

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20230523>

Original Research Article

Postpartum depression: a prospective observational cross-sectional study

Asha Dalal¹, Ashwin Shetty^{1*}, Rakshitha Shetty¹,
Aashish Contractor², Mehezabin Dordi²

¹Department of Obstetrics and Gynaecology, HN Reliance Foundation Hospital, Mumbai, Maharashtra, India

²Department of Rehabilitation Services, HN Reliance Foundation Hospital, Mumbai, Maharashtra, India

Received: 25 October 2022

Revised: 15 February 2023

Accepted: 16 February 2023

***Correspondence:**

Dr. Ashwin Shetty,

E-mail: ashetty1505@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: To determine the prevalence of postpartum depression in the puerperium and offer referrals to counsellor/mental health practitioner for at risk patients

Methods: Sample size was 214 patients and duration of study was 1 year, it included all deliveries at HN reliance foundation hospital. It excluded women with pre-existing mental health problems or neurological disease on medications and those who declined participation. On day 7 and day 42 post-delivery the women were phoned and asked questions from the Edinburg postnatal depression scale which is a validated questionnaire. Interpretation used was; EPDS ≥ 13 or saying yes to question no 10, with depression and EPDS < 13 without depression. Those identified with depression were appropriately referred.

Results: Patient identified to be depressed were more likely to have perceived complications during delivery ($p=0.02$), problems with lactation ($p=0.035$), hospital stay of more than four days ($p=0.002$). There was no statistical association with help available and place where the mother stayed post-discharge.

Conclusions: Out of 213 study participants, 32 study participants (15.02 percent) had post-partum depression. This was prevalent among those that felt their delivery was complicated, those with lactation difficulties and those with hospital stay of more than 4 days. The prevalence of post-partum depression at our hospital was significantly high to institute routine use of EPDS for new mothers.

Keywords: Post-natal depression, Edinburg postnatal depression scale, Delivery complications

INTRODUCTION

Postpartum depression (PPD) is a major depressive disorder. For depressive “episodes that are associated with the puerperium,” the World health organization's international classification of diseases-10th Revision requires onset of the episode within six weeks of delivery.¹ Studies in clinical settings estimate that the prevalence of depression among postpartum women is approximately 10

to 16 percent.² A retrospective study of women with postpartum onset of major depression ($n=116$) found that onset occurred as follows Postpartum month 1 was 54 percent, postpartum month 2 was 4-40 percent, postpartum month 5 was 12-6 percent.⁴ Among the many possible risk factors for postnatal depressive syndromes that have been identified, the factor that has the largest effect and is most consistently associated with postpartum depression is a past history of either perinatal or non-perinatal depression

Risk factors for postnatal major depression

Young age (e.g., age <25 years), multiparity, family domestic violence, unintended/unwanted pregnancy, poor perinatal physical health, personality traits, such as neuroticism (which is marked by an enduring tendency to worry and to feel anxious, angry, sad, and guilty), history of premenstrual syndrome or premenstrual dysphoric disorder, perinatal anxiety symptoms and disorders, adverse pregnancy and neonatal outcomes (e.g., including stillbirth, preterm birth, very low birth weight, and neonatal death), postpartum blues (subsyndromal depressive symptoms), breastfeeding difficulty/shorter duration/cessation, childcare stress such as inconsolable infant crying, difficult infant temperament, or untreated postpartum depression may resolve spontaneously or with treatment, or develop into a persistent (chronic) depressive disorder.^{5,6}

Reviews estimate that among women with postnatal depression, recurrence of postpartum and/or non postpartum depression occurs in approximately 40 to 50 percent.⁷ The most widely used instrument to screen postpartum women for major depression is the self-report, 10-item Edinburgh Postnatal Depression Scale (Appendix), which can be completed in less than five minutes. The scale is acceptable to most women and clinicians easy to score. The specificity of the scale is enhanced because the instrument does not include items that ask about somatic depressive symptoms such as changes in sleep and appetite, which are common in postpartum women who are not depressed.⁸ Responses to items are scored 0, 1, 2, or 3, with a maximum score of 30. We have used a cutoff score of ≥ 13 , which appears to maximize sensitivity plus specificity, and provides generally good to excellent test performance. We suggest that postpartum patients be screened at least once, which is consistent with the recommendation of the American college of obstetricians and gynecologists that clinicians screen perinatal patients at least once.⁸ A reasonable time to screen is four to eight weeks after delivery. Postpartum unipolar depression is often not recognized by patients and clinicians because the somatic symptoms of depression overlap with some of the usual discomforts of the acute puerperium, such as fatigue, difficulty sleeping, poor appetite, and low libido.⁸ These somatic symptoms should be evaluated in the context of normal expectations for the postpartum period.

METHODS

Sample size was 214, duration of study was 1 year. It included all women delivering at HN reliance foundation hospital from 17 June 2021 to 21 April 2022. Exclusion criteria were women with pre-existing mental health problems or neurological disease on medications and those who declined to participate in the study. Primary outcome was to study the prevalence of postpartum depression in the puerperium period. The proposed study was granted ethical approval by the Scientific advisory committee at

HN Reliance foundation hospital. The patients were given Information sheets about the nature of the study in English, Hindi, Marathi and Gujrati. If they accepted participation, then an informed consent form in their preferred language was signed by them. The study was designed as a prospective observational cross-sectional study.

Procedure

On day 7 post-delivery the co – investigator telephoned the women and asked her questions from a validated questionnaire the Edinburg postnatal depression scale (EPDS). When found to meet the criteria of postpartum depression they were offered referral to the rehabilitation department at HN reliance foundation hospital or to a mental health practitioner of their choice. All the patients were called again on day 42 after delivery and screened. For the ones who met the depression criteria on day 7, they were asked the same questionnaire again to find out if they have benefited from the referral. Interpretation; EPDS ≥ 13 or saying yes to question no 10, with depression and EPDS <13, without depression. All the data collected was entered in the excel sheet. Access to the excel sheet and any paper documentation was restricted to the principle investigator/co- investigator alone.

Statistical tests

Prevalence rate of post-partum depression was calculated based on the EPDS. Bivariate analysis in the form of unadjusted association between depression and the selected covariates was calculated using either Chi-square test or Fisher's exact test and the results were presented in the form of numbers and percentages. Fisher's exact test was employed instead of the χ^2 test when >20% of cells had expected frequencies <5. For all analyses, a two-tailed p value of <0.05 was considered statistically significant. All statistical analyses were performed using STATA 17 (StataCorp. 2021. Stata Statistical Software: Release 17. College Station, TX: StataCorp LLC).

RESULTS

The distribution of depression among the mothers and its association with selected covariates is depicted in (Table 1). Out of 213 study participants, 32 study participants (15.02 percent) had post-partum depression. Regarding the mother's socioeconomic status, almost 11 percent of the mothers in the lower category, while almost 16 percent of the women in the higher category had depression. Mothers staying in a joint family (17.12 percent) had a higher prevalence of depression than mothers in a nuclear family (10.45 percent). The mother's parity also showed differences in the prevalence of depression among mothers. Nulliparous women had the highest prevalence of depression, i.e., almost 17 percent which was approximately 11 percent in mothers with parity one. Around 11 percent of the women who previously suffered a miscarriage were depressed. Only two study participants had a previous perinatal loss. However, there was no

depression among them. There was a difference in the prevalence of depression based on the mode of delivery. Women undergoing LSCS had the highest prevalence

(18.68 percent), followed by Normal (15.00 percent), and the lowest prevalence of depression was seen in the Instrumental method (10.98 percent).

Table 1: Association of depression among mothers with selected covariates.

Co-variates	Depression			P value
	%	N	Total	
Socioeconomic status ^a				
Low	11.11	3	27	0.774
High	15.59	29	186	
Type of family				
Nuclear	10.45	7	67	0.301
Joint	17.12	25	146	
Parity ^a				
0	17.48	25	143	0.417
1	10.94	7	64	
2	0.00	0	6	
Previous miscarriage				
No	16.17	27	167	0.373
Yes	10.87	5	46	
Previous perinatal loss ^a				
No	15.17	32	211	0.55
Yes	0.00	0	2	
Mode of delivery				
Normal	15.00	6	40	0.367
Instrumental	10.98	9	82	
LSCS	18.68	17	91	
Sex of the baby ^a				
Female	17.00	17	100	0.094
Male	12.50	14	112	
Twin	100.00	1	1	
Patient perceived complications at delivery				
No	13.09	25	191	0.02
Yes	31.82	7	22	
Patient perceived complications at post-partum ^a				
No	14.00	28	200	0.112
Yes	30.77	4	13	
Problem at lactation				
No	11.56	17	147	0.035
Yes	22.73	15	66	
Length of stay in hospital				
1 to 4 days	12.76	25	196	0.002
More than 4 days	41.18	7	17	
Discharge from hospital to				
Husband's place	13.68	13	95	0.624
Mother's place	16.10	19	118	
Help available at home ^a				
No	27.27	3	11	0.243
Yes	14.36	29	202	
Total	15.02	32	213	

^aResults from Fisher's exact test

Mothers who delivered a girl child (17 percent) had a higher prevalence of depression than mothers who delivered a male child (12.50 percent). However, there was no statistical association of the selected covariates with depression. Patient perceived complicated delivery was

associated with depression among the study participants ($p=0.02$). More than 30 percent of the mothers who felt their delivery was complicated had depression. Mothers who felt that they had complications post-partum had a higher prevalence of depression (30.77 percent) compared

to mothers who perceived no complications (14.00 percent). The problem with lactation was associated with depression among the mothers ($p=0.035$). Mothers who faced a problem at lactation had almost double the prevalence of depression (22.73 percent vs. 11.56 percent). Almost 40 percent of the mothers who had a hospital stay of more than four days suffered from depression. Length of stay in the hospital was statistically associated with depression ($p=0.002$). There was no statistical association between depression and help available and home and place where the mother stays post-discharge.

DISCUSSION

Postpartum unipolar depression is often not recognized by patients and clinicians because the somatic symptoms of depression overlap with some of the usual discomforts of the acute puerperium, such as fatigue, difficulty sleeping, poor appetite, and low libido.⁵ These somatic symptoms should be evaluated in the context of normal expectations for the postpartum period. Adverse consequences included breastfeeding problems; postpartum depression appears to be associated with an increased risk of not breastfeeding. Maternal postpartum depression can interfere with maternal-infant bonding. Postpartum depression may strain the marital relationship.

Although suicide is a leading cause of death in postnatal women the absolute rate of suicide during the postpartum period is very low, and ranges from approximately 1 to 5 per 100,000 live births. A study of postpartum women who committed suicide ($n = 80$) in the United Kingdom between 1997 and 2012 found that most of the women appeared to be married and living with a partner, most were receiving mental health treatment but did not manifest suicidal ideas or endorse recent self-harm at the time of the last clinical contact, and the most had a primary diagnosis was depression (51 percent).⁹ Our study shows prevalence of depression to be 15.2% in the population studies, patient identified to be depressed were more likely to have perceived complications during delivery ($p=0.02$), problems with lactation ($p=0.035$), hospital stay of more than four days ($p=0.002$). There was no statistical association with help available and place where the mother stayed post-discharge. This correlates with findings of Mathisen et al who found a prevalence of 18.6% and increased prevalence in patients with pregnancy and labor complications, breastfeeding difficulties.¹⁰ Youn et al in a nationwide study in South Korea similarly found an increased incidence of postpartum depression in women with complications during pregnancy and labour. They also found increased incidence with maternal age of less than 20 and more than 35 which was not identified in our study.¹¹

Limitations

Larger studies in postnatal women may show an association with postnatal depression with other

parameters that were studied such as socio-economic status, type of delivery and previous pregnancy losses.

CONCLUSION

Out of 213 study participants, 32 study participants (15.02 percent) had post-partum depression. Patients who felt that their delivery was complicated were associated with depression among the study participants. The problem with lactation was associated with depression among the mothers. Almost 40 percent of the mothers who had a hospital stay of more than four days suffered from depression. The prevalence of postnatal depression in an urban population at prominent hospital is significantly high enough to institute routine enquiry of mental health by using the Edinburgh post-natal depression questionnaire as routine practice for new mothers. The importance of establishing satisfactory feeding should be supported with dedicated maternity and breast feeding support nurses and lactation consultants. Proper debriefing for mothers who have longer than average stay due to pregnancy complications or those who perceive that they have had a complicated delivery should take place to reduce the risk of depression due to these events. Support and referral mechanism for mothers with depression need to be streamlined and effective.

ACKNOWLEDGMENTS

Authors would like to thank Dr. Tarang Gianchandani, Dr. Charulata Pamnani and Mr. Shreyans Rai for their help in completing this study.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. International classification of diseases (ICD). Available at: <http://www.who.int/classifications/icd/en/>. Accessed on 10 February 2016.
2. Gaillard A, Le Strat Y, Mandelbrot L, Hawa K, Caroline D. Predictors of postpartum depression: prospective study of 264 women followed during pregnancy and postpartum. *Psychiatry Res.* 2014;215: 341.
3. Iwata H, Mori E, Sakajo A, Kyoko A, Kunie M, Koji T. Prevalence of postpartum depressive symptoms during the first 6 months postpartum: Association with maternal age and parity. *J Affect Disord.* 2016; 203:227.
4. Altemus M, Neeb CC, Davis A, Mallay O, Theresa N, Kathryn LB. Phenotypic differences between pregnancy-onset and postpartum-onset major depressive disorder. *J Clin Psychiatr.* 2012;73:e1485.
5. Paschetta E, Berrisford G, Coccia F, Jennifer W, Amanda GW, Sam P, et al. Perinatal psychiatric

- disorders: an overview. *Am J Obstet Gynecol.* 2014; 210:501.
6. Chojenta CL, Lucke JC, Forder PM, Loxton DJ. Maternal health factors as risks for postnatal depression: a prospective longitudinal study. *PLoS One.* 2016;11:e0147246.
 7. Howard LM, Molyneaux E, Dennis CL, Tamsen R, Alan S, Jeannette M. Non-psychotic mental disorders in the perinatal period. *Lancet.* 2014;384: 1775.
 8. Committee on Obstetric Practice. Screening for perinatal depression. *Obstet Gynecol.* 2015;125:1268.
 9. Khalifeh H, Hunt IM, Appleby L, Howard LM. Suicide in perinatal and non-perinatal women in contact with psychiatric services: 15 year findings from a UK national inquiry. *Lancet Psychiatr.* 2016;3:233.
 10. Mathisen SE, Kari G, Lars L, Per L. Prevalence and risk factors for postpartum depressive symptoms in Argentina: a cross-sectional study. *Int J Womens Health.* 2013;5:787-93.
 11. Youn H, Lee S, Han SW, Kim LY, Lee TS, Oh MJ, et al. Obstetric risk factors for depression during the postpartum period in South Korea: a nationwide study. *J Psychosomat Res.* 2017;102:15-20.

Cite this article as: Dalal A, Shetty A, Shetty R, Contractor A, Dordi M. Postpartum depression: a prospective observational cross-sectional study. *Int J Reprod Contracept Obstet Gynecol* 2023;12:609-13.