



A STUDY OF PREVALENCE AND PATTERN OF PSYCHIATRIC CO-MORBIDITIES IN PREGNANCY AND POSTPARTUM PERIOD AT TERTIARY CARE UNIT

Psychiatry

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KEYWORDS

INTRODUCTION

The period of pregnancy and the postpartum phase are pivotal stages in a woman's life, marked by profound physical, emotional, and social transformations. While these phases are often associated with joy and anticipation, they can also bring about significant challenges, particularly in the realm of mental health.¹ Psychiatric co-morbidities, including mood disorders, anxiety disorders, and other related conditions, can emerge or worsen during pregnancy and the postpartum period, posing considerable risks to maternal well-being, fetal development, and overall family dynamics.² Understanding the prevalence and patterns of these psychiatric co-morbidities within the context of a tertiary care unit is critical for developing targeted interventions, enhancing clinical care, and improving outcomes for mothers and their infants.

The rationale for conducting a study on the prevalence and pattern of psychiatric co-morbidities during pregnancy and the postpartum period at a tertiary care unit is multifaceted and grounded in several key considerations. Psychiatric disorders during pregnancy and the postpartum phase have far-reaching implications for public health. Research indicates that approximately 10-15% of pregnant women experience mood and anxiety disorders, such as depression and generalized anxiety disorder.³ The prevalence of these disorders may be even higher during the postpartum period, with estimates suggesting that up to 1 in 7 women experience postpartum depression.⁴ These conditions not only affect the mental health and quality of life of mothers but also have consequences for infant health, maternal-infant bonding, and family functioning.

The impact of psychiatric co-morbidities on maternal and infant outcomes is substantial. Women with untreated or poorly managed mental health conditions during pregnancy and postpartum are at higher risk of adverse outcomes such as preterm birth, low birth weight, impaired fetal growth, and difficulties in breastfeeding and bonding with their infants.⁵ Additionally, postpartum depression and anxiety can have long-lasting effects on maternal functioning, parenting abilities, and the overall family environment. Identifying and addressing psychiatric co-morbidities early in pregnancy or postpartum is essential for optimizing clinical outcomes. Timely diagnosis, appropriate intervention, and on-going support can mitigate the impact of mental health challenges, improve maternal mental well-being, enhance the mother-infant relationship, and promote positive developmental outcomes for children.

Research findings from this study can support educational initiatives, capacity-building efforts, and professional development programs for healthcare providers, policymakers, and stakeholders involved in perinatal care. By amplifying the voices and experiences of women with psychiatric co-morbidities, this study advocates for inclusive, compassionate, and responsive healthcare systems that prioritize mental health as an integral component of maternal care.

Aim and Objectives

Aim

To study the prevalence and pattern of psychiatric comorbidities in

pregnancy and postpartum period at Tertiary care unit.

Objectives

- To study the prevalence and pattern of psychiatric comorbidities with onset during pregnancy
- To study the prevalence and pattern of psychiatric comorbidities within 6 months postpartum period.
- To study association of psychiatric comorbidities with socio-demographic factors.
- To study association of psychiatric comorbidities with clinical variables.

MATERIALS AND METHODS

Study Setting: The present study was conducted in the department of Psychiatry and department of Obstetrics & Gynecology at Rajshree medical research institute, Bareilly, Uttar Pradesh.

Study Design: Cross-Sectional Study.

Place Of Study: Department of Obstetrics & Gynecology at Rajshree Medical Research institute, Bareilly.

Study Period: The data collection took place during the interval of 1 year.

Sample Size:

The pregnant women who visited the Obstetrics & gynecology department OPD for Antenatal routine checkup, Patients admitted in Labour room of Obstetrics & gynecology department at Rajshree Medical Research Institute, Bareilly, U.P. Postpartum patient coming for follow up visits, and patient having delivery outside RMRI Bareilly & visiting RMRI for follow up visit with proper history. Giving a valid consent were enrolled in this study.

SAMPLE SIZE CALCULATION

- $n = Z^2 \frac{a}{2} P(100-P)E^2$
- $Z^2 \frac{a}{2}$ - standard Normal variate-1.98 at 5% type 1 error
- P- prevalence - 6%
- E-Absolute error - 5%
- $n = 1.98^2 * 6 (100-6) 5^2$
- $n = 89$ (minimal sample size)

Statistics

- Data was analyzed using Statistical package for social sciences 22.0(SPSS, IBM).
- Values are presented as actual number, percentage, mean and standard deviation (mean $\pm$ 2 SD).
- The p value of <.05 will be considered as statistically significant.

Inclusion Criteria

- 1) Pregnant women who visited the Obstetrics & gynecology department OPD for Antenatal routine checkup.
- 2) Patients admitted in Labour room of Obstetrics & gynecology department.
- 3) Patients within the reproductive age group i.e., 18-45 years.
- 4) Patient within 6 months postpartum period.

Exclusion Criteria

- 1) Patient not in appropriate condition to give interview.
- 2) Patient suffering from Psychiatric disorder prior to pregnancy.
- 3) Patient who are having chronic debilitating medical and surgical illness influencing the results.

Study Tool

- 1) Semi structured proforma for data collection.
- 2) MINI (Mini International Neuropsychiatric Inventory) 6.0.0 scale [2009]
- 3) DASS-21 scale (Depression, Anxiety and Stress scale 21) [1995]

METHODOLOGY

- After obtaining informed written consent, cases were screened for various psychiatric comorbidities such as depression, anxiety disorder, obsession compulsion disorder and mood disorder etc, with the help of detailed medical history and mental status examination. Patients satisfying the inclusion and exclusion criteria's were assessed further with the help of two scores.
- The 2 scores included in the study are: MINI 6.0.0 scale.
- The Mini International Neuropsychiatric Interview (MINI) 6.0 is a short, structured diagnostic interview of choice for psychiatric evaluation. It uses only the screening questions in each module. A negative response to the screening questions usually means it is unlikely the patient has a major psychiatric disorder. A positive response to any questions in the MINI Screen prompts the clinician to ask additional question. The patients were then evaluated according to the ICD 10 criteria's for the psychiatric comorbidities.

RESULTS**Table 1: Distribution Of Age Among The Study Participants (n=200)**

Sl.no	Age	Frequency	Percentage
1	18-25	111	55.5
2	26-30	46	23
3	31-35	43	21.5

Mean age of the study participants were 25.035.61 years. 55.5% were in between 18-25 years , 26-30 age bracket comprised 23% of the sample & 31-35 age group made up 21.5% of the sample.

Table 2: Distribution Of Education Among The Study Participants (n=200)

Sl.no	Education	Frequency	Percentage
1	Graduate	53	26.5
2	Higher secondary	45	22.5
3	Illiterate	43	21.5
4	Primary	59	29.5

Among the respondents, graduates, primary education, higher secondary education & illiterate - constituted 26.5% ,29.5% ,22.5% & 21.5% of the total respectively.

Table 3: Distribution Of Religion Among The Study Participants (n=200)

S. No	Religion	Frequency	Percentage
1	Hindu	127	63.5
2	Muslim	40	20.0
3	Sikh	30	15.0
4	Christian	3	1.5

Among the respondents Hindu, Muslim, Sikh & Christian - constituted 63.5% , 20% , 15% & 1.5% of the total respectively.

Table 4: Distribution Of Occupation Among The Study Participants (n=200)

S. No.	Occupation	Frequency	Percentage
1	Home maker	74	37.0
2	Manual	73	36.5
3	Skilled	53	26.5

Occupationally, the study participants represent a mix of roles, with homemakers accounting for 37%, manual workers at 36.5%, and skilled workers comprising 26.5% of the respondents.

Table 5: Distribution Of Socioeconomic Status Among The Study Participants (n=200)

S. No.	Socioeconomic Status	Frequency	Percentage
1	High	51	25.5
2	Low	80	40.0
3	Middle	69	34.5

Socioeconomic status distribution in this study shows a balanced representation across high (25.5%), low (40%), and middle (34.5%) socioeconomic status categories.

Table 6: Distribution Of Locality Among The Study Participants (n=200)

S. No.	Locality	Frequency	Percentage
1	Rural	83	41.5
2	Urban	117	58.5

Locality distribution represented - rural (41.5%) and urban (58.5%) areas.

Table 7: Distribution Of Type Of Family Among The Study Participants (n=200)

S. No.	Type of family	Frequency	Percentage
1	Nuclear	110	55
2	Joint/extended	90	45

Nuclear families accounting for 55% and joint/extended families representing 45% of the respondents.

Table 8: Distribution Of Education Of Spouse Among The Study Participants (n=200)

S. No.	Education of Spouse	Frequency	Percentage
1	Graduate	81	40.5
2	Higher secondary	37	18.5
3	Illiterate	23	11.5
4	Primary	59	29.5

Among the spouse, graduates, primary education, higher secondary education & illiterate - constituted 40.5% ,29.5% ,18.5% & 11.5% of the total respectively.

Table 9: Distribution Of Occupation Of Spouse Among The Study Participants (n=200)

S. No.	Occupation of Spouse	Frequency	Percentage
1	Managerial	46	23.0
2	Manual	73	36.5
3	Skilled	81	40.5

Occupationally, the study participant's spouse represent a mix of roles, with managerial position accounting for 23%, manual workers at 36.5%, and skilled workers comprising 40.5%.

Table 10: Distribution Of Antenatal Care Among The Study Participants (n=200)

S. No.	Antenatal care	Frequency	Percentage
1	Present	185	92.5
2	Absent	15	7.5

Among the respondents 92.5% individuals reported receiving antenatal care,

Table 11: Distribution Of Planning Of Pregnancy Among The Study Participants (n=200)

S. No.	Planning of pregnancy	Frequency	Percentage
1	Present	185	92.5
2	Absent	15	7.5

Among the respondents 92.5% reported having planned pregnancy.

Table 12: Distribution Of Term Delivery Among The Study Participants (n=200)

S. No.	Term delivery	Frequency	Percentage
1	Term	194	97
2	Preterm	6	3

The data on term delivery among the respondents constituted 97% of the total sample.

Table 13: Distribution Of Mode Of Delivery Among The Study Participants (n=200)

S. No.	Mode of delivery	Frequency	Percentage
1	Normal	101	50.5
2	C-section	77	38.5
3	Normal with episiotomy	22	11

Normal delivery, constituted 50.5% ,caesarean section (C-section) deliveries represented 38.5% & normal delivery with episiotomy made up 11% of the respondents.

Table 14: Distribution Of Number Of Dead Children Before Delivery Among The Study Participants (n=200)

S. No.	Number of dead children before delivery	Frequency	Percentage
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1	1	32	16
2	2	8	4
3	Nil	160	80

Around 16% individuals reported having one dead child before delivery & 4% individuals reported having two dead children before delivery.

Table 15: Distribution Of Abortions Before This Delivery Among The Study Participants (n=200)

S. No.	Abortions before this delivery	Frequency	Percentage
1	1	20	10
2	Nil	180	90

Around 10% had 1 Abortions before this delivery.

Table 16: Distribution Of Congenital Anomalies Among The Study Participants (n=200)

S. No.	Congenital Anomalies	Frequency	Percentage
1	Present	21	10.5
2	Absent	179	89.5

Around 10.5% had congenital anomalies.

Table 17: Distribution Of Psychiatric Morbidities Among The Study Participants (n=200)

S. No.	Psychiatric morbidities	Frequency	Percentage
1	Depressive disorder	48	24
2	Obsession of child harm	28	14
3	Panic disorder without agoraphobia	6	3
4	Social phobia	14	7
5	Depressive disorder-NOS with social phobia	14	7
6	Depressive disorder-NOS with obsession of child harm	2	1
7	Obsession of child harm with social phobia	2	1

Depressive disorder was reported by 24% of the total sample. Obsession of child harm was reported by 14% of the sample. Panic disorder without agarophobia was reported by 3% of the respondents. Social phobia was reported by 7% of the sample. Depressive disorder-NOS (Not Otherwise Specified) with social phobia was reported by 7% of the respondents. Depressive disorder-NOS with obsession of child harm was reported by 1% of the sample. Obsession of child harm with social phobia was reported by 1% of the sample.

DISCUSSION

The demographic and health characteristics of the study participants provide valuable insights into several key aspects. Firstly, the mean age of the participants being 25.03±5.61 years indicates a relatively young population involved in the study. This is further reflected in the age distribution, with the majority falling within the 18-25 age range (55.5%), followed by the 26-30 age bracket (23%), and the 31-35 age group (21.5%). This age distribution highlights the importance of studying this population segment, considering their reproductive health and associated factors. Education plays a significant role in shaping individuals' lives, and the education level distribution among the respondents is noteworthy. The data shows a diverse range of education levels, with graduates comprising 26.5% of the sample, primary education holders at 29.5%, higher secondary education at 22.5%, and illiterate individuals at 21.5%. This diversity in educational backgrounds can influence various aspects of life, including healthcare decision-making, access to resources, and socioeconomic status.

Religious diversity is also evident in the study population, with the majority identifying as Hindu (63.5%), followed by Muslim (20%), Sikhs (15%) and Christian (1.5%). Religious beliefs and practices can influence health-related behaviors and perceptions, making this aspect important to consider in healthcare planning and service delivery. Occupationally, the study participants represent a mix of roles, with homemakers accounting for 37%, manual workers at 36.5%, and skilled workers comprising 26.5% of the respondents. This distribution reflects the occupational diversity within the community and its potential impact on health outcomes, including access to healthcare services and exposure to occupational hazards.

Socioeconomic status is a key determinant of health, and the distribution in this study shows a balanced representation across high

(25.5%), low (40%), and middle (34.5%) socioeconomic status categories. Understanding the socioeconomic context of individuals is crucial for addressing health inequalities and implementing targeted interventions. Locality distribution between rural (41.5%) and urban (58.5%) areas indicates a mix of urban and rural populations in the study, each with its unique health challenges and access to healthcare services. Family structure is also varied, with nuclear families accounting for 55% and joint/extended families representing 45% of the respondents.

The education and occupation levels of spouses mirror to some extent the main participants' demographics, with a notable proportion of spouses being graduates (40.5%) and holding skilled occupations (40.5%). This suggests a level of educational and occupational alignment within households, which can influence family dynamics and decision-making processes. Maternal health indicators such as antenatal care utilization (92.5%), planned pregnancies (92.5%), and term deliveries (97%) reflect positive trends in maternal healthcare seeking behaviors and outcomes. However, the presence of dead children before delivery (20%) and congenital anomalies (10.5%) underscores the importance of continued monitoring and intervention in maternal and child health programs.

Prevalence of Psychiatric Morbidities:

The study revealed several psychiatric morbidities among the participants. Depressive disorder was the most prevalent, reported by 24% of the total sample, followed by obsession of child harm (14%), panic disorder without agoraphobia (3%), social phobia (7%), Depressive Disorder-NOS with social phobia (7%), Depressive Disorder-NOS with obsession of child harm (1%), and Obsession of Child Harm with social phobia (1%). These findings highlight the diverse spectrum of mental health challenges within the studied population.

In the research conducted by Kumar et al, the predominant psychiatric condition within our study group was depression, observed in 41 individuals (27%). Among them, 9 had concurrent social phobia alongside depression, and one exhibited obsession with child harm. The categorization of depression as NOS (Not Otherwise Specified) was employed due to the observation that most patients were in the initial week postpartum, experiencing mood symptoms post-delivery onset. This contrasts with the MINI diagnostic criteria, which stipulate a minimum duration of 2 weeks for diagnosing depressive disorder. Both Indian and Western literature indicate a prevalence of postpartum depression ranging from 10% to 15%. Jacob et al, following a methodology akin to ours, reported a postpartum depression rate of 23% in an Indian study. Another Indian study by Sankapithilu et al compared depression rates post-normal and cesarean deliveries, noting a 16% depression rate post-normal delivery versus 20% post-cesarean, though the disparity lacked statistical significance. Kumar et al's study reported a slightly higher depression rate, possibly due to early assessment within the first week post-delivery, capturing cases of transient blues that resolve spontaneously within two weeks and may not be separately identified by MINI.

Kumar et al's study also identified Obsessions of child harm (10%), panic disorder without agoraphobia (2%), and social phobia (6%) as other prevalent disorders. In a study by Gautam et, Hysteria (conversion and dissociative reactions as per ICD-9) was observed in 7% of all psychiatric morbidity among 100 postpartum subjects in an Indian study, although other anxiety disorders were not mentioned. Eerola et al's study interviewed 162 subjects during the postpartum period using a scan, identifying anxiety disorders as the most common psychiatric comorbidity. Social phobia was noted in 10%, simple phobia in 12%, panic disorder with or without agoraphobia in 4%, and OCD in 7%, with most cases manifesting antepartum. Our study similarly identified these disorders.

CONCLUSION

In conclusion, the study sheds light on the complex landscape of psychiatric morbidities and their associations with depression, anxiety, and stress levels. It emphasizes the importance of tailored interventions, community support, and holistic mental health care strategies to promote mental well-being and resilience among diverse populations.

REFERENCES

1. Sharma P, Singh N, Tempe A, Malhotra M. Psychiatric Disorders during Pregnancy and Postpartum. J Pregnancy and Child Health 2017; 4: 317.

2. Debra Fulghum Bruce. Postpartum Depression: WebMD.
3. Burke KC, Burke JD, Regier DA, Rae DS. Age at onset of selected mental disorders in five community populations. *Arch Gen Psychiatry* 1990; 47: 511-518
4. Brandes M, Soares CN, Cohen LS. Postpartum onset obsessive compulsive disorder: Diagnosis and management. *Arch Women's Mental Health* 2004; 7:99-110.
5. Russell EJ, Fawcett JM, Mazmanian D. Risk of obsessive-compulsive disorder in pregnant and postpartum women: A meta-analysis. *J Clinical psychiatry* 2013; 74: 377.
6. Kumar R: Postnatal mental illness. A trans-cultural perspective. *Soc Psychiatry Psychiatric Epidemiology* 1994; 29: 250-264.
7. Okano T, Nomura J, Kumar R, Kaneko E, Tamaki R. An epidemiological and clinical investigation of postpartum psychiatric illness in Japanese mothers. *J affect Disord* 1998; 48: 233-240.
8. Ean C, Kendell RE. The symptomatology of puerperal illnesses. *Br J psychiatry* 1981; 139: 128-133.
9. Klompenhouwer JL. A study of 250 mother and baby admissions in the Netherlands. *Acta Psychiatrica Scand* 1991; 84: 255-261.
10. Kumar R, Marks M, Platz C, Yoshida K. Clinical survey of a psychiatric mother and baby unit: Characteristics of 100 consecutive admissions. *J affect Disord* 1995; 33: 11-22.
11. Classification of Disorders Associated with Pregnancy or Puerperium according to ICD-11. Available online: <https://icd.who.int> (accessed on 1 May 2023).
12. Rai S, Pathak A, and Sharma I. Postpartum psychiatric disorders: Early diagnosis and management. *Indian J Psychiatry*; v.57(Suppl 2) 2015; PMC4539865
13. Warburton W, Hertzman C, Oberlander TF. A register study of the impact of stopping third trimester selective serotonin reuptake inhibitor exposure on neonatal health. *Acta Psychiatr Scand*. 2010; 121(6):471-479.
14. Huybrechts KF, Bateman BT, Palmsten K. Antidepressant use late in pregnancy and risk of persistent pulmonary hypertension of the newborn. *JAMA*. 2015; 313(21): 2142-2151.
15. Chambers CD, Hernandez-Diaz S, Van Marter LJ. Selective serotonin-reuptake inhibitors and risk of persistent pulmonary hypertension of the newborn. *New Engl J Med*. 2006; 354(6):579-587.
16. Kumar N, Nagaraj AK, Koudike U, Majgi SM. Psychiatric Morbidity and Correlates in Postpartum Women in a Tertiary Care Hospital. *Indian J Psychol Med*. 2016 Jul-Aug; 38(4):309-14.
17. Jacob J, Seethalakshmi G, Charles SX, Abraham V. Psychiatric disturbances during the postpartum period – A prospective study. *Indian J Psychiatry*. 1977; 19:40-3.
18. Sankapithilu GJ, Nagaraj AK, Bhat SU, Raveesh BN, Nagaraja V. A comparative study of frequency of postnatal depression among subjects with normal and caesarean deliveries. *Online J Health Allied Sci*. 2010; 9:4
19. Gautam S, Nijhawan M, Gehlot PS. Post partum psychiatric syndromes-an analysis of 100 consecutive cases. *Indian J Psychiatry*. 1982; 24:383-6
20. Eerola K. Mental disorders among primiparas: A prospective study of the epidemiology and risk factors of the disorders and of social support. Book review. *Nord J Psychiatry*. 2000; 54:294-5.