and their social and emotional development is on schedule as expected. Questionnaires are age appropriate and completed by a parent(s). Start and end scores were provided for 22 infants. We found a small improvement in infant social and emotional development following HLM intervention as average scores decreased from 33.5 at the start to 29.6 at the end. However, this difference was not statistically significant.

2. Patient Health Questionnaire – 9 (PHQ-9)

The PHQ-9 is a tool for screening, monitoring, and measuring the severity of depression (Kroenke et al., 2001). A mother or a mother's partner, where appropriate, would fill out

the PHQ-9 to understand more about the mother's mental health. A lower score suggests a lower risk of depression. Start and end scores were provided for 8 adult women, aged 19-40 years. We found a small decrease in the severity of depression in mothers following HLM intervention, with average scores decreasing from 12.3 at the start to 10.6 at the end. Like the ASQ:SE, this difference was not statistically significant.

3. Edinburgh Postnatal Depression Scale (EPDS)

The EPDS is a screening tool for perinatal depression which can be used during pregnancy and after birth (Cox et al, 1987). It is typically used to identify:

- If the mother is suffering from a depressive illness and requires specialist mental health services
- Risk of suicidality
- Further information from the parent
- How depression is impacting the parent-infant relationship.

A lower score suggests a lower severity of post-natal depression, with possible depression indicated by scores of 10 or greater. Start and end scores were provided by 33 women and 6 men, aged between 16-40 years. We found a small improvement in EPDS scores following HLM intervention, with average scores decreasing from 14.4 at the start to 12.0 at the end. Moreover, this improvement was found to be statistically significant.

4. Generalized Anxiety Disorder – 7 (GAD-7)

The GAD-7 is a screening tool used to identify whether a parent or carer is experiencing mild, moderate, or severe anxiety and to consider if specialist mental health support is required (Spitzer et al, 2006). Ways in which the anxiety is impacting the parent-infant relationship is also explored. A score of 5-9 suggests mild anxiety, a score of 10-14 suggests moderate anxiety, and a score of 15-21 suggests severe anxiety. Start and end scores were provided for 38 women and 5 men aged 16-40 years. We found an improvement in anxiety following HLM intervention, with average scores decreasing from 11.0 at the start (moderate anxiety) to 9.22 at the end (mild anxiety). Like the EDPS results, this improvement was statistically significant.

5. My Baby – Mothers Objection Relation Scale (MORS)

The My Baby- MORS is used to assess a mother's perception of their infants on two scales – warmth and invasion (Oates et al, 2018). A parent who sees their infant as unduly invasive or lacking in warmth towards them is at risk of experiencing difficulties with establishing a mutually satisfying relationship with the infant. Higher scores, out of 35, indicate a mother's perception of greater warmth from the child. Start and end warmth scores were provided for 19 infants, aged 0-2 years. We found average start and end scores to be relatively similar (26.7 and 27.0 respectively) and there was no statistically significant difference between the scores.

6. Goal Based Outcomes (GBOs)

The GBO tool is a way of evaluating progress towards goals in clinical work with children, young people, and their families and carers (Law and Jacob, 2015). The GBO compares how far an individual feels they have moved towards reaching a goal that

they have set for themselves at the beginning of an intervention, on a scale between 0 and 10. Start and end scores were collected for up to three goals as follows:

- 41 women and 6 men aged 15-40 years for goal 1,
- 27 women and 3 men aged 15-40 years for goal 2, and
- 7 women and 1 man aged 21-40 years for goal 3.

We found that progression had been made towards achieving goals following HLM intervention, with average GBO scores increasing from 3.0 to 6.3 for goal 1, 3.5 to 6.2 for goal 2, and 2.5 to 6.5 for goal 3. Additionally, these score changes were found to be statistically significant.

Assessment Tool	**Total**	**Average start score**	**Average end score**	**Statistically significant?**
ASQ:SE	22 infants aged 0-2 years.	33.5	29.6	No (Wilcoxon, p=.348)
PHQ-9	8 women aged 19-40 years.	12.3	10.6	No (t-test, p=.472)
EPDS	33 women and 6 men aged 16-40 years.	14.4	12.0	Yes (Wilcoxon, p<.05)
GAD-7	38 women and 5 men aged 16-40 years.	11.0	9.22	Yes (Wilcoxon, p<.05)
My Baby - MORS	19 infants aged 0-2 years.	26.7	27.0	No (t-test, p=.331)
GBOs	Goal 1: 41 women and 6 men aged 15-40 years.	3.0	6.3	Yes (Wilcoxon, p<.001)
	Goal 2: 27 women and 3 men aged 15-40 years.	3.5	6.2	Yes (Wilcoxon, p<.001)
	Goal 3: 7 women and 1 man aged 21-40 years.	2.5	6.5	Yes (Wilcoxon, p<.05)

Table 8: Healthy Little Mind intervention outcomes recorded between the 29th of September 2022 and the 2nd of April 2024.

Summary

In summary, positive improvements were observed for most parents and infants supported by the Healthy Little Minds service between the 29th of September 2022 and the 2nd of April 2024. The HLM intervention also directly improved outcomes around parental mental health and parent and infant attachment. We found minor improved outcomes in infant social and emotional development, parent depression, and infant warmth, although these improved outcomes were not statistically significant. We also found that, following intervention from HLM, there were improved outcomes in perinatal depression and parental anxiety, and progress was made towards goals; these improved outcomes were statistically significant.

Due to missing data and small samples, statistical results should be taken with caution. Indirect improved outcomes will be explored in our interview and focus groups with beneficiaries.

III. Have outcomes been stronger for particular beneficiaries, activities or situations and why?

In this section of the report, we compare the outcomes outlined in the previous section between beneficiary groups mentioned in the Reach and Need section. Specifically, we compared start and end scores for each outcome on the basis of gender, ethnicity, disability, IMD decile, reason for referral (need), RAG rating, and interventions. We assessed differences in start and end scores for the PHQ-9, the EDPS, the GAD-7 and GBOs using the parent data and assessed differences in start and end scores for the ASQ:SE and the My Baby – MORS using the infant data. The statistical test used for this analysis was a Mixed ANOVA. As mentioned in the previous section, statistical results should be read with caution as statistical tests were run on small samples. We are expecting additional data which should increase sample sizes for the final report.

We found a statistically significant interaction effect between PHQ-9 scores and RAG ratings (p= .018). In other words, there was a statistically significant decrease in depression following support from HLM for beneficiaries with a red/severe RAG rating (N = 1, p= .005), with average scores decreasing from 24.0 at the start to 9.0 at the end. There were no statistically significant changes in depression for beneficiaries with a green/mild (N = 1, average scores at start = 13.0, average scores at end = 13.0) or amber/moderate RAG rating (N = 6, average scores at start = 10.2, average scores at end = 10.5). These results are presented in figure 3. We found no other statistically significant changes in start and end scores between different parent demographic groups, parent need groups, and the interventions parents took part in.

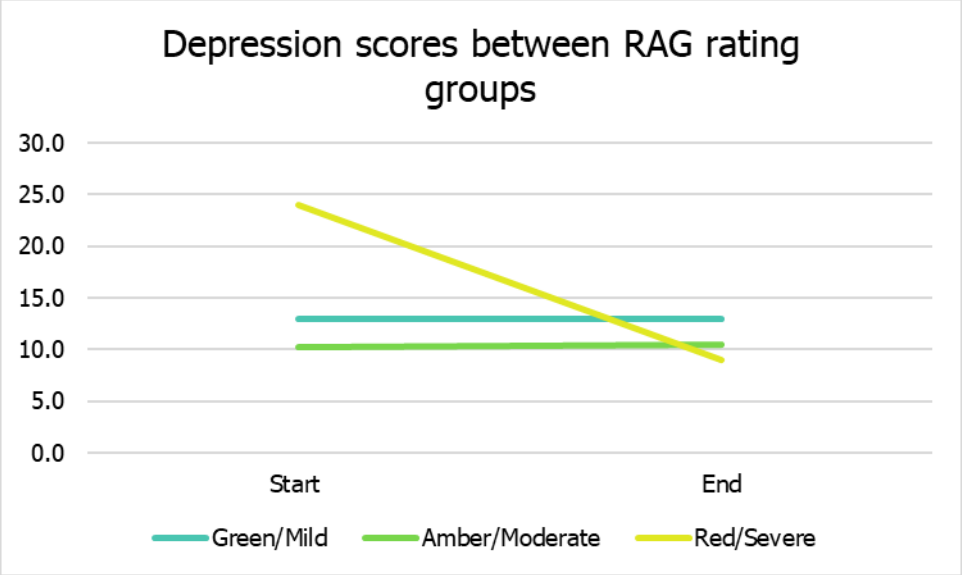

Figure 3: Changes in start and end depression scores between parent RAG rating groups (N = 19). Data was recorded between the 29th of September 2022 and the 2nd of April 2024.

In addition to this, we found a statistically significant interaction effect between ASQ:SE scores and IMD deciles (p>.001). In other words, there was a statistically significant decrease in risk following support from HLM for infant beneficiaries of families living in a postcode with an IMD decile rank of 6 (N = 1, p>.001), with average scores decreasing from 65.0 at the start to 15.0 at the end. Infant beneficiaries with both start and end

ASQ:SE scores lived in postcodes with IMD decile ranks of 1, 2, 6, and 7; we found no statistically significant changes in risk for infant beneficiaries living in postcodes with IMD decile ranks of 1 (N = 8), 2 (N = 9), or 7 (N = 1). These results are presented in figure 4. We found no statistically significant changes in My Baby MORS start and end scores between different infant demographic groups, need, and interventions.

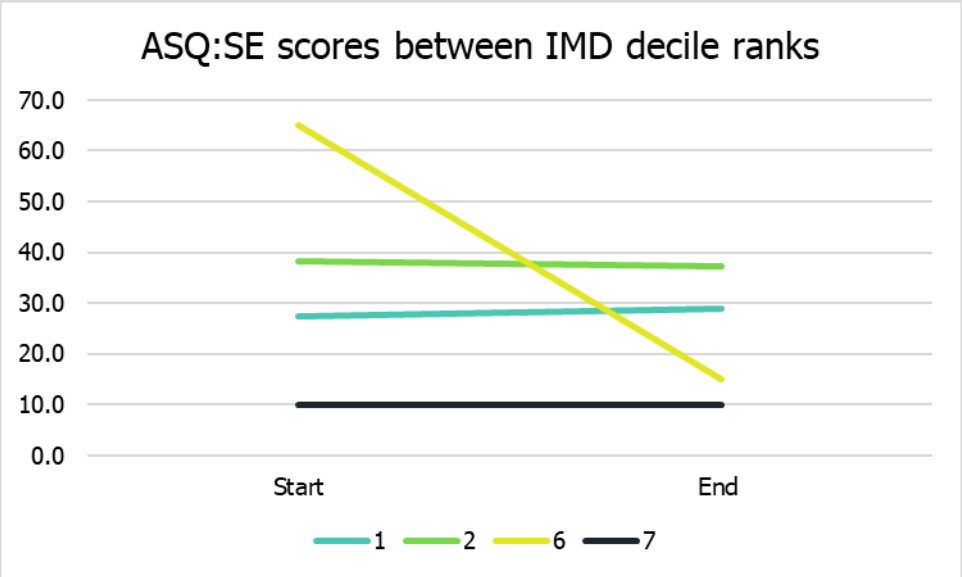

Figure 4: Changes in start and end ASQ:SE scores between infant IMD decile rank groups (N = 8). Data was recorded between the 29th of September 2022 and the 2nd of April 2024.

Summary

In summary, we found that a number of specific improved outcomes were stronger for particular beneficiaries. Parents and caregivers with a RAG rating of red/severe were found to have significantly decreased depression following the HLM programme, compared to parents and caregivers with green/mild and amber/moderate RAG ratings who experienced very little or no change. Similarly, infants of families living in postcodes with an IMD decile rank of 6 demonstrated significant improvements in social and emotional development compared to infants of families living in postcodes with an IMD decile rank of 1 (most deprived), 2, and 7 who demonstrated very little or no change.

We found no statistically significant differences in outcomes for particular activities or interventions. As mentioned previously, due to small samples, these results should be taken with caution. We aim to explore why these impacts were stronger for particular beneficiaries in our interviews and focus groups. Additionally, we will further explore situations and outcomes in the quantitative analysis once we receive the next round of data. Examples of situations which may have a bearing on outcomes include whether the child was previously in foster care, or whether the parent has experienced the loss of a child. As we receive more data, we may find more statically significant results within the larger samples.

Conclusions

The Healthy Little Minds service supported and improved outcomes for a diverse population of parents and infants between the 29th of September 2022 and the 2nd of

April 2024. A total of 162 families, consisting of 202 parents and 169 infants, were supported by the HLM programme during this time. Most parents were female, and the proportion of male and female infants was relatively equal. A total of 14 mothers were pregnant at the time they received support.

Over half of parent and infant beneficiaries were White English, Welsh, Scottish, Northern Irish or British. Parent beneficiaries who identified as White and infant beneficiaries from mixed or multiple ethnic groups were overrepresented compared to population statistics. Parent beneficiaries who identified as Asian and Asian, Black, and White infant beneficiaries were underrepresented compared to population statistics. Just under half of parents and infants supported by the HLM programme lived in the 10% most deprived areas of Nottingham City.

Most beneficiaries were referred due to concerns for the caregiver's mental health and difficulties bonding. Around three quarters of beneficiaries took part in two or more interventions such as Mellow Babies and group massage.

Direct positive improvements in parental mental health and parent and infant attachment were observed for most parents and infants supported by the HLM programme. These included minor improvements in infant social and emotional development, parent depression, and infant warmth, and significant improvements in perinatal depression, parental anxiety, and goal-based outcomes. Furthermore, parents and caregivers with a RAG rating of red/severe were found to have significantly decreased depression following the Healthy Little Minds service , and infants of families living in postcodes with an IMD decile rank of 6 demonstrated significant improvements in social and emotional development.

We found no statistically significant differences in outcomes for interventions. Additionally, differences in outcomes for situations, such as whether a child was previously in foster care, did not form part of the quantitative analysis for the interim report but will form part of the final report after we receive the final round of data.

Due to missing data and small samples, statistical results should be taken with caution. Indirect improved outcomes, as well as why impacts were stronger for certain beneficiaries, will be explored in our interviews and focus groups with beneficiaries.

In conclusion, our interim findings highlight the Healthy Little Minds service has effectively supported and improved the mental health and parent-infant relationships of many families. These findings underscore the importance of expanding such specialised parent-infant teams and continuing research to adapt support for diverse family needs and assessing long-term outcomes. Investing in these early interventions is crucial for establishing nurturing relationships and promoting lifelong mental and physical health.

Challenges and Limitations

Small samples and missing data

As we have mentioned throughout the report, there was a considerable amount of missing data, particularly outcomes data, which resulted in small sample sizes. Smaller samples increased the risk of statistical tests reporting a false non-significant result; this

is known as a Type II Error. Larger samples produce more accurate results that better represent the population and the positive outcomes resulting from the Healthy Little Minds service. We are anticipating larger sample sizes in the next round of data.

Lack of data on sexual identities

There was no data detailing the sexual identities of parents. Without this data, we were unable to assess the outcomes of the Healthy Little Minds service on parents from LGBTQ+ communities. We recommend this is included in future data collection.

Intervention data

As mentioned in the report, around three quarters of parent and infant beneficiaries took part in two or more Healthy Little Minds interventions (see table 6). For those beneficiaries, we were unable to recognize the outcomes of each individual intervention, and instead, these beneficiaries were grouped more generally under the category "multiple interventions". This reduced the precision of our analyses and results.

Training data

Data for the Healthy Little Minds staff training programme was not available for the interim report, so we were unable to assess the impacts. This analysis will be included in the final report.

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Appendices

Appendix 1

Evaluation Questions

Impact

I1: How well has the service improved outcomes around parental mental health and parent and infant attachment (directly or indirectly)?

I2: What has the initiative and its actions contributed to the observed outcomes, considering both the overall impact (gross outcomes) and the refined impact, accounting for relevant factors (net outcomes) *e.g. Costs, demographics, unintended consequences, timeframes, etc?*

I3: Have outcomes been stronger for particular beneficiaries, activities or situations and why?

Process

P1: What has helped and hindered the wider workforce in developing an understanding of the potential benefits of early intervention?

P2: How has this understanding helped them support families both in their existing roles and in recognising and responding to the need for specialist support?

P3: What has helped or hindered parents in recognising a need and reaching out for help?

P4: What is being delivered and how?

P5: How well have the different activities and outputs of the programmes supported the achievement of overall programme objectives?

P6: How does the delivered intervention produce change?

P7: How does the context affect implementation and outcomes?

P8: To what extent has the specialist service integrated into the local system and added value?

P9: How has co-production shaped the service and what has been the benefit?