Characteristics of Postpartum Depression in Anand District, Gujarat, India

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ABSTRACT

Characteristics of postpartum depression (PPD) in Anand District, Gujarat, India. PPD affects 1 in 10 women in the developed world. It has been implicated as an independent factor with adverse effect on child health, and health care-seeking behavior of mothers. We sought to find the prevalence of PPD in our hospital by including mothers who registered and delivered live babies at our hospital. Basic demographic information related to pregnancy was acquired from mothers and Edinburgh Postnatal Depression Scale (EPDS), pre-translated and validated in Gujarati language, was administered. Current study observed prevalence of PPD as 48.5% using cutoff score of 10.5 for classifying depression in Gujarati women. Factors associated with depression after multivariable logistic regression were: age of mother, modified Kuppuswami category (MKC) score, family type, violence from husband, gravida, para and sex of infant. PPD has higher prevalence in our study vis-a-vis Western countries. This may be because of early administration of EPDS.

KEYWORDS: postpartum, depression, EPDS, child health.

INTRODUCTION

During the immediate postpartum period, about 50–80% of women experience some type of mood disturbances. These include anxiety, getting upset easily, feeling of being alone, fear of unknown and/or feeling guilty. These emotions generally subside as time passes and as the mother develops strong bond with her newborn baby. However, 10–15% women develop more significant symptoms of depression or anxiety also known as postpartum depression (PPD). In Western part of the world, the prevalence of PPD is around 10–15% [1, 2], but higher rates have been reported in developing countries [3, 4]. The questionnaire to quantify PPD, i.e. Edinburgh Postnatal Depression Scale (EPDS), is a 10-item self-report tool that is validated for screening for PPD. It is not only the most frequently used measure to assess postpartum depressive symptoms and identify at-risk mothers [5, 6], but has also proven efficient compared with other tools when screening for PPD [7]. In a study from Gujarat, where the EPDS was validated for Gujarati women at cutoff score of 10.5, the prevalence was found to be 12.5% [8, 9]. The maternal PPD also influences the infant feeding outcomes and, thus, affects the growth of the infant adversely [10–12].
The current study aimed to determine (i) prevalence and characteristics of PPD in a hospital setting in Anand district, Gujarat, India, and (ii) feasibility of use of EPDS for postpartum women in this region of India.

In this study, the EPDS validated in Gujarati women was used to find out the prevalence of the problem in our hospital-based maternal population. Although a hospital-based study, the findings from this are expected to direct further research in this area in our population.

**MATERIALS AND METHODS**

We performed a cross-sectional survey at the Obstetrics and Gynecology out-patient department and neonatal ward of a multispecialty, tertiary care, rural, teaching hospital in Gujarat for 2 months to collect all the required data. Written approval for conduction of the study was obtained from the institutional Human Research Ethics committee of HM Patel Centre for Medical care and Education before starting the study. The expectant mothers who had registered with the hospital during their antenatal visit and who consented for participation were included in the study. All study participants were administered the validated Gujarati version of EPDS questionnaire during their first week of postpartum. The questionnaire was filled by the interviewer as per the response of the participant, and then the scores were calculated accordingly. Details related to socio-demographic status, antenatal, medical and other clinical history-related information were noted. Women who scored >10 on the EPDS were considered to have postnatal depression based on a previous study done in Gujarat that suggested the cutoff of 10.5 EPDS score for the Gujarati women based on receiver operating curve analysis for their data [8].

**RESULTS**

A total of 136 women were approached out of whom 134 mothers voluntarily participated in the study. Two mothers were ambivalent about participation and hence opted out. The prevalence of PPD with the cutoff of 10.5 was found to be 48.5%. Table 1 represents the demographic characteristics of the study population. Twenty-four (18%) women were illiterate and the median education was up to seventh standard. The mean MKC total score was found to be 8.34 but the median was 7, implying that most of the females were from upper lower socio-economic class. Of the 134 women, 121 (90%) reported having good relations with their in-laws. Of the total 65 PPD-positive women, 30 (46%) women were facing violence from husband and were in joint family against 4 of 8 who faced violence from their husbands who were from nuclear families. (Fig. 1). Forty-seven of 83 (56.6%) mothers with low birth weight babies were found to be depressed compared with 18 of 51 (35.3%) with >2.5 kg baby weight. In all, 127 women (95%) stated that the current infant gender was favorable. There were 74 male children born against 60 females to these 134 mothers. In all 19 infant deaths occurred but with no association between infant death and PPD in univariate analysis.
None of the women in the study had any previous history of PPD or any other psychiatric illness.

The univariate analysis revealed that the variables associated with PPD were favorable infant gender, violence by the husband, addiction in husband, housing type, current pregnancy wanted or unwanted, planned or unplanned and whether the mother was worried about the infant health and infant birth weight.

The model developed for multivariable logistic regression analysis with the independent variables specified above was able to explain 59% variation in the PPD with correct classification of 79.5% (Table 2).

DISCUSSION
In this study, we have demonstrated that it is feasible to use translated version of EPDS to address issues
related to depressive symptoms in mothers during postpartum period. While our study was carried out in Gujarati, there have also been Hindi, Urdu, Telugu, Kannada and Konkani versions of EPDS. Divakar et al. [13] demonstrated feasibility of using EPDS by using a version in Bangalore in a private obstetrics setting. To our knowledge, this is the first study addressing PPD in Anand district, Gujarat, India. We intend to increase practitioners’ awareness about mental health issues during perinatal period by promoting the use of screening tools such as EPDS. This would enable early detection of PPD and early management so that adverse effects on mother, infant and child can be minimized. It has been shown that use of cursory questions regarding depression during interview would miss at least 50% of cases of PPD, and therefore, using routine screening is crucial. Our finding of the prevalence of 48.5% for depressive symptoms in the immediate postpartum period is in line with published figures for depressive symptoms during this period. The high prevalence could be ascribed to the study being carried out in a tertiary care hospital and the data being collected at the immediate postpartum time for mothers registered in antenatal period. In a study by Desai et al. [8], the prevalence was reported as 12.5%. However, the study was conducted at a government-run hospital whose clients are poor patients who prefer the hospital owing to the subsidized or free treatment offered.

The odds of developing PPD increases by 1.39 times per unit increase in age. This is in line with the study by Savarimuthu et al. [14], although contrary to the systematic review on prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries by Fisher et al. [4] where the related studies were all from Nigerian population.

With unit increase in the MKC total score, the odds of PPD decreased by 1.40 times. This implies that the PPD is more prevalent in lower than the middle socio-economic class. Similar findings have been reported by Inandi et al. [15] and by King [6].

None of the mothers in our study had preexisting illness such as depression or psychiatric illness before pregnancy. Lee et al. [16] have suggested these as risk factors for PPD.

Staying in nuclear family reduces the odds of PPD by 11.11 times compared with staying in a joint family as per the current study, although 121 of 134 (90%) women have reported as having good relations with their in-laws. Women facing violence from

<table>
<thead>
<tr>
<th>Variable</th>
<th>Adjusted OR</th>
<th>CI for adjusted OR</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years</td>
<td>1.39</td>
<td>(1.11, 1.74)</td>
<td>0.004</td>
</tr>
<tr>
<td>MKC total score</td>
<td>0.713</td>
<td>(0.58, 0.87)</td>
<td>0.001</td>
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<tr>
<td>Family</td>
<td></td>
<td></td>
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<tr>
<td>Joint (ref)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nuclear</td>
<td>0.09</td>
<td>(0.02, 0.55)</td>
<td>0.009</td>
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<tr>
<td>Violence from husband</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (ref)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>9.78</td>
<td>(2.61, 36.67)</td>
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<td>Gravida</td>
<td>0.025</td>
<td>(0.002, 0.32)</td>
<td>0.004</td>
</tr>
<tr>
<td>Para</td>
<td>15.74</td>
<td>(1.41, 175.41)</td>
<td>0.025</td>
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<tr>
<td>Hospital admission of illness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (ref)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>20.15</td>
<td>(1.08, 374.95)</td>
<td>0.044</td>
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<tr>
<td>Sex of the infant</td>
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<td></td>
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<tr>
<td>Male (ref)</td>
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<td></td>
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<tr>
<td>Female</td>
<td>0.308</td>
<td>(0.103, 0.924)</td>
<td>0.036</td>
</tr>
</tbody>
</table>
husband have 9.78 times higher odds of getting PPD against women not facing intimate partner violence. With each subsequent gravida, the odds of PPD decreased as gravida showed to be a protective factor to PPD, whereas with unit increase in parity, the odds of PPD increased by 15.74 times. In the patriarchal male-dominated society of India, women do not have much authority to decide about their fertility, and it is generally guided by the male of the family. There is also the male child preference because of the patrilineal nature of this society, where the property and title are inherited by only the male lineage [17, 18]. In want of as many, or at least one male child in the family, the woman keeps on conceiving, and with every pregnancy, the expectations of herself and the family to get a baby boy stress her and push her into more depression as documented in previous studies [9]. Contrary to this, in the current study, it was found that the female sex of the infant was a protective factor from developing PPD for the mother. This could be so because the majority (95%) mothers had got a favorable infant gender in the current pregnancy. The odds of developing PPD were 20.15 times higher in mothers whose children required hospitalization compared with mothers with children not hospitalized.

The literature supports the statement that an expectant mother depressed in the antenatal period is more likely to deliver a low birth weight baby [19]. Depression during pregnancy and low birth weight baby both increase the risks for development of PPD in mothers. The limitation of our study is that we have not tracked these women on longitudinal basis to demonstrate how many of these women would go on to develop severe symptoms and result in true PPD or postpartum psychosis. The benefits of early screening and timely management also have positive impact on maternal health, infant and child health and health care-seeking behavior of mother. It would be important to continue screening mothers beyond the hospital period to detect depression in timely fashion.

CONCLUSION

Community-based studies should be conducted to find the prevalence of PPD. Current study indicates a high prevalence in the hospital setting, which is likely to be reflected in the community too. In our study, the incidence of depressive symptoms in the immediate postpartum period is 48.5%, which is keeping in line with published figures for depressive symptoms during this period. As the prevalence of PPD is observed to be high in India, specifically in Gujarat, as compared with the Western countries, interventions to lower this prevalence of PPD need to be designed and tested once the extent of the problem has been delineated.

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REFERENCES