



A Perinatal Psychiatry Service in Bangalore, India: Structure and Function

22

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22.1 Introduction

Lower- and middle-income (LAMI) countries have a higher prevalence of perinatal mental health (PMH) problems when compared to high-income countries [1], and maternal suicide is also a concern in many countries [2]. LAMI countries have very few dedicated PMH services available, most of which are concentrated in the urban areas. High-income countries offer PMH services through dedicated perinatal psychiatry services which provide both outpatient and inpatient PMH to pregnant and postpartum women. These services are run in liaison with obstetricians, NGOs, community health workers and families of patient [3]. Several countries such as France, the UK, Australia and New Zealand have dedicated inpatient mother-baby psychiatry units (MBU) for women with perinatal psychiatric illnesses [4, 5].

Providing PMH services requires additional knowledge, specialized skills and proficiency to meet the specific demands of the mother during pregnancy and postpartum in addition to addressing concerns about foetal development and infant health [6]. Several LAMI countries still face challenges such as high prevalence of nutritional deficiencies in mothers, poor access and availability of hospital deliveries as well as high maternal and infant mortality rates. Therefore, reproductive and child health programmes in the LAMI countries predominantly focus on improving these parameters, and mental health is not prioritized [7]. Lack of awareness on mental health issues, stigma related to mental illnesses, higher prevalence of poverty and domestic violence, lower literacy rates and limited resources allocated to mental health delivery are some of the barriers to access mental healthcare in the LAMI countries [8]. In resource-limited regions of South Asian countries, a stepped

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care approach by up-skilling the community healthcare workers and primary care doctors has been tried successfully. This includes sensitization and training of obstetricians, mid-wives and auxiliary nurse midwife (ANMs) and up-skilling of mental health professionals to handle PMH disorders [9].

Further, in most South Asian countries, due to lack of specialized MBUs, inpatient perinatal mental health care is offered through general hospital psychiatric units or adult psychiatry units. This may lead to difficulty in admitting the baby along with the mother, leading to baby being admitted under paediatric services or being sent back home. The other challenge includes the lack of simple screening tools, as the available screening tools developed in the west maybe too complex for women with low literacy and often do not translate easily to vernacular languages. In addition, research focusing on the magnitude, extent and determinants of perinatal mental health problems from the LAMI countries is limited. Studying the barriers and facilitators for accessing maternal mental health services including the cultural factors will enable these countries in establishing perinatal health services tailored to their needs [10].

Understanding the felt need for a specialized PMH service, the Perinatal Psychiatric Service was established in 2004 at the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, in a LAMI country, India. This is an inpatient and outpatient service in a clinical hospital setting. We describe this service in the current chapter.

22.2 Perinatal Psychiatry Services

Currently, the PMH services provided at NIMHANS include outpatient services through the perinatal psychiatric clinic, inpatient services through the mother-baby unit and a perinatal mental helpline service. Our perinatal psychiatry outpatient clinic was the first clinic of its kind in Asia and was started in 2004 at NIMHANS, Bengaluru. Its founder, Professor Prabha Chandra who currently heads the perinatal psychiatric services, was inspired and mentored by Professor Ian Brockington and also derived inspiration from other services in the UK. The service while based on western models was customized to meet the local cultural and resource needs. The inpatient service and mother-baby unit was started in 2009, at NIMHANS [11].

Services are delivered by a multidisciplinary team comprising of psychiatrists, a post-doctoral fellow in women's mental health, clinical psychologists, psychiatric social workers, infant development assessment team, nursing staff, health assistants and administrative staff who work to provide holistic perinatal psychiatric care to women. We also liaise actively with obstetricians and gynaecologists, paediatricians and lactation specialists to offer comprehensive care.

22.3 The Perinatal Team

The psychiatry team comprises of psychiatry post-graduate trainees posted in the perinatal clinic and inpatient services who do a detailed evaluation of the mental health problems using a structured proforma developed for the purpose and

a detailed physical examination under the supervision of the senior residents. Each case is discussed with the psychiatry consultant, and a management plan is made involving the patient and caregivers. Emphasis is laid on preconception counselling in women planning for pregnancy, regular antenatal check-ups including the necessary ultrasound scans in pregnancy and preparing the parents for delivery and parenthood in the postpartum period. In addition, lactation advice, developmental and maternal-infant bonding assessment and contraception advice are provided.

The **psychiatric social work team** evaluate and educate the family. They also explore the psychosocial issues such as social support, intimate partner violence, stigma and cultural practices and offer necessary intervention. Follow-up calls are made to women to address ongoing psychosocial issues, reduce drug defaults, maintain the treatment loop and encourage regular follow-ups. Partner groups and grandmother groups are also held at every clinic.

Clinical psychologists perform personality assessments and IQ assessments and provide psychotherapy for women with personality disorders or mother-infant bonding disorders, mild to moderate forms of anxiety and depression, grief and perinatal loss and coping with infertility. Developmental assessment of infants is done by qualified developmental psychologists to pick up development delays as early as possible. Case-based inputs are provided to family, and appropriate referrals to child psychiatry team or paediatricians are made.

Nurses, in addition to offering nursing care, discuss issues related to breastfeeding, bonding and side effects of medications. To overcome the shortage of nurses, we have skilled and trained **health assistants** who help the mother with activities such as infant care and hygiene and breastfeeding. They also maintain cleanliness of the ward, assist in making baby feeds, accompany mothers during electroconvulsive therapies and make referrals for immunization for baby along with providing support to the mother and the caregiver.

The clinic also has **administrative staff** who manage appointments, record-keeping and referrals.

22.4 The Perinatal Psychiatry Outpatient Clinic: Structure and Function

The perinatal psychiatry clinic functions once a week every Friday and offers evaluation and treatment for psychiatric problems to women who are planning pregnancy, are pregnant and are in postpartum period (up to 2 years postpartum). The clinic is housed in a separate airy and well-lit building away from the main psychiatric outpatient to ensure privacy and provide a safe space for perinatal women and infants. The clinic is equipped with basic amenities such as access to safe drinking water, toilets, diaper changing room and a separate room for breastfeeding. This clinic runs in liaison with general adult psychiatry services within and outside NIMHANS, other mental health professionals, obstetricians and paediatricians for referrals. Patients can attend the clinic through prior appointments or walk-ins, and average time taken for completing a consult is around 90–120 min.

Structured proformas specifically developed for detailed evaluation of mental health, pregnancy and postpartum-related factors, risk assessments and mother-infant bonding assessments are used in the clinic. Information and educational materials such as booklets and pamphlets about mental health care in pregnancy and postpartum, stress reduction and physical exercise are made available in the perinatal clinic for patients and caregivers. A structured care plan for communication to obstetrician and paediatrician is also available.

The clinic also maintains registers on antenatal exposure to psychotropic drugs and reasons for referrals.

22.5 The Inpatient Mother-Baby Unit

22.5.1 MBU Structure

India's first exclusive inpatient mother-baby unit was started in 2009, at NIMHANS, Bengaluru, enabling the joint admission of mother-baby dyad. Our MBU setup includes the main components of an ideal MBU such as having a dedicated multi-disciplinary team caring for the mother and infant and is staffed 24 h a day, 7 days a week [11]. India's current legislation, the Mental Health Care Act (2017), mandates a child under the age of 3 years of a woman receiving care, treatment or rehabilitation at a mental health establishment to ordinarily not be separated from her during her stay in such establishment [12]. However, our current MBU setup like other traditional MBUs has facilities to admit babies up to 1 year of age as joint admission with the mother.

Our five-bedded MBU has been set up in a relatively quieter part of the inpatient psychiatric block, on a ground floor of a building, away and separate from other wards with all safety precautions. The ward has ample space for mothers to move around with an outdoor play area and garden for infants. Adequate care has been taken for ventilation and to keep it pest-free. The indoor areas include a small kitchenette with an area for milk preparation, facilities for sterilizing the vessels and common dining area which also doubles as an entertainment area.

In the Indian culture, family plays an important role in decision-making and caregiving especially in the postpartum period. Family members are often reluctant to admit the mother alone in the hospital during the postpartum. Keeping this in mind, we have provisions for a caregiver to stay with the dyad, often the woman's mother or mother-in-law (sometimes the spouse), to stay with the patient during inpatient care. This provides additional support to women, ensures safe bonding with the baby and offers us with an opportunity to work with the family members. Along with a bed for mother and a crib for the baby, we provide an additional bed for the female caregiver. Ours is a collectivistic culture which encourages interaction between families. Our MBU provides a shared but comfortable space, with beds separated by curtains to ensure privacy for breastfeeding while allowing interaction and support between families.

We have a separate infant bathing space where traditional ways of bathing the babies are encouraged. Additionally, we have physical space for infant intervention,

mother-baby bonding intervention and clinical rounds. The common areas have a closed circuit TV monitoring to ensure safety. We also maintain a stock of toys and baby clothes (often donated by philanthropists) to provide for the families.

22.5.2 Admission Procedures

Pregnant and postpartum women with mental illness are admitted from the perinatal clinic or the psychiatry emergency after being evaluated by the perinatal psychiatry team. While the MBU mainly admits women with babies, we also offer inpatient care for pregnant women in the general psychiatry female wards. If risk of harm to herself or the infant is high or if the woman requires more intensive monitoring in cases like pregnancy with complications, she is admitted to a high monitoring ward such as FICU (female intensive care unit). Paediatrician referrals are done routinely for every infant to assess the general health, feeding and immunization of the baby while admitting in the MBU. We have the advantage of having a well-known children's hospital at walking distance from the unit; hence this arrangement works efficiently. If the mother is very disturbed or significant risk of harm to infant is noted on initial assessment, we consider a temporary separation of mother and baby. The mother's condition is assessed daily, and all efforts are made to ensure that baby is brought back to stay with the mother as early as possible. Mothers are closely monitored by relatives and nursing staff, while feeding the infant and leaving the mother alone with the infant is avoided especially in the early days of admission.

22.6 Assessments and Management

22.6.1 Handling of Risks

The presence of suicidal ideation or attempts warrants high-risk suicidal precautions in the ward, such as continuous monitoring by nursing staff and making sure that the patient does not have access to ropes and sharp objects. Depending on the clinical picture, electroconvulsive therapy (ECT) is considered if there are no contraindications. The underlying psychiatric illness that leads to suicidality is treated aggressively. If the mother is found to have a poor oral intake, an input/output chart is maintained by the nursing staff. Adequate hydration is prioritized and the mother is given intravenous fluids, if necessary. Considering the need for risk assessment in perinatal settings and the paucity of data in this population, doctors and nurses of the MBU at NIMHANS developed a 15-item tool for risk assessment based on data from 200 admissions, which was later modified to include 17 items. This tool called the Formal Initial Risk Assessment for Mothers and Babies (FIRST-MB) has been immensely useful in the NIMHANS MBU in assessing and managing risks [13]. FIRST-MB form includes the assessment of risk to self, risk to others, risk to infant and infant health. The risk assessment is done before the admission to triage the patients and to plan the management accordingly. Risk assessment is repeated at the

ward immediately after the mother gets admitted and after 6 hours by the resident. Further, risk assessment is continued daily until the mother gets discharge.

A systematic assessment of risk is important, as it picks up the risks higher than routine assessments. In a study done on 58 mother-infant dyads at our MBU, formal risk assessment using FIRST-MB was found to be superior to routine risk assessment for picking up suicidal ideas, suicidal attempts, physical harm to the infant and poor self-care [14].

22.7 Electroconvulsive Therapy (ECT)

Both pregnant and postpartum women with severe illness needing augmentation of pharmacotherapy, suicidality or catatonia are considered for ECTs. Generally, bitemporal ECT is the therapy provided. In the case of pregnant women, clearance is obtained from obstetrician before proceeding. The risks involved with ECT during pregnancy are explained in detail to the patient and caregivers before consent is obtained. The ECT team includes experienced personnel in providing ECT treatment for pregnant women. The foetal heart rate is recorded at baseline, before and after the procedure at the ECT suite. In the case of lactating postpartum woman, care is taken to not disrupt the feeding due to the ECT procedure. Expression of breast milk prior to receiving ECT is encouraged, so that the infant can be fed while the mother is in an overnight fasting state before the procedure or drowsy after receiving ECT.

In a naturalistic study of 78 women with postpartum psychosis admitted in our inpatient service, 43.6% received ECT. Presence of catatonia, augmentation of medications and suicidality were common indications for ECT. Catatonic symptoms were significantly higher among women who received ECT. Transient side effects to ECT were observed in few women, with no adverse effects noted in infants who were breastfed. Hence ECTs appear to be a safe treatment option in the case of postpartum psychosis [15]. Bifrontal ECTs have also been given to some of our patients. In a study conducted in our centre of comparison of bifrontal and bitemporal ECT, analysis of 13 postpartum women who received bifrontal ECTs were found to have significantly more improvement (as shown by lower scores on the Edinburgh Postnatal Depression Scale, compared to 18 mothers who received bitemporal ECTs [16].

22.7.1 Clinical Assessments

Other than the risk assessment, the mother's assessment also includes rating them using standardized instruments including Edinburgh Postnatal Depression Scale, Young's Mania Rating Scale, Brief Psychiatric Rating Scale, Bush-Francis Catatonia Rating Scale and Yale-Brown Obsession and Compulsion Scale as well as the Clinical Global Improvement (CGI) scale. The ratings are done at the time of admission and then weekly until the mother gets discharged.

A detailed interpersonal trauma interview is also done with the mother when she is cooperative for the same. Items from the Stafford Interview have been included as part of clinical assessment. We have now developed an electronic database to ensure efficient capturing of data.

22.7.2 Infant Assessment

A detailed general physical examination is done at admission. Weight is measured weekly. Infant sleep and rhythms are also monitored. An infant behaviour questionnaire is used to for infants, 3 months or older. Daily monitoring of infants is done for early detection of any lactation-related side effects of psychotropic drugs. A study done in our MBU among infants who were being breastfed by mothers receiving psychotropic drugs found only minimal side effects and no major developmental problems in the infants during follow-up [17].

22.7.3 Infant Feeding

The various myths and misconceptions of patients and families regarding breastfeeding are assessed and addressed accordingly. In a low-income setting like ours, women are encouraged to breastfeed to meet the nutritional demands of the baby and prevent diarrhoeal illnesses except in conditions when breastfeeding is contraindicated due to the mother being on specific medications such as lithium or clozapine. However, in cases when the mother is unable to breastfeed due to sedation, agitation or when they receive ECTs, breast milk is expressed with electronic or manual breast pumps, stored in a hygienic manner and fed using a “pallada” – wide-mouth spoon which is the local practice. Advice from a lactation expert is sought for women who have severe lactation difficulties. Successful restitution of breastfeeding after disruption due to illness and separation of mother and infant has been done in several cases in our MBU. If the mother has lactation problems despite intervention and is very disturbed and unable to feed or there are medication-related contraindications, formula feeds are provided under safe and hygienic conditions.

22.7.4 Mother-Infant Bonding

Maternal-infant bonding can be affected by pre-existing mental illness, personality issues, emotional dysregulation or mental health issues developing during pregnancy and postpartum [18, 19]. We use clinical tools such as the *Kannada* (local language) version of the Postpartum Bonding Questionnaire [20], the Stafford Interview sixth edition of the Birmingham Interview for Maternal Mental Health 2015 [21] and the NIMHANS Maternal Behaviour Scale (NIMBUS). NIMBUS scale was developed by our team for the assessment of a mother’s behaviour towards an infant that can be used easily without formal training and hence is ideal for use in low-resource

settings. This 16-item scale was developed by assessment of 100 mother-baby dyads. The NIMBUS is rated based on observations and information from caregivers, health assistants and nurses. The scale has six domains with adequate inter-rater and test-retest reliability (Cohen's kappa >0.81). The Cronbach's alpha for internal consistency was 0.94, and it showed adequate external validity when used with the Bethlem Mother-Infant Interaction Scale ($R = 0.947, p = 0.000$) and PBQ [22].

22.7.5 Video Feedback Sessions to Improve Mother-Infant Interaction

We use video feedback sessions to assess and promote mother-infant bonding once the mother is clinically stable. In a 15–20-min play interaction, the mother is instructed to interact with her infant being as natural as possible. No suggestions or interruptions are made by the observer during the recording. The recording is then viewed with the mother on a laptop computer, and she is encouraged to identify areas which she did well and where it can be improved. Mothers are often able to identify several areas which need improvement. Mother is provided skills and support to improve her bonding with the infant based on the video feedback. Similar video feedback sessions are repeated with the mother every week till she is discharged, and she is encouraged to practice these skills in between sessions [23]. While assessing for maternal-infant bonding, we observe the pattern of communication, the interaction between the mother and the baby, eye-to-eye contact, cooing, smiling and singing lullabies, gentle touch and response to cues and needs of the baby. The immediate caregiver account is also taken into consideration. Grandmothers are often co-therapists for this intervention and act as good role models.

22.7.6 Interventions to Improve Mother-Infant Bonding

The specific interventions carried out include encouraging touch and holding, encouraging attention towards infant during breastfeeding, infant massage to promote physical contact between mother and baby and emphasizing the need for face-to-face and eye-to-eye contact between mother and baby. Mothers are also encouraged to speak to baby, play with the baby, sing to the baby, tell stories to the baby and mimic baby's sound and facial expressions. The nurses also help in the process by involving the mothers gently in the process. In mothers with fears of rejection and attachment issues, individual psychotherapy and mother-infant psychotherapy are provided.

22.7.7 Infant Development Assessment

Infants of mothers with psychiatric problems are vulnerable to developmental issues. This could be due to poor stimulation, poor bonding and attachment, neglect

due to the family's preoccupation with the mother's illness and exposure to psychotropic medication if the mother was ill during pregnancy.

All the infants admitted to the MBU are screened for developmental issues. This is done by observation of the infant in a well-ventilated spacious room, and non-toxic bright toys and other common household items such as cups, boxes, bells and strings are used for assessment. This is followed by a detailed assessment of development done by the certified clinical psychologist, and appropriate interventions are offered.

The strengths of the infant and family are emphasized. The dynamic nature of development and scope of improvement with early interventions are explained. The family members are explained about the importance of play and the need for their active involvement in their infant's play.

22.7.8 Contraception Counselling

To avoid unplanned pregnancies and the risk of foetal exposure to psychotropics, contraception counselling is provided. Safe methods of contraception, how and when to plan the next pregnancy, are some of the important issues which are discussed with both patient and the spouse.

22.7.9 Additional Services

22.7.9.1 Liaison Services

Liaison with obstetricians and paediatricians is integral in effective functioning of the perinatal services. All referrals to obstetrician for pregnant women include a care plan for management of pregnancy and psychiatric illness. In case a pregnant woman needs ECT, obstetrician opinion is sought before the procedure. Gynaecological problems such as discharge per vagina, menstrual irregularities, pelvic pain, etc. that require an evaluation are also referred. All babies admitted to the MBU are evaluated by a paediatrician for health concerns. Referrals are also made for purpose of immunization or in view of poor weight gain or feeding difficulties. When latching-related difficulties are observed, referral to a lactation consultant is considered.

In addition to active liaison with obstetricians and paediatricians, we also liaise with the neurology team. In the case of suspected organicity or a neurological cause for the presentation of illness, neurology referral is done before admitting the patient in the psychiatry ward. In such cases neuroimaging if indicated is obtained and discussed with the radiologist. We have higher rates of acute psychosis in the post-partum period when compared to the West, possibly due to organic factors. Patients presenting with atypical features or catatonia need investigations to assess for organic causes. Liaison with neurologists has facilitated timely referrals, early detection and management of organic conditions such as autoimmune encephalitis [24–26].

We also offer mother-infant yoga services at the NIMHANS Integrated Centre for Yoga (NICY). The yoga team also conducts mother-baby yoga sessions which promote bonding between mother and infant after women are clinically stable and able to follow instructions.

22.7.9.2 Support for Caregivers

Support from the family is essential during this period in terms of providing care to the mother, helping her develop a bond with the baby, taking care of her baby when she is unable to, supervising her medication and providing emotional, physical and practical support. The spouse, maternal family and in-laws are educated about the illness and its management. They are involved from the outset which helps in enhancing the support to the mother and baby. The various issues for which the family is assisted with include expressed emotions, violence against mother and baby, emotional and psychiatric problem in spouse, socio-cultural practices related to pregnancy, childbirth and postnatal care. Knowledge, attitude and practices regarding breastfeeding and illness are assessed and enhanced.

22.7.9.3 Special Focus on Spouses

Traditionally, husbands in India receive little attention from health systems during the perinatal period. So their involvement may be limited. This in turn may adversely affect the mother and baby. Spouses' groups are held regularly in our service to help them support each other and also express and share their own emotional concerns. This helps them in handling stress and decreasing caregiver burden.

22.7.9.4 Special Focus on Grandmothers

In our MBU, patients are frequently accompanied by their mothers or mothers-in-law during inpatient care. Taking care of the patient as well as the baby during the acute period often causes added stress and caregiver burden. Sometimes grandmothers themselves have been subject to domestic violence; hence we routinely assess the caregivers for their mental and physical health and offer support.

22.7.9.5 Cultural Sensitivity in Providing Perinatal Psychiatric Service

In different parts of the world, women and their families have their unique explanations and beliefs for the occurrence of postpartum disorders [27]. Understanding their belief systems and explanatory models is therefore essential in making services user-friendly and removing barriers of help-seeking. There are unique nuances and a diverse array of birthing rituals and practices. Some of the common practices that we have come across in our region include a belief that the new mother should remain in a state of "hot and cold" balance during the postpartum period because of which the mother is made to wear warm clothes, eat hot food, drink warm water and bathe in hot water in a belief that a state of "cold" will lead to lactation failure or even postpartum illnesses. A deep embedded preference for a male child by family members can lead to emotional and physical violence on the mother if she has only a girl children. A woman may feel a range of emotions if she does not give birth to

Table 22.1 Number of new registrations and follow-ups made in perinatal clinic and MBU 2012–2020

Year	2012–2013	2013–2014	2014–2015	2015–2016	2016–2017	2017–2018	2018–2019	2019–2020
New registrations	114	109	104	238	203	216	146	231
Follow-ups	471	496	672	799	1037	1619	1541	1490
Admissions to MBU	76	69	74	58	66	74	68	71

the son her family desires. There are other range of rituals performed to ward off evil during the postpartum period for the safety and well-being of the infant. As healthcare providers, we believe that the more one educates themselves about various cultural practices and the meaning of these practices, the more they can advocate for diverse patient populations.

Initial assessment of the patient and family includes a detailed assessment of their knowledge about the illness and their explanatory models and beliefs surrounding treatment and care. The mother is supported if she faces stress and discrimination from the family due to gender preference of the child. A flexible approach is taken while providing treatment. The families may conduct traditional practices or rituals which do not cause harm to the mother or infant and those which do not hamper treatment. This helps in building trust with the families.

22.7.9.6 Reach of Our Services

The numbers of outpatient registrations and inpatient admissions over 8 years has been depicted in Table 22.1 indicating a steady increase in women and families availing the service. The MBU admissions range from 60 to 75 every year.

22.8 Clinical Profile of Women Admitted to MBU

Analysis of the profile of 252 patients admitted in our MBU from 2016 to 2020 shows that 76.6% of women were admitted during their postpartum period and the rest were pregnant women. The majority belonged to a lower socioeconomic status (67.5%), and to rural areas (36.5%). The mean age of admitted women was 26.72 ± 5.03 years, and most were married. Diagnoses ranged from bipolar affective disorder (36.7%), unspecified nonorganic psychosis (18.5%), severe depression (17.4%), acute and transient psychotic disorder (13.2%), schizophrenia (9.5%), schizoaffective disorder (2.4%), organic psychosis (2.3%). In a retrospective analysis of 200 women with postpartum psychosis admitted in our MBU, it was seen that 20% ($n = 40$) presented, with catatonia of whom 19 required ECT as a treatment modality [26]. Higher rates of catatonia seen in our centre might be due to comorbid medical illness or nutritional deficiencies.

Majority of infants admitted were less than 8 weeks of age, similar to other MBUs across the world. Although duration of admission, good clinical outcomes

and lesser readmission rates are similar to other MBUs, there are some notable differences in the nature of illness occurring in this region. Considering the sparse research in the field of PMH from LAMI countries, our team strives to undertake research activities to highlight unique challenges faced and serviced provided.

22.8.1 Perinatal Helpline Services

For women who find it difficult to access healthcare services, especially during the COVID 19 pandemic, telephonic helpline services are a better alternative, especially in LAMI countries. Through helplines, women can access information, identify and manage symptoms and seek help when necessary. We offer a 24-h perinatal mental health helpline service for women in the perinatal period including post-discharge care. Women across all states in the country access the helpline. The Perinatal Mental Health helpline service has been found it to be useful in addressing a wide range of concerns about medications, symptom exacerbation, suicidal ideations, planning for pregnancy, breastfeeding and seeking appointments [28].

22.9 Conclusion

This chapter provides details about the various services provided by the perinatal psychiatric team in Bangalore, South India, including a dedicated outpatient perinatal psychiatry service and an inpatient mother-baby unit. The range of services provided have been developed over time based on a combination of evidence-based practices worldwide [29] and culturally appropriate adaptations. Based on this model, similar clinical services maybe developed in other lower- and middle-income countries as well to care for mothers with mental illness and their infants.

References

1. Fisher J, Mello MC, Patel V, Rahman A, Tran T, Holton S, Holmes W. Prevalence and determinants of common perinatal mental disorders in women in low-and lower-middle-income countries: a systematic review. *Bull World Health Organ.* 2012;90:139–49.
2. Supraja TA, Thennarasu K, Satyanarayana VA, Seena TK, Desai G, Jangam KV, et al. Suicidality in early pregnancy among antepartum mothers in urban India. *Arch Womens Ment Health.* 2016;19(6):1101–8. <https://doi.org/10.1007/s00737-016-0660-2>. Epub 2016 Aug 26.
3. Royal college of Psychiatrists. Perinatal mental health services: Recommendations for the provision of services for childbearing women [Internet]. 2015. Available from: https://www.rpsych.ac.uk/docs/default-source/improving-care/better-mh-policy/college-reports/college-report-cr197.pdf?sfvrsn=57766e79_2.
4. Elkin A, Gilbert H, Slade M, Lloyd-Evans B, Gregoire A, Johnson S, Howard LM. A national survey of psychiatric mother and baby units in England. *Psychiatr Serv.* 2009;60(5):629–33.
5. Glangeaud-Freudenthal NC. Mother-Baby psychiatric units (MBUs): national data collection in France and in Belgium (1999–2000). *Arch Womens Ment Health.* 2004;7(1):59–64.

6. National Collaborating Centre for Mental Health. The Perinatal Mental Health Care Pathways. [Internet] London; 2018. Available from: https://www.rcpsych.ac.uk/docs/default-source/improving-care/nccmh/perinatal/nccmh-the-perinatal-mental-health-care-pathways-full-implementation-guidance.pdf?sfvrsn=73c19277_2.
7. Bagadia A, Chandra PS. Starting the conversation-Integrating mental health into maternal health care in India. *Indian J Med Res*. 2017;145(3):267.
8. Maitra S, Brault MA, Schensul SL, Schensul JJ, Nastasi BK, Verma RK, Burleson JA. An approach to mental health in low-and middle-income countries: a case example from urban India. *Int J Ment Health*. 2015;44(3):215–30.
9. Mendenhall E, De Silva MJ, Hanlon C, Petersen I, Shidhaye R, Jordans M, et al. Acceptability and feasibility of using non-specialist health workers to deliver mental health care: stakeholder perceptions from the PRIME district sites in Ethiopia, India, Nepal, South Africa, and Uganda. *Soc Sci Med*. 2014;118:33–42.
10. Ganjekar S, Thekkethayil AV, Chandra PS. Perinatal mental health around the world: priorities for research and service development in India. *BJPsych Int*. 2020;17(1):2–5.
11. Chandra PS, Desai G, Reddy D, Thippeswamy H, Saraf G. The establishment of a mother-baby inpatient psychiatry unit in India: adaptation of a Western model to meet local cultural and resource needs. *Indian J Psychiatry*. 2015;57(3):290.
12. The Mental Healthcare Act, 2017. Ministry of Law and Justice, India [Internet]. Available from: <http://egazette.nic.in/WriteReadData/2017/175248.pdf>.
13. Chandra PS, Saraf G, Desai G, Harish T, Reddy DGS. Detecting and managing risk to mother and infant in a mother-baby unit in India using a tool—the FIRST MB (formal initial risk assessment for mothers and babies). *Arch Womens Ment Heal*. 2015.
14. Saraf G, Chandra P, Desai G, Thippeswamy H. Systematic risk assessment in a mother-baby unit (MBU)—importance for maternal and infant safety. *Eur Psychiatry*. 2017;41(S1):S363.
15. Babu GN, Thippeswamy H, Chandra PS. Use of electroconvulsive therapy (ECT) in postpartum psychosis—a naturalistic prospective study. *Arch Womens Ment Health*. 2013;16(3):247–51.
16. Raghuraman BS, Varshney P, Sinha P, Ganjekar S, Desai G, Chandra PS. Electroconvulsive therapy (ECT) for severe mental illness (SMI) during perinatal period: the role of bifrontal (BF) ECT. *Brain Stimul*. 2019;12(2):388.
17. Sinha S, Kishore M, Thippeswamy H, Kommu J, Chandra P. Adverse effects and short-term developmental outcomes of infants exposed to atypical antipsychotics during breastfeeding. *Indian J Psychiatry*. 2021;63(1):52–7. Available from: <https://www.indianjpsychiatry.org/article.asp?issn=0019-5545>.
18. Nakano M, Upadhyaya S, Chudal R, Skokauskas N, Luntamo T, Sourander A, et al. Risk factors for impaired maternal bonding when infants are 3 months old: a longitudinal population based study from Japan. *BMC Psychiatry*. 2019;19(1):1–9.
19. McNamara J, Townsend ML, Herbert JS. A systemic review of maternal wellbeing and its relationship with maternal fetal attachment and early postpartum bonding. *PLoS One* [Internet]. 2019;14(7):e0220032. <https://doi.org/10.1371/journal.pone.0220032>.
20. Brockington IF, Oates J, George S, Turner D, Vostanis P, Sullivan M, et al. A screening questionnaire for mother-infant bonding disorders. *Arch Womens Ment Health*. 2001;3:133–40.
21. Brockington I, Chandra P, Bramante A, et al. The Stafford interview: a comprehensive interview for mother-infant psychiatry. *Arch Womens Ment Health*. 2017;20(1):107–12. <https://doi.org/10.1007/s00737-016-0683-8>.
22. Ganjekar S, Prakash A, Thippeswamy H, Desai G, Chandra PS. The NIMHANS (National Institute of Mental Health and Neuro Sciences) Maternal Behaviour Scale (NIMBUS): Development and validation of a scale for assessment of maternal behaviour among mothers with postpartum severe mental illness in low resource setting. *Asian J Psychiatr*. 2020;47:101872.
23. Reddy PD, Desai G, Hamza A, Karthik S, Ananthanpillai ST, Chandra PS. Enhancing mother infant interactions through video feedback enabled interventions in women with schizophrenia: a single subject research design study. *Indian J Psychol Med*. 2014;36:373–7.

24. Dahale AB, Chandra PS, Sherine L, Thippeswamy H, Desai G, Reddy D. Postpartum psychosis in a woman with Graves' disease: a case report. *Gen Hosp Psychiatry*. 2014;36(6):761.e7–8.
25. Reddy MSS, Thippeswamy H, Ganjekar S, Nagappa M, Mahadevan A, Arvinda HR, et al. Anti-NMDA receptor encephalitis presenting as postpartum psychosis—a clinical description and review. *Arch Womens Ment Health*. 2018;21(4):465–9.
26. Nahar A, Kondapuram N, Desai G, Chandra PS. Catatonia among women with postpartum psychosis in a Mother-Baby inpatient psychiatry unit. *Gen Hosp Psychiatry*. 2017;45:40–3.
27. Thippeswamy H, Dahale A, Desai G, Chandra PS. What is in a name? Causative explanatory models of postpartum psychosis among patients and caregivers in India. *Int J Soc Psychiatry*. 2015;61(8):818–23. <https://doi.org/10.1177/0020764015597016>. Epub 2015 Aug 3.
28. Ragesh G, Ganjekar S, Thippeswamy H, Desai G, Hamza A, Chandra PS. Feasibility, acceptability and usage patterns of a 24-hour mobile phone helpline service for women discharged from a mother-baby psychiatry unit (MBU) in India. *Indian J Psychol Med*. 2020;42(6):530–4.
29. Antenatal and postnatal mental health: clinical management and services guidelines. National Institute of Health and Care Excellence. 2020 Feb. Available from: <https://www.nice.org.uk/guidance/cg192>.