Screening for Postnatal Depression in a Tertiary Care Hospital

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About the Author

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Abstract

Aim To determine the need to screen postpartum women for postpartum depression.

Objective This study was designed to determine the prevalence of an Edinburgh postnatal depression scale (EPDS) score of ≥ 13 in postpartum mothers and to evaluate the association of different sociodemographic and obstetric factors with postpartum depression.

Design Prospective cohort study.

Method 1600 postpartum women who delivered a live born at St. John's Hospital were recruited into the study. Participants were screened for postnatal depression using the EPDS. A risk factor questionnaire that covered key sociodemographic and obstetric factors was also completed by all the subjects. Main Outcome Measure: Prevalence of a score of 13 or higher, on the EPDS.

Results The prevalence of an EPDS score of ≥ 13 in our population was 7.5 % (120/1600). Participants with a family history of psychiatric illness, history of domestic abuse, delayed initiation of breastfeeding, and those who gave birth to a female infant were at a significantly higher risk for an EPDS score of 13 or higher, indicating probable postnatal depression. The mode of delivery, NICU admission of the newborn, and history of antenatal complications were not significant risk factors.

Conclusion Since the prevalence of an EPDS score ≥ 13 (which is suggestive of PPD) was found in a significant proportion of women, screening for PPD is indicated in all

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postpartum women to identify and promptly treat these women. Identification of a clear correlation between certain risk factors and PPD will lead to a more prompt diagnosis of PPD.

Keywords Postpartum depression (PPD) · Edinburgh postnatal depression scale (EPDS) · Screening

Introduction

The prevalence of postnatal depression ranges from 7.6 to 39 % in various areas of the world and differs according to the population tested and the screening tools used [1–3]. The Edinburgh postnatal depression scale (EPDS) was designed by Cox et al. in 1987 [4]. A review of 37 validation studies of the EPDS had shown a highly variable sensitivity from 34 to 100 % and a specificity of 44 to 100 % [5]. The importance of postnatal depression lies in the fact that it has negative consequences on the parenting experience and child development. Marital relationships are also affected by postnatal depression. Depression in the postnatal period is also associated with malnutrition in the child. An EPDS score of ≥ 13 is strongly suggestive of PPD. This study was designed to evaluate the need for screening all postpartum mothers for PPD, using the EPDS and also to determine the association of different sociodemographic and obstetric factors with postpartum depression.

Materials and Methods

Setting

This was a prospective study conducted in the Department of Obstetrics & Gynecology, St. John's Hospital. The study period was from January 2013 to June 2014. St. John's hospital is a tertiary health care center, located in central Bangalore, catering to all sections of the society.

Participants

All postpartum women who delivered a live born at St. John's Hospital and those who gave a written informed consent were included in the study, and were assessed at 4–7 days postpartum, using the EPDS. The volunteers gave a written informed consent to participate in the study, following which the mothers were asked to complete the risk factor questionnaire and were screened for postnatal depression using the EPDS. Women with mental retardation were excluded. Patients with stillbirths were excluded from the study because we sought to examine risk factors that correlate with typical PPD, rather than the grief process that accompanies the loss of an infant.

Tool

The EPDS was designed by Cox et al. in 1987. It is a 10-item scale, which focuses on cognitive and affective

Edinburgh Postnatal Depression Scale (EPDS) (4)

In the past 7 days:

1. I have been able to laugh and see the funny side of things ☐ As much as I always could ☐ Not quite so much now ☐ Definitely not so much now ☐ Not at all 2. I have looked forward with enjoyment to things ☐ As much as I ever did ☐ Rather less than I used to ☐ Definitely less than I used to ☐ Hardly at all *3. I have blamed myself unnecessarily when things went wrong ☐ Yes, most of the time ☐ Yes, some of the time ☐ Not very often ☐ No, never 4. I have been anxious or worried for no good reason ☐ No, not at all ☐ Hardly ever ☐ Yes, sometimes ☐ Yes, very often *5 I have felt scared or panicky for no very good reason ☐ Yes, quite a lot ☐ Yes, sometimes ☐ No, not much ☐ No, not at all	*6. Things have been getting on top of me ☐ Yes, most of the time I haven't been able to cope at all ☐ Yes, sometimes I haven't been coping as well as usual ☐ No, most of the time I have coped quite well ☐ No, I have been coping as well as ever *7 I have been so unhappy that I have had difficulty sleeping ☐ Yes, most of the time ☐ Yes, sometimes ☐ Not very often ☐ No, not at all *8 I have felt sad or miserable ☐ Yes, most of the time ☐ Yes, quite often ☐ Not very often ☐ No, not at all *9 I have been so unhappy that I have been crying ☐ Yes, most of the time ☐ Yes, quite often ☐ Only occasionally ☐ No, never *10 The thought of harming myself has occurred to me ☐ Yes, quite often ☐ Sometimes ☐ Hardly ever ☐ Never

features of depression rather than the somatic symptoms. EPDS is the only self-report scale that has been validated for use in pregnancy and postnatal periods. Scores on this scale range from 0 to 30.

Outcome

(1) The *primary outcome* was an EPDS score ≥ 13 . Mothers who score above >13 were considered to be at risk of a depressive illness of varying severity. Women who could not understand English were given a Kannada/Hindi version of the questionnaire. Women who could not read or write were cross-questioned by the co-investigator in a language known to the patient. (2) The *secondary outcome* was to review the sociodemographic characteristics, which predisposed the women for postpartum depression. Demographic characteristics (age, religion, education, socioeconomic status, employment) were taken into account. Data regarding marital status, family structure (joint/nuclear), previous depressive illness, domestic abuse, and previous postpartum depression were also obtained. Also recorded were obstetric histories, including numbers of living children, current pregnancy details, and the condition of the newborn.

Statistical Analysis

Results were analyzed applying the Chi-square test and the Fisher Exact test to evaluate the significance of association of risk factors with PPD. Z test for difference between two

proportions was applied for assessing the difference in prevalence of postnatal depression according to EPDS score. The relative risk for each statistically significant risk factor was calculated. *P* values ≤ 0.001 were considered statistically significant.

Results

A total of 1600 women were recruited in the study. The demographic details are as shown in Table 1. The average age of the women was 26 years (Range = 18–41). All the women were married. Majority of the women were primiparous and belonged to middle-class families (Tables 2, 3).

Of the 1600 women studied, 120 scored ≥ 13 on the Edinburgh postnatal depression scale (prevalence = 7.5 %).

After adjustment for all significant postnatal variables, risk factors like family history of psychiatric illness, history of domestic abuse, delayed initiation of breastfeeding and female gender of the baby remained statistically significant for EPDS ≥ 13 (*P* value < 0.001).

Discussion

A score of ≥ 13 on the EPDS scale indicates probable PPD in a wide number of studies [6, 7]. In our study, 120 out of 1600 women, scored ≥ 13 on the EPDS (prevalence = 7.5 %). This was found to be statistically significant, using the Z test for difference between two proportions. The prevalence in this sample is similar to the rates of 7.7–14 % assessed by Lee et al. [8]. Chandran et al. [9] reported a prevalence of 11 % for PPD in a cohort of women from rural Tamil Nadu, which is the only study available in South India. It was previously believed that the prevalence of PPD is low in India because of the social and cultural factors. However, with increasing westernization and changing sociocultural pattern, PPD is showing an increasing trend in India as well. Hence, we felt the need to screen postpartum women for PPD, in our setting.

In this study, we have screened women at 4–7 days postpartum. One of the strongest arguments for early screening of PPD is the possibility of enhancing secondary prevention. Supported individuals may experience only a

Table 1 Demographic details of the patients

Patient characteristic	<i>N</i>	%
Primipara	912	57
Multipara	688	43
Duration of marriage		
<1 year	532	33.25
1–3 years	140	8.75
>3 years	928	58
Education		
$\geq$ SSLC	32	2
PUC	928	58
Degree	640	40
Occupation		
Housewife	1312	82
Working	288	18
Socioeconomic status		
Lower	240	15
Middle	1200	75
Upper	160	10
Married	1600	100

Table 2 Prevalence of EPDS score ≥ 13

EPDS score	<i>N</i> = 1600	Prevalence (%)	<i>Z</i>	<i>P</i>
≥ 13	120	7.5	25.90	0.001
≤ 12	1480	92.5		
Total	1600	100.0		

Table 3 Relation of risk factors to EPDS score

	EPDS ≥ 13 ($n = 120$)	EPDS < 13 ($n = 1480$)	Relative risk (95 % CI)	<i>P</i> value
1. Family history of psychiatric illness	10	Nil	14.45	<0.001**
2. History of domestic abuse	14	16	6.912	<0.001**
3. Family structure			1.151	>0.05
Nuclear	70	985		
Joint	50	495		
4. Antenatal complications	10	860	0.998	>0.05
5. Mode of delivery			1.081	>0.05
Normal	72	858		
LSCS	48	622		
6. Breastfeeding initiation			0.08336	<0.001**
Immediate	28	1228		
Delayed	92	252		
7. Obstetric outcome			1.278	>0.05
Healthy newborn	72	792		
NICU admission	48	688		
8. Gender of the baby			0.3196	<0.001**
Boy	42	962		
Girl	78	518		

Antenatal complications Preeclampsia, GDM, Anemia, Hypothyroidism, Antepartum hemorrhage etc

Bolditalics signifies that the *P* value is significant

** *P* value <0.001 is statistically significant

subclinical, less severe, or abbreviated episode of postpartum depression [10–12]. Some argue that early screening can increase the false positives (Postpartum blues or baby blues, which is characterized by relatively mild symptoms could be wrongly labeled as postpartum depression). Mothers who experience postpartum blues are six times more likely to go on to a clinically significant depressive disorder [13]. Dennis and Ross [14] suggested that a screening measure should be used in conjunction with assessment of known risk factors, in order to decrease the rate of false positives. They recommended further evaluation for women screening positive and having one or more risk factors. The sociodemographic factors have been taken into consideration, in our study, thereby reducing the false positives. Women with an EPDS score of ≥ 13 , were referred to psychiatry department for further evaluation. In our study, 3 out of the 120 women went on to develop postpartum psychosis.

Of particular interest is the fact that 38 women of the 120 women who scored ≥ 13 on the EPDS scale had suicidal thoughts. In this study, since we evaluated the women at 4–7 days postpartum, we did not reapply the EPDS scale for final assessment.

History of domestic abuse was found to be statistically significant as a risk factor for PPD in our study, although domestic abuse is a very sensitive issue, which is often underreported since women are not too forthcoming in this

regard. Western research has implicated spousal and parental relationships as risk factors for postpartum depression [15]. Cultural factors probably underlie this difference. Women with family history of psychiatric illness were 14.45 times (relative risk) more likely to have a higher EPDS score ($P < 0.001$).

The presence of antenatal complications and obstetric outcome in terms of NICU admission were not significant. Women who failed to initiate early breastfeeding were at a higher risk for PPD. Not meeting one's own prenatal expectations is a plausible mechanism for the previously observed association between lack of breastfeeding and PPD [16]. In our study, NICU admissions of the newborn and cultural practices were responsible for delayed initiation of breastfeeding. Birth of a female infant also contributed to a higher EPDS score, which was statistically significant. The study confirms our hypothesis that gender-based factors are important determinants of postnatal depression [17].

Conclusion

The impact of PPD is significant not only to the mother, but also to the baby. Since the prevalence of EPDS score ≥ 13 was found to be statistically significant in our population, we recommend routine screening for PPD in our population.

Compliance with Ethical Standards

Conflicts of interest All authors declare that there have been no conflicts of interest.

Ethical approval This study meets ethical guidelines as the manuscript has been approved by ethics committee of St. Johns Medical College and hospital. A written consent has been taken from all patients about participation in research.

Informed consent Informed consent of all the participants has been obtained.

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