Postpartum Depression and its Risk Factors among Indian Women

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Abstract

Postpartum depression (PPD) is a mood disorder that can affect women after childbirth. The ill effects of PPD include maladaptive mother-infant interactions, negative effect on cognitive and behavioural development of infants. There are wide variations in reported prevalence of PPD ranging from 0.5 percent to 60 percent among various countries as estimated by the Edinburgh Postnatal Depression Scale (EPDS). PPD screening is not a routine part of postpartum care in India and postpartum women suffering from PPD may remain largely unrecognized and untreated. The study aimed to assess the prevalence of depression and its risk factors in postpartum women attending well-baby clinic at 6 weeks postpartum at a tertiary hospital in India. A total of 284 women who came for immunisation of their babies in well baby clinic at 6 to 8 weeks postpartum were assessed for PPD using the EPDS, after taking consent. Ethical approval was taken from the ethics committee of the organisation. Demographic profile was collected and women were assessed for risk factors of PPD using a self-developed performa. The point prevalence of PPD was 21.5 percent with a cut off EPDS score of ≥12 (mean=7.67±5.94). Presence of congenital malformation or neonatal morbidity, problems related to feeding, sleep, satisfaction with marital relationship, violence in the family, relationship with mother-in-law, and presence of stressor in the family were significantly associated with PPD. The study brings out the importance of screening for PPD at accessible points like well-baby clinic. Maternal health programmes need to address the mental wellbeing of postpartum women.

Pregnancy and childbirth are times of physical and mental changes in a woman's life requiring support from spouse, family and the community at large. Depression, according to the World Health Organisation, is the leading cause of disability worldwide and women are more likely to suffer from depression as compared to men (WHO, 2017). Episodes of depression during significant life events like childbirth and nurturing can be damaging not only for the woman but also to the child, who is heavily influenced by the mother during the early years of growth and development. Postpartum depression (PPD) is a mood disorder that can affect women anywhere within one year of childbirth.

PPD screening is not a routine part of postpartum care in India and postpartum women suffering from PPD may remain largely unrecognised and untreated. Moreover, there is a cultural stigma attached to a person or family suffering from mental illness and this may deter the woman from expressing how she feels, as well as to seek help. If left untreated, this hampers her ability to bond with her baby and fulfil the responsibilities of motherhood. During the peripartum period, women have repeated contact with the healthcare system and thus accessible for health promotion and prevention activities. Screening for depression can be a feasible intervention when a woman comes for routine antenatal and postnatal care. The aim of the study was to assess the prevalence of PPD and its risk factors among women attending well-baby clinic at 6 to 8 weeks postpartum at a tertiary health care centre in India.

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Objectives

- To assess the prevalence of PPD among women at 6 to 8 weeks postpartum
- To assess the risk factors of PPD among women at 6 to 8 weeks postpartum.

Review of Literature

There are wide variations in reported prevalence of PPD ranging from 0.5 percent to 60 percent among various countries as estimated by the Edinburgh Postnatal Depression Scale (EPDS) (Halbreich & Karkun, 2006). A recent meta-analysis on PPD in India (Upadhyal et al, 2017) reported a prevalence

of 22 percent which is comparable to China whereas prevalence in high income countries is reported at 12.9 percent. The ill effects of PPD include maladaptive mother-infant interactions, negative effect on cognitive and behavioural development of infants. Postpartum woman with depression experiences symptoms like anxiety, feelings of guilt, loss of interest or pleasure in activities, difficulty bonding with baby, and insomnia. Women who had PPD also have increased risk for chronic and recurrent depression, which is most likely to have long term negative effect on the child (Stewart & Vigod, 2016). Several factors can contribute to the development of PPD. Prominent risk factors in Asian countries include poor relationships, poverty, unwanted pregnancy, abortion, stressful life events, lack of inadequate rest, and gender preference. The presence of previous mental illness, lack of partner support, postnatal anxiety, and antenatal depression were also reported to have strong associations with PPD.

Materials and Methods

Data was collected from August 2018 to November 2018 from a tertiary level teaching hospital in India. The hospital receives patients from all over the country, and most of the women seeking care belong to high risk group. We targeted a sample size of 280 (calculated on a confidence interval of 95%), expected prevalence of 23 percent, from similar Indian study with margin of error at 5 percent (Patel et al, 2002). A descriptive cross-sectional design was used for the study. A consecutive sample of 284 women who came for immunisation of their babies in well-baby clinic at 6 to 8 weeks of postpartum period were enrolled in the study. Those with acutely ill babies were excluded. Ethical approval for the study was taken from the institutional Ethics Committee. After obtaining written informed consent, demographic profile was collected and women were assessed for risk factors of PPD. Then, they were screened for risk of PPD using the EPDS. The EPDS is a commonly used tool for screening PPD with reported sensitivity of 86 percent and a specificity of 78 percent (Cox et al, 1987). It has 10 questions with a maximum score of 30. The Hindi version of the EPDS was used. A score of 12 or more was used to detect risk for depression as cut off score of 11 or 12 on the EPDS was found to detect depression with a specificity of 85 percent and sensitivity of 92 percent in a previous study (Patel et al, 2002). Similar cut offs have been reported to detect depression with adequate sensitivity and specificity in other vernacular validation studies (Ghubash et al, 1997; Ing et al, 2017) and in the original version of the scale (Cox et al, 1987; Murray & Carothers, 1990). The tool on risk factors of PPD was developed by the researchers and validated by

Table 1: Socio-demographic characteristics (n= 284)

Variable		N (%)	Chi² value	p value
Age (mean ± SD)		28.6± 4.61		
Religion	Hindu	252 (88.7)	0.28	0.96
	Muslim	22 (7.7)		
	Sikh	6 (2.1)		
	Others	4 (1.4)		
Education in years	Mean	13.6 ± 4.28		
	Illiterate	9 (3.2)	7.66	0.105
	Primary	7 (2.5)		
	Secondary	50 (17.6)		
	Graduate	126 (44.4)		
	Postgraduate	92 (32.3)		
Locality	Native	240 (84.5)	1.15	0.28
	From Outside	44 (15.5)		
Occupation	Housewife	210 (73.9)	2.18	0.13
	Working	74 (26.1)		
Type of family	Joint	173 (60.9)	3.05	0.21
	Nuclear	111 (39.1)		
Years of marriage	Mean	5.2 ± 4.24	0.53	0.76
	0 to 5	183 (64.5)		
	6 to 10	71 (25)		
	More than 10	30 (10.5)		
Number of children	Mean	1.3 ± 0.53	1.60	0.44
	One child	193 (68.0)		
	Two	83 (29.2)		
	Three	8 (2.8)		
	Male	172 (60.6)		
	Female	162 (57.0)		
Median duration of hospital stay after delivery	5 (1-45)			
	Less than 7 days	239 (84.2)	0.006	0.93
	7 days or more	45 (15.8)		

Table 2: Postpartum depression among postpartum mothers (n=284)

Stage	Frequency (%)
EPDS (12 or more)	72 (25.3)
EPDS (Less than 12)	212 (74.7)

Mean± SD (95%CI), Total score 7.67± 5.9 (6.98, 8.37)

Table 3: Factors predicting risk of postpartum depression (n=284)

Characteristics	Nominal category	EPDS less than 12 f (%)	EPDS≥12 f (%)	χ^2	COR (95% CI)	AOR (95% CI)
Gender of recent baby	Male(R)	115 (74.2)	40 (25.8)	0.03	-	-
	Female	97 (75.2)	32 (24.8)		0.95 [0.55-1.62]	1.02 [0.51-2.01]
History of miscarriage	No(R)	126 (81.8)	28(18.2)	9.14**	-	-
	Yes	86 (66.2)	44(33.6)		2.30** [1.33-3.98]	1.95 [0.99-3.82]
Overall mood during pregnancy	Positive(R)	165 (81.7)	37 (18.3)	18.29***	-	-
	Negative	47 (57.3)	35 (42.7)		3.32*** [1.88-5.84]	2.48* [1.19-5.18]
Mode of delivery of present baby	Vaginal(R)	97 (73.5)	35 (26.5)	0.17	-	-
	LSCS	115 (75.7)	37 (24.3)		0.89 [0.52-1.52]	0.94 [0.48-1.82]
Experience of labour	Poor	26 (68.4)	12 (31.6)	0.90	1.44 [0.31-6.05]	1.00 [0.36-2.75]
	Fair	83 (75.5)	27 (24.5)		1.02 [0.24-3.86]	0.67 [0.31-1.42]
	Good(R)	103 (75.7)	33(24.3)		-	-
Congenital malformation or baby's illness	No(R)	209 (75.5)	68 (24.5)	3.83	-	-
	Yes	3 (42.9)	4 (57.1)		4.09 [0.89-18.76]	1.80 [0.29-11.29]
Degree of trouble due to complication during pregnancy	Very much	14 (56.0)	11 (44.0)	9.63*	2.46* [1.04-5.82]	1.27 [0.42-3.97]
	Somewhat	23 (69.7)	10 (30.3)		1.36 [0.60-3.08]	0.98 [0.37-2.63]
	Undecided	5 (62.5)	3 (37.5)		1.88 [0.43-8.19]	1.28 [0.19-8.46]
	Not really or not at all	32 (88.9)	4 (11.1)		0.39 [0.13, 1.17]	0.31 [0.09, 1.13]
	No complication(R)	138 (76.0)	44 (24.0)		-	-
Status of pregnancy	Wanted(R)	200 (76.0)	63 (24.0)	3.67	-	-
	Unwanted	12 (57.1)	9 (42.9)		2.38 [0.96-5.91]	2.07 [0.69-6.21]
Feeding of baby	Breastfeeding only(R)	180 (75.0)	60 (25.0)	0.10	-	-
	Mixed feeding	32(72.7)	12 (27.3)		1.12 [0.54-2.32]	0.66 [0.21-2.05]
Problems related to feed	No(R)	182 (76.5)	56 (23.5)	2.57	-	-
	Yes	30 (65.2)	16 (34.8)		1.73[0.88-3.40]	1.06 [0.36-3.09]
Getting enough sleep since arrival of the baby	Rarely	57 (53.8)	49 (46.2)	38.94***	5.58*** [2.42-12.8]	4.98 [1.92-12.87]
	Sometimes	103 (87.3)	15 (12.7)		0.94[0.37-2.37]	1.01 [0.37-2.74]
	Most of the times or always(R)	52 (86.7)	8 (13.3)		-	-
Family support for baby care	Very much	131 (79.4)	34 (20.6)	5.70	0.44* [0.20-0.95]	1.05[0.39-2.80]
	Somewhat	50 (71.4)	20 (28.6)		0.68 [0.29-1.58]	1.10 [0.38-3.17]
	Undecided	7 (63.6)	4 (36.4)		0.97 [0.24-3.94]	1.39 [0.20-9.63]
	Not at all(R)	24 (63.2)	14 (36.8)		-	-
Satisfaction with marital relationship	No	24 (50.0)	24 (50.0)	18.54***	3.91*** [2.05-7.49]	2.53* [1.11-5.78]
	Yes(R)	188 (79.7)	48 (20.3)		-	-
History of family violence	No(R)	202 (76.7)	72 (25.3)	5.21*	-	-
	Yes	10 (52.6)	9 (47.4)		2.88* [1.12-7.41]	2.79 [0.78-9.97]
Relationship with mother in law	Poor	8 (50.0)	8 (50.0)	10.68*	3.76* [1.23,1.49]	0.97 [0.21,4.41]
	Fair	36 (64.3)	20 (35.7)		2.09 [0.97-4.49]	1.02 [0.40-2.63]
	Good	104 (79.4)	27 (20.6)		0.97 [0.49-1.93]	0.79 [0.36-1.74]
	Excellent(R)	64 (79.0)	17 (21.0)		-	-

COR=Crude odds ratio, AOR= Adjusted odds ratio, *p≤0.05, **p≤0.01, ***p≤0.001, (R) = Reference

four experts in the field. Face to face interview was used to collect data. Data entered in Microsoft Excel spreadsheet and then imported to STATA software version 13.1, StataCorp, College Station, Texas 77845 USA. Statistical analysis, descriptive, bivariate and binary logistic were performed using STATA.

Results

The mean age of the postpartum women was 28.6± 4.61 years. Majority of them were Hindu (88.7%), had completed graduation (44.4%), belonged to Delhi (84.5%), were housewives (73.9%), and lived in joint families (60.9%). Nearly a third of them (n= 101, 35.6%) had complications associated with pregnancy. The mean year of marriage was 5.2 and majority of them were married for less than 5 years (64.5%). Majority had single child (68%) and the proportion of male and female children were nearly equal (60.6% vs 57.0%). Median duration of hospital stay was 5 days and most of them were hospitalised for less than 7 days (84.2%). There was no significant association between socio-demographic variables and EPDS score 12 or more (Table 1).

Seventy-two (25.3%) postpartum women were found to be at risk of developing depression with a cut off EPDS score of 12 or more. With a cut off EPDS score of 10 or more, the proportion of women at risk of devel-

oping depression increased to 33.1 percent. The mean EPDS score was 7.67 (Table 2). History of miscarriage, overall mood during pregnancy, degree of trouble due to complications related to pregnancy, sleep status since arrival of the baby, satisfaction with marital relationship, history of family violence, and relationship with mother in law were significantly associated with EPDS score of 12 or more ($p<0.05$). Overall mood during pregnancy, sleep status since the arrival of the baby, and satisfaction with marital relationship were still significantly associated with risk of PPD after controlling for other risk factors (Table 3). Around one third of the women (35.9%) reported having some medical problems during pregnancy but this was not significantly associated with depression.

Discussion

This study reports the burden of PPD in a high-risk referral centre in India. The prevalence of women at risk for PPD was found to be higher than other reported studies from the region (Patel et al, 2002; Dubey et al, 2012). This may be because of the predominantly high-risk nature of the study participants. None of these mothers were aware about PPD as an illness and showed reluctance to go for mental health consultation when advised. This suggests a general disregard for mental problems in the society. Significant association with ominous risk factors such as history of miscarriage, negative mood during pregnancy, marital discord, and poor relationship with mother-in-law was found and these factors have been reported in previous studies also (Chojeuta et al, 2016; Dubey et al, 2012; Azad et al, 2019; Chandran et al, 2002). This reflects the need for psychological care after adverse events, and the protective nature of healthy relationship within the family. With majority of the subjects from joint families, poor relationship with mother-in-law hints to a breakaway from traditional societal norms where daughter in laws are usually expected to be submissive. The adequacy of sleep received by the mother after arrival of the baby showed strong statistical significance even after adjusting for other significant variables. The effect of poor sleep during pregnancy and the postpartum period on depression is well documented (Tsai et al, 2016; Gelaye et al, 2017; Goyal et al, 2007; Okun et al, 2011). Women in this study were also more likely to be at risk for depression if they were very much troubled due to complications relating to pregnancy. This suggests that women with high risk pregnancies need attention to their mental health alongside with special medical attention.

Gender of the baby has shown association with PPD in multiple studies (Klanin & Arthur, 2009) but was not a significant risk factor in this study. The reason may be the predominantly high-risk nature of the group and the fact that most of these pregnancies were "wanted" (92.6%).

Limitations

The findings of this study have limited generalisability as it was conducted in a high-risk tertiary care facility. Also, the researchers could not validate the diagnosis of PPD in high risk women, although they were advised to consult psychiatric outpatient department. Data was self-reported and thus may not be fully reliable and there may be a tendency to give socially correct responses, especially when it comes to areas like domestic relationships.

Implications

This study adds to the evidence of the magnitude of the problem of PPD. Nurses can play a major role in detection of PPD as they are the first line health care providers. Midwives need to be aware of the possibility of PPD in postpartum women and make appropriate referrals. The health care system should create a policy of screening and treatment of PPD and depression during the peripartum period, so that women receive the care and treatment they need.

Recommendations

Women in India do not routinely avail postpartum healthcare services for themselves and thus are unlikely to seek professional help for mental problems (Okun et al, 2011). There is an urgent need for integration of mental health screening of postpartum women in the health care system at accessible point of care such as well baby clinics so that women at risk of PPD can be recognised and treated. Mental health must be given due importance, so that women are able to fulfil their full potential as a mother, and as a valuable member of the society. Nurses need to conduct research and implement evidence-based findings while caring for postpartum mothers.

Conclusion

This study reports a high prevalence of postpartum depression in women attending well-baby clinic at six weeks postpartum. Health care providers tend to focus on physical problems and neglect mental health issues, especially when there is a huge patient load as it as often the case in low to middle income countries. Nurses can bridge the gap between physician and patient interaction by taking up roles like screening for mental health and creating awareness about common mental health problems like depression, which may not be addressed by physician consultations during routine outpatient visits. Quality maternal care can only be achieved when we treat women as holistic entities, which both mental and physical needs.

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