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A study of postnatal depression in a tertiary care centre – A prospective observational study

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Abstract

Background: Postnatal depression is one of the most common non-obstetric illnesses that cause significant morbidity in pregnant women. The purpose of this study is to determine the prevalence of postnatal depression in postnatal moms in a tertiary care centre using the Edinburgh Postnatal Depression Scale (EPDS) questionnaire, as well as the risk variables that contribute to postpartum depression.

Methods: It is a 400-person sample size prospective observational research. Postnatal moms were assessed using the EPDS questionnaire when they were admitted to the hospital at one week and again at four weeks. Women with an EPDS score of 13 or higher were determined to have Postpartum Depression. At one week and four weeks, age, socioeconomic status, educational status, work status, family type, menstrual history, premenstrual syndrome, obstetric score, mode of birth, pregnancy planning, and connection with parents, in laws, and partner were compared.

Results: The primary goal of the study was to determine the prevalence of PPD at week one (30%) and week four (15%). Menstrual history, mode of delivery, relationship with in-laws, and lack of partner support were identified as risk variables contributing to PPD in our study, and were proven to be statistically significant. In our study, factors like age of the mother, socioeconomic status, education status, employment status, type of family, obstetric score, gender of the infant, mode of delivery, planning for delivery, planning admission of baby and premenstrual syndrome did not have any association with postpartum depression.

Conclusion: In our study prevalence of an EPDS score ≥13 (which is suggestive of PPD) was found in a significant proportion of women. Birth by Caesarean section, menstruation history, bad connection, and lack of partner support were identified to be risk factors contributing to PPD in our study conducted in a tertiary care hospital at one week and four weeks.

Keywords: Postnatal depression, Tertiary care centre

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Introduction

Depression is a psychiatric illness that affects over 280 million people of all ages and ranks fifth in terms of its contribution to the Global Burden of Disease. When just women are included, it ranks fourth and is predicted to rise more in the future years. Postpartum depression (PPD) is one of the most common non-obstetric diseases in women during the perinatal period, causing significant morbidity. It is sometimes overlooked, however it is a very common condition (100-150 per 1000 births) that affects up to 19% - 22% of Indian women.[1,2]

Depression has a negative and frequently devastating effect on the outcome of the perinatal mother and the newborn due to the already elevated physiological, physical, and emotional stress during the perinatal period. According to data, women are more likely to be diagnosed with their first episode of depression or severe depression during the postpartum period, notably during the first three months following childbirth. The risk factors for postpartum depression are multifaceted. Adolescent or unmarried pregnancy, unplanned pregnancy, unsupportive marital relationship, history of stillbirth or miscarriage, nulliparity, poverty and lack of financial support, domestic abuse, and other circumstances can all lead to mental health difficulties during pregnancy.[3-5]

Following childbirth, the following factors may be to blame: difficult husband behaviour, stressful relationship with in-laws, operative child birth, illness or complications during child birth, birth of an unwanted gender, sick infant, lack of practical support, poverty, and other stressful family events. The implications of postpartum severe depression are considerably more concerning. Postpartum depression is usually severe and lasts up to six months after birth, but it can last up to a year in some situations. Maternal suicide is one of the leading non-obstetric causes of maternal death in the first year of life.[5,6]

It is reasonable to infer that postnatal depression has effects for the infant, and data suggests that it does. Infants of depressive moms demonstrate dysregulations in their behaviour and physiology due to prenatal exposure due to biochemical abnormalities, but whether postnatal depression per se affects the growing newborn is uncertain.[7,8]

Objective

To study the incidence of postpartum depression in postnatal clinic at week one and week four using Edinburg Postnatal Depression Scale (EPDS) in a tertiary care Hospital and to determine the risk factors contributing to postpartum depression.

Materials and Methods

Study design: Prospective Observational study using a questionnaire.
Place of study: Department of Obstetrics and Gynecology of a tertiary care hospital.
Study period: Jan 2022 - December 2022.

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Inclusion criteria

1. All postnatal mothers irrespective of age.
2. Parity – Primi gravida and multi gravida.
3. Mode of delivery – Normal, Assisted vaginal and Caesarean section.
4. Willing to give consent.

Exclusion criteria

1. History of Psychiatric disorder before conception.
2. Previous history of postpartum depression.
3. Not willing to participate in study.

Sample size

From the study by the sample size of this study was calculated as 400. Our study had assumption of 50% Prevalence of postnatal depression, 5% precision, 80% power and 5% level of significance.

Methodology

Those women who fulfil the inclusion criteria were subjected to study. Consent was taken from participants in the study. The history of the participants was collected using proforma which was given to them at first week when they are in hospital and fourth week when they reviewed in postnatal clinic. EPDS questionnaire was given at week one when in hospital and week four when they reviewed in postnatal clinic. Those patients who have moved to their maternal homes for postnatal care were called over phone at the end of 4 weeks where they would be asked to respond to the questionnaire orally. The results are interpreted as mentioned below:

EPDS score	**Interpretation**
1 to 9	Normal
10 to 12	Borderline
13 and above	Postpartum depression

Women with EPDS score of 13 and above in first week and fourth week were considered to have postpartum depression and all these women are included in the study.

Statistical analysis

Statistical analysis was done by the statistical software Epi info Version-7. Continuous variables were represented as ‘Mean (SD) ‘and categorical variables were represented as ‘Frequency (percentage) ‘. Chi-square test or Fischer’s exact test were used to differences in categorical data. The p value of< 0.05 was considered as significant.

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Ethical consideration

The study abides by the rules of the Ethical Committee of the hospital. No intervention causing harm to patient mentally, physically or financially was done. Women with inclusion criteria were selected after explaining in detail about study design, written consent and detailed history was taken.

Results

After recruiting 400 women in our study, they were assessed with the help of EPDS score at one and four weeks for the evaluation of postpartum depression.

A score of 13 and above was considered as postpartum depression and referred to psychiatric consult for counselling and treatment. A score of 10 to 12 would be considered borderline and referred to psychiatric consult for further evaluation.

EPDS Score	**EPDS at one week**	**EPDS at four weeks**	**Interpretation**
1 to 9	158	246	Normal / Stressed
10 to 12	122	94	Borderline
13 and above	120	60	PPD
Total	400	100	

Table-1: EPDS score

120 women had a score of 13 or above in the first week that is suggestive of postpartum depression. Therefore, the prevalence of postpartum depression in the first week after pregnancy is 30%. The number of women having EPDS Score 13 or above in the fourth week was 60 indicating that the prevalence of postpartum depression dropped to 15% in the fourth week after child birth.

Effect of menstrual history on EPDS score at one week				
Menstrual history	EPDS less than 13	EPDS 13 and above	Total	P value
Irregular	32 (66.7%)	16 (33.3%)	48	0.59
Regular	248(70.5%)	104(29.5%)	352	
Total	280(70%)	120(30%)	400	
Effect of menstrual history on EPDS score at fourth week				
Irregular	37(77.1%)	11(22.9%)	48	

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Regular	303(86.1%)	49(13.9%)	352	0.12
Total	340(85%)	60(15%)	400	

Table-2: Effect of menstrual history on EPDS score

On analyzing menstrual history and their effect on EPDS scores at one week it was found that more women who had irregular menstrual history (33.3%) had higher EPDS scores (EPDS >13) compared to women who had regular menstrual history (29.5%). The difference was found to be statistically non-significant with a p value of 0.59.

On analyzing menstrual history and their effect on EPDS scores at four weeks it was found that more women who had irregular menstrual history (22.9%) had higher EPDS scores (EPDS >13) compared to women who had regular menstrual history (13.9%). The difference of EPDS scores among the two groups was not statistically significant.

Effect of mode of delivery on EPDS score at one week				
Mode of delivery	**EPDS less than 13**	**EPDS 13 and above**	**Total**	P value
Normal vaginal delivery	214 (81.1%)	50 (18.9%)	264	<0.001
LSCS	66 (48.5%)	70 (51.5%)	136	
Total	280(70%)	120(30%)	400	
Effect of mode of delivery on EPDS score at four weeks				
Normal vaginal delivery	239(90.5%)	25(9.5%)	264	<0.001
LSCS	101(74.3%)	35(25.7%)	136	
Total	340(85%)	60(15%)	400	

Table-3: Effect of mode of delivery on EPDS score

On analyzing the mode of delivery and its effect on EPDS scores at one week it was found that more women who gave birth through LSCS (51.5%) had higher EPDS scores (EPDS >13) compared to women who gave birth through normal vaginal delivery (18.9%). The difference of EPDS scores at one week between the two groups was statistically significant with a p value <0.001.

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On analyzing the mode of delivery and its effect on EPDS scores at four weeks it was found that more women who gave birth through LSCS (25.7%) had higher EPDS scores (EPDS >13) compared to women who gave birth through normal vaginal delivery (9.5%). The difference of EPDS scores at four weeks between the two groups was statistically significant with a p value <0.001.

Effect of relationship with in-laws on EPDS score at one week				
Relationship with in laws	**EPDS less than 13**	**EPDS 13 and above**	**Total**	P value
Good	257(74.5%)	88(25.5%)	345	<0.001
Bad	23(41.8%)	32(58.2%)	55	
Total	280(70%)	120(30%)	400	
Effect of relationship with in-laws on EPDS score at four weeks				
Good	299(86.7%)	46(13.3%)	345	0.02
Bad	41(74.5%)	14(25.5%)	55	
Total	340(85%)	60(15%)	400	

Table-4: Effect of relationship with in-laws on EPDS score at one week

On analyzing the relationship with in laws and its effect on EPDS scores at one week it was found that more women who had bad relationship with in laws (58.2%) had higher EPDS scores (EPDS >13) compared to women with good relationship with in laws (25.5%). The difference of EPDS scores at one week between the two groups was statistically significant with a p. value of <0.001.

On analyzing the relationship with in laws and its effect on EPDS scores at four weeks it was found that more women who had bad relationship with in laws (25.5%) had higher EPDS scores (EPDS >13) compared to women with good relationship with in laws (13.3%). However, the difference of EPDS scores at four weeks between the two groups was statistically significant with a p. value of <0.02.

Effect of partner support on EPDS score at one week				
Partner support	**EPDS less than 13**	**EPDS 13 and above**	**Total**	P value
Good	262(72.4%)	100(27.6%)	362	0.002

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Bad	18(47.4%)	20(52.6%)	38	
Total	280(70%)	120(30%)	400	
Effect of partner support on EPDS score at four weeks				
Good	314(86.7%)	48(13.3%)	362	0.006
Bad	26(68.4%)	12(31.6%)	38	
Total	340(85%)	60(15%)	400	

Table-5: Effect of partner support on EPDS score

On analyzing the partner support and its effect on EPDS scores at one week it was found that more women among those without partner support (52.6%) had higher EPDS scores (EPDS >13) compared to women with good partner support (27.6%). The difference of EPDS scores at one week between the two groups was statistically significant with a p value of 0.002

On analyzing the partner support and its effect on EPDS scores at four weeks it was found that more women among those without partner support (31.6%) had higher EPDS scores (EPDS >13) compared to women with good partner support (13.3%). The difference of EPDS scores at four weeks between the two groups was statistically significant with a p value of 0.006.

Discussion

In my study postpartum depression was screened at one week and four weeks in the postnatal period using EPDS scale. The EPDS scale is a self questionnaire which contains 10 questions and a score of 13 and above in postnatal period indicative of PPD. In our study, the incidence of PPD at week one was 30% and at week four was 15%. In our study, it was evident that more women tend to have higher EPDS Scores (>13) in the first week after child birth which suggests that assessment in the first week after childbirth is more sensitive to diagnose postpartum depression. Similarly, in the study done by Preethi B et al[5], the incidence of PPD at week one which was 40% and week four which was 27%. In our study, characteristics such as mother's age, socioeconomic situation, education level, job status, family type, obstetric score, infant's gender, mode of birth, planning for delivery, planning admission of baby, and premenstrual syndrome had no association with postpartum depression.

In the study by Upadhyay RP et al[9], the overall pooled estimate of the prevalence of postpartum depression was 22% (95% CI: 19–25). Reported risk factors for postpartum depression in their study included financial difficulties, presence of domestic violence, past history of psychiatric illness in mother, marital conflict, lack of support from husband and birth of a female baby.

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Another study by Sheela CN et al[10] reported 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 in their study.

Conclusion

In our study prevalence of an EPDS score ≥13 (which is suggestive of PPD) was found in a significant proportion of women. Birth by Caesarean section, menstruation history, bad connection, and lack of partner support were identified to be risk factors contributing to PPD in our study conducted in a tertiary care hospital at one week and four weeks. Screening for PPD is indicated in all 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.

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