The establishment of a mother-baby inpatient psychiatry unit in India: Adaptation of a Western model to meet local cultural and resource needs

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ABSTRACT

Background: Several Western countries have established mother-baby psychiatric units for women with mental illness in the postpartum; similar facilities are however not available in most low and medium income countries owing to the high costs of such units and the need for specially trained personnel.

Materials and Methods: The first dedicated inpatient mother-baby unit (MBU) was started in Bengaluru, India, in 2009 at the National Institute of Mental Health and Neurosciences in response to the growing needs of mothers with severe mental illness and their infants. We describe the unique challenges faced in the unit, characteristics of this patient population and clinical outcomes.

Results: Two hundred and thirty-seven mother-infant pairs were admitted from July 2009 to September 2013. Bipolar disorder and acute polymorphic psychosis were the most frequent primary diagnosis (36% and 34.5%). Fifteen percent of the women had catatonic symptoms. Suicide risk was present in 36 (17%) mothers and risk to the infant by mothers in 32 (16%). Mother-infant bonding problems were seen in 98 (41%) mothers and total breastfeeding disruption in 87 (36.7%) mothers. Eighty-seven infants (37%) needed an emergency pediatric referral. Ongoing domestic violence was reported by 42 (18%). The majority of the mother infant dyads stayed for <4 weeks and were noted to have improved at discharge. However, 12 (6%) mothers had readmissions during the study period of 4 years. Disrupted breastfeeding was restituted in 75 of 87 (86%), mother infant dyads and mother infant bonding were normal in all except ten mothers at discharge.

Conclusions: Starting an MBU in a low resource setting is feasible and is associated with good clinical outcomes. Addressing risks, poor infant health, breastfeeding disruption, mother infant bonding and ongoing domestic violence are the challenges during the process.

Key words: India, low- and middle-income countries, mother-baby unit, perinatal psychiatry, postpartum psychosis

INTRODUCTION

The joint admission of infants with mentally ill mothers was pioneered by Thomas Main in 1948 at the Cassel Hospital in Surrey, England. The initial joint admissions were limited to patients with neuroses but slowly progressed to include severe mental illnesses in facilities across the United Kingdom (UK), Europe, Canada, Australia, and New Zealand. The UK National Institute for Health and Clinical Excellence clinical guidelines for antenatal and postnatal mental health recommend that women who need inpatient care for a mental disorder within 12 months of childbirth should normally be admitted to a specialized mother-baby...
Mother-baby unit is an inpatient psychiatry service with at least four beds that are separate from other wards with a facility for joint admission of the mother along with the baby. They are staffed 24-h a day, 7 days a week, by dedicated multidisciplinary staff to care for both mothers and babies. MBUs encourage breastfeeding, are expected to have specific interventions for parenting, provide psychotherapy, enhance mother-infant bonding and offer an opportunity for education regarding the current illness and preventing future episodes. They are also expected to provide support to spouses and caregivers and also involve social services in case of risk to the infant. Admission to an MBU enables a mother to obtain care for psychiatric disorders and simultaneously receive support in developing her identity as a mother. This care is meant to prevent attachment disorders and mother-baby separation.

Most of the data available from countries such as UK, France, Belgium, Australia indicate that 75–80% of mothers have a good outcome. Lack of dedicated MBUs may result in separation from infants causing mothers to refuse admission, problems with breastfeeding, difficulties in diagnostic evaluation, lack of dyadic psychotherapy, longer lengths of hospital stay, increased chances of relapse after discharge, and increasing the responsibility of caring for the baby on the spouse and extended family.

There are no published reports on dedicated MBU facilities from low- and middle-income (LAMI) countries. LAMI countries have high birth rates and postpartum psychiatric disorders often present with co-morbid organic and medical conditions necessitating specialized care, enhancing the need for special facilities during this period.

This study reports a description of the clinical profile, interventions and outcomes of joint mother-infant admissions at a newly established MBU in India.

MATERIALS AND METHODS

Description of the mother-baby unit
The first MBU in India was started in July 2009 at the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru as a five bedded facility for admitting mother-infant dyads.

Staffing
The unit is managed by a multidisciplinary team of psychiatrists, psychiatric social workers, and nurses. One psychiatry trainee is posted to the unit round the clock and social work and psychology trainees provide part-time services. A lactation expert is available on call to respond to breastfeeding difficulties, and pediatric support is available from a neighboring pediatric hospital.

Admission procedure
All mother-infant dyads are first assessed by the team for their suitability to admission under MBU facility. This assessment includes risk assessment using an instrument – Formal Initial Risk Assessment for Mothers And Babies (FIRST-MB) (for self harm and harm to the infant) infant health details, ruling out medical conditions in the mother and assessing problems related to breastfeeding.

Based on the risks, necessary decisions are made about joint admissions, with precautions to ensure the safety of mother and the infant. Mothers and infants are admitted with a family member (usually a woman) in keeping with local cultural traditions where a postpartum mother receives extra care from the family and is seldom left alone. Babies have cribs based on their age, and the caregiver has facilities to rest near the mother-infant dyad.

Referrals
All infants are referred to a neighboring pediatric hospital for consultation about feeding and immunization. Twice weekly psycho-education sessions are conducted by the psychology and social work trainees who also do specific interventions for impaired mother-infant bonding (including video enabled interventions to promote bonding). Once a week group sessions are held for caregivers and spouses focusing on caregiver burden and relapse prevention strategies. An infection control nurse advises mothers and caregivers on personal and infant cleanliness and ward hygiene.

Data collection
Tools used
Data for this paper have been collected prospectively and includes socio-demographic and clinical details; history of domestic violence and infant details (overall health, immunization, and infant feeding) and clinical and mother-infant outcomes at discharge.

Detailed socio-demographic data were collected, and the FIRST-MB tool was used to assess; risks to mother and infant. The tool has 10 items, which include risk to self, risk to others, risks to infant, medical conditions, feeding concerns, and infant health.

Psychiatric diagnosis was established by two trained psychiatrists as per the ICD-10 classification. Items from the Birmingham Interview for Maternal Mental Health were used to collect clinical details of pregnancy and postpartum mental health. Using the Kannada translation of the Postpartum Bonding Questionnaire (PBQ)
subjective mother-infant bonding was assessed. The PBQ is a self-report questionnaire with positive and negative statements related to the infant and is rated by mother on a Likert scale.

The Objective Bonding Instrument was used to assess maternal infant safety, psychotic ideas about the baby, maternal care toward the baby, and other aspects of maternal behavior toward the infant based on family and nurses observations. The bonding assessments were done at admission and discharge. Details of lactation and infant feeding were also assessed systematically at admission and discharge.

RESULTS

The total number of admissions from July 2009 to September 2013 was 237. The mean age was 24.25 ± 4.27 years and mean years of education were 6.50 ± 3.02. Most women were from lower socio-economic status and rural backgrounds. The majority of the mothers (80%) stayed for 3–4 weeks and the mean duration of hospital stay was 17.23 ± 14.56 days. One hundred and twelve women (47%) were <8 weeks of age at the time of admission, 88 (37%) were between 8 weeks and 6 months of age, and 21 (8%) were between 6 months and 1-year-old.

One hundred and twelve women (47%) were <8 weeks of age and maternal illness in 87 (36%) mothers while 150 mothers were breastfeeding at least partially at the time of admission.

Risk assessments
The FIRST-MB detected risks in 68 (28%) mothers. Harm toward themselves and suicidality in 18; harm toward the infant in 14; and harm toward self, infant, and others in 36 mothers. Ten mothers had to be refused admission to the MBU initially, as there was a serious risk to infant from the mother and were provided care at a different ward separated from the infant. However, these mothers were shifted to MBU with their infant once the high-risk status was improved.

Treatment related details
All mothers received psychotropic medications as indicated and included second generation antipsychotics, antidepressants, and benzodiazepines. Sixty-eight women (28%) received electro-convulsive therapy (ECT) for catatonia, high suicidal risk, and need for rapid symptom control.

Mother-infant bonding and interventions
Based on ratings of PBQ and Objective Bonding instrument, mother-infant bonding problems that needed specific interventions were noted in 98 (40%) of the mothers. Interventions for mothers with severe bonding disorders included a six session video enabled intervention. In addition, all mothers received six sessions of mother-infant bonding education that focused on maintaining eye to eye contact, cooing, singing lullabies, smiling at the infant, infant massage and stroking, restitution of breastfeeding, understanding cues from baby (hunger, sleep etc.), and playing with the baby. Among 98 dyads who needed mother-infant bonding interventions, ratings of PBQ and Objective Bonding at discharge were indicative of normal bonding in 88 mothers. Ten mother-infant dyads needed close supervision or surrogate infant care even at the time of discharge.

Lactation interventions
These included dispelling myths, helping in positioning while feeding and education regarding timing of breastfeeding based on peak levels of psychotropic drugs in breast milk. The use of electronic breast pumps and use of expressed breast milk for infants was encouraged when mothers had difficulty in feeding due to sedation, agitation, or when they received ECTs. Advice from a lactation expert was sought for women who had severe feeding difficulties. Of the 87 mothers who had stopped breastfeeding due to mental illness, lactation was restored in 75 (86%).

Outcomes and re-admissions
Among the 237 mothers, 188 (80%) were noted to
have improved completely while the rest had some residual symptoms at discharge. However, 12 (6%) of the 237 mothers had readmissions to the unit during the study period of 4 years. Eight of the twelve readmissions were due to a psychosis developing after a subsequent childbirth with inadequate psychiatric care during pregnancy and poor treatment compliance. In 5 of the 12 readmissions, significant social stress and marital problems were responsible for poor treatment compliance.

DISCUSSION

The findings from our MBU highlight some of the cultural and resource challenges that are likely to be faced by future MBU facilities in other identical settings. An important difference between MBUs and other inpatient units is the need to establish assessments and interventions aimed at the joint care of the mother and infant dyad. This includes both clinical management, infant health, and handling of mother-infant interactions.

The clinical profile of patients admitted to our unit while similar in some aspects to those reported by MB units around the world, also has some important differences. The similarities included brief duration of stay, good clinical outcomes, and low rates of readmission; similar to those reported from the UK and Europe.\[15,23,24\] The important difference between our sample and those from the West, however, was in the rates of acute psychosis and catatonia. Higher rates of acute psychosis in our sample maybe due to organic factors. It may also be indicative of a subsequent bipolar illness, which is known to be the most common form of postpartum psychosis.\[25\] The high rates of catatonia (15%) may be related to comorbid medical illnesses and nutritional deficiencies.\[10,16,26\]

Infants are an important part of the joint admission, and care of the vulnerable infant is an important role of an MBU. The majority of our infants were below 8 weeks of age which is similar to findings from MBUs across the world. As MBUs admit very young infants, there is a strong need for pediatric support services, as shown by our high rates of referral.\[27\] An additional concern in LAMI countries such as India, where hygiene is a concern and artificial feeding expensive, is the disruption of breastfeeding when a mother has a postpartum psychiatric illness. Mother-baby psychiatric units have an important role in restoration of lactation, which is important for infant health and for mother-infant bonding. The finding that specific lactation interventions and advice led to the restitution of breastfeeding among mother-infant dyads in our MBU, where there was complete disruption (75 of 87 mother-infant dyads) emphasizes the need for such units.

Our finding of high levels of risk also strongly corroborate the need for assessment of mother-infant risks in MBUs.\[3,6-8,28\] Training doctors and nurses to assess risks systematically using a standard tool like the FIRST-MB, is an important method of assuring that risks are not neglected in this vulnerable period.\[14\]

In our setting, having a family caregiver helped in handling challenges related to infant safety and also in caring for the infant when the mother was disturbed, drowsy or needed ECTs. No infant was separated from the mother at discharge, which is contrary to the existing literature from the West where separation and foster care due to the risk associated with mental illness are not uncommon.\[7,26,29,31\] This is again a strength of the strong family system in India where surrogate care is often provided to the infant by female relatives.

Apart from the clinical challenges, social issues such as poverty and domestic violence are some of the other problems that MBUs like ours in LAMI countries might face. Rates of partner violence in pregnancy and postpartum are quite high, and MBU staff needs to be trained in assessing and managing the consequences of partner violence and providing appropriate interventions.\[32,33\]

Box 1 lists the important requirements of a mother-baby inpatient psychiatry unit for future initiatives in LAMI countries.

CONCLUSION

The NIMHANS mother-baby psychiatry unit is the first such inpatient facility in India, and while modeled after MBUs

Box 1: The requirements of a mother-baby psychiatry inpatient unit

| Physical structure and facilities          |
|-------------------------------------------|
| A ward that is separate from other psychiatry wards to ensure infection control and safety |
| Beds and age appropriate cradles and cribs |
| Separate area for milk preparation        |
| Space for mother infant play, infant massage, and toys for infant stimulation    |
| Adequate facilities to ensure hygiene and control infections                      |
| Availability of substitute infant feeds if needed                                 |
| Educational material for mothers, spouses and family members                      |
| Availability of electronic breast pumps and facility to store expressed breast milk|
| Staffing                                                                                |
| Round the clock staffing by trained nurses (nurse-mother infant dyad ratio should be 1:3) |
| Multidisciplinary team including psychiatric social worker and/or clinical psychologist |
| Assessments and interventions                                                      |
| Risk assessments and protocols for admission of mother infant dyads               |
| Lactation assessments and interventions                                             |
| Mother-infant bonding assessments and interventions                                |
| Infant health assessments including side effects of drug exposure through breast milk |
| Liaison services                                                                     |
| Liaison with pediatrics                                                            |
| Link with immunization services                                                    |
| Liaison with lactation expert and obstetrician                                      |

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in the UK, has been adapted to be compatible with Indian systems of care during the postpartum period. Frequent co-morbid medical conditions in the mother and poor infant health highlight the need for adequate pediatric and medical/obstetric supportive services. Risk assessment and a quick response to this risk, forms an important part of multidisciplinary management. Bonding interventions remain an important part of MBU care, in addition to restitution or maintenance of lactation.

Mother-baby psychiatric units and services are a need in LAMI countries and our experience indicates that it is feasible to have an effective service that contributes to good clinical outcomes for the mother with mental illness and to mother-infant dyadic relationships.

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