

Perinatal mental health in India in the states of Haryana and Telangana: A district level situational analysis

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Abstract

Background

Women in the perinatal phase are at an increased risk of experiencing mental health problems, but in low and middle-income countries such as India, perinatal mental health (PMH) care provision is often scarce. This situational analysis presents the formative findings of the

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SMARThealth Pregnancy and Mental Health (PRAMH) project (Votruba et al.). It investigates the nature and availability of maternal mental health policies, legislation, systems, and services, as well as relevant context and community in India on a national, state (Haryana and Telangana) and district (Faridabad and Siddipet) level.

Findings

A desktop, scoping review and informal interviews with mental health experts were conducted. Socio-demographic and maternal health indicators vary between Haryana and Telangana. No specific national PMH policy or plan is available. General mental health services exist at a district level within Siddipet and Faridabad but no specific PMH services have been identified.

Implications

National and state level plans and policies will be critical in establishing services to bridge the existing PMH treatment gap. The findings from this situational analysis will inform the development of a future intervention for PMH in rural communities in Telangana and Haryana.

Impact statement

In India, many women experience mental health conditions during the perinatal period, yet most of them do not receive treatment. The substantial negative impact of untreated perinatal mental health (PMH) conditions demands urgent high-quality research into strategies to close this treatment gap. Interventions must be evidenced base, culturally tailored, and consider the wider policy and health systems within which they sit. This situational analysis took a broad approach to understanding maternal health and socioeconomic context as well as the systems and policies on a national, state and district level in two states Haryana and Telangana. Using a mixed methods approach, we have mapped out the existing evidence on systems and policies as well as delving into community level barriers to PMH support. There are important socio-demographic differences between the two states such as rates of adolescent pregnancy and intimate partner violence as well as differences in maternal health outcomes and health care interaction. Understanding these factors will help shape future interventions as well as supporting policies for maternal mental health in India. Key barriers to seeking PMH support include Stigma, isolation and transport difficulties. Calls are growing for the integration of mental health into routine maternal care. Delivering national and state level plans and policies that are evidence based and community driven is essential. This situational analysis is part of the formative work of the Perinatal Mental Health project (PRAMH) and provides an essential

step for the co-development of a community-based intervention for women in the perinatal phase in Haryana and Telangana.

Introduction

The perinatal period, which encompasses pregnancy and the first year after giving birth, is associated with a high risk of mental disorders, particularly depression and anxiety (Biaggi et al. 2016). Globally up to 20% of women experience perinatal mental health conditions (PMHCs), with a higher prevalence in low- and middle-income countries (LMICs) (Fellmeth et al. 2021) where maternal mental illness is both under-recognised and under-treated (Gelaye et al. 2016), meaning the true disease burden is likely to be underestimated. Maternal mental health problems can have far-reaching consequences for both mothers and children. PMHCs are associated with difficulties in maternal self-care and infant bonding (Śliwerski et al. 2020), leading to inter-generational impacts. The total costs for a hypothetical cohort of women with perinatal depression and anxiety as well as their children living in Pakistan were estimated to be \$16.5 billion (Bauer et al. 2024).

PMHCs can affect the infant before birth, after birth and long into a child's development. Maternal depression is linked to stillbirth, premature birth and a reduction in birth weight (Räsänen et al. 2014). There are sequelae for the social and emotional development of the child: for instance, children of mothers with perinatal depression are more likely to show symptoms of attention deficit disorder and conduct disorder (Glover et al. 2014). In addition, postnatal depression is the strongest predictor of parenting stress and difficulties in the mother-infant relationship (Leigh and Milgrom, 2008), and is associated with an increased risk of depression in adolescence (Murray et al. 2011; Pearson et al. 2013).

Although maternal mortality in India has reduced by over 50% since the early 2000s (Singh, 2018) to 97 deaths per 100,000, maternal suicide constitutes an increasing proportion of maternal deaths. A recent report in Kerala estimated that maternal suicide accounted for nearly one in five maternal deaths in 2020 (Paily et al. 2020). Further progress towards the UN SDG for maternal mortality in India therefore depends on the urgent provision of better prevention and treatment for PMHCs in women.

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96 Reducing the burden of PMHCs in India has been defined as a priority for research and clinical
97 practice (Ganjekar et al. 2020; Desai and Chandra, 2023). India is the world's most populous
98 country with several languages as well as cultural, religious and socio-economic diversity, and
99 a largely rural population distribution. Services for maternal and mental health vary greatly
100 across and within the countries' 29 states (Ganjekar et al. 2020). In India, as in other LMICs,
101 risk factors for mental disorders are more common (Varma et al. 2007; Howard et al. 2013;
102 Choi et al. 2019) than in high-income countries (HICs) and include: poverty, lack of
103 employment, physical health problems, issues of safety and security and adolescent pregnancy
104 (Agnafors et al. 2019). Importantly, intimate partner violence has been identified as one of the
105 strongest predictors for PMHCs (Howard et al. 2013; Halim et al. 2018).

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107 Widespread availability of perinatal mental health services is critical for reducing maternal
108 morbidity and mortality, yet maternal mental health has not been a policy priority in India in
109 the past decades (Ganjekar et al. 2020). Increasingly, in parts of the country, efforts have been
110 made to call attention to maternal mental health (The New Indian Express, 2019; Fuhr et al.
111 2019; Ganjekar and Parthasarathy, 2023; UNICEF, 2023) such as the 'Amma Manasu'
112 perinatal mental health programme in Kerala (The New Indian Express, 2019), and the Thaiy
113 card in Karnataka (Ganjekar and Parthasarathy, 2023), which integrates mental health into
114 routine antenatal care, a strategy recommended by WHO (WHO, 2022). Routine screening for
115 PMHCs is associated with improved identification of women at risk, as well as increased
116 referral and engagement with mental health services (Reilly et al. 2020) and is recommended
117 in many countries including Australia (Highnet and Purtell, 2012) the US (O'Connor et al.
118 2016) and the UK (National Collaborating Centre for Mental Health 2007). However,
119 screening and treatment require an understanding of the specific challenges and socio-cultural
120 context of perinatal mental health and the local setting (Shrestha et al. 2016). As India currently
121 lacks a national maternal mental health programme, understanding existing efforts as well as
122 challenges on a national, state and district level is important in shaping future policy.

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124 This study presents the situational analysis for the formative phase of the SMARThealth
125 PRegnancy And Mental Health (PRAMH) project (Votruba et al. 2023). The situational
126 analysis will investigate the nature and availability of maternal mental health policies,
127 legislation, systems, and services, as well as relevant context and community in India on a

national, state and district level. Conducting a situational analysis is a critical first step when planning for research and implementation of a study in contexts where mental health services and systems are under-resourced or lacking (Murphy et al. 2019). This presents the first step in co-developing an intervention to support women's perinatal mental health (PRAMH) in Telangana and Haryana (Votruba et al. 2023). These two states are located in South and North India (Supplementary Materials Figure 1). Both states differ socio-culturally and in terms of health services. Telangana has maintained an average of less than 70 maternal deaths per 100,000 live births since 2017, and most recent data makes it the third best performing state in the country. In comparison, in Haryana maternal mortality rates are not only higher but have increased from 98 to 110 (Sample Registration System 2022a).

Methods

This situational analysis focuses on the two sites of the PRAMH study: Siddipet District (Telangana state) and Faridabad District (Haryana state). We used a standardised tool (Hanlon et al. 2014) developed by the PRIME consortium to collect data for the planning of integrated mental healthcare. This tool focuses on factors required for the implementation of WHO's mhGAP (Dua et al. 2011) intervention guide. It was previously adapted for maternal mental health context (Baron et al. 2016), and further modified for this study. The sections of the situational analysis were structured as follows:

1. Socio-economic and maternal health context,
2. Perinatal mental health policies, and legislation,
3. Perinatal mental health services - mental health treatment coverage, district level health services,
4. Perinatal mental health and the community, and
5. Monitoring and evaluation.

Data collection

Methods used to inform each section of the situational analysis are illustrated in table 1. Secondary data was collected between February 2021 and April 2024, from publicly available

sources. The scoping literature review was conducted between September 2022 and March 2025.

[Insert Table 1 here]

Major socio-demographic determinants were explored, such access to sanitation, clean water and power, as well as female literacy, adolescent pregnancy and intimate partner violence.

Maternal health was investigated using the National Family Health Surveys and Sample Registration System Bulletins to describe key indicators of care access and potentially identify opportunities for future perinatal mental health integration. We considered key indicators of maternal health access such as the availability of institutional or otherwise assisted deliveries and receipt of antenatal care.

In addition, informal interviews were conducted between June 2022 and November 2023 with a number of experts (psychiatrists, psychologists, psychiatric nurses), to inform section 3 (perinatal mental health services) and 4 (community) of the analysis. Informal interviews were employed as they allow ease of conversation and rapport building when dealing with a sensitive topic. These interviews provided an initial understanding of available services and community beliefs. The interviewees are illustrated in table 1. Interviews were conducted by LM (medical doctor) and research assistants.

Scoping review

The question guiding the scoping review was: What is the evidence for perinatal mental health policies or policy recommendations in India? The search was limited to journal articles published in English between 1st January 2007 and 3rd March 2025. Five databases were searched (Science direct, Web of science, PubMed, PsychInfo and Scopus). For a full search strategy see Supplementary Materials. Inclusion criteria were as follows: 1) Focused on perinatal mental health, 2) Specific policy/health system/legislation recommendations, 3) Focused in India. Exclusion criteria are fully listed in the Supplementary Materials, but papers were excluded if there were no specific policy or system suggestions. For example, an article suggesting that maternal mental health is a priority without positing policy or health

system suggestions would be excluded. This was found to be an important distinction in order to identify studies that actively engage in health system and policy planning. In addition, papers that made clinical practice recommendations for implementation by individual clinicians were excluded. However, if recommendations were made for implementation by a health system as a whole these papers were included. The literature search yielded 541 articles which were screened for eligibility, resulting in 82 included publications (Supplementary Materials Figure 2).

Results

1: Relevant context around perinatal mental health

Sociodemographic and economic indicators

Relevant data on the Sociodemographic and economic situation on a National and state level is presented in Table 2. District level data is also provided where available. Figures for population size, density and rural population are from the 2011 census as this is the most recent data. Both Haryana and Telangana have better than national average sanitation, with a functioning latrine in 15% more homes in Haryana than the national average (NFHS-5, 2022). Telangana and Haryana have predominantly rural populations, with just under two thirds of the population living in rural areas, slightly lower than the national average. However, Faridabad district is an exception with a majority urban population. Haryana, has a higher population density, with better sanitation, water and electricity provision than seen nationally, along with higher-than-average figures for life-expectancy and female literacy, and lower rates of adolescent pregnancy. Telangana has a lower population density than the national Indian average and better sanitation than the national average but below that found in Haryana. Life expectancy and adolescent pregnancy rates in Telangana are similar to the national average but female literacy is considerably lower. Siddipet and Faridabad have similar levels of sanitation, water and electricity provision, but female literacy rates are higher in the Haryanan district. Importantly, Haryana has the lowest proportion of female to male residents (Singh and Hans, 2022) and the sex ratio at birth still remains below the national average. This has led to a shortage of brides in Haryana and women are being sold into forced marriages or prostitution (Tong, 2022).

Adolescent pregnancy rates have dropped nationally from 7.9(NFHS-4, 2017) to 6.8%(NFHS-5, 2022) between 2015/16 and 2019/2021. Telangana has seen the biggest decrease in adolescent pregnancy from 10.8% (NFHS-4, 2017) to 5.8% (NFHS-5 2022). Haryana's adolescent pregnancy rate stands at 3.9%. Nationally, nearly a third of women have experienced spousal physical or sexual violence (NFHS-5 2022). In Telangana, 36.9% of women reported experiencing intimate partner violence when surveyed and 4% during pregnancy. By contrast, the rate of intimate partner violence in Haryana as measured by the NFHS-5 was 18.2%. Although another study found that 37% of currently married women in Haryana reported ever experiencing domestic violence (Nadda et al. 2018). According to the National Crime Bureau the rate of reported rape per lakh (100,000) population was 12.7 in Haryana (4th highest rate in the country) and 4.3 in Telangana (National Crime Records Bureau, 2022). The total rate of crimes against women per one lakh of population in 2022 in both Haryana (118.7) and Telangana (117) were amongst the highest in the country (National Crime Records Bureau, 2022).

[Table 2 here]

Maternal Health

Key maternal health indicators for India, Telangana and Haryana are illustrated in Figure 1(Government of India, 2022; NFHS-5 2022; Office of the Registrar General & Census Commissioner 2022b, 2022a). Telangana has a lower maternal mortality rate than the national average, with Telangana's MMR of 43 making it the third best performing state in the country (Office of the Registrar General & Census Commissioner, 2022a). By contrast, Haryana's maternal mortality ratio is higher than the national average and over double Telangana's. The Ending Preventable Maternal Mortality (EPMM) initiative (WHO 2015) has set a number of targets for 2025 for the SDGs to be met. One such target is that 90% of women attend at least four antenatal care visits during their pregnancy(WHO 2015). As illustrated in Supplementary Table 1, 58.1% (NFHS-5, 2022) of women attended an antenatal clinic at least four times across the country in 2019-2020.

[Figure 1 here]

2: Policies and legislation around perinatal mental health

At the time of conducting this review, there was no discrete national perinatal mental health policy or plan in place. In addition, a search for a specific perinatal mental health plan within national mental health and maternal health policy produced no results. We conclude that both mental and maternal/child health programmes currently fail to cover perinatal mental health. The search reviewed guidelines and strategies of maternal and mental health bodies. Results are displayed in Supplementary Materials Table 4. National health mission maternal health programmes and the Federation of Obstetrics and Gynaecological Societies of India (FOGSI) guidelines were reviewed, but no guideline on maternal mental health was found. There is clear interest in maternal mental health from maternal health providers, but this has not yet translated into national guidelines or strategy.

The National Mental Health programme (NMHP) was launched in 1982 (Wig et al. 2015) and has since been implemented in most states ('12th Common Review Mission' 2018; '13th Common Review Mission' 2019). The District Mental Health Programme (DMHP) was launched in 4 districts in 1996 as the main implementation arm of the NMHP, to provide community based mental healthcare. The DMHP has evolved significantly over the years, and is now sanctioned for implementation in 738 districts (Kirpekar et al. 2024). The National Mental Health Policy was released in 2014 (Ministry of Health & Family Welfare, 2014), increasing access to mental health services for vulnerable populations, including a multi-part strategy for tackling suicide. The Mental Healthcare Act of 2017 (Mental Healthcare Act 2017) protects the rights of people with mental illnesses and decriminalised suicide. In addition, and of particular relevance to this review, this act mandates joint mother-infant care when a mother is admitted for a mental health crisis.

The scope of this article was to review perinatal mental health policies. However, importantly, other policies and acts will affect maternal mental health either directly or by influencing risk factors contributing to PMHCs. Major key points along the timeline of perinatal mental health are mapped below (see Figure 2), and include the launch of the National Mental health programme and Act in 1982, and district mental health programme in 1996 as well as subsequent schemes aiming at providing free safe delivery in public facilities.

[Insert Figure 2 here]

It is importantly to note that despite legislation, this has not always translated into practice. The Dowry remains embedded in religious and cultural traditions, 40-50% of female homicides in India were Dowry related between 1999 and 2016 (UNODC, 2019). Sex selective abortions are still a significant problem across the country, as evidenced by the distorted sex ratio at birth, with an estimated 10 million gender biased sex selective abortions reportedly occurring between 1981 and 2005 (Kulkarni, 2007).

3: Perinatal mental health services

Specialist perinatal mental health inpatient and outpatient services exist at the National Institute for Mental Health and Neurosciences (NIMHANS) in Bangalore (Perinatal Psychiatry NIMHANS) which is home to India's only mother and baby unit. This department provides patient care as well as driving academic work including perinatal mental health research as shown in Figure 4. It provides assessment and treatment tailored to the individual, including counselling for partners and family members, using multi-disciplinary approaches. Perinatal mental health services also exist in other states. Kerala is the only state with a comprehensive perinatal mental health programme, which is implemented through the "Amma Manasu"(The New Indian Express, 2019) ("mother's mind") programme. Karnataka has started to integrate mental health into its Reproductive and Child Health programme with questions on risk factors and early signs of depression and anxiety have been added to the mother and child protection card (Thayi card) (Ganjekar and Parthasarathy, 2023).

In Haryana and Telangana, general services for mental health care exist at state and district levels. Information from informal interviews with clinicians in Siddipet indicated that perinatal mental health training was delivered in Telangana in 2023. UNICEF and NIMHANS are running a project aiming to enhance maternal nutrition and improve the mental health of pregnant women (UNICEF 2023). Working with the Government of Telangana, weight tracking, nutritional counselling, anaemia prevention and mental health screening will be integrated into routine antenatal check-ups (UNICEF 2023). There is no mention of any perinatal mental health plan on the Haryana Health Department website (Health Department Haryana), and services are limited currently.

An overview of the availability of mental health care professionals, inpatient and outpatient facilities on a district level is displayed in Table 3.

[Insert Table 3 here]

Telangana's largest centre for mental health care is the Institute of Mental Health in Hyderabad. A general mental health care centre exists in Siddipet, at the Government General Hospital which has a 30 bed psychiatric ward and day clinic and treats referrals from primary health care and walk ins. Importantly, primary healthcare doctors don't treat mental health cases, but refer on to tertiary centres for treatment. Perinatal mental health orientation training was provided to Primary Health Care doctors and Maternal and Child Health (MCH) supervisors (by NIMHANS in October 2023) for all districts in Telangana including Siddipet. Auxiliary Nurse midwives (ANMs) will be trained to complete mental health screening questionnaires with all pregnant women. Then PHC doctors will review the score and refer to tertiary hospitals for treatment. Comments from informal interviews informed this section.

The State Mental Health Institute, Pandit Bhagwat Dayal Sharma University of Health Sciences in Rohtak is the major mental health institute for the state of Haryana. In addition, the Department of Psychiatry Postgraduate Institute of Medical Education and Research, Chandigarh was one of the earliest general psychiatric units, and runs satellite clinics in Haryana. There are no specific perinatal mental health services in Haryana but cases can be seen in the District Hospital in Faridabad. Travel to district hospitals in both states can be challenging and expensive for women and their families. For instance, it can take around two hours from the furthest village in Faridabad to travel to the District Hospital by car, and there are no feasible public transport options. Private clinics and services exist. As part of the general mental health programme, awareness raising sessions are run for the ANMs, staff nurses, medical officers of the PHCs and Community Health Centres. During these sessions information is given about general mental health, signs and symptoms of mental illness, prevention strategies and stigma. Accredited Social Health Activists (ASHAs) are also given a day of annual training on antenatal and postnatal mental health, to allow them to recognise symptoms, provide basic counselling and identify those that need further help. Basic psychiatric medicine (mostly anti-depressants are available at the PHCs and CHCs). District counselling services exist in Haryana ('14th Common Review Mission' 2021). Again, data from informal interviews informed this section.

3.1 Perinatal mental health policies, systems and legislation literature review

The review of perinatal mental health policies, systems and legislation included 82 publications. An overview of these publications, their design, focus, location and policy/systems commentary is provided in Table 4. There were 26 prevalence studies and 33 studies looked at risk factors or determinants of perinatal mental health conditions. Six studies focused on the Mental Health Care Act and 12 studies were primarily focused on health systems or policies. 21 of the studies were performed at a National level and 60 were performed at a state level, primarily in South India (Supplementary Materials Figure 3).

[ADD table 4 here]

The evidence for specific policy/system recommendations varied: for some recommendations there was empirical evidence supporting feasibility and efficacy; other comments arise from the practical experience of a broad range of professionals in the field. Figure 3 illustrates some of the key recommendations. There is a broad consensus that mental health care for women during pregnancy and in the postnatal period should be integrated into routine maternal health services (Bagadia and Chandra, 2017; Prost et al. 2012; Rathod et al. 2018; Ransing et al. 2020; Sheeba et al. 2019; Amipara et al. 2020; Ransing et al. 2021; Babu et al. 2020; Behl 2021, 2023; Behl et al. 2024, 2025; Easwaran et al. 2025; Handa et al. 2024; Kalra et al. 2021, 2022; Kedare et al. 2024; Kukreti et al. 2022; Mariam and Srinivasan 2009; Mhamane et al. 2024; Nisarga et al. 2022; Priyadarshini et al. 2023; Ransing et al. 2020a; Shidhaye et al. 2017; Singla et al. 2021; Thomas et al. 2023). Routine screening for mental health disorders in antenatal care is widely seen as critically important (Prost et al. 2012; Shrivastava et al. 2015; Amipara et al. 2020; Doke et al. 2021; Fellmeth et al. 2021, 2023; Joshi et al. 2020; Kalra et al. 2024; Kukreja et al. 2012; Kumari and Basu 2024; Meerambika Mahapatro et al. 2022; Nisarga et al. 2022; Priya et al. 2024; Rajeev et al. 2024; Ransing et al. 2021; Sheeba et al. 2019; Shiva et al. 2021) and should include screening for risk factors for suicide (Supraja et al. 2016), so that at-risk individuals can be prioritised for early intervention (Rathod et al. 2018; Shrivastava et al. 2015; Amipara et al. 2020; Goyal et al. 2020; Jelly et al. 2021; Fellmeth et al. 2021; Kumari and Basu 2024; Mahale et al. 2021; Mariam and Srinivasan 2009; Rajeev et al. 2024). Some valid screening instruments exist (Fellmeth et al. 2021) such as EPDS (Joshi et al. 2020), however these may have limitations when used in 'Non-Western settings' (Shrestha et al. 2016). A number of treatment

interventions have been the subject of clinical trials, including the ‘Thinking Healthy Programme’ (Fuhr et al. 2019; Singla et al. 2021), participation in women’s groups (Tripathy et al. 2010) and individual (Prabhu et al. 2025) and group interventions (George et al. 2020) with preliminary evidence of efficacy.

[Insert Figure 3 here]

4: Perinatal mental health and the community

Through informal interviews with psychiatrists, psychologists and psychiatric nurses we have gained an understanding of some community beliefs surrounding mental health. The following points were discussed with interviewees:

1. In Telangana, and indeed throughout India, it is common practice that women go back to their family home around the 7th month of their pregnancy and stay until around 40 days after birth, particularly for the birth of the first child. Here they are well supported and the practice of isolating the mother during this time seems to be rare. However, when women move back to their husband’s family, they often receive less support and are expected to do the house-work in addition to looking after the baby. Little is known about how this move may affect risk of mental health conditions, and this could be explored further in focus groups.
2. Stigma is a major barrier for women in need of mental health support. In families, some level of mental distress is frequently seen to be normal; family members often seem to reject the idea that PMHCs require treatment, help coming from outside is often not accepted and medical interventions can be seen as “unnecessary”. Consulting psychiatrists and psychotherapists, therapy and medication are widely considered as taboo. Counselling seems to be better accepted but is usually only available through the private system.
3. Male child preference and dowry practices were also mentioned during interviews as factors that might influence a woman’s mental health following the birth of a girl child. If a woman delivers two or three baby girls, they may have more anxiety depression symptoms in their subsequent deliveries

5: Monitoring and Evaluation

No monitoring and evaluation of perinatal mental health conditions has or is currently being conducted in the two districts. The 2015/2016 National Mental Health Survey (NMHS) found states were at different stages of implementing their health management information systems. Only five states (including Chhattisgarh, Gujarat, Madhya Pradesh and Punjab) routinely recorded mental health in their information systems (NMHS 2016). According to NMHS 10% of the Indian population suffers from depression and anxiety and 20% of these are pregnant women or new mothers (NMHS 2016), however, this survey did not include Haryana or Telangana in its sampling. One study based in rural Haryana estimated the prevalence of common mental disorders in pregnancy to be 15.3% (Jha et al. 2021) with 2.8% affected by major depression and 15.1% affected by anxiety. No comparable study looking at prevalence of PMHCs in Telangana was found. However, prevalence rates for antenatal depression South India range between 16.3% (George et al. 2016) and 36.5% (Hegde et al. 2012). Estimates for postnatal depression prevalence in South India range from 19.8% (Chandran et al. 2002) to 34% (Chainani 2021) and 21.5% (Saldanha et al. 2014) and 29% (Basu et al. 2021) in North India.

Discussion

This situational analysis evaluated perinatal mental health context, policies and plans and, services in India as well as locally in Telangana and Haryana. There is no specific national perinatal mental health policy or plan. No specific PMH services are available in either Telangana and Haryana. General mental health services for women who experience PMHCs exist in these states and within Siddipet and Faridabad.

The demographic differences between Haryana and Telangana may affect the prevalence of mental illness during pregnancy and may pose different challenges in establishing perinatal mental health provision.

Adolescent pregnancy is an acknowledged risk factor PMHCs (WHO, 2008), and Adolescent Girls and Young Women (AGYW) may be subject to a number of other intersecting vulnerabilities such as unintended pregnancy and exclusion from education (Palfreyman and Gazeley, 2022). Rates of adolescent pregnancy are lower in Siddipet (1.0% of 15-19 year olds) than in Faridabad (2.8% of 15-19 year olds). One study based in South India found increased odds of postpartum depression in women aged under 25 years (Doke et al. 2021).

This population will be an important target for early intervention as an ‘at-risk’ group. Mental health services must be integrated into adolescent sexual and reproductive health services, as the Reproductive, Maternal, Newborn, Child and Adolescent (RMNCH+A) strategy advocates. This strategy addresses the major causes of mortality among women and children aiming to ensure a ‘continuum of care’ for integrated service delivery across the lifecourse.

Intimate partner violence is strongly linked to PMHCs. A systematic review and meta-analysis looking at studies based in both HMICs and LMICs found that 88% of studies established an association between IPV and perinatal depression (Ankerstjerne et al. 2022). Data presented from the NFHS’s is likely an underestimate of the true prevalence of violence against women (Shah et al. 2021). Indeed, intimate partner violence remains one of the few indicators of risk of PMHCs measured in the NFHS, which (Behl 2024) argue needs to be expanded. Despite a lower prevalence of reported intimate partner violence in the NFHS, the rate of reported rape in Haryana is the 4th highest in the country (National Crime Records Bureau, 2022). Haryana has historically had one of the worst sex ratios in the country, a patriarchal culture and a high rate of violence against women (National Crime Records Bureau, 2022; Parihar et al. 2015). Pressure to have a male child as well as the gender of the newborn has been found to have an impact on risk for PMHCs (Kar et al. 2024; Kumari and Basu 2024; Shidhaye et al. 2017) although this is not uniform across the country (Doke et al. 2021). Research is needed in Haryana in particular, into what state specific risk factors exist. Women are affected by high rates of intimate partner violence in both states, which will be a key area to target in reducing the burden of PMHCs.

Poor sanitation is linked to adverse pregnancy outcomes (Padhi et al. 2015), and complications during pregnancy can negatively affect women’s mental health (Badiya et al. 2020). A systematic review and meta-analysis by Yang et al. found both lower educational level and poor economic status of families to be risk factors for perinatal depression across 31 studies (Yang et al. 2022). The percentage of home with sanitation and clean water is similar across both districts. Faridabad is a majority urban district whereas 86% of population is rural in Siddipet. This may have an impact on support-systems (Kishore et al. 2018) as well as accessibility of services (Kar et al. 2024) and coverage of technology. Rural residence has also been found to be a risk factor for perinatal depression (Easwaran et al. 2025), and there

may be lower levels of awareness about PMHCs in this population. A lack of familial and social support has been associated with depression during pregnancy (Basu et al. 2021; Pasricha et al. 2021). Policies aimed at improving the socio-economic status of women should be considered an integral part of any perinatal mental health strategy. Multi-sectoral approaches that tackle poverty, social protection, violence prevention, education and gender disadvantage are called for (Behl 2024; Handa et al. 2024; Insan et al. 2022; Scott et al. 2020). Some of these are detailed in figure 2. In 2015 the government launched the Beti Bachao, Beti Padang program with the objective of saving and educating the girl child which has been associated with significant improvements in the sex ratio at birth in Haryana (Gupta et al. 2018). However, the success of other programs is not so clear. Despite the passing of the Dowry Prohibition Act, this is still widely practiced across India, and one study based in Maharashtra found more than a third of pregnant women admitted that a dowry was exchanged at the time of marriage (Shidhaye et al. 2017). Unsatisfactory reaction to the dowry and a difficult relationship with the in-laws was significantly related to antenatal depression (Shidhaye et al. 2017).

Maternal and infant mortality is lower in Telangana than Haryana. Indeed the MMR in Telangana is less than half that in Haryana, and worryingly the MMR in Haryana has risen to 110 in 2018-2020 from 91 in 2016-18. Goli et al. found a clustering of high MMR in North-eastern and central regions (Goli et al. 2022). The strongest correlates with MMR were found to be postnatal care, maternal age and nutrition and poor economic status (Goli et al. 2022). In addition health infrastructure, fertility levels, sex ratio at birth and years of schooling were significantly related to MMR. Indeed many of these are risk factors for PMHCs as well, and targeting both nutrition and mental illness together is a strategy being implemented currently in Telangana (UNICEF 2023). The leading causes of maternal deaths are haemorrhage, infection, and hypertension (Meh et al. 2022). However, suicide is also a leading (Oates 2003) and often underestimated cause of maternal death. There is a need to understand the factors influencing MMR across these states, and targeting these to reduce maternal mortality in Haryana in particular is crucial; and efforts can go hand in hand with strategies aimed at reducing the burden of PMHCs .

A high proportion of women attend ante- and post-natal assessments in both states. However, at around 60 %, attendance at antenatal clinics (ANC) is well below the 90 % target set by the EPMM Initiative. Improving this is important as antenatal clinic appointments provide the

opportunity for mental health intervention as part of integrated care. There are also concerns that the focus on the at least 4 ANC visits distracts from the content and quality of care. One study based in Telangana found low coverage of gestational diabetes and syphilis testing, substantial deficiencies in symptom checking and communication, and only one woman was asked about her mental health (Radovich et al. 2022). The WHO has released new guidelines recommending an increase from four to eight or more ANC visits and emphasising the importance of person-centred care and wellbeing (WHO, 2016). Particularly in LMICs, pregnancy is a time of high health care attendance in a women's life. It is well established that integrating mental health into routine maternal care is an important strategy. The WHO (WHO, 2022) recommends this strategy and have published guidance for the integration of perinatal mental health into maternal and child services.

Location of perinatal care is another important factor to consider. The institutional birth rate is higher in Siddipet than Faridabad, with 47.3% of institutional births conducted in a public facility in Siddipet compared with 42.9% in Faridabad (Ministry of Health & Family Welfare Government of India 2021). Private hospitals are favoured for care (Kamath et al. 2024). Despite initiatives like the national health insurance scheme (Rashtriya Swasthya Bima Yojana RSBY) and then later the Prime Minister's people's insurance scheme and Pradhan Mantri Jan Arogya Yojana (PMJAY) (Sharma and Nambiar 2024), India continues to exhibit one of the highest rates of Out-of-Pocket Expenditure (OOPE) worldwide (MoFHW 2022). Out-of-Pocket expenditure reflects the household's financial burden for healthcare services. Southern Indian States have higher levels of development and OOPE (Sharma and Nambiar 2024), and rural areas also often have higher rates and burden of OOPE relative to household expenditure (Vasudevan et al. 2019). Consistent with this, OOPE is higher in Siddipet than Faridabad (Ministry of Health & Family Welfare Government of India 2021). In addition, women suffering from PMHCs may be driven to seek help from private hospitals due to stigma, and often seek help when symptoms are more severe. These factors may also increase the financial burden of PMHCs faced by the individual or family.

Another important difference between the two districts is the percentage of deliveries by Caesarean Section (CS). The CS rate in Siddipet is roughly triple that of Faridabad (Ministry of Health & Family Welfare Government of India 2021). Delivery by CS has been found to be a risk factor for development of postpartum depression (Doke et al. 2021). It is also associated with increased OOPE (Mishra and Mohanty 2019) and financial stress can be a

significant burden on the family, and is reported to contribute to postpartum depression particularly in men (Malik 2024). Expanding health insurance and improving the public healthcare infrastructure is important, particularly in rural areas (Kamath et al. 2024). Policy interventions, including perinatal mental health interventions must provide cost-contained strategies and ensure equitable utilisation (Kamath et al. 2024).

The National Mental Health Programme does not include a national perinatal strategy and the National Mental Health Policy does not include a focus on maternal health. In addition, we found no perinatal mental health strategy included in any maternal or child health programmes. There is no formal perinatal mental health plan in either state. On a state and district level, patients can access mental healthcare at district hospitals during the perinatal period. In both Faridabad and Haryana, there are specialist mental health professionals, however no specialist perinatal mental health services exist. There is an institute for mental health serving both states, however these tertiary institutions may have varying capacity to develop specific perinatal mental health services such as mother and baby units. Travel to seek medical attention from more remote communities may be challenging as well as expensive. In addition, the stigma attached to seeking help for a mental illness prevents many women from receiving the care they need. This emphasises the need for care in the community.

A stepped-care model of mental health intervention is recommended by WHO (WHO, 2022) and makes sense in a predominantly rural setting with relatively few specialist mental health service hubs (Bagadia and Chandra 2017; Ganjekar et al. 2020; Kukreti et al. 2022; Ransing et al. 2021) This is the most efficient (Ho et al. 2016) way of delivering care as it involves delivering low-resource interventions to the majority of people whilst retaining the ability to provide more intensive treatment to those who need it. The stepped care package should include perinatal mental health promotion, prevention measures, identification and treatment. Once adequately trained, existing community health workers such as ASHAs and ANMs could have an important role in referral (Ganjekar et al. 2020; Ransing et al. 2020a; Shanbhag et al. 2022), with mental health specialists in district/general hospitals acting as points of specialist intervention (Bagadia and Chandra, 2017). An example of a low-intensity intervention is the Thinking Healthy programme, a WHO supported programme which can be effectively delivered by community health workers or peers (Fuhr et al. 2019).

Delivering mental health care within maternal health services carries with it significant challenges. The most obvious challenge lies in training maternity care workers (Supraja et al. 2016) among whom there is evidence of a knowledge gap concerning perinatal mental health (Ransing et al. 2020b). Mental health teams should have an outreach role in planning and delivering education and training, something which Shidhaye et al. note may require a ‘fundamental paradigm shift’ in the role of psychiatrists and mental health workers (Shidhaye et al., 2016). Training programmes need to be developed that are sensitive to well documented cultural factors, and prevailing perceptions and attitudes about mental health (Chainani, 2021; Goyal et al., 2020; Insan et al., 2022; McCauley et al., 2020; Shiva et al. 2021). Virtual training courses have been implemented successfully (Shiva et al. 2021). Training was provided to Primary health care doctors and MCH supervisors by NIMHANS in Siddipet in October 2023. In Faridabad, mental health awareness raising sessions are run for ANMs, staff nurses and medical officers as well as annual training on PMH for ASHAs were reported during informal interviews. Developing a sensitive workforce and a safe, non-judgemental environment is important in ensuring women feel positively about available services.

A stepped care model utilising existing antenatal staff has been trialled successfully (Kukreti et al. 2022). The BIND-P model is not only an intervention but also a pathway for stepping up care with universal screening in MCH settings, risk stratification and appropriate onward referral or brief intervention within the obstetric setting (Kukreti et al. 2022). There are appropriate psychiatric services in both districts, and if more specialist care is needed, larger state level tertiary psychiatric care can be sought. Liaison between different specialties is an important part of care for PMHCs (Shanbhag et al. 2022). Women are supportive of being asked about their mental health specifically and of obstetric staff facilitating psychiatric referrals (Shanbhag et al. 2023). A collaborative approach and streamlined referral systems between antenatal care and mental health care should be reinforced (Shanbhag et al. 2023).

A recent systematic review also found no specific policy or program on maternal mental health, and calls for a comprehensive approach to policy development (Kalra et al. 2024). Kalra et al. advocate for a range of strategies including addressing female gender related risks such as inequity and socioeconomic disadvantage as well as addressing risk factors for PMHCs (Kalra et al. 2024). Due to the far-reaching public health implications, incorporation

of perinatal mental health into maternity and mental health programs is of high priority and the development of perinatal mental health policy can in turn shape evidence based and locally tailored initiatives (Kalra et al. 2024).

In the absence of a perinatal mental health policy, there have been several recommendations as to how one could be introduced. Priyadarshini et al. proposed three options: [1] strengthening and focused implementation of the NMHP, [2] integrating mental health in the RMNCH+A program, and [3] including a ‘maternal’ component in NMHP (Priyadarshini et al. 2023). Our review of antenatal clinic attendance suggests in both states, although particularly in Telangana, there are already many opportunities for screening of mental illness throughout prenatal care. This literature review found that numerous authors advocated for the integration of mental health into routine maternal care. If this is to occur, inclusion of mental health in the RMNCH+A program is essential, as the maternal health workforce will need to be up-skilled. Developing a perinatal mental health strategy will involve cross-sector participation, and a perinatal mental health focus in both existing mental and maternal/child health programs.

Strengths and limitations

This is the first integrated review to our knowledge of perinatal mental health to investigate maternal health and socioeconomic context as well as systems and policies on a national, state and district level. This broad approach is helpful in understanding the wide range of factors that may influence the success of an intervention. It also systematically scopes policy and system recommendations that have been published in India. We acknowledge some limitations including collection of secondary data via desktop search which may lead incomplete or outdated data. Once major sites such as the national health mission and ministry for family health and welfare (both national and state sites) were identified, these were reviewed for any relevant policies and programmes. In addition, by interviewing experts in the field on both a national and district level, major PMH policies and programmes should have been identified. A limitation of the literature search was that only one author screened the publications for relevance. The inclusion criteria were based on a subjective analysis of whether the publication made specific policy/health system/legislation recommendations. There is therefore a possibility that some papers were missed by human error. However, this scoping review captures an overview of existing publications and policy/health system themes successfully. An informal or conversational approach was taken to interviewing

669 clinicians which means that information gleaned is more limited. But this approach has
670 provided an good introduction to service availability and community beliefs.

673 **Conclusion**

674
675 This systematic review found very little evidence for existing perinatal mental health
676 systems, policies, and services in the two districts in Haryana and Telangana. Across India,
677 the evidence gap persists on prevalence, coverage and interventions for PMHCs. In order to
678 adequately support women during pregnancy and after childbirth, it is important to
679 understand their needs and socio-cultural context, and to gain evidence on what interventions
680 are acceptable and effective. National and state level perinatal mental healthcare plans and
681 policies will be critical to provide guidance and supporting district managers, researchers and
682 communities in implementing perinatal mental health support.

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Author Contribution statement

NV designed the study and oversaw data collection, analysis and writeup. LM led and conducted the review. LM, SR, and SY collected the data. LM wrote and revised the article draft. SR, SY, DP, PM, JH and NV contributed to editing the draft for publication. All authors contributed to the article and approved the submitted version.

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Conflict of Interest statement

No conflicts of interest.

Ethics statements

This study has approvals from the University of Oxford Tropical Research Ethics Committee (OXTREC reference number 539-22) and the George Institute for Global Health India Institutional Ethics Committee (IEC; reference: 09/2022).

Data Availability statement

Data can be accessed through the provided links.

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1283 Table 1: Methods used to inform situational analysis and Interviewees
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Situational analysis section	Methods used	Data sources
Socio-economic and maternal health context	Desktop review of relevant sites- collecting secondary data Google search for relevant statistics	Census of India https://www.censusindia.gov.in HMIS https://hmis.mohfw.gov.in National Family health survey https://rchiips.org/nfhs/factsheet_NFHS-5.shtml Telangana state website https://www.telangana.gov.in Crime in India https://ncrb.gov.in/uploads/nationalcrimerecordsbureau/custom/1701607577CrimeinIndia2022Book1.pdf Health Department Haryana https://haryanahealth.gov.in
Policies and legislation around perinatal mental health	Google search for perinatal mental health policies and legislation asw Review of documents on national health mission, ministry of family health and welfare, federation of obstetrics and gynaecology and Literature review	National Health Mission https://nhm.gov.in MoFHW https://main.mohfw.gov.in/?q=Major-Programmes/non-communicable-diseases-injury-trauma/National-Mental-Health-Programme-NMHP New pathways New Hope-National mental health pathway for India https://nhm.gov.in/WriteReadData/1892s/6479141851472451026.pdf Mental Healthcare Act-2017 https://main.mohfw.gov.in/sites/default/files/Mental%20Healthcare%20Act%2C%202017_0.pdf Federation of Obstetrics and Gynaecological Societies of India https://www.fogsi.org/
Perinatal mental health services	Google search for mental health facilities in both states Search of Telangana and Haryana state health websites Informal interviews	Commissionerate of Health and Family Welfare, National Health Mission, Government of Telangana https://chfw.telangana.gov.in/programmes.html National health mission Haryana https://nhmharyana.gov.in/page?id=214 Interviews with mental health experts including psychiatrists, psychologists, mental health nurses, researchers and ASHA

	Literature review	
Perinatal mental health and the community	Informal interviews	Interviews with mental health experts including psychiatrists, psychologists, mental health nurses, researchers and ASHAs
Monitoring and evaluation	Informal interviews	Interviews with mental health experts including psychiatrists, psychologists, mental health nurses, researchers and ASHAs
Informal Interviews	Haryana	Telangana
Psychiatrists	Senior psychiatrist in Faridabad district Hospital, Psychiatrist with 10 years of experience in Rothak	Psychiatrist in Hyderabad with >30 years of experience
Psychologists	Psychologist with 15 years of experience	Psychiatrist in Siddipet with >5 years of experience
Nurses	2 psychiatric nurses with >15 years of experience between them	Nurses in Siddipet PHC with >10 years of experience
Medical Officers		Medical officer in Siddipet PHC with >4 years of experience
Gynaecologists		Gynaecologist in Siddipet with >8 years of experience

Other	Senior psychiatrist working in Bangalore	District Health officer in Siddipet with 20 years of experience
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Table 2

SOCIO- DEMOGRAPHIC AND ECONOMIC INDICATORS	National level - India			State level - Haryana			District level- Faridabad		State level - Telangana			District level- Siddipet	
	Male	Female		Male	Female		Male	Female	Male	Female		Male	Female
Literacy	84.4%	71.5%		91.5%	79.7%		82.3%		84.8%	66.6%			71.0%
Sex Ratio of the total population (females per 1,000 males)	1,020			926			890		1,049			1,062	
Sex Ratio at birth for children born in the last five years (females per 1,000 males)	929			893			955		894			976	
Homes with sanitation (functioning latrine)	Overall	Rural	Urban	Overall	Rural	Urban	Faridabad		Overall	Rural	Urban	Siddipet	
	70.2%	64.9%	81.5%	85%	84.6%	81.5%	84.2%		76.2%		72.9%	81.8%	84.1%
Homes with clean water supply	95.9%	94.6%	98.7%	98.6%	98.2%	98.7%	97.9%		98.7%		98.4%	99.4%	97.2%
Homes with electricity supply	96.8%	95.7%	99.1%	99.6%	99.5%	99.1%	100		99.6%		99.4%	99.8%	99.5%
Population size (thousands)	1210855			25351			1810		35004			1013	
Population density (per square km)	382			573			2,442		312			260	
Population living in rural areas	69%			65%			20%		61%			86%	
Life expectancy	Overall	Female		Overall	Female				Overall	Female			
	70.0	71.4		69.9	73.0				70.0	71.4			
Total Fertility Rate	Overall	Rural	Urban	Overall	Rural	Urban			Overall	Rural	Urban		
	2	2.1	1.6	1.9	2.0	1.7			1.8	1.7	1.8		
Pregnancy amongst 15-19 year olds	6.8%			3.9%			2.8%		5.8%			1.0%	
Prevalence of intimate partner violence	Overall	During Pregnancy		Overall	During pregnancy				Overall	During pregnancy			
	29.3%	3.1%		18.2%	1.6%				36.9%	4%			

- Population size, density and rural population is from census 2011
- Life expectancy is from the sample registration system (SRS)-abridged life tables 2016-2020 data

- 1294 • NFHS for literacy, sex ratios, home with data, fertility rate and total adolescent pregnancy and IPV data
- 1295 • In the National Family Health survey-5 (NFHS-5) literacy rates were calculated based on those who have
- 1296 completed at least standard 9 (exam taken during Schooling) or passed a literacy test conducted at part
- 1297 of the survey.
- 1298 • Prevalence of intimate partner violence is measured in ever-married women aged 18-49.
- 1299 • Adolescent pregnancy: girls aged 15-19 who were pregnant or already mothers at the time of the survey
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Table 3: Available District-level Healthcare

Obstetrics & Gynaecology services	Faridabad district (Haryana)	Siddipet district (Telangana)
Obstetrician & Gynaecologist	8	6 (as well as 4 postgraduate students)
Paediatricians	2	5 (as well as 4 postgraduate students)
Staff nurse	14	250
Anaesthesiologists	2	4
Compounder	0	15
Housekeeping	10	150
Total beds	55	500
OP visits/month	50	Up to 20,000
Monthly delivery rate	150-160	500
%Caesarean section deliveries	Roughly 5%	50%
Available Mental Health Human Resources		
Available Human Resources	Faridabad district (Haryana)	Siddipet district (Telangana)
General perinatal mental health workers	No	No
General doctors	Yes	Yes
Health Officers	Yes	Yes
Midwives	Yes	Yes
Degree nurses	Yes	Yes
Diploma nurses	Yes	Yes
Neurologist	No	Yes
Psychiatrist	Yes	Yes
Psychiatric practitioners	Yes	Yes
Psychiatric nurse	Yes	No
Psychologist	Yes	Yes
Perinatal mental health in-patient care		
Perinatal in-patient care	Faridabad	Siddipet
Specialist perinatal mental health care	No	No
Nearest general in-patient facility	District Hospital	General mental health care in Government General Hospital in Siddipet (GGH). This has a ward with 30 beds. Also Institute of Mental Health Hyderabad
Is alcohol detoxification offered?	Yes- District Hospital has a dedicated de-addiction programme and inpatient facilities at the district hospital are available for de-addiction	Yes- there is a separate drug centre at the Institute of Mental Health Hyderabad and facilities in Siddipet
Perinatal mental health outpatient care		
Specialist Perinatal mental health outpatient care	Faridabad	Siddipet
What are the nearest facilities?	District Hospital – can take about 2 hours from the furthest village to reach this hospital	Government General Hospital in Siddipet and District Hospital in Gajwel

Referral systems in place?	Community psychiatric nurse conducts home visits to pregnant women. They can identify those who need further support. General doctors are asked to identify potential cases and refer to the District Hospital. ASHA workers have also been trained to refer women for further treatment and diagnosis.	Screening questionnaires on ANC cards – scores are reviewed by PHC doctors who refer onwards to GGH/tertiary hospitals for treatment. In addition private healthcare providers and Obstetricians can make referrals. Women can also self refer to outpatient services.
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Informal Interviews were conducted to complete this table

1306 Table 4
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Year	Title	Location	Focus of study	Type of study	Comments on Policy/systems
Intervention studies					
(Ransing et al. 2020)	Development of a brief psychological intervention for perinatal depression (PND)	National	Development of a scalable model of care for PND	Literature review and expert opinion discussion	Urgent need to address the burden of PND and to reduce the treatment gap in India. Screening accompanied with interventions is associated with a significant increase in use of perinatal mental healthcare services. WHO recommends a stepped care model with self help interventions and non-specialist interventions to reduce the gap. Need for an integrated model of care aimed at training primary health care workers, and a multi-pronged strategy. Consensus reached to develop a auxiliary nurse midwife based stepped care model consisting of care, training and referral services for PND.
(Fuhr et al. 2019)	Delivering the Thinking Healthy Programme for perinatal depression through peers: an individually randomised controlled trial	Goa	The effectiveness and cost effectiveness if the Thinking Healthy Programme (THP)	Single blind, Individually randomised Controlled trial	This programme had moderate effects in remission from perinatal depression, was relatively cheap to deliver and was cost-saving. Thus it could be used as part of a stepped care approach. This may also give rise to a new cadre of healthcare workers- Sakhis who are able to tackle the treatment gap of maternal depression.
(Singla et al. 2021)	Multiple mediation analysis of the peer-delivered Thinking Healthy Programme for perinatal depression: findings from two parallel randomised controlled trials	Goa	Examine three mediators of the Thinking Healthy Programme	Two parallel RCTs	Interventions should target both social support and patient activation levels. To achieve integration of mental health into other services a stronger emphasis on mother-child attachment may be required. Generalisability of the THPP. Peer delivered interventions have the potential to be more feasible than other interventions and may result in better adherence especially amongst those that are more socioeconomically disadvantaged and isolated from the healthcare system.
(Supraja et al. 2016)	Suicidality in early pregnancy among antepartum mothers in urban India	Bangalore	Prevalence and predictors of suicidality	Cross-sectional study nested within a prospective cohort study	Training obstetric healthcare staff to identify women at risk and provide support and referral should be an important initiative.
(Shiva et al. 2021)	A virtual course in perinatal mental health for healthcare professionals	Bangalore	Explore the role of a virtual certificate course in PMH	Educational intervention or pre/post study	Encouraging feedback indicates that virtual courses could help enhance competency in healthcare professionals to identify and treat PMH. Strong need to develop expertise in PMI in LMICs and this virtual course could be provided globally. Training health professionals is

					necessary and this format lends itself to scale-up. Involve learners from multidisciplinary backgrounds, keep courses interactive and include case-based and peer learning.
(Vaiphei et al. 2023)	Formation of a stakeholder group of women with a lived experience of Post-Partum Psychoses (PP) – Experience from a perinatal psychiatry service in India	Bangalore	Process of forming a stakeholder group for PP	Qualitative	Value of participatory approaches in health care systems. Patients and their caregivers can be involved in health system policy, planning, service monitoring and research – can strengthen the mental health system. Can lead to more acceptable and accessible health services, and improve the responsiveness of services. Indeed involvement of stakeholders is increasingly being recognised as critical to service development. Women with PP and their caregivers can be involved as stakeholders in mental health decision-making – it appears feasible in a LMIC setting and should be encouraged. Need to ensure adequate gender representation and urban/rural representation. Suggestions stemming from people's lived experiences are important in understanding their unique service needs as well as helping to refine research questions.
(Thomas et al. 2023)	Feasibility of training primary healthcare workers to identify antenatal depression	Bangalore	Feasibility of training PHC workers in an urban antenatal clinic in screening pregnant women with a questionnaire	Pre-post design	Task shifting by training primary healthcare workers in screening could help in identifying and referring more women with antenatal depression at an early stage. Training healthcare workers (nurses, nurse assistants and ASHAs) in antenatal clinics is feasible and can increase the identification rate of depressive symptoms in pregnant women. The training improved staff's knowledge, perceived skills and self-efficacy – which may make them more prepared for task shifting. There was an increase in the number of women identified with depressive symptoms once a structured screening was initiated. The MHGap intervention guide directly targets knowledge. Some women with moderate depressive symptoms declined referral for fear of being perceived negatively for seeking help for their mental illness. Need for education in the community addressing mental health disorders and stigma as well as providing interventions for women with symptoms and integrating mental health services into routine ANC.

					Policy decisions should be taken to incorporate mandatory screening in antenatal care settings along with interventions based on illness severity.
(Prabhu et al. 2025)	Effectiveness of psychosocial education program on postnatal depression, stress and perceived maternal parenting self-efficacy among pregnant women in South India	Manipal	Effect of a psychosocial education program on postnatal depression, maternal stress and self-efficacy	Randomised controlled Trial	The program was effective in reducing postnatal depression and stress related to pregnancy and childbirth. Preventive interventions might be more effective if conducted during pregnancy due to high incidence of PPD in the first few months postpartum. Nurses in a maternity unit could be trained to conduct a brief psychosocial education program which can be incorporated into routine care. This intervention was simple, low cost and effective and can support continuity of care.
(Shidhaye et al. 2016)	Development and piloting of a plan for integrating mental health in primary care in Sehore district, Madhya Pradesh, India	Madhya Pradesh	Operationalise the WHO Mental Health Gap Action Plan and design an integrated mental healthcare plan (MHCP)	Situational analysis, qualitative study	The role of psychiatrists needs to undergo a fundamental paradigm shift and they should play a major role in tasks such as designing mental healthcare programmes that can be delivered by community mental health teams, as well as providing supportive supervision to these teams. Focus shift from clinical interventions to systems strengthening.
(Lakshminarayanan et al. 2020)	Delivery of perinatal mental health services by training lay counsellors using digital platforms	Karnataka, Maharashtra, Bihar, Jharkhand	Remote training of people with no prior knowledge surrounding perinatal mental health to recognise mental illness and deliver psychosocial services	Feasibility study	Digital training is a viable alternative to face-to-face training in situations with a limited budget and other constraints. There is a compelling requirement to address the maternal mental health gap and this initiative has generated evidence in favour of cost effective training for psychosocial treatment in less-resourced settings.
(George 2020)	Effectiveness of a group intervention led by lay health workers in reducing the incidence of postpartum depression in South India	Kerala Tamil Nadu	Low intensity group intervention led by lay workers during the antenatal period	Parallel group design with both positive and negative controls	This intervention with its possibility of reducing postnatal depression could be scaled up for testing/intervention. Need to develop locally relevant, innovative and feasible strategies for prevention of postnatal depression. Innovative techniques such as smart phone technology use could be employed. High levels of satisfaction among the recipients confirms the feasibility of effective task shifting in similar settings.
(George et al. 2016)	Antenatal depression in coastal South India- Prevalence and risk factors in the community	Kerala and Tamil Nadu	Prevalence of antenatal depression in women from a rural coastal background and associated risk factors	Cross-sectional community based study	Need to develop strategies for recognition and appropriate intervention in the context of locally relevant risk factor. Need for a universal screening programme and treatment strategies for antenatal depression.

					Policy makers must prioritise addressing emotional disorders within programmes which seem to focus preferentially on reducing maternal and infant mortality. Shorter, time-efficient and accurate screening methods that can be employed by healthcare workers at the primary care level during obstetric/infant related appointments must be developed. Management of depression may require a stepped care approach. Multi-sectoral response is needed addressing poverty reduction, social protection, violence prevention, education and gender disadvantage.
(Fellmeth et al. 2021)	Perinatal mental health in India: protocol for a validation and cohort study	Karnataka and Himachal Pradesh	Outline a study on PMH which will aim to improve understanding of CMD in women of reproductive age	Protocol	Screening for PMI should occur in maternal health and obstetric settings by healthcare workers including nurses, midwives and primary care doctors. Screening tools must be simple, reliable and quick to administer as well as locally validated and culturally appropriate. They must have established cut-offs to facilitate stepped care.
(Kukreti et al. 2022)	Stepped Care Model for Developing Pathways of Screening, Referral and Brief Intervention for Depression in Pregnancy: a Mixed-Method Study from Development Phase	Delhi and Ratnagiri	Develop and implement a stepped care model	Mixed Methods	Stepped care models using existing antenatal health care staff or peers for screening maternal depression and providing brief intervention have shown promising results across South Asian countries. Lay health workers can deliver such models. The BIND-P stepped care pathway is a systematic path for integration of mental health principles in general health care settings. Preliminary result shows the model is feasible, acceptable and there is potential for up-scaling for integration into reproductive child health programs.
(Tripathy et al. 2010)	Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: a cluster-randomised controlled trial	Jharkhand Orissa	Effects of a low cost participatory intervention on neonatal mortality and maternal mental health	Randomised Controlled trial	This programme led to reduction in depression amongst women in the third year of its running and a 32% reduction in neonatal mortality rate. Such an intervention could be supported by the government and could strengthen the National Rural Health Mission's mandate for communities being at the centre of its programme.
Prevalence and risk factor studies					
(Kalra et al. 2021)	Prevalence and determinants of antenatal common mental disorders among women in	National	Prevalence of antenatal CMDs and their determinants among women in	Systematic review and meta analysis	There is an urgent need for locally developed policies and programmes, as well as integration of preventative and early intervention mental

	India: a systematic review and meta analysis		India (risk factors and protective factors)		health programmes into maternal care. Lack of availability of synthesised local evidence of perinatal mental health morbidity in India; most studies found were on populations in South India and based on urban populations.
(Kalra et al. 2022)	Burden of severe maternal peripartum mental disorders in low- and middle-income countries: a systematic review	National	Prevalence of severe peripartum mental disorders	Systematic review	Psychosocial disadvantage and gender related risk factors have a negative influence on health seeking behaviours and reduce access to treatment. There are far more negative consequences of severe mental illness (SMI) in LMIC setting. These factors make postpartum psychosis a public health priority. The authors strongly support the integration of mental healthcare into routine maternal care in these settings.
(Kedare et al. 2024)	Mental health and well-being of women (menarche, perinatal and menopause)	National	Mental health and well-being considerations and determinants of women in each phase	Chapter	Workplace support should be available – all institutions should have a good environment for pregnant and lactating women. Mental health services and maternal and child services should overlap with more contact and interaction of both at each obstetric visit. Greater education about symptoms of a mental health problem – likely best done by a MCH service. The government or DMHP needs to train healthcare providers like ASHAs, community midwives, community social workers and those working in MCH in PMI. Healthcare workers attitudes and behaviours are important in promoting mental health. Mindfulness training can be incorporated into community health programs.
(Rajeev et al. 2024)	India's Silent Struggle: A Scoping Review on Postpartum Depression in the Land of a Billion Mothers	National	Evidence on the awareness and prevalence of PPD in India	Scoping review	Most studies emphasised the need to establish support systems and strengthen the existing healthcare system. Hospitals need to develop referral systems and establish postpartum clinics. Urgent need for more geographically inclusive study in India to represent samples across states. Highlights the importance of accessible services related to PPD. Education of healthcare service providers to identify PPD early. An online or offline screening system should be made available so that routine screening can be administered. Establish a knowledge repository in English and local languages for women.

					Establish specialised postpartum clinics attached to paediatric departments.
(Mariam and Srinivasan 2009)	Antenatal psychological distress and postnatal depression: A prospective study from an urban clinic	Bangalore	Prevalence and risk factors in the development of postpartum depression	Prospective cohort study	Antenatal psychological distress was a risk factor in the development of PPD hence a need for routine screening of psychological distress during antenatal visits. Mental health care must be made part of routine antenatal services to facilitate early identification and treatment of psychological distress during pregnancy.
(Kishore et al. 2018)	Life events and depressive symptoms among pregnant women in India: Moderating role of resilience and social support	Bangalore	Understand the association between life events and perinatal depression and whether that is moderated by resilience and support	Prospective cohort study	Life events predicted depression during pregnancy and the relationship was moderated by social support but not resilience. Since it is not always possible to prevent adverse life events appropriate intervention programmes need to be planned to enhance adequate social support to deal with their impact. Inclusion of assessment of life events in the preceding year as part of comprehensive psychosocial screening, and consider interventions for enhancing social support for those who report them.
(Sheeba et al. 2019)	Prenatal depression and its associated risk factors among pregnant women in Bangalore: A hospital based prevalence study	Bangalore	Prevalence of prenatal depression and its associated risk factors among pregnant women in Bangalore	Cohort study	Obstetric practice should include screening and diagnosis of prenatal depression as part of routine antenatal care in low and middle-income countries.
(Mahale et al. 2021)	A study of Postpartum depression and its risk factors in a tertiary Hospital in India	Karnataka	Prevalence of PPD women attending a tertiary hospital and associated risk factors	Hospital-based Cross-sectional	Risk factors can be identified during routine antenatal visits (low level of education, low socio-economic status, age at marriage, parity, obstetric complication, previous marriage, male baby preference, neonatal complications, history of psychiatric disorder, living in joint families, lack of family support, history of marital conflict and alcohol abuse in the husband) and hence these issues must be addressed by healthcare providers so that at risk women can be identified for early follow up. Incorporate mental health care programs into the Maternal Health Care system.
(Nisarga et al. 2022)	Social and obstetric risk factors of antenatal depression	Karnataka	Modifiable social and obstetric risk factors of antenatal depression	Cross sectional study	Focus must be on screening for depression during pregnancy and providing adequate psychosocial support with treatment for depression. This study found antenatal depression to be very common, thus screening should be included as a routine part of antenatal care and an attempt to screen must be at least made in

					high-risk individuals (urban residents, and those affected by fear of labour, intimate partner violence, poor relationship with in laws and parents). Antenatal depression is multi factorial in origin and requires a multi factorial approach to prevention and treatment with efforts at the community level. Integrating mental health within maternal and child services should be adopted at a community level.
(Basu et al. 2021)	Postpartum depression burden and associated factors in mothers of infants at an urban primary health centre in Delhi, India	Delhi	Burden of PPD and associated factors in women with an infant	Cross-sectional	Regular mandatory screening for PPD is needed in primary healthcare facilities for an extended period post childbirth.
(Kukreja et al. 2012)	Persistent postnatal depression after preterm delivery	New Delhi	Prevalence of poor-psychological well-being and depression at 6 weeks post delivery	Prospective cohort study	Higher incidence of postnatal psychological distress and depression at 6 weeks after delivery among mothers with preterm infants. All mothers who had a preterm delivery should be screened for features of psychological distress during the early postnatal period to ensure early detection and management of the condition.
(Bachani et al. 2022)	Anxiety and depression among women with COVID-19 infection during childbirth – experience from a tertiary care academic centre	New Delhi	Prevalence of depression and anxiety in women testing positive for COVID-19 and associated factors	Cross sectional study	Need for increased screening for common mental illnesses with identification of associated risk factors. Strong need for liaison between obstetricians and mental health professionals. If worries about the effects of COVID-19 are out of proportion referral services should be made available. Addressing mental health concerns early on prevents long-term consequences.
(Mahapatro et al. 2022)	Domestic violence during pregnancy as risk factors for stress and depression: The experience of women attending ANC at a tertiary care hospital in India	New Delhi	Association of domestic violence (DV) with stress and depression during the first trimester	Mixed Methods	The strong association between DV victimisation around the time of pregnancy and the likelihood of a mother exhibiting stress and depressive symptoms reinforces the need to conduct routine screening during pregnancy to identify women with a history of domestic violence/currently experiencing domestic violence. Call for significant attention in the planning of health education programs for all staff to identify and screen the risk of DV and associated stress and depression, as well as for the implementation of holistic interventions. Initial rapport building with trust and bonding, customised care and a patient centric approach. Necessity for discrete screening and creation of safe spaces within the institutional

					health care system, and responsive and reactive care giving
(Arora et al. 2021)	Association between high pre-pregnancy body mass index and antenatal depression: A study among pregnant women of upper socio-economic strata in North-West Delhi, India	Delhi	Prevalence of AD among normal weight, overweight and obese pregnant women	Observational study part of a longitudinal study	This study has provided evidence for the hidden burden of AD and its association with pre-pregnancy BMI even among women of higher socio economic status. A holistic approach needs to be adopted by healthcare professionals. Regular screening of pregnant women for depression must be conducted as well as lifestyle advice. This study can provide an impetus for the development of interventions aimed at addressing maternal mental health
(Kumari and Basu 2024)	Postpartum depression and its determinants: A Cross-sectional study	Delhi	Prevalence and determinants of PPD among women reporting to secondary care	Cross-sectional study	Prioritising birth-preparedness and strengthening health system screening protocols may prevent and reduce the effects of PPD. Increased focus on training and sensitisation of health professionals for screening with questionnaires. National health programs in India should include strategies and interventions for early recognition and treatment of PPD. Integrate evidence based behavioural modifications within essential health care packages for mothers and infants. Expand the role of telemedicine. Promote the availability of antidepressants through trained primary care providers.
(Shidhaye et al. 2017)	Association of gender disadvantage factors and gender preference with antenatal depression in women: a cross-sectional study from rural Maharashtra	Maharashtra	Prevalence of probable antenatal depression and association of marital and gender disadvantage factors and child gender preference	Cross-sectional	The maternal mental health agenda should be linked to addressing broader social development deals and gender empowerment. Decision-makers involved in maternal and child health and mental health must collaborate with each other to integrate mental health into primary care. Nurses and other para-medical staff in PHCs can be trained to screen for antenatal depression.
(Chainani 2021)	Incidence of postpartum depression in tertiary care hospital in Navi Mumbai amid COVID-19 Pandemic	Maharashtra	Incidence of postpartum depression (PPD) during the COVID-19 pandemic and identify sociocultural triggers	Cross-sectional	COVID-19 and worldwide lockdown causing widespread psychological problems, PPD quite common in this part of the country. Early identification of PMI can be lifesaving. A support system, plenty of transparent medical advice, and compassion must be applied to doctor visits. Doctors also need to familiarise themselves with PPD scoring systems and also clinical symptoms to be able to reassure and diagnose women

					ahead of severe maternal morbidity
(Doke et al. 2021)	Assessment of difference in postpartum depression among caesarean and vaginally delivered women at 6 week follow up in hospitals in Pune District, India: an observational cohort study	Maharashtra	Compare the proportion of PPD among women who had CS or vaginal delivery and associated socio-demographic risk factors	Observational cohort study	Odds of PPD higher in women who had a CS and women aged less than 25 had higher odds. Young women particularly those who had a CS delivery should be screened 6 weeks after delivery. Universal assessment and screening of women (particularly young women and those who had a CS delivery) should be carried out at 6 weeks post partum in all hospitals using EDPS through nurses or social workers.
(Singh et al. 2023)	Association between gestational diabetes mellitus and postpartum depression among women in Eastern India: a cohort study	Odisha	Association between GDM and PPD	Prospective cohort study	Women with gestational diabetes mellitus (GDM) were at higher risk of developing PPD suggesting an at-risk approach should be implemented for screening. After appropriate training, front line healthcare workers can screen during follow-up visits for GDM and as part of the home-based newborn program. Women can be educated about the need to approach health facilities if they develop any signs or symptoms of PPD. This multi-pronged provider and patient- based approach along with linkage of front-line healthcare workers can identify those at risk of PPD and offer interventions when needed.
(Kar et al. 2024)	Family and facility care variables attributing to postnatal depression among women in two tribal dominated districts of Odisha: Log model analysis to suggest intervention	Odisha	Postnatal depression and its attributes in the early postpartum period	Cross-sectional study	Robust healthcare alone will not be able to address the holistic health needs of childbearing women. Ingrained familial perceptions and structures are the barriers to success. Family stressors compound poor mental health and counselling of the family as a whole is needed to achieve sound mental health for women postnatally. The EPDS is a simple cost-effective tool that can be integrated into health assessment systems.
(Prost et al. 2012)	Predictors of maternal psychological distress in rural India: a cross sectional community based study	Jharkhand	The prevalence and predictors of psychological distress as a proxy for common mental disorders among mothers	Cross-sectional community based	Scaling up interventions with lay/community health workers or group interventions. Screening with simple tools could be integrated with maternal health care especially for those who are high risk.
(Srinivasan et al. 2015)	Assessment of Burden of Depression During Pregnancy Among Pregnant Women Residing in Rural Setting of Chennai	Chennai	Burden of antenatal depression and associated risk factors	Cross-sectional study	True estimates of the prevalence of antenatal depression as well as risk factors can provide evidence for research and policy development. Integrating screening into routine antenatal care can reduce untreated antenatal depression and can be carried out by trained non-mental health professionals.

(Goyal et al. 2020)	Psychiatric Morbidity, Cultural Factors, and Health-Seeking Behaviour in Perinatal Women: A Cross-Sectional Study from a Tertiary Care Centre of North India	North India	Prevalence of psychiatric morbidity as well as cultural factors influencing illness, help seeking behaviour and barriers to care	Cross-sectional study	Psychosocial stressors, marital conflict and past history of psychiatric illness were significantly higher in women with perinatal mental illness. So if psychological support could be provided to these women on time it could reduce the occurrence of depression. Religion and social support were major coping strategies and stigma and financial problems major barriers to help seeking with less than a third reporting medical help. Cultural aspects need to be addressed in planning prevention and treatment programmes.
(Jha et al. 2021)	Prevalence of Common Mental Disorders among pregnant women – evidence from population-based study in rural Haryana, India	Ballabgarh-Haryana	Burden of common mental disorders (CMDs) among pregnant women in rural Haryana	Community-based Cross-sectional	Need for integration of screening of CMDs into routine antenatal care. Recommend integration of mental health care with routine antenatal services at a primary care level. Primary care physicians and ANMs can be trained to use screening tools like PRIME MD PHQ-9 to aid in detecting CMDs at an early stage and timely referral to specialist. This should also be supported by awareness generating activities at a community level to reduce stigma.
(Sarkar et al. 2022)	The unheard parental cry of a stillbirth: fathers and mothers	Chandigarh	Prevalence of depression among parents after a stillbirth	Prospective cohort study	Advocate for the development of health policies for mental health screening in couples following a stillbirth. Need to bring changes in hospital policies to promote psychotherapy to bereaved parents. Possible value of web-based mental health services including informative websites, self-help groups, virtual counselling services and automated therapy programs but need for systematic evaluation. Need of the hour: set up protocols for tailor made bereavement services to provide couples suffering stillbirths should be offered bereavement care and counselling and health professionals should screen these parents for MH problems.
(Jelly et al. 2021)	Impact of COVID-19 Pandemic on the psychological status of pregnant women	Uttarakhand	Psychological impact of COVID-19 on pregnant women	Cross-sectional survey	Early identification of high risk women is important in guiding planning to reduce the complications associated with maternal psychological stress. It is essential to assess the psychological impact of stressful events such as the pandemic on pregnant women and plan effective strategies to reduce their impact.
2018 (Rathod et al. 2018)	Characteristics of perinatal depression in rural	Madhya Pradesh	Epidemiological features of	Secondary analysis of cross sectional surveys	The high risk groups highlighted in this study (18-22 yrs, higher disability, facility

	central, India: a cross-sectional study		depression among perinatal women		attendee) should be made a priority for mental health care. Mental health services should be integrated into maternal healthcare platforms. Use maternal health infrastructure as a foundation for provision of maternal mental health care. Use economic modelling to predict the cost-benefit with different service models. Service planners must recognise that treating depression is likely to have a partial effect on reducing suicidal ideation. With adequate training and supervision nurses and ASHA workers can be capacitated to screen vulnerable mothers and provide psychosocial interventions as indicated. Evidence generated by this study and others must be used by policy-makers to prioritise mental health services for mothers alongside maternal and child services.
(Amipara et al. 2020)	A study on postpartum depression and its association with infant feeding practices and infant nutritional status among mothers attending the Anganwadi centres of Valsad District, Gujarat, India	Gujarat	Sociodemographic risk factors associated with PPD and its possible association with infant feeding practices and infant nutritional status	Cross-sectional	Integration of maternal mental health into existing maternal and child health services. Screening procedures for PPD and counselling should be introduced at a field level. Early and timely preventative measures, referral and treatment are important in decreasing maternal suffering and preventing the harmful effects on child growth.
(Prabhu et al. 2022)	Prevalence and associated Risk Factors of Antenatal depression among Pregnant women attending Tertiary Care Hospitals in South India	Manipal	Prevalence and risk factors associated with AD in South India	Cross-sectional	Screening for prenatal depression as part of routine pregnancy care and prompt treatment. Regular antenatal care should include screening and diagnosis of antenatal depression (AD). Healthcare professionals must create educational programs to assist with expectant mothers and offer psychological prenatal care assistance.
(Priya et al. 2022)	Prevalence and risk factors of postpartum depression in Sub-Himalayan region	Himachal Pradesh	Prevalence of PPD and its associated risk factors in a hilly region in Himachal Pradesh	Hospital-based cross-sectional study	High prevalence of PPD was found in this region and therefore routine screening for PPD should occur at 6 weeks postpartum. Planning effective public health measures towards PPD requires a precise estimation of the burden of this disease and its risk factors.
(Easwaran et al. 2025)	Depression, anxiety and stress among HIV positive pregnant women during the COVID-19 pandemic: a hospital based cross-sectional study in India	Andhra Pradesh	Prevalence and factors associated with DAS (perinatal depression, anxiety and stress) amongst HIV positive women	Cross-sectional study	Integrate maternal mental health care into antenatal care in all primary healthcare settings. Telehealth services can meet the needs of antenatal and HIV care to build confidence among rural HIV-positive pregnant women to sustain their mental health and wellbeing.

					Design educational programs targeting COVID-19 stressors and implement them at the institutional level to improve the mental health of HIV-positive pregnant women. Holistic interventions delivered by a multi-disciplinary team including a clinical psychologist, obstetrician and HIV prevention and treatment specialist. Pandemic preparedness involves not only just the development of healthcare infrastructure but also handling mental health challenges in the public and special populations.
(Scott et al. 2020)	Multidimensional. Predictors of common mental disorders among Indian mothers of 6- To 24- month old children living in disadvantaged rural villages with women's self-help groups: A cross sectional analysis	Jharkhand, Madhya Pradesh, West Bengal, Odisha, Chhattisgarh	Risk factors for CMD across multiple aspects of life	Cross Sectional survey data	Practitioners and policymakers should aim to improve food security, economic wellbeing and social capital, such as that created through SHG membership, to improve maternal mental health.
(Badiya et al., 2020)	Identification of clinical and psychosocial characteristics associated with perinatal depression in the south Indian population	Andhra Pradesh Karnataka	Prevalence and characteristics associated with perinatal depression	Longitudinal observational study	To mitigate the risks associated with these characteristics (urban living, recent adverse life events, irregular menstrual history and pregnancy complications) it is important to implement appropriate intervention programmes for pregnant women and new mothers. As India is culturally and linguistically diverse, a sustained effort is required to implement interventions by healthcare providers and government agencies.
Health systems/policy					
(Baron et al. 2016)	Maternal mental health in primary care in five low- and middle-income countries: a situational analysis	National and Madhya Pradesh	Prevalence and impact of priority maternal mental disorders as well as existing policies, plans and services	Situational analysis	No mental health services dedicated for perinatal women or strategies in place in PHCs to detect mental health disorders in Sehore district. Imperative that mental health programmes include information systems to ensure detection and treatment coverage. Awareness of factors that influence access to mental health care is important in developing future programmes.
(Shrivastava et al. 2015)	Antenatal and postnatal depression: a public health perspective	National	Maternal mental health policy and health systems	Commentary	A universal psychosocial assessment should be undertaken within the primary care system. Health professional can actively screen the mother and family for stressors. They should also have a high index of suspicion, and understand the importance of early detection. Communication skills of physicians should be addressed.

(Bagadia et al. 2017)	Starting the conversation – Integrating mental health into maternal health care in India	National	Need for policies/health systems for maternal mental health	Commentary	Specific recommendations: Upskilling existing community health workers, existing counsellors and psychologists could be identified as points of referral. Sensitising obstetricians and paediatricians to mental health issues to ensure women do not get missed. With the strengthening of the district mental health programme, a mental health specialist in a district or general hospital can be a point of referral. Use of technology to educate health workers.
(Ganjekar et al. 2020)	Perinatal mental health around the world: priorities for research and service development in India	National	Maternal mental health policy, health systems and services	Commentary	Too ambitious to have a single plan that works nationwide. A stepped care approach will require education of healthcare professionals. Need to adapt screening tools to the local setting. Need to train healthcare professionals to provide evidence based interventions and appropriate care pathways.
(Priyadarshini et al. 2023)	Recommendations for maternal mental health Policy in India	National	Maternal mental health policy	Commentary	Three policy options proposed 1. Strengthening and focused implementation of the National Mental Health Program 2. Integrating mental health in the ongoing Reproductive, Maternal Newborn, Child and Adolescent Program 3. Including a maternal component in the NMHP Pilot project before nationwide implementation including three levels with comprehensive planning to address the needs of both urban and rural populations. Information, education and communication campaigns by community health workers and community leaders will also be essential. Need to increase Human Resources.
(Jatchavala et al. 2023)	Perinatal mental health in India and Thailand: A call for collaboration	National	Current state of perinatal mental health in India and Thailand	Commentary	Some mother and baby units and community based services for perinatal mental health have been established. These services need to be integrated and scaled up within existing national programs to make sure they are sustainable and accessible. Capacity building for research and service development. Priority should be given to the scaling up of interventions and PMH should be included in policies, guidelines, curricula and legislation.

					Immediate need to develop PMH service models and integrate these into maternal and child health services. Development of national guidelines and established services for the PMH issues for transgender women and the LGBTQ+ population. International exchanges/consortiums among researchers, policymakers, practitioners and patients will help develop locally appropriate and sustainable interventions.
(Kalra et al. 2024)	National policies and programs for perinatal mental health in India: a systematic review	National	Maternal mental health programs and policies	Systematic review	No specific national policy or program on maternal mental health was identified. Universal access to health and mental health including for women and children was articulated in maternity and mental health policies. National policies as well as evidence based locally tailored programs are needed across the country. The success of maternity care policies provides a platform to address the mental health needs of women in existing care pathways. Screening by non-expert clinicians can be feasible and tools need to be adapted. These could be accompanied by financial incentives to screen. Population based public health initiatives. Policies relating to poverty reeducation and eliminating gender based violence are also important in addressing the female gender related risk. Using available digital platforms like the mother and child tracking system and telehealth to deliver interventions. Need to set up mother and baby units across the country as well as community PMH services.
(Handa et al. 2024)	Shedding light on maternal mental health in LMICs: a cornerstone of maternal and child healthcare	National and regional	The importance of addressing maternal mental health within the framework of MCH programs	Commentary	Integrating maternal mental health into MCH programmes is a necessity. One of the main goals of the NMHP is de-stigmatisation – awareness and education around PMI should be given to mothers. Routine screening should be implemented in India and screening should be culturally sensitive and integrated into the existing healthcare workflow. Multidisciplinary approach to treatment and collaborative care. Primary care mental health initiatives to close the treatment gap. Capacity building for healthcare practitioners and

					role for non-specialist employees. Intersectoral cooperation and health system strategies that emphasise life course based prevention and treatment.
(Chauhan et al. 2024)	Call for Action: The Obstetrician's Role in Peripartum Mental Health	National	Role of OBGYN in maternal mental health	Commentary	The obstetrician is duty bound to identify those women at risk and should refer appropriately and educate patients and families. Mental healthcare should be delivered seamlessly from antenatal and postnatal clinics by collaborating with on-site mental health professionals. Resources should be allocated to training all levels of healthcare workers. Capacity building for mental healthcare will allow task shifting/task sharing thus widening the network of maternal mental healthcare. Community based interventions and using the Mother and child tracking system may prove viable.
(Ragesh et al. 2016)	Context and scope of social work interventions in Perinatal mental health settings in India	Bangalore	Role of social workers in the perinatal mental health setting	Commentary	A biopsychosocial framework can be adopted during assessment including intervention based on principals of social justice and human rights. Social workers need to have a role in perinatal mental health settings, Individual, family, group and community level intervention is required.
(Shanbhag et al. 2022)	A perinatal psychiatry service in Bangalore, India: Structure and function	Bangalore	Structure and function of NIMHANS perinatal psychiatry services	Chapter	NIMBUS (NIMHANS maternal behaviour) scale was developed for assessment of a mother's behaviour towards the infant. This can be used easily without formal training and hence could be used in low resource settings. Understanding womens' belief systems and explanatory models is essential in making services user-friendly. Healthcare providers need to be educated about cultural practices and their meaning so that they advocate for diverse patient populations. 24hr perinatal mental health helpline service is available for women across all states in the country. A range of services have been developed based on a combination of evidence based practices worldwide and culturally appropriate adaptations. A stepped care approach by up-spilling community healthcare workers and PHC doctors has been trialled successfully
Knowledge/perceptions					
(Insan et al. 2022)	Perceptions and attitudes around perinatal mental	National	Perceptions and attitudes of perinatal women,	Systematic review	Affective symptoms are much less acceptable to women than physical symptoms of perinatal

	health in Bangladesh, India and Pakistan: a systematic review of qualitative data		their families and healthcare providers surrounding PMH		mental illness. Even healthcare providers perceive it to be inappropriate to ask about emotional or mental health symptoms. Increased training and education is required to increase awareness around PMH. Barriers and enablers to accessing PMH care operate at a number of levels ranging from sociocultural to structural factors. Women resorting to personal and religious coping strategies but these are not sustainable- calls for culturally appropriate coping interventions for long-term management. The education sector will be a key actor in development of interventions addressing many of the attitudes and perceptions identified. Improved education for healthcare providers at all levels is vital for increasing awareness of PMH and better knowledge of the symptoms and management options. Should be trained in friendly and confidential counselling. Psychosocial education aimed at tackling IPV, gender inequalities and stigma within communities could be provided through government and NGOs. Family planning services are also key to addressing the issue of unplanned pregnancies and can be achieved through maternal, neonatal and child health platforms at the community and household level. The social welfare sector should be integrated to tackle poverty, housing and unemployment.
(Ransing et al. 2020)	Perinatal depression- knowledge gap among service providers and service utilisers in India	New Delhi Maharashtra	The knowledge gap among service providers- nurses and medical practitioners as well as service users-pregnant women	Cross sectional study	The vast majority of pregnant women are uninformed about perinatal depression. There was misconception about the aetiology and management of perinatal depression amongst nurses. This is important information as nursing providers are well placed to provide a large part of the multi-level intervention needed for the integration of perinatal mental health. Training of nurses must go hand in hand with creating awareness among pregnant women, as there are currently significant misconceptions around perinatal depression.
(McCauley et al., 2020)	Good health means being mentally, socially, emotionally and physically fit: women's understanding of	New Delhi	What women consider health and ill health to be and women's views on screening for	Qualitative study	Currently there is good coverage and uptake of antenatal care, but content needs to be adapted to ensure good quality comprehensive care that is respectful and integrated, that also delivers

	health and ill health during and after pregnancy in India and Pakistan: a qualitative study		mental illness and social morbidity		mental and social care with agreed country specific content. Most women feel positively towards being asked about mental health, and report that currently they aren't screened for mental illness.
(Malik et al. 2024)	Ignored sufferers: a phenomenological inquiry into the lived experiences of postpartum depression among men	Meerut, Delhi	Lived experiences of men with PPD	Qualitative, phenomenological	Policy-level changes such as paternal leave for fathers is needed Need for provision of medical support for young children through medical coverage and financial support. Encourage open communication among family members to address the issues of men's silence. Need to implement more widespread screening of new fathers for PPD especially if their partners are experiencing PPD. Counsellors should be aware of factors influencing PPD in men (men's silence in relationships due to fear of conflict, economic burden, sleep deprivation, interference from wider family) and collaborate with other stakeholders to provide holistic care and support. Need for structural guidelines to aid with diagnosis and treatment in men.
(Banerjee et al. 2022)	It seemed like my fault for wanting to become a mother – experiences and perceptions related to motherhood in women with severe mental illness	Bangalore	First-person accounts of mothers as they move from pre-conception to pregnancy	Qualitative study with a 'social constructivist paradigm'	Emergent themes were thoughts/feelings about childbearing (including ambivalence, guilt), impact of mental illness (stigma, self-care, effects of medication on foetus), unmet needs (lack of emotional support, doubts on impact on pregnancy) and caregivers reactions (discrimination, anger/abuse, selective support). Centrality of motherhood and the dual role of patient and mother. These results provide critical insights for service and policy provisions. Being sensitive to these nuances perceptions will help tailor perinatal care and shape interventions.
(Shanbhag et al. 2023)	"If They Don't Ask, We Don't Share" – A Qualitative Study on Barriers and Facilitators to Discussing Mental Health with Obstetric Care Providers in Urban Anganwadi among Pregnant Women in India	Bangalore	Barriers and facilitators to discussing mental health among pregnant women	Qualitative	To enhance screening and support for PMI it is necessary to increase awareness about the importance of mental health in the perinatal period among women and families. Education will reduce stigma and increase their ability to have open discussions with healthcare providers. Technology can play an important role- messages regarding mental health could be added to already existing voice messages about aspects of regular antenatal care.

					Train obstetric care providers in sensitive screening and ensure privacy in clinics. The first step in providing mental health support in antenatal settings is facilitating a non-stigmatising, sensitive and private discussion. Train first responders like community health workers in a conversational approach. Collaborative approach and streamlined referral system will ensure women get timely help and these barriers need to be addressed before starting a screening program.
(Fellmeth et al. 2023)	Women's awareness of perinatal mental health conditions and the acceptability of being asked about mental health in two regions in India: a qualitative study	Kangra, Bangalore	Awareness of PMI and acceptability of being asked about mental health and assessment tools	Qualitative	Existing assessment tools may need translation and cultural adaptation. Asking about symptoms of PMI during routine antenatal and postnatal appointments can help identify women at risk. Being asked about mental health was generally considered to be acceptable but questions related to suicidality may be challenging in a community setting requiring sensitivity by the interviewer. Discussions need to occur in a private space, with advanced warning and a supportive and familiar health professional delivering the questions.
(Pasricha et al. 2021)	Sense of Coherence, Social Support, Maternal-foetal attachment, and Antenatal Mental Health: a Survey of Expecting Mothers in Urban India	Sonipat	Associations of expecting mothers' sense of coherence, perceived social support and maternal-fetal attachment	Cross-sectional	Importance of training OBGYNs physicians and nurses performing perinatal care in urban India. Importance of utilising techniques to increase perceptions of social support among pregnant women – for example health care facilities could create support groups for pregnant women. Importance of developing interventions to encourage maternal foetal attachment among urban Indian women. Lamaze classes exist in urban India which can be modified to include awareness on perinatal mental health, maternal-fetal attachment and what to expect when the baby is born.
(Lodha et al. 2022)	Perceptions of perinatal depression among low-income mothers and families in Mumbai, India	Mumbai	Perceptions of perinatal depression amongst mothers and their relatives	Mixed Methods	Interventions should factor in the target population's awareness levels and sociocultural perceptions. Clinicians must be trained to increase their awareness and sensitivity and importantly to carry out routine screening for perinatal depression. Mental health treatment and family care must be made accessible within maternal health facilities/ A multidisciplinary approach is key to battling perinatal depression and PHC, perinatal services and community health worker services can be

					integrated to provide holistic care. Future resource allocation and local/institutional policies should reflect these priorities.
Screening tools					
(Fellmeth et al. 2021)	Validated screening tools to identify common mental disorders in perinatal and postpartum women in India: a systematic review and meta analysis	National	Validity of screening tools for perinatal mental illness in India	Systematic review and meta analysis	Early detection and treatment of perinatal Common Mental disorders (CMD) is essential to minimise the adverse effects and improve outcomes. Current gaps in evidence specifically around the validity of screening tools for anxiety hinder the practice of screening. Existing evidence is narrow in scope and focuses entirely on perinatal depression and almost exclusively on Edinburgh Postnatal Depression Scale (EPDS). Testing the acceptability of screening tools to the local population is essential in informing policy makers. Comparisons of EPDS with other depression screening tools is necessary to establish which is most effective in the Indian setting and guide policy makers and practitioners.
(Joshi et al. 2020)	Validation of Hindi version of Edinburgh postnatal depression scale as a screening tool for antenatal depression	Madhya Pradesh	Validates linguistically and contextually appropriate Hindi version of EDPS	Cross-sectional study	The Hindi version of EDPS can be used as a valid measure to screen antenatal depression. Screening of antenatal depression should be included as an essential component of routine antenatal care. Screening of high-risk population by primary health care workers. There is a specific need for introducing a validated screening instrument and appropriate management tools for PMI as a specific service delivery component in primary health care. Given the ease of administration of EDPS it can be a beneficial assessment tool but it will only be meaningful if paired with confirmatory diagnosis and treatment by a psychiatrist.
(Ransing et al. 2020)	Assessing antenatal depression in primary care with the PHQ-2 and PHQ-9: Can it be carried out by auxiliary nurse midwife (ANM)?	Maharashtra	Analyse the inter-rater reliability of PHQ-22 and PHQ-9 between ANMs and clinical psychologist	Prospective, observational	These two scales can be used to screen and assess the severity of AD by either qualified or minimally trained, community health workers. The stepped care approach using existing manpower of the RCH programme and nurse based collaborative-integrative models are options for integration of mental health care into the RCH programme. This will require ANMs to have skills and training and if good inter-rater reliability is achieved then there can be successful integration of ANM-based models under the NMHP in India.

					ANM administered PHQ-9 could be a reliable method to detect suicidal ideation in the context of the MCH programme. ANM administration of PHQ-2 and PHQ-9 is a reliable approach to screen the antenatal women for depression and rate its severity. The low cost and ease of administration of these scales by ANMs could cover a large number of women across the country. Routine screening by ANM may be considered an appropriate method in a low-resource setting. Need for modification and cross-cultural adaptation of PHQ-9 to improve the performance and reliability of screening depression in rural settings. Will help improve the screening, facilitating early detection, referral to appropriate mental health services and overcome the mental human resource deficit in the future.
Legislation					
(Aneja et al. 2020)	Pregnancy and severe mental illness: Confounding ethical doctrines	National	Mental Health Care Act (MHCA)	Case report	The MHCA currently doesn't directly address perinatal mental health and some of the unique ethical concerns of mental illness during pregnancy and motherhood. Integration of mental health services with other services like social services, child protection, public health and medico-legal services is important The NIMHANS model for perinatal mental health services may be replicated at some of the well-developed tertiary psychiatric care services.
(Behl 2021)	Perinatal depression during COVID-19 Pandemic: Need to introduce Perinatal Mental Health Services Under Indian Reproductive Health Rights Framework	National	Impact of COVID-19 on PMH and responses made by India	Narrative review	There have been reports that with adequate training and supervision ASHA workers and ANMs can detect and screen vulnerable individuals. Integration of mental health services into the maternal healthcare platform is recommended and is evidence-based and cost-effective. Services for high-risk perinatal women especially those who are facing IPV/DV should be given priority. Specific medical services, guidelines and information should be made available to vulnerable groups such as perinatal women during pandemics, Digital platforms should be used in a culturally acceptable manner, Governments and other stakeholders should act

					proactively in devising services and guidelines that are digital friendly
(Behl and Nemanic 2023)	Perinatal mental health and the justice delivery system in India	National	How the absence of services for PMI affects the justice system in cases of infanticide	Commentary	A better understanding of these issues by all concerned – judiciary, advocates, police The Indian justice system needs to urgently adapt to deal with the challenges posed by such complex medico-legal issues in the setting of PMI. Better training is imperative. When a healthcare system does not include a perinatal mental health assessment it is unfair to blame a woman when her mental health deterioration goes unrecognised and untreated.
(Behl 2023)	Judicial interface with perinatal depression in India: an empirical analysis and thematic review of published judgements	National	Medico-legal milieu of perinatal depression through the lens of judicial interface	Empirical analysis and thematic review	Imperative to introduce policies for preventing and managing postnatal depression (PND) as well as services which will be beneficial to the judiciary system as well. Imperative that Maternal and Child Health and mental Health frameworks incorporate PMH services. Necessary to train the judiciary and police about the interface between PND and the justice delivery system. Awareness and sensitisation regarding PND among policymakers, health practitioners and the legal body is critical to protect human rights and the rights of those suffering from PND.
(Behl 2024)	Indicators of perinatal mental health of the Indian women, and the National Family Health Surveys: a trajectory of obscurity	National	The inclusion of perinatal mental health in NFHS results	Commentary	Perinatal mental health services and the status of PMI amongst women in India must be included in the NFHS framework. This data can provide an evidentiary base for future policy making, The existing absence of any data about PMI shows the lack of recognition of PMI as a public health issue. Multisectoral and collaborative approach must be taken towards curbing the prevalence and consequences of PMI, and the Ministry of Health and Family Welfare must play a cardinal role.
(Behl et al. 2024)	Perinatal Mental Disorders: The 'Non-Liquet' Facet of Mental Health Legislative Instruments in India	National	The coverage of perinatal mental disorders under legislative instruments	Commentary	Immediate need to highlight perinatal mental disorders through legislative instruments. The MHCA Act should be amended to explicitly include women during the perinatal period. Integration of perinatal mental health services within maternal healthcare infrastructure is in consonance with existing legislation and PMI and should be undertaken. Policies and services focused on PMH will align with the goals of the NMHP.

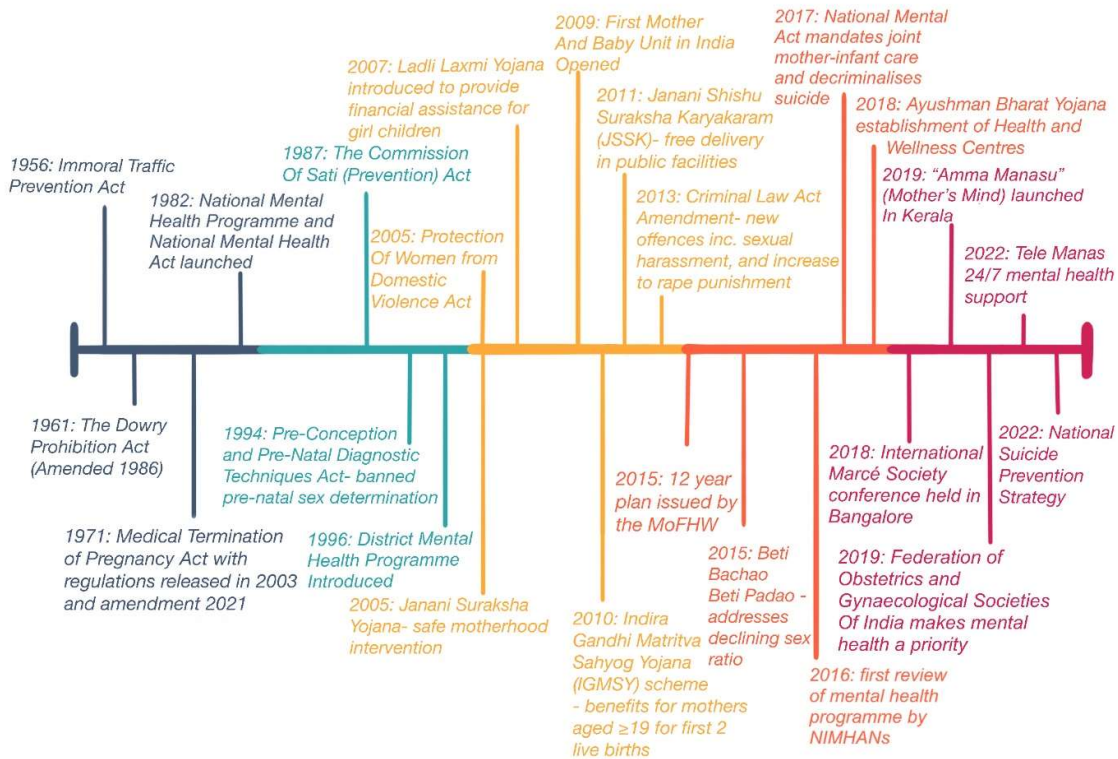
					Increasing understanding about PMI will influence the approach of society towards other mental disorders and lead to de-stigmatisation. Training existing and future healthcare personnel will also help in fulfilling objectives of the NMHP.
(Behl et al. 2025)	Legal interventions for perinatal depression in India: a qualitative study with clinical specialists having expertise in perinatal mental health	National	Efficacy of existing legal interventions in addressing and managing PND		Neither is PMH covered or prioritised under the existing mental healthcare frameworks in India. The absence of a nationwide applicable framework results in a knowledge gap. The MHCA should be amended to ensure explicit inclusion of perinatal women. A nationwide applicable policy should be introduced for the universal screening of PND during ante and post natal appointments. PMH services should be prioritised for women undergoing spontaneous abortion or termination of pregnancy. Change in attitude with curriculum change, soft-skill training and ethics and communications regulations for healthcare personnel. Task sharing approach, policy should provide a stepped care model and facilitate the integration of mental health within the Indian Reproductive Health framework. Multi-sectoral approach where different ministries collaborate and provide awareness about PND. Tackle disease burden with cautious use of digital healthcare delivery platforms. Models of other countries including Sri-Lanka, Bangladesh and Pakistan can be used as a guiding force for PMH service models. Legal interventions can play a crucial role in addressing and managing PMI at the population level as well as protecting the 'right to perinatal health' for Indian women. Amending existing laws can create momentum.
Consequences of perinatal mental illness					
(Babu et al. 2020)	Small for gestational age babies and depressive symptoms of mothers during pregnancy: results from a birth cohort in India	Bangalore	The possibility of any relationship between EDPS score and the incidence of SGA babies	Prospective cohort study	Need to universally screen women for depression during pregnancy- healthcare workers at primary care level can conduct screening. Timely and effective screening, diagnostic services and evidence-based antenatal mental health services are needed to reduce the rates of small for gestational age babies.

					The government can modify and/or incorporate mental health screening within the existing provisions of the national health mission.
(Roy et al. 2022)	Impact of perinatal maternal depression on child development	Kolkata	Effect of antenatal and postnatal depression on child development at 12 months	Prospective observational study	Pressing need to include mental health screening in routine antenatal care. Adequate and timely intervention of AD can help ameliorate the burden of PPD and adverse child development attainments.
(Jakhar et al. 2023)	Mental Health Impact of COVID-19 Infection on Postpartum Women from Lower and Middle-income Backgrounds in India and its Effects on Early Mother-Infant Bonding: An Observational Study	New Delhi	Impact of COVID-19 infection and its effects on bonding during the first 8 weeks postpartum	Cross-sectional Observational	Need for specialised mental health services and individualised breastfeeding interventions for this vulnerable population. Beyond the specific fear of COVID-19 other factors like recent loss of income, psychosocial stressors, pandemic related restrictions, limited support, uncertainty create multiple stressors that affect mental health. These factors must be considered when interpreting the study and developing strategies to support the mental health of postpartum women during the pandemic. Psychiatry and maternal care facilities must be aware of the need to alleviate stress associated with caring for a newborn in the pandemic and promote mother-infant bonding despite COVID-19 restrictions. Recommend promoting exclusive breastfeeding practices and screening all post COVID mothers for distress and enhancing perinatal practices.
(Mhamane et al. 2024)	Post-partum depression: its association with IYCF practices and effect on child growth indicators in urban slums of Mumbai, India	Mumbai	Association between PPD and IYCF practices and the effect on child growth during the first 1000 days of life	Cross-sectional	It is essential to have mental health inclusive policies and programmes for mother and child health as well as engaging in capacity building of grassroots workers to spread awareness about PPD. Include maternal depression in maternal and child health programmes to ensure the holistic health of mother and child. Spread awareness about the early signs, mandatory screening, providing essential counselling, building mental health inclusive policies, including a psychologist within teams, and engaging in capacity building will help tackle the significant burden of PPD.

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Figure 1

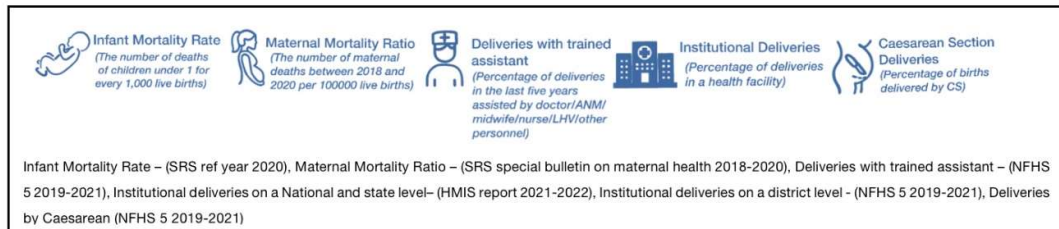
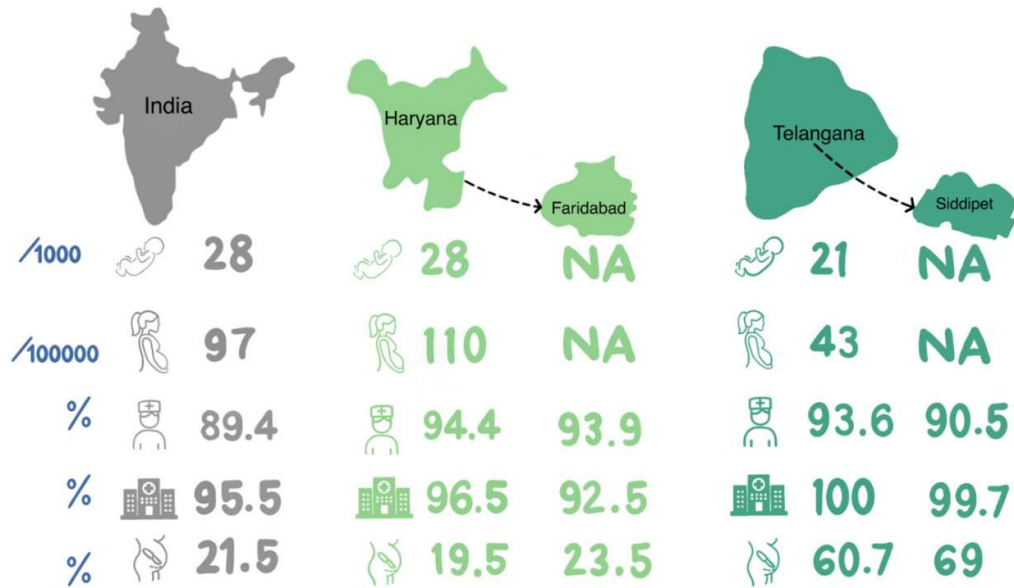


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