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Exploring the Relationship between Socio-Demographic Factors and Postpartum Depression: A Prospective Observational Study in a Tertiary Care Hospital

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Abstract

Background: There is a great variability in the rate of postpartum depression (PPD) which has been reflected in many well designed studies. This variability may reflect geographical location. It is important also to understand the risk factors to develop preventive intervention strategies. This study aims to examine the incidence of PPD and associated risk factors among postpartum women admitted at a tertiary care hospital in north Karnataka.

Methods: This is a prospective observational study conducted at a tertiary care hospital. Total of 150 patients were included in the study. The study included all mothers in their postpartum period extending from day 1 till 6 weeks of post-partum period. Mothers with post-partum medical complications and who did not give consent were excluded from the study. A structured Mini International Neuropsychiatric Interview (MINI) 7.0.2 is used to collect the data from cases included in the study for the diagnosis of PPD. Results were compiled in MS excel software and analyzed by SPSS 22.

Results: A total of 150 post-partum women were included and analyzed for postpartum depression. The PPD was found in 16 (10.6%) postpartum women. The presence of urban residence (p .020), multiparous women (p .012), birth of a female newborn (p .03) and having a previous female infant (p .005) were found to

be significantly associated with development of postpartum depression.

Conclusion: The presence of postpartum depression is common. The disorder should be screened regularly so that early treatment can be provided for those required. Thereby preventing the morbidity in mother and also the harmful effect in their infants.

Keywords: MINI, Postpartum Depression, Postpartum, Gender, Rural

Introduction

Pregnancy and the postpartum period are susceptible to illness due to the significant psychological and biological changes that accompany the transition to motherhood. The postpartum period i.e., up to six weeks after delivery is identified as a risk factor for the occurrence or recurrence of psychiatric disorders. Common postpartum psychiatric morbidity includes postpartum blues, depression, anxiety, and psychosis. [1]

A mild to severe nonpsychotic depressive episode that happens during pregnancy or after delivery is commonly referred to as perinatal depression.[2,3,4] Pregnancy is a major life event that is inevitably accompanied by social, psychological and hormonal changes.[5] These changes can trigger depressive episodes with serious implications for both maternal and infant outcomes.[6,7,8] The prevalence of antepartum depression ranges from 7 to 15% in high-income countries.[3,9] and 19 to 25% in low- and middle-income countries (LAMICs).[10] It is noteworthy that postpartum depression is estimated to affect 10%[11] of women in high-income nations and 20% of women in LAMICs[4]

Postpartum depression can start soon after childbirth or as a continuation of antenatal depression and needs to be treated.[2] Women who experience antepartum depression often continue to experience depressive symptoms into the postpartum period, with more than 54% of those with postpartum depression reporting depressive episodes before or during pregnancy.[12,13] The postpartum depression is a considerable health issue for many women which often remains undiagnosed and hence untreated.[14,15] the missing of these PPD case could be because of greater priority has been assigned to preventing deaths related to obstetric complications.[4] The antepartum depression is of concern due to its association with postpartum depression which further results in poor infant physical and neurocognitive developmental outcomes.[16,17]

A depressed mother may not develop a positive and satisfying relationship with her infant to offset the stresses of newborn care and postpartum recovery and this may continue to affect children into toddlerhood, the preschool years and beyond. Mothers who are at risk of developing PPD should be detected as soon as possible, ideally during pregnancy, or at the latest, right after birth, due to the possibility of these severe outcomes. [18] Hence the aim of this study was to identify the incidence and risk factors for PPD in a tertiary care teaching hospital in north Karnataka.

Methodology

This is a hospital based cross sectional study. The study is conducted in a tertiary care 1000 bedded medical college hospital in Kalaburagi, Karnataka, over a period of 18months from June 2022 to December 2023. The inclusion criteria of the study is all women in postpartum period having age above 18 years. Post-partum period has been defined as the period from delivery of the infant until 6 weeks after delivery. Those with past history of psychiatric disorder and critically ill postpartum patients were excluded from the study.

All the relevant data for the study has been collected on a predesigned proforma. The demographic profile such as age, parity, medical complications, gestational age at delivery, mode of delivery, antenatal registration, previous history of abortions and gender of the infant born were collected. The social factors such as residence, occupation, education, religion, socioeconomic status and type of family were collected. For the diagnosis of postpartum depression the Mini International Neuropsychiatric Interview (MINI) 7.0.2 is used. [19] The socioeconomic classification is done by using modified Kuppuswamy classification for socioeconomic status. [20]

The sample size is calculated using Cochrane formula, considering the prevalence of PPD to be 44% [21] with power of the study to be 80% having a confidence interval (CI) of 95% and relative error of 20%. The sample size calculated for the study is 150 cases. The data is collected in MS excel sheet. The continuous variables were presented as mean ±SD and categorical variable were presented as frequencies and percentages. The chi square test is used for comparison of variables. The SPSS 22 is used for analyzing the data.

Results

This is a prospective observational study which included 150 postpartum women from day one till six weeks of postpartum period, to determine the incidence and association of sociodemographic factors with postpartum depression. The MINI 7.0.2 is used to diagnose the postpartum depression among the postpartum women.

Demographic and social profile of study population: The most common age group in our study was ≤30years (87.3%) with mean age of the cases was 25.3±4.3years. The majority of the cases included were from rural background (63.4%) and remaining were from urban background (38.6%). Most of the cases were working as unskilled (51.3%) employees followed by semiskilled employees (36.6%). The education status in the cases was having more of high school education (45.3%) followed by graduates (24.7%). The cases included were mostly belonged to Hindu religion (92.7%). The cases belonged more to lower middle class (49.3%) socioeconomic status which is followed by upper lower class of socioeconomic status according to the modified Kuppuswamy classification.

Clinical profile: The majority of the cases were multiparous women (62.4%) and almost all (98.7%) of them were booked antenatally at nearest health center. Among the infants born majority were term babies (92%) and most of them were born by LSCS (71.3%). The male baby (53.3%) was born in most of the postpartum women in study population. Majority (80.6%) of the cases did not have previous history of abortions. Previous male baby was present in 40.6% and female baby was present in 32.7%.

In the present study the incidence of psychiatric comorbidity was found in 25 (16.7%) of the postpartum women. The most common comorbidity was postpartum depression. Out of 150 postpartum women 16 (10.6%) women had postpartum depression. The other disorders in our study were anxiety 4(2.7%), psychosis 4 (2.6%), OCD 1 (0.67%).

The sociodemographic factors which are significantly associated with postpartum depressive disorders in our study were presence of rural residence (p 0.02), multiparous women (p 0.012), birth of a female child (p 0.005) and having a previous female child (p 0.003)

Discussion

The overall incidence of psychiatric disorder in our study was 16.6% (n=25). The most common disorder

was postpartum depression which included 10.6% (n=16) cases of the total sample size.

Since few women in low- and middle-income nations go to the health care facility for postpartum checkups, mental illnesses frequently go undiagnosed and untreated, particularly for women who give birth at home. [21]

In the study conducted by Rachel B et al [22] in their community based prospective study in north India found that 10% of their study cases had postpartum depression. The incidence of postpartum depression in our study also was 10.6%. The study conducted by Hamadamand tamim et al [23] in UAE which was a prospective study conducted from second trimester followed till 4 months postpartum period, Using the Mini International Neuropsychiatric Inventory (diagnostic), 10% of the 137 participants in the study were diagnosed with postpartum depression. Similarly, the study by Chandran et al[24] conducted in rural community setting of Tamil Nadu state had 11% (n=39) incidence of postpartum depression. A population based cross sectional study conducted in Ethiopia by Azale et al [25] found that 12.2% (n=383) of their cases had postpartum depression which is similar to our study.

In the study conducted by Reck C et al[26] in rural Germany community setting. The data were gathered in a longitudinal study over the first 3 months postpartum. In this two-stage screening procedure, a population-based representative sample of 1024 postpartum women was assessed for symptoms of anxiety and depression using DSM-IV based screening instruments. They found that postpartum depression was present in 4.6 % of the population. The prevalence of depression was lower in their study when compared to our study. The difference in the rate of depression could be due to the longer duration of the study conducted by Reck et al. which was 3 months, during which some of the cases having features of postpartum blue resolved and lessened the overall number of depression cases in their study. The duration of study was only six weeks and was a cross sectional study, which we assume that the incidence could have been overestimated the rate of depression in our study.

In the meta-analysis conducted by Gelaye B et al [27], found that the pooled prevalence estimate of postpartum depression was 19.0 % (15.5%-23.0%) across 53 studies. In the Gelaya et al study the prevalence was higher as they included teenage mothers in the study. In the present study the teenage mothers were not included which could be a possible reason for the difference in the prevalence of postpartum depression.

Adolescents' developing brains' experience major changes. These developmental changes in adolescents and especially adolescent mothers put them at increased risk for developing depression.[28] Adolescent mothers must rapidly adjust to their new role as mothers in addition to their prior responsibilities as daughters, students, and so on after the birth of a child. Even the most competent, well-supported woman may find the physical, emotional, and mental demands of parenthood to be too much to handle. PPD in adolescent mothers has been linked to a number of risk factors, including their youth, developing cognitive abilities, and inadequate coping mechanisms.[29]

In a study conducted by Fan Q et al[30] in Sri Lanka, the prevalence of PPD in two different study centers were 15.5% when screened postpartum at day 10 and 7.86% on screening at four weeks, respectively was found. The study used Edinburgh Postnatal Depression Scale (EPDS) for screening the depression. The incidence was

different in their study at two different locations due to the timing of screening. The incidence in our study was 10.6% which is lesser than Fan Q et al which may be due to the use of different interview scale. The other reason could be that the Fan Q et al interviewed the patients at two different time period i.e. on 10th day and 4 weeks for screening depression. In our study we conducted interview only at one point during our study period. The subsequent follow up of the included cases has not been done which could have given a comparatively different incidence in our study.

In the study conducted by Dubey C et al[31] in Delhi found that, the prevalence of postpartum depression was 6% of the study women, who scored ≥ 10 on the EPDS. In the present study the depression was around 10.6% which was slightly higher than Dubey et al. The EPDS is a specific scale for screening depression with a sensitivity and specificity of 84% and 85% respectively which is expected for specific scale. [32] The MINI has a sensitivity of 70% or greater and had a specificity of 70% or greater for all diagnoses.[19] The EPDS scale being more specific to depression has more accurately screened with questions focused more specifically to the depression compared to MINI scale. The MINI scale is a general scale for diagnosing psychiatric disorders.

The sociodemographic factors which are significantly associated with postpartum depression disorder in our study were presence of rural residence, multiparous women, having a previous female child and delivery of female newborn. In the study conducted by Azale et al [25] identified that the factors which are significantly associated with depression were the presence of rural residence and multiparity which were similar to our study. The Meta analysis conducted by Upadhyaya et al[33] found that high parity and previous female baby were significantly associated with depression in postpartum women. In our study also presence of multiparity and rural residence were found to be significantly associated with postpartum psychiatric comorbidity.

Rural living is associated with lower socioeconomic status, lower empowerment of women and poorer access to healthcare. The association between depression and disadvantage in women, including gender inequality, intimate partner violence and low maternal education, which have been reported by many studies in LMICs.[34,35] Gender preference has been reported as independent predictor of PPD in Asian countries.[22,36,37,38] In most of the studies conducted in LMICs, male gender was preferred to female especially among people with low income and education.[36,39] The same has been reflected in our study were birth of a female newborn and having a previous female child was significantly associated with development of postpartum depression.

Women who had given birth to five or more children had two-fold increased odds of experiencing PPD compared to first time mothers. This is in keeping with previous studies from LMICs.[40,41] Most LMICs have a high unmet family planning need, and women with high fertility are more likely to be poor, illiterate, and in worse health—all of which are linked to PPD.[42]

The variation in the incidence of PPD had multiple determining factors. The demographic, social and cultural factors at various geographical locations have significant effect on the development of PPD. The diagnosis of postpartum depression should consider all the relevant factors and manage accordingly.

Strengths

Our study has been conducted at a geographical location which is caring for the health of the women who

belonged to all social and economic status. The study had a mixed population from both rural and urban locations which gives an additional edge to our study providing diversified of study population.

Limitations

Our study is conducted at a single center with small sample size, the results of which cannot be generalized to a larger population. The factors which determine the development of postpartum depression are various, many of which are not addressed in the present study.

Recommendations

The depressive disorders associated with postpartum period should be diagnosed early to prevent the adverse effects on mother and her infant. We recommend that a protocol should be prepared at each health center caring for pregnant women for screening of depressive disorder in all postpartum women, so that no cases are missed at any time during the postpartum period.

Conclusion

The presence of postpartum depression is common psychiatric disorder. The risk factors associated with postpartum depression are presence of rural residence, multiparity, having a previous female infant and birth of a female newborn in the present pregnancy, all of which were significant statistically. Hence early screening and treatment for postpartum depression is important.

Table 1: Sociodemographic and clinical parameters

Variable	Frequency (%)
Age	
≤30	131 (87.3%)
>30	19(12.6%)
Residence	
Urban	58 (38.6%)
Rural	92(63.4%)
Education	
Illiterate	14 (9.3%)
Primary	29(19.3%)
Higher	68(45.3%)
Graduate	37(24.7%)
Professional	02(1.4%)
Occupation	
Professional	2(1.3%)
Semiprofessional	3(2.0%)
Clerical	6(4.0%)
Skilled	6(4.0%)
Semiskilled	55(36.6%)
Unskilled	77(51.3%)

Unemployed	1(0.6%)
Religion	
Hindu	139 (92.7%)
Muslim	11(7.3%)
Family status	
Nuclear	59(39.4%)
Joint	91(60.7%)
Socioeconomic status	
Upper	02(1.3%)
Upper middle	16(10.7%)
Lower middle	74(49.3%)
Upper lower	57(38.0%)
Lower	01(0.67%)
Previous male offspring	49
Previous female offspring	61
Birth of a female newborn	80

Table 2: Clinical parameters

Variable	Frequency
Obstetric index	
Primipara	56(37.5%)
Multipara	93(62.4%)
Antenatal registration	
Yes	148(98.7%)
No	02(1.3%)
Gestational age	
Term	138(92.0%)
Preterm	12(8.0%)
Mode of delivery	
NVD*	43(28.7%)
LSCS$^{\pi}$	107(71.3%)
Birth order	
First born	70 (46.7%)
Non first born	80(54.3%)
Gender of the newborn	

Male	80(53.3%)
Female	70(46.7%)
Previous abortions	
Yes	29(19.4%)
No	121(80.6%)
Congenital anomalies	
Yes	03(2.0%)
No	147(98.0%)

*NVD- normal vaginal delivery. ᵻLSCS- Lower Segment Ceaserian Section

Table 3: Association of Sociodemographic factors with postpartum depression

Variables	frequency	P value
Residence		
Urban	58 (38.6%)	0.020
Rural	92(63.4%)	
Previous female offspring	61	0.005
Birth of a female newborn	80	0.003
Primigravida	56(37.5%)	0.012
Multigravida	93(62.4%)	

References

1. Hendrick V, Altshuler LL, Suri R. Hormonal changes in the postpartum and implications for postpartum depression. Psychosomatics. 1998; 39: 93-101.
2. Bowen A, Muhajarine N. Antenatal depression. Can Nurse. 2006; 102(9):26–30.
3. Evans J, Heron J, Francomb H, Oke S, Golding J. Cohort study of depressed mood during pregnancy and after childbirth. BMJ. 2001; 323(7307):257–60.
4. Fisher J, Cabral de Mello M, Patel V, et al. Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. Bull World Health Organ. 2012; 90(2):139G–49G.
5. Bennett HA, Einarson A, Taddio A, Koren G, Einarson TR. Prevalence of depression during pregnancy: systematic review. Obstet Gynecol. 2004; 103(4):698–709.
6. Field T, Diego M, Hernandez-Reif M. Prenatal depression effects on the fetus and newborn: a review. Infant Behav Dev. 2006; 29(3):445–55.
7. Dayan J, Creveuil C, Marks MN, et al. Prenatal depression, prenatal anxiety, and spontaneous preterm birth: a prospective cohort study among women with early and regular care. Psychosom Med. 2006; 68(6):938–46.
8. Hollins K. Consequences of antenatal mental health problems for child health and development. Curr Opin Obstet Gynecol. 2007; 19(6):568–72.

9. Grote NK, Bridge JA, Gavin AR, Melville JL, Iyengar S, Katon WJ. A meta-analysis of depression during pregnancy and the risk of preterm birth, low birth weight, and intrauterine growth restriction. Arch Gen Psychiatry. 2010; 67(10): 1012–24.
10. Rahman A, Iqbal Z, Harrington R. Life events, social support and depression in childbirth: perspectives from a rural community in the developing world. Psychol Med. 2003; 33(7):1161–7.
11. Gavin NI, Gaynes BN, Lohr KN, Meltzer-Brody S, Gartlehner G, Swinson T. Perinatal depression: a systematic review of prevalence and incidence. Obstet Gynecol. 2005;106(5 Pt 1):1071–83.
12. Stewart DE, Robertson E, Dennis C-L, Grace SL, Wallington T. Postpartum depression: Literature review of risk factors and interventions. 2003.
13. Burt VK, Quezada V. Mood disorders in women: focus on reproductive psychiatry in the 21st century--Motherisk update 2008. Can J Clin Pharmacol. 2009;16(1):e6–e14.
14. Stewart DE, Robertson E, Dennis CL, Grace SL, Wallington T. Postpartum depression: literature review of risk factors and interventions. Toronto: University Health Network Women's Health Program; 2003.
15. Dennis CL, Stewart DE. Treatment of postpartum depression, part 1: a critical review of biological interventions. J Clin Psychiatry. 2004. September; 65(9):1242–51.
16. Davalos DB, Yadon CA, Tregellas HC. Untreated prenatal maternal depression and the potential risks to offspring: a review. Arch Womens Ment Health. 2012;15(1):1–14.
17. Chung TK, Lau TK, Yip AS, Chiu HF, Lee DT. Antepartum depressive symptomatology is associated with adverse obstetric and neonatal outcomes. Psychosom Med. 2001;63(5):830–4.
18. Righetti-Veltema M, Conne-Perreard E, Bousquet A, Manzano J. Risk factors and predictive signs of postpartum depression. J Affect Disord. 1998;49:167–80. doi: 10.1016/ S0165-0327(97) 00110-9.
19. Sheehan DV, Lecrubier Y, Harnett-Sheehan K, Amorim P, Janavs J, Weiller E, Hergueta T, Baker R, Dunbar G: The Mini International Neuropsychiatric Interview (M.I.N.I.): The Development and Validation of a Structured Diagnostic Psychiatric Interview. J. Clin Psychiatry, 1998; 59(suppl 20): 22-33.
20. Wani RT. Socioeconomic status scales-modified Kuppuswamy and Udai Pareekh's scale updated for 2019. J Family Med Prim Care. 2019 Jun; 8(6):1846-1849.
21. Kumar N, Nagaraj AM, Koudike U, Majgi SM. Psychiatric Morbidity and Correlates in Postpartum Women in a Tertiary Care Hospital; Indian Journal of Psychological Medicine: Jul - Aug 2016;38-4
22. Bashir Rachel, Taing, Shahnaz Wani, Zaid Khan, S M Salim. Prevalence of psychiatric morbidities among women during postpartum period in block hazratbal, district Srinagar. International Journal of Advanced Research.2020;8: 327 - 335
23. Hamdan A, TamimH. Psychosocial risk and protective factors for postpartum depression in United Arab. Arch Women Mental Health2011; 16: 411-422.
24. Chandran M, Tharyan P, Muliyil J, et al. Post-partum depression in a cohort of women from a

rural area of Tamil Nadu, India. Incidence and risk factors.Br J Psychiatry. 2002; 181:499–504.

25. Azale t, Abebaw Fekadu, and Charlotte Hanlon. Postpartum depressive symptoms in the context of high social adversity and reproductive health threats: a population-based study. Int J Ment Health Syst (2018) 12:42
26. C Reck , K Struben, M Backenstrass, U Stefenelli, K Reinig, T Fuchs, C Sohn, C Mundt Prevalence, onset and comorbidity of postpartum anxiety and depressive disorders. Acta Psychiatr Scand. 2008 Dec; 118(6):459-68.
27. Gelaye B, Rondon MB, Araya R, Williams MA. Epidemiology of maternal depression, risk factors, and child outcomes in low-income and middle-income countries. Lancet Psychiatry. 2016 Oct; 3(10):973-982. doi: 10.1016/S2215-0366(16)30284-X. Epub 2016 Sep 17
28. Granja AC, Zacarias E, Bergström S. Violent deaths: the hidden face of maternal mortality. BJOG. 2002; 109(1):5–8.
29. Ladores S, Corcoran J. Investigating Postpartum Depression in the Adolescent Mother Using 3 Potential Qualitative Approaches. Clin Med Insights Pediatr. 2019 Oct 31; 13
30. Fan Q, Long Q, De Silva V, Gunarathna N, Jayathilaka U, Dabrera T, Lynn H, Østbye T. Prevalence and risk factors for postpartum depression in Sri Lanka: A population-based study. Asian J Psychiatr. 2020 Jan; 47:101855.
31. Dubey C, Gupta N, Bhasin S, Muthal RA, Arora R. Prevalence and associated risk factors for postpartum depression in women attending a tertiary hospital, Delhi, India. Int J Soc Psychiatry. 2012 Nov; 58(6):577-80.
32. Levis B, Negeri Z, Sun Y, Benedetti A, Thombs B D. Accuracy of the Edinburgh Postnatal Depression Scale (EPDS) for screening to detect major depression among pregnant and postpartum women: systematic review and meta-analysis of individual participant data BMJ 2020; 37
33. Upadhyay RP, Ranadip Chowdhury, Aslyeh Salehi, Kaushik Sarkar, Sunil Kumar Singh. Bireshwar Sinha, Aditya Pawar, Aarya Krishnan Rajalakshmif & Amardeep Kumarg. Postpartum depression in India: a systematic review and meta-analysis. Bull World Health Organ 2017; 95:706–717B
34. Deyessa N, Berhane Y, Emmelin M, Ellsberg MC, Kullgren G, Hogberg U. Joint effect of maternal depression and intimate partner violence on increased risk of child death in rural Ethiopia. Arch Dis Child. 2010; 95(10):771–5.
35. Deyessa N, Berhane Y, Alem A, Ellsberg M, Emmelin M, Hogberg U, Kullgren G. Intimate partner violence and depression among women in rural Ethiopia: a cross-sectional study. Clin Pract Epidemiol Ment Health. 2009; 5:8.
36. Qadir F, Khan MM, Medhin G, Prince M. Male gender preference, female gender disadvantage as risk factors for psychological morbidity in Pakistani women of childbearing age—a life course perspective. BMC Public Health. 2011; 11:745.
37. Loo KK, Luo X, Su H, Presson A, Li Y. Dreams of tigers and flowers: child gender predictions and preference in an urban mainland Chinese sample during pregnancy. Women Health. 2009; 49(1):50–65.
38. Yasmin S, Mukherjee A, Manna N, Baur B, Datta M, Sau M, Roy M, Dasgupta S. Gender preference and awareness regarding sex determination among

antenatal mothers attending a medical college of eastern India. Scand J Public Health. 2013; 41(4):344–50.

39. Rai P, Paudel IS, Ghimire A, Pokharel PK, Rijal R, Niraula SR. Effect of gender preference on fertility: cross-sectional study among women of Tharu community from rural area of eastern region of Nepal. Reprod Health. 2014; 11(1):15.
40. Fisher J, de Cabral Mello M, Patel V, Rahman A, Tran T, Holton S, Holmes W. Prevalence and determinants of common perinatal mental disorders in women in low- and lower-middle-income countries: a systematic review. Bull World Health Organ. 2012; 90(2):139G–49G.
41. Roomruangwong C, Eppersonb N. Perinatal depression in Asian women: prevalence, associated factors, and cultural aspects. Asian Biomed. 2011; 5(2):179–93.
42. Ayele W, Tesfaye H, Gebreyes R, Gebreselassie T. Trends and determinants of unmet need for family planning and programme options, Ethiopia. In: DHS, editor. Further analysis of the 2000, 2005 and 2011 Demographic and Health Surveys. 81st ed. Calverton: ICF International; 2013. p. 31.