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Perinatal Mental Health Evidence Mapping: Impact Report

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Prepared for Hamish Magoffin and the PAM Foundation



**CENTRE for
PERSONALISED
MEDICINE**



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PERINATAL MENTAL HEALTH EVIDENCE MAPPING: IMPACT REPORT APRIL 2024

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1. PROJECT OVERVIEW

The purpose of this project was to assess the existing evidence on perinatal mental health and provide an overview of its distribution.

Perinatal mental health problems occur during pregnancy or in the first year following the birth of a child. They cover a wide range of conditions including antenatal and post-natal depression, anxiety, obsessive compulsive disorder (OCD), postpartum psychosis, and post-traumatic stress disorder (PTSD). Left untreated, these problems can have a long term impact on the parents, the child, and the wider family.

A wealth of evidence has been accumulated describing perinatal mental health problems. Multiple studies have reported different ways of measuring the problem, as well as the potential causes of and risk factors for these disorders, and the effectiveness, cost effectiveness, user-experience and acceptability of interventions and services aimed at preventing and treating mental health problems during this period. Much of this evidence has even been summarised in Systematic Reviews (SRs) undertaken for a variety of purposes and addressing a range of questions. It is unclear where the bulk of this evidence lies and where there might be important gaps in the evidence base. It is also unclear whether the evidence base adequately addresses questions that are important to those affected, including parents, their offspring, other family members, and their health care providers, support staff and other decision-makers involved in their care in all parts. Given the abundance of evidence within this field, this project aimed to chart the landscape of available evidence.

The project is a joint effort between the Centre for Reviews and Dissemination at the University of York and the Centre for Personalised Medicine at the University of Oxford. This report details the methodology employed and the findings derived from our evidence mapping, and suggests avenues for future action.

2. AIMS AND OBJECTIVES

This project aimed to demonstrate the breadth of evidence already available from Systematic Reviews (SRs) in the field of perinatal mental health, to help consider where further investment might be of value. Systematic reviews provide a comprehensive synthesis of all relevant studies on a specific topic, employing rigorous methods to accurately identify and summarise the available evidence. The evidence mapping demonstrates where SR evidence on this topic does and does not exist, as well as the volume, nature and diversity of this research, providing an overview of where further work might be of value.

Specifically, the objectives of this work are to help:

- Highlight areas that would benefit from further exploration (for example, through thematic analysis of SR)
- Identify areas where further searches for primary research would be of value
- Highlight important gaps in the evidence base that might be addressed by future research
- Demonstrate where systematic review knowledge might be better mobilised.



3. METHODOLOGY

Evidence mapping: description and purpose

The project employed an evidence mapping approach. Mapping reviews are useful for strategic decision making to guide further/future research. They generally have a broad thematic scope covering a range of interventions and outcomes but, due to the vast amount of information, these types of reviews are not intended to provide an in-depth examination of content. Mapping reviews are produced using the same principles as SRs. Populations, Concept and Context (PCC) or Populations, Interventions, Comparisons and Outcomes (PICOs) are specified as appropriate, a comprehensive search strategy is applied, studies are screened using explicit inclusion and exclusion criteria, and systematic coding, analysis and reporting is undertaken. Mapping reviews are very useful for describing the characteristics and volume of research in a particular area, and can therefore be used to identify and analyse knowledge gaps, as well as for further targeting of analysis in a specific area of interest, potentially informing funding and research design decisions.

Inclusion criteria

Types of study

SR that include clear and unambiguous eligibility criteria, report a comprehensive search, and detail included studies and their references separately (for example, in a table of characteristics) were eligible. No restrictions were placed on the review date or the types of study designs included in the SRs, as these will be based on the questions being addressed.

Depending on the nature of the review, either PCC or PICO information from the SRs were coded based on the following criteria.

Types of problem and population

- All perinatal mental health problems occurring during pregnancy or in the first year following the birth of a child (including, but not limited to, antenatal and post-natal depression, anxiety, OCD, postpartum psychosis, and PTSD).
- Mothers or fathers experiencing mental health problems during the perinatal period.
- Definitions of perinatal mental problems will be those applied in the SRs, but will include those conditions listed above.

Types of concept

- Any type of prevention or treatment evaluated against any or no comparator and/or the generalisability of these
- Any type of service intervention evaluated against any or no comparator and/or the generalisability of these
- Any evaluation of user experience/acceptability (e.g. barriers and facilitators to care) and/or the applicability/generalisability of this evidence
- All reported outcomes in included SRs will be recorded. Outcomes will not form part of the criteria for inclusion.

Types of context

- Studies covering any geographic location and undertaken in any setting or context were eligible.

3. METHODOLOGY

Exclusions

The following types of SRs were excluded from the mapping tool, but were coded so that they can be easily identified for later detailed synthesis where required:

- Reviews of validity and reliability of measurement tools to assess perinatal mental health problems (unless relevant to service provision/use).
- Reviews about aetiology, incidence and prevalence of perinatal mental health problems.
- Reviews relating to offspring outcomes relating to perinatal mental health problems, inclusive of parent-infant bonding.
- Overviews of reviews or umbrella reviews of perinatal mental health questions.

Reviews focussed exclusively on the following topics were excluded without coding due to being outside the remit of the question.

- Reviews examining interventions focussed on anxiety during labour or delivery.
- Reviews addressing the untreated prognosis or symptomatology of perinatal mental health or its effects on behaviours such as breastfeeding or pregnancy outcomes such as stillbirth.
- Reviews that focus exclusively on the parental mental health after the termination of a pregnancy or perinatal loss.

Reviews reporting the findings of meta-analyses that do not meet the criteria for systematic review methodology and reviews not published in English were excluded.



4. FINDINGS

Summary of search results

The searches revealed 2108 potentially relevant articles. Titles, abstracts and, when necessary, the full texts of these records were screened against the inclusion criteria, and resulted in 433 SRs being included in the Evidence Gap Maps (EGM).

We categorised each type of review according to:

- Reviews that examined the effects of a treatment or intervention,
- Reviews looking at prevention,
- Reviews that focused on the experiences of mothers and/or their partners, and
- Reviews that looked at the processes of how a service was provided.

Figure 1 gives an overview of how many we found of each type of review and this categorisation and colouring is continued through to the EGM (shown later). These categories were not mutually exclusive, as some reviews had more than one focus. Of those included 269 looked at the impact of treatments for perinatal mental health, 139 looked at prevention, 76 on the lived experiences of those involved and 65 on the impact of how services were provided.

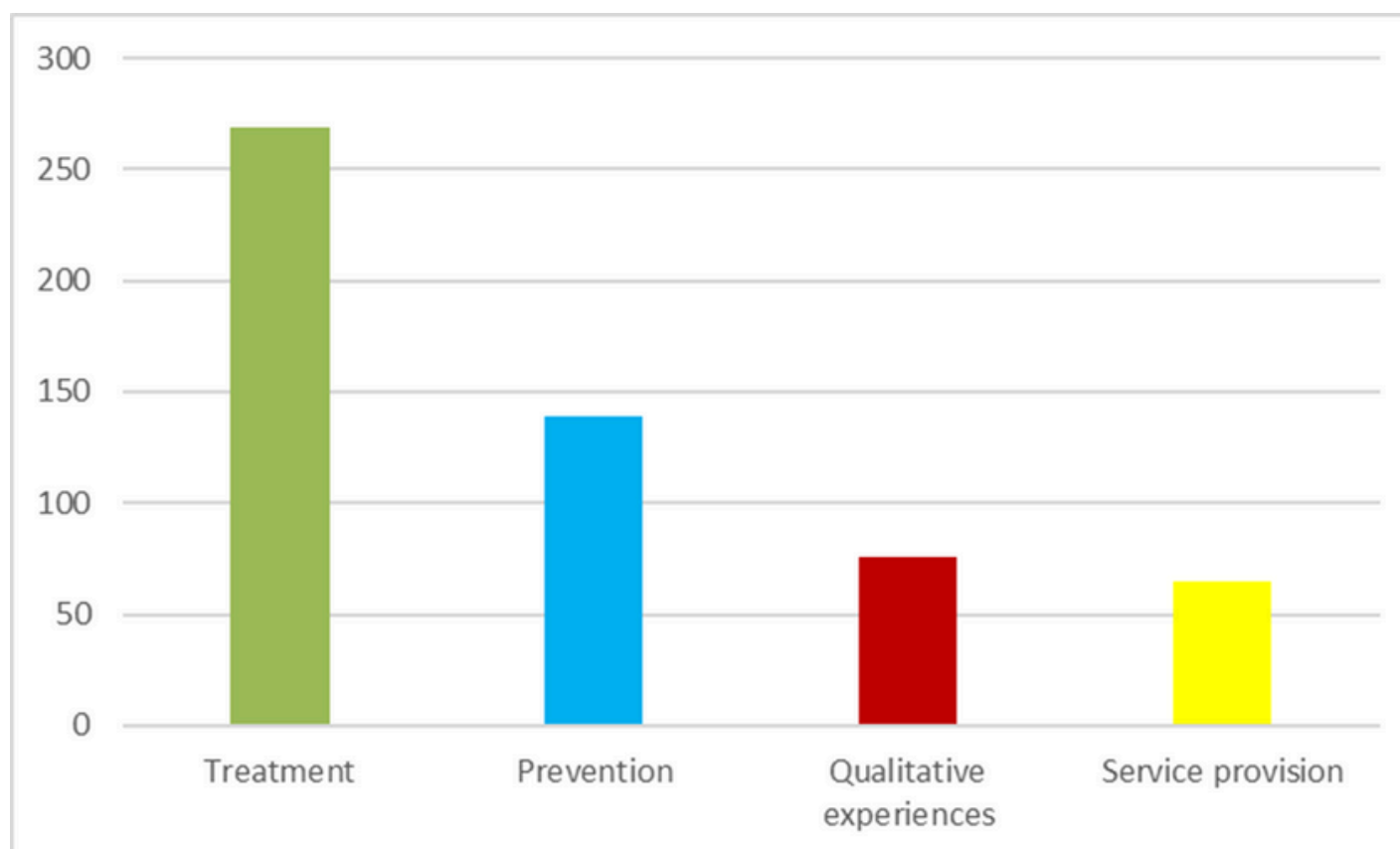


Figure 1: The number of studies of each type of review included

4. FINDINGS

This evidence has been coded into distinct categories according to the focus of the reviews and what they found. The findings have then been organised within a comprehensive mapping tool to provide an overview of the breadth and distribution of system review evidence (studies that synthesise the primary research on a particular topic) within the field of maternal mental health. **The interactive tool allows users to interrogate the data and identify where evidence clusters and where key gaps may appear, and could serve as a valuable resource for identifying key research priorities. However, it is important to emphasise that the tool alone cannot determine necessary research priorities. It must be interpreted alongside additional research involving key stakeholders to understand the significant questions within the field and assess how effectively existing research addresses them.** Below, we describe the key insights from the mapping tool, followed by suggestions on leveraging this tool to inform further research and enable priority setting.

The Evidence Gap Map (EGM)

Overview

Figure 2 shows a view of the EGM with all categories collapsed. The colour blobs in each cell show how many of each type of review falls within that category with the size of the blob corresponding to the number of studies (e.g. a higher number of studies is represented by a larger blob). Hovering over any cell will display the exact number of reviews relevant to that category by type. The horizontal access displays details about what the reviews focused on (their parameters) such as what perinatal period was examined and what mental health conditions they were interested in. The vertical access gives summary data about the types of studies they found were relevant to their focus, such as how many studies they included and the country they were conducted in.



Figure 2: The Evidence Gap Map with all cells collapsed

4. FINDINGS

Expanding the categories

Each category of the EGM can be expanded to quickly display how many reviews of each type were conducted on the included sub categories. For example, in Figure 3 we have expanded the population category. From this we can very clearly see that most reviews of all categories focused on the birth mother (larger blobs) with relatively few studies looking at the experiences of their partner (smaller blobs).



Figure 3: The Evidence Gap Map with the population parameter expanded.

4. FINDINGS

We can similarly expand the categories on the vertical axis. Figure 4 shows the EGM with the study types category expanded. From this we can see that the findings of most review types were based on controlled trials. The main exception to this finding were that reviews that focused on the experiences of their participants unsurprisingly focused primarily on qualitative studies (larger red blob under this category of study).



Figure 4: The Evidence Gap Map with the included study design parameter expanded.

4. FINDINGS

Interaction between the focus of the study and the types of studies they included.

Both vertical and horizontal categories may be expanded simultaneously to give an indication of how the review focus and what they include interact. This can highlight large evidence clusters or gaps in the literature. Both clusters and gaps may be of interest to further explore through future research. For example, in Figure 5 we have expanded both the population parameter and the type of included studies category. An example of an evidence gap arising from this is not only that relatively few reviews have been conducted focusing solely on the partner of the birth mother but that the majority of these were qualitative reviews focused on their experience rather than reviews focused on treatment or prevention.



Figure 5: The Evidence Gap Map with the included study design and population parameters expanded.

4. FINDINGS

Filters

In addition to expanding and collapsing the relative categories the data in the tool may also be filtered according to some key variables (type of review, size of the review, country of the included studies, mental health condition studied, and unique population characteristics). This can be done by clicking on the cogwheel at the top left of the tool.

Key evidence clusters (large circles)

Larger blobs indicate a lot of reviews have been conducted within those particular parameters. It may be of interest to further explore these clusters to explore why this might be. For example it may be because there is a wealth of primary research in the topic area or alternatively the reviews may be repeatedly synthesising the same small number of studies. The evidence map shows key clusters of SRs in the following areas:

- **Population characteristics**

The majority of the SRs include studies focused on mothers, with fewer studies focused on co-parents or service provider experiences.

- **Type of evidence**

The largest cluster of evidence included in the reviews across all parameters come from controlled studies. Two hundred and thirty-six treatment-based and 120 prevention based reviews focused on mothers included evidence from controlled studies, the majority exclusively. A similar pattern was found in the most abundant categories of other review parameters. For example, 214 treatment-based and 122 prevention based reviews that focused on depression included evidence from controlled studies. Similarly, 172 treatment-based and 86 prevention based reviews focused on psychology-based intervention included these study types.

- **Geographical location**

An overwhelming majority of all review types do not focus on particular geographical locations. Instead they include studies regardless of where they were conducted. This may have led to a bias in this area of research towards North America, Europe, Asia and Oceania or higher income countries more generally as this is where the majority of primary studies are conducted. Filtering the data by specific countries highlights this more clearly.

- **Health condition**

Most of the SRs concentrated on depression in mothers, followed by anxiety, compared to relatively few studies focused on OCD, psychosis, PTSD, and eating disorders.

- **The treatment of perinatal depression in mothers**

The largest cluster of review evidence relating to depression in mothers evaluates the treatment effects of interventions for depression (221 reviews). Over half of these reviews (n=132) included more than 10 studies and only 20 contained less than six studies. The reviews that included the least amount of studies generally looked at specific individual interventions, e.g. acupuncture.

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- **The prevention of perinatal depression in mothers**

The second largest cluster of review evidence relating to depression examines the preventative effects of interventions on mothers (119 reviews). Most of these reviews (n=79) included more than 10 studies and only 18 contained less than six studies. Similar to the findings for the treatment reviews, the reviews that included the least amount of studies generally looked at very specific intervention types exclusively.

- **The treatment of perinatal anxiety in mothers**

Anxiety was also found to be a well-represented cluster of evidence in the EGM. When the reviews are filtered to include just those evaluating anxiety, the largest cluster of review evidence in the EGM evaluates the treatment effects of interventions on mothers (89 reviews). Just over half of these reviews (n=55) included more than 10 studies and only 9 contained less than six studies. Again, the reviews that included the least amount of studies generally looked at very specific intervention types exclusively such as music therapy or computerised interventions.

Key evidence gaps (smaller/absent circles)

Smaller or no blobs in the EGM indicate areas where few reviews have been conducted. It may be of interest to explore these areas further to get an indication as to why this is. It could be due to a lack of primary research in the area, that the area is too narrow to explore in depth, or simply that the area has not been adequately reviewed yet. Less systematic review evidence was identified in the following areas:

- **Reviews focused on co-parents**

Reviews focused on the treatment and prevention of perinatal mental health for the non-birth parent are notably lacking. Of the few reviews focused on this cohort, most were qualitative reviews looking at their experiences. Only 11 reviews attempted to review the effects of potential interventions on their mental health. There is even less focus on non-male co-parents with only two reviews even acknowledging the potential for LGBTQ co-parents.

- **Postnatal psychosis and PTSD**

There are clear evidence gaps in the review literature for both postnatal psychosis and PTSD. There are 11 reviews which focus on the treatment of PTSD, all of which included more than 6 studies indicating a presence of primary research in the area. There are only 2 reviews which look at the prevention of trauma however indicating an under-reviewed area.

Only four reviews have been conducted that specifically look at postnatal psychosis and two of these were reviews on qualitative experiences. Of the remaining two reviews one looked at prevention and treatment and included 26 primary studies. The second looked only at prevention but included no eligible studies.

- **Lower- and middle-income countries**

It is clear from the data that most of the evidence available comes from higher-income countries. Only nine studies restricted their inclusion criteria to evidence from lower- or middle-income countries. It is unclear whether from these reviews if there is a large body of primary literature in this area or if the reviews are repeatedly synthesising the same studies.

4. FINDINGS

Overview of findings

As highlighted above, it is important to reiterate that the EGM exclusively focuses on Systematic Review evidence. Therefore, the identified gaps on the map do not inherently signify a lack of evidence in the field. There could plausibly be an abundance of primary research (such as clinical trials, cohort studies, or qualitative research) that has not been synthesised into a review and thus would not be captured by this tool. Similarly, a high volume of identified reviews in a certain area does not necessarily indicate a robust evidence base or that essential questions have been adequately addressed. Delving into the specifics of what the reviews found lies beyond the scope of this project, and it may be that the reviews may indicate poor-quality research, the absence of effective interventions, or lingering unanswered research questions.

To begin addressing these details, it is crucial to conduct additional research involving stakeholders to understand their experiences and perspectives on priorities in the field. This insight is essential before further exploring the evidence identified through this project, as drawing meaningful conclusions from the identified evidence base is not possible without it. For example, if we wished to begin addressing these details, it is crucial to conduct additional research involving stakeholders to understand their experiences and perspectives on priorities in the field. If we wished to gain a deeper understanding of the extensive research on depression in mothers, it would be imperative to first comprehend the experiences of mothers who have encountered depression around the birth of a child, their partners or co-parents, and healthcare professionals working with this group, along with their perspectives on priority research areas. Without these insights, it is impossible to ascertain whether the available evidence base is adequate and addressing crucial research areas. Similarly, in investigating whether there is any primary research evidence concerning PTSD in mothers, an area identified as lacking in the evidence map, we would once again require insights into the pressing issues for key stakeholders in the field to pinpoint relevant primary research and evaluate its significance. Below, we offer some recommendations on how this approach might be implemented.



5. NEXT STEPS - RECOMMENDATIONS FOR FURTHER WORK

While the mapping tool provides a valuable overview of research breadth and distribution within the field, it alone is not sufficient to determine the necessary research priorities. To be able to make informed decisions on priority areas, it is essential to conduct additional research involving stakeholders to understand their experiences and perspectives. Triangulating these insights with the evidence mapping exercise will add significance to the findings shown in the mapping tool, and provide a solid basis from which to inform priority setting.

Further qualitative research

The immediate next step must entail a programme of qualitative research involving stakeholders. While the evidence mapping study was designed to encompass a wide spectrum of evidence from SRs investigating perinatal mental health, meaningful qualitative research requires a more targeted approach. This involves narrowing down and focusing on specific areas to identify and engage with relevant stakeholders. Decisions regarding specific areas of focus will also be contingent upon the interests and priorities of the PAM Foundation. For instance, prioritising research into post-partum psychosis, involving partners and significant others, or exploring international research beyond the global north might be considered, as based on the evidence map, these areas have been highlighted as needing further attention.

The research should follow a qualitative methodology, prioritising co-production methods, which involves working with stakeholders to explore their experiences, perspectives, and priorities. Adopting this approach will enable assessment of how stakeholder experiences align with the characterisation of the research landscape depicted through the mapping tool, providing a better indication of the genuine priorities in the field. The selection of specific stakeholders will depend on the research focus, but examples include:

- Experts by experience (including those with direct experience, partners, and families)
- Healthcare professionals
- Policy makers
- Third sector organisations
- Trade unions
- Royal colleges

Involving key stakeholders is essential to ensuring that future research efforts are aligned with the needs and priorities of the broader community.

5. NEXT STEPS - RECOMMENDATIONS FOR FURTHER WORK

Value of the findings

Triangulating the evidence mapping exercise with additional qualitative research in this manner will yield a methodologically robust study, offering valuable insights that can inform various strategic activities. This may include:

1. **Establishing a working group** to examine the implications of the research for the prioritisation agenda within the field, and to develop a manifesto that outlines priorities for both implementation and further research needs. The working group should encompass representatives from healthcare practice, policy, the third sector, as well as those with lived experience.
2. **Collaborating with research funders**, third-sector organisations, and other relevant entities to establish a commissioning programme aimed at funding further research in the areas identified as pressing needs through the above activity. This may involve funding additional research to delve into the specifics of the literature identified in the mapping tool, thereby adding another layer of detail to the mapping process.
3. **Commissioning further primary research** through the PAM foundation to examine elements of the mapping tool that hold strategic importance to the organisation.
4. **Developing the mapping tool as a collective resource.** The mapping tool serves as a useful tool for describing the breadth of characteristics of research within the field. With further refinement, it holds the potential to become a valuable asset for the research community, supporting the identification and analysis of knowledge gaps, facilitating targeted investigations in specific areas of interest, and guiding strategic decision-making for future research. Given its significance, we propose developing the tool as into a dynamic resource that would be accessible to other researchers, and potentially citizen science projects, through which the knowledge base could be expanded. This would entail hosting the tool on an online platform, such as the PAM Foundation website, and establishing administration protocols to manage researcher and citizen contributions, ensuring the tool's continuous upkeep. Potentially, features that allow for real-time updates and contributions could be integrated to maintain the tool's relevance and foster collaboration, enabling users to provide feedback, suggestions, and additional information to enhance its accuracy and utility over time.

