Original Research Article

A COMMUNITY-BASED CROSS-SECTIONAL STUDY ON POSTPARTUM DEPRESSION AND ITS ASSOCIATED FACTORS IN A RURAL AREA OF MAHARASHTRA

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ABSTRACT

Background: Postpartum depression is exhibiting a typical iceberg phenomenon, tip being the visible clinical symptoms and few case detections, beneath are hidden multiple factors causing postpartum depression. The need of the hour is to assess these factors and curb them to reduce the prevalence of postpartum depression. This study estimates the prevalence of postpartum depression and its associated factors in a rural area of Maharashtra. **Aim:** Aim is to study postpartum depression and its associated factors in a rural area of Maharashtra. **Objectives:** To estimate the prevalence of postpartum depression in a rural area and to identify the factors associated with postpartum depression. **Settings and Design:** A community based cross-sectional study conducted in a rural area of Maharashtra from June 2023 to November 2023, calculated sample size was 110.

Materials and Methods: Women within the postpartum period of 2 weeks to 6 months and women aged 18 years or older were included in the study after obtaining consent. Interviews were conducted at home in a confidential and non- judgemental manner with Edinburgh postpartum depression scale. Women with a history of psychiatric disorders prior to pregnancy, women with pre-existing chronic medical conditions that may impact mental health or women who had still-birth or neonatal death were not included in the study. Statistical analysis was done using 'Open Epi Info' software.

Results: The prevalence of postpartum depression in our study was 13% and influencing factors for postpartum depression were elderly mothers (43%, p=0.047), higher education in mothers (50%, 0.016), higher socioeconomic class (50%, p=0.008), working mothers (37.5%, p=0.029), higher birth order (50%, p=0.000*), mode of delivery being C-section (79%, p=0.002), presence of complications such as gestational diabetes mellitus or pregnancy induced hypertension during antenatal period (p=0.015), previous female child (75%, p=0.006), female child as outcome of present pregnancy (75%, 0.024), history of previous abortion (40%, p=0.000*), presence of marital conflict (37.5%, p=0.001), domestic violence (75%, p=0.000*), poor relationship with in-laws (75%, p=0.002) and absence of family involvement in child rearing (59%, p=0.000*). **Conclusion:** The findings of our study underscore the importance of screening all postpartum women for depression, with a special emphasis on safeguarding women with less social means because they are more vulnerable. Future studies can determine the potential contribution of frontline healthcare providers, such as the accredited social health activists in India who already offer postpartum care in the home, to the screening, identification, and referral of postpartum depression. For a prolonged period, postpartum, regular, mandated screening for postpartum depression in resource-constrained settings

is crucial for the early identification and treatment of the undertreated burden of postpartum depression.

Keywords: Postpartum depression, Edinburgh postpartum depression scale, domestic violence, caesarean section, screening, mental health.

INTRODUCTION

Postpartum depression (PPD) is a common psychiatric disorder starting from 2 weeks after childbirth to 1 year,[1]and may have a detrimental effect on the social and cognitive health of spouses, infants, and children. Global prevalence of postpartum depression was found to be 17.22%.[2] A systematic review and meta-analysis on postpartum depression in India showed a prevalence of 22%.[3]

PPD presents as sleep disturbances, mood swings, change in appetite, fear of harming, extreme concern or worry about the baby, sadness or excessive crying, feeling of doubt, guilt and helplessness, difficulty concentrating, loss of interest in usual activities, and recurrent thoughts of death including suicidal ideation.[4]

It has negative effects on the growth and development of infants,[5] but often remains unreported and hence untreated.[6]Untreated PPD can cause chronic maternal depression and contribute to child's emotional, behavioural, cognitive, and interpersonal problems in later life.[7]Poverty, poor relationship with mother-in-law, birth of a female baby, unplanned pregnancy, antenatal psychiatric morbidity, infant's hospital admission, husband's unemployment, and lack of social support have been recognized as risk factors for PPD.[8-10]

Due to the dearth of studies in postpartum depression in a rural area, a community- based study is undertaken.

MATERIAL AND METHODS

A community based cross-sectional study was conducted from June 2023 to November 2023. Sample size was calculated with 95% power and alpha error 7%, using the formula, Sample size (n) = $4pq/d^2$where, p is prevalence (17%), q= 1-p, d is allowable error (7%)

The prevalence of postpartum depression (PPD) as per a meta-analysis of 58 studies was reported to be 17% (95% CI 0.15–0.20).[11] A sample size of 110 was calculated.

Inclusion Criteria
1. Women within the postpartum period of 2 weeks- 6 months
2. Women aged 18 years or older

Exclusion Criteria
1. Women with a history of psychiatric disorders prior to pregnancy
2. Women with a diagnosis of intellectual disability, substance use disorders, central nervous system disorders, psychosis, bipolar disorders, depression, critically ill patients
3. Women who had still-birth or neonatal death

Data Collection

Ethical clearance from institutional ethics committee was obtained. Written informed consent was obtained prior to the study. All mothers satisfying the inclusion criteria residing in the rural field practice area of tertiary care hospital was involved in this study.

A list of recently delivered females was obtained from vital records data collected by medico-social workers of the department of community medicine and information from Anganwadi worker of the area. These females were visited at home between 6 weeks and 6 months postpartum period.If consent was not given, or female was not found at home on two visits due to any reason, then the next female on the list was approached.

A pretested predesigned questionnaire was used to collect sociodemographic information such as age, place of residence, religion, caste, type of family, educational status, occupationand husband's education, occupation status. Socioeconomic status was determined by per capita income per month using Modified B.G. Prasad Classification 2023,[12] Obstetric history and history related to index pregnancy was included – parity, total number of children, number of girl children, history of abortion, mode of delivery, any complication during pregnancy. Clinico-social factors included were past history, history of any substance abuse in husband, domestic violence, marital conflict, in-cordial relationship with in-laws and perceived lack of family support.

The assessment of PPD was done using Edinburg postnatal depression Scale (EPDS)[13] which was administered orally by the interviewer to the female in the local language.

Interviews were conducted at home in a confidential and non-judgmental manner.

Appropriate health education, counselling, and referral was done.

Statistical Analysis

Data was entered into MS excel and imported to and analysed using IBM SPSS Statistics Version 20.0 (IBM Corporation, Armonk, NY). Descriptive statistics was done showing frequency distribution and sociodemographic characteristics.

RESULTS

As observed in table 1, Out of 110 participants, majority that is 77 (70%) belonged to age group 21-25, 74 (67.3%) participants have completed higher secondary education, 84 (76.4%) were hindu.

Majority of the participants that is 84 (76.4%) were from joint family, 57(51.8%) belonged to class III socioeconomic status according to modified B.G.

Prasad classification, 102 (92.7%) were non-working and 77 (70%) spouses' of the participants has completed their higher secondary education. [Table 1]

As mentioned in Table 2, For majority of the participants that is 74 (67.3%) it was first order pregnancy, mode of delivery was full term normal vaginal delivery in 95 participants (86.4%).

There was no previous history of postpartum depression in 108 (98.2%) participants and uneventful pregnancy in 105 (95.5%) participants. [Table 2]

Table 3 shows association between postpartum depression and other determinants. Influencing factors for postpartum depression were elderly mothers (43%, p=0.047), higher education in mothers (50%, 0.016), higher socioeconomic class (50%, p=0.008), working mothers (37.5%, p=0.029), higher birth order (50%, p=0.000*), mode of delivery being C-section (79%, p=0.002), presence of complications such as gestational diabetes mellitus or pregnancy induced hypertension during antenatal period (p=0.015), previous female child (75%, p=0.006), female child as outcome of present pregnancy (75%, 0.024), history of previous abortion (40%, p=0.000*), presence of marital conflict (37.5%, p=0.001), domestic violence (75%, p=0.000*), poor relationship with in-laws (75%, p=0.002) and absence of family involvement in child rearing (59%, p=0.000*). [Table 3]

Figure 1: Prevalence of postpartum depression

The prevalence of postpartum depression measured with Edinburgh postpartum depression scale was 13%.

Table 1: Socio-Demographic Profile

VARIABLES		FREQUENCY	
		n	%
AGE GROUP	<or=20	26	23.6
	21-25	77	70
	26-30	7	6.4
EDUCATION	GRADUATE	6	5.5
	HIGHER SECONDARY	74	67.3
	SECONDARY	30	27.3
RELIGION	BAUDDHA	4	3.6
	HINDU	84	76.4
	MUSLIM	22	20
FAMILY	JOINT	84	76.4
	NUCLEAR	18	16.4
	THREE GENERATION	8	7.3
SOCIOECONOMIC CLASS	CLASS I	8	7.3
	CLASS II	38	34.5
	CLASS III	57	51.8
	CLASS IV	7	6.4
OCCUPATION	NON-WORKING	102	92.7
	WORKING	8	7.3
SPOUSE EDUCATION	GRADUATE	7	6.4
	HIGHER SECONDARY	77	70
	SECONDARY	26	23.6

Table 2: Obstetric Profile

VARIABLES		FREQUENCY	
		n	%
BIRTH ORDER	FIRST	74	67.3
	SECOND	27	24.5
	THIRD	8	7.3
	FOURTH	1	0.9
MODE OF DELIVERY	C-SECTION	15	13.6
	FTNVD	95	86.4
PREVIOUS H/O POSTPARTUM DEPRESSION	NO	108	98.2
	YES	2	1.8
COMPLICATIONS	GESTATIONAL DIABETES MELLITUS	2	1.8
	PREGNANCY INDUCED HYPERTENTION	3	2.7
	NIL	105	95.5

Table 3: Association Between Postpartum Depression and Other Determinants

		DEPRESSION		chi VALUE	p VALUE
		NOT PRESENT	PRESENT		
AGE GROUP	<or=20	VARIABLES	3 (11.5%)	6.133a	0.047
	21-25	69 (89.6%)	8 (10.4 %)		
	26-30	4 (57%)	3 (43%)		
EDUCATION	GRADUATE	3 (50%)	3 (50%)	8.226a	0.016
	HIGHER SECONDARY	67 (89.3%)	7 (9.4%)		
	SECONDARY	26 (86.7%)	4 (13.3%)		
RELIGION	BAUDDHA	4 (100%)	0 (0%)	1.224a	0.542
	HINDU	88 (89%)	10 (11%)		
	MUSLIM	6 (75%)	2 (25%)		
FAMILY	JOINT	75 (89%)	9 (11%)	1.643a	0.44
	NUCLEAR	15 (83%)	3 (17%)		
	THREE GENERATION	6 (75%)	2 (25%)		
SOCIOECONOMIC CLASS	CLASS I	4 (50%)	4 (50%)	11.708a	0.008
	CLASS II	33 (87%)	5 (13%)		
	CLASS III	53 (93%)	4 (7%)		
	CLASS IV	6 (86%)	1 (14%)		
OCCUPATION	NON-WORKING	91 (90%)	11 (10%)	4.767a	0.029
	WORKING	5 (62.5%)	3 (37.5%)		
SPOUSE EDUCATION	GRADUATE	6 (85%)	1 (15%)	.053a	0.974
	HIGHER SECONDARY	67 (87%)	10 (13%)		
	SECONDARY	23 (88%)	3 (12%)		
BIRTH ORDER	FIRST	67 (90%)	7 (10%)	27.390a	0.000*
	SECOND	26 (100%)	0 (0%)		
	THIRD	5 (62.5%)	3 (37.5%)		
	FOURTH	1 (50%)	1 (50%)		
MODE OF DELIVERY	C-SECTION	3 (21%)	11 (79%)	57.435a	0.002
	FTNVD	92 (97%)	3 (3%)		
PREVIOUS H/O POSTPARTUM DEPRESSION	NO	96 (89%)	12 (11%)	13.968a	0.02
	YES	2 (100%)	0		
COMPLICATIONS	GESTATIONAL DIABETES MELLITUS	0	2 (100%)	35.918a	0.015
	PREGNANCY INDUCED HYPERTENTION	0 (0%)	3 (100%)		
PREVIOUS FEMALE CHILD	NO	95 (90%)	11 (10%)	14.492a	0.006
	YES	1 (25%)	3 (75%)		
PRESENT FEMALE CHILD	NO	75 (91%)	7 (9%)	5.093a	0.024
	YES	21 (75%)	7 (25%)		
HISTORY OF ABORTION	NO	90 (90%)	10 (10%)	28.464a	0.000*
	YES	6 (60%)	4 (40%)		
MARITAL CONFLICT	NO	86 (91.5%)	8 (8.5%)	10.345a	0.001
	YES	14 (62.5%)	6 (37.5%)		
DOMESTIC VIOLENCE	NO	94 (92%)	8 (8%)	30.121a	0.000*
	YES	2 (25%)	6 (75%)		
RELATIONSHIP WITH IN- LAWS	GOOD	93 (95%)	5 (5%)	47.025a	0.002
	POOR	3 (25%)	9 (75%)		
SUBSTANCE ABUSE IN SPOUSE	NO	2 (67%)	1 (33%)	1.313a	0.519
	YES	93 (88%)	13 (12%)		
SPOUSE INVOLVEMENT IN CHILD REARING	NO	82 (90%)	9 (10%)	3.818a	0.051
	YES	14 (74%)	5 (26%)		
FAMILY INVOLVEMENT IN CHILD REARING	NO	7 (41%)	10 (59%)	38.466a	0.000*
	YES	89 (96%)	4 (4%)		

DISCUSSION

Postpartum depression is increasingly being recognized as a major public health challenge in low- and middle-income countries. This study aimed to assess the prevalence of postpartum depression and its associated factors in a rural area of Maharashtra. In this study, 77 (70%) participants belonged to 21-25 age group, 74 (67.3%) participants have finished their higher secondary education, 84 (76.4%) participants belonged to joint family, 57 (51.8%) participants were from class III socioeconomic class, 102 (92.7%) were non-working participants. In a similar study conducted by Basu S et al in Delhi on 2021 majority of the participants, that is 81% belonged to 18-29 age group,[15] 55.2% of the participants have completed higher secondary education, 66.7% belonged to joint family. Majority of the participants, 77.6% belonged to upper-middle class, in contrast to our study.

In this study, prevalence of postpartum depression was 13%. In a study conducted by Aslam et al in rural population of Aligarh on 2020, prevalence of postpartum depression was 9.5%.[16] In a similar study conducted by Basu S et al on 2019 in mothers of infants at an urban primary health centre in Delhi,

prevalence was 29%,[15] which is higher than our study, most probably due to the difference in study population, as our study population was from a rural area.

In our study the associated factors with postpartum depression were higher birth order, history of previous abortion, poor relationship with in-laws and marital conflict, very similar to a study conducted by Aslam et al in Aligarh.[16] In a study conducted by Dadhwal et al, in rural India in 2022, associated factor for postpartum depression were domestic violence and absence of family involvement in child rearing,[18] similar to our study.In a study conducted by Dubey A et al in 2018 on risk factors of postpartum depression, primi mothers who had no formal education were found to have postpartum depression,[17]in contrast to our study.

CONCLUSION

Postpartum depression is the most common healthcare issue in India faced by women who recently underwent pregnancy. Because of the potential consequences of untreated depression in the woman and her family, the healthcare worker needs to strive for an initial diagnosis and management of postnatal depression. The risk factors for postpartum depression include a history of psychiatric illness, stress, marital conflicts, complications in pregnancy, and financial difficulties. Pregnant women having a history of depression must be assessed for advisory prevention care for postpartum depression recurrence.[16]

Untreated postnatal depression affects the woman directly and her family indirectly. Management of postpartum depression is based on the patient's medical history, symptom severity, effects on functions, patient preference, and availability of resources and expertise. Women ranging from mild to moderate symptoms of depression undergo psychotherapy, cognitive behavioural therapy, interpersonal therapy, psychodynamic psychotherapy, or non-directive counselling. Treatment of postpartum depression includes the use of antidepressant medications such as SSRIs. To avoid recurrence, mothers with a personal history of postpartum depression should get counselling and strict supervision.[18]

The management of postpartum depression is an important thing to safeguard women and their children in India. About one in every ten postpartum females suffered from depression but did not seek health care for the same. Women suffering from consequences of social pathologies like substance abuse in husband, marital conflict, and poor relationship with in-laws are more at risk of PPD. Screening for PPD should be included in the maternal and child health-care programs to address the hidden "iceberg" portion of this disease with far reaching consequences for both mother and child.

Further research can be directed toward interventions for reducing PPD.[14]

Limitations

Limitation of the present study was the cross-sectional design that precluded the detection of ongoing changes in the emotional and mental health status of the women for the entire duration of the extended postpartum period that constitutes the period of risk.

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