Section: Community Medicine

Original Research Article

A CROSS-SECTIONAL STUDY TO ASSESS THE PREVALENCE OF POSTPARTUM DEPRESSION IN TRIBAL WOMEN OF DAHOD DISTRICT

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ABSTRACT

Background: Women may experience postpartum depression after childbirth which negatively impact the health of both mother and child.

Materials and Methods: An observational cross-sectional study was conducted among 200 women attending immunization camp at Anganwadi centers in the Dahod district, Gujarat, India. EPDS scale was used to assess postpartum depression in eligible women. The data were recorded in notes and analyzed further.

Results: This study has 200 participants out which 92(46%) were screened positive for postpartum depression according to EPDS scale. In bivariate analysis, younger age, lower educational status, low household income, joint family structure, high parity and having female children were significantly associated with postpartum depression. After adjustment for potential confounders, younger maternal age (AOR 2.75, 95% CI: 1.79–4.20) and having two or more female children (AOR 2.56, 95% CI: 1.64–4.00) remained significant independent predictors of postpartum depression. Lack of education was significantly associated with non-exclusivity of breastfeeding, rather than postpartum depression.

Conclusion: This study shows a high prevalence of postpartum depression in this region. Factors such as young maternal age and having two or more female children are independent predictors of postpartum depression. There is a need for education and awareness in the community regarding maternal mental health.

Keywords: Breastfeeding, child health, maternal health, mental health, mood disorders, postpartum depression, Tribal health.

INTRODUCTION

Depression is a common and serious mood disorder in which a person experiences persistent feeling of sadness, hopelessness and loss of interest.[1,2] Postpartum depression can be defined as the onset of depressive episodes after childbirth and can become chronic.[2] Due to emotional turmoil of childbirth, first six months after child birth women are prone to undergo depression with estimated prevalence of 22% in India.[3] Major risk factors that lead to postpartum depression in women are lack of family support, domestic violence, financial condition of the family, young age, lack of education and awareness, high parity, previous miscarriage or problems in conceiving, unwanted pregnancy, gender of the baby(female) and history of psychiatric illnesses or other diseases.[4,5,6,7,8,9] There are various health issues related to women with postpartum depression such as postpartum weight retention, insomnia, mood fluctuations and anger issues, low self-esteem, increased anxiety and stress levels, and poor quality of life. Postpartum depression may lead to suicidal tendencies and intentional self-harm.[10,11] Postpartum depression affects mother's health as well as child's health and development.[11,12,13] It considerably affects mother-child interactions. Mother may become insensitive to infant cues as a

result of which she might ignore cry for feed.[11,12,13,14] In infants, it may lead to delays in motor , language, emotional, social and behavioral development.[11,12,13]

During such crucial times, a women seeks emotional support from family, friends, and most importantly from her husband. Women with low social support and those who have experienced miscarriage or abortion have 10 times higher risk of developing postpartum depression.[15] As women live with their in-laws, paternal social support plays a significant role in comes to maternal mental health. Despite such severe consequences screening, diagnosis and referral are often neglected not only in tribal areas but also in rural and even urban areas.[9] In India women often stay for less than 48 hours after delivery, which gives less time for counselling about postpartum depression and its symptoms.[6] This study aimed to identify the burden of postpartum depression in tribal belt of Dahod district in Gujarat, India.

Aims and objectives: This study aimed to estimate the prevalence of postpartum depression and its associated factors among tribal women in Eastern Gujarat. This study also sought to determine the role of emotional support and the effect of postpartum depression on breastfeeding practices.

MATERIALS AND METHODS

Study design and setting: An observational cross-sectional study was conducted over a period of 3 months(July-September 2024). Each Anganwadi covers the population of 700 people in tribal and hilly areas.[16] Women attending immunization camp at the Anganwadi centers were approached and those who fulfilled inclusion criteria and provided consent were recruited in this study using convenience sampling. Data were collected from multiple Anganwadi centers until the required sample size of 200 was achieved.

Sample size and Sampling technique: The expected prevalence was taken as 9.5% reported by the study done by Aslam et al,[17] Minimum sample size for this study was taken as 133 using N=z2pq/l2, where p(prevalence) = 0.095, q(1-p) = 0.905, z = 1.96 for 95%CI and 5 % of margin error. Women with a child aged less than 1 year of age and those who gave consent were included in this study. Exclusion criteria (1) mothers with other psychiatric illnesses, (2) mothers with serious debilitated conditions and (3) mothers who did not provide consent. A total of 200 eligible postpartum women who fulfilled the inclusion criteria and provided informed consent were included in the study, to ensure sufficient sample size. Women were approached and interviewed during waiting time at immunization camp.

Data collection tools: A validated 10-question Edinburgh Postnatal Depression Scale (EPDS) in Gujarati language was administered to these women to screen for postpartum depression.[18] Each question has four options scored from 0 to 3. A score of > 13 is set as cut off for postpartum depression.[19] Literate women filled the EPDS questionnaire themselves whereas illiterate participants were interviewed by the investigator using same questionnaire and then filled by the investigator. Based on their answers they were assessed for presence of postpartum depression. A Preformed questionnaire administered by investigator was used to determine about the support from their family members and society, various factors that lead to postpartum depression and breastfeeding practices followed by tribal women. No missing data were observed for the variables included in the analysis. Women who were screened positive for postpartum depression were referred to the outpatient department (OPD) of the department of psychiatry of tertiary care teaching hospital of the Dahod district.

Outcome variable: The outcome variable for this study was the presence of postpartum depression in women, as determined by the EPDS scale. The predictor values include age, education, household income, type of family (joint/three generational / nuclear), parity, gender of the children, breastfeeding pattern and emotional support.

Statistical analysis: The Obtained Data were analyzed using the chi-square test, logistic regression, yate's variation and fisher's exact text to assess the relationship between postpartum depression and its factors and the relationship between postpartum depression and breastfeeding practices. Confidence interval of 95 % with p value of < 0.05 was considered significant.

Ethical clearance: Permission from Institutional Ethical Committee was taken prior to study. Certificate no: ZMCH/IEC/087(21)-2024. Informed written consent in the regional language was taken from all participants/ guardian (in minor patients). Confidentiality and anonymity of the participant were maintained.

Funding and support: No external support or funding was provided for this study.

RESULTS

A total of 200 women from multiple Anganwadi centers were included in the study and analyzed. Of the 200 women 92 were depressed based on their EPDS scores (cut off was set at 13) using a study by Cox J et al,[19] This gives us the prevalence of postpartum depression as 46%. Chi-square test and logistic regression were applied to assess to relationship between various factors and postpartum depression. The bivariate and multivariate associations between sociodemographic factors and postpartum depression are represented in Table 1. In the initial bivariate analysis, all the factors that were examined demonstrated significant associations with depression.

But, upon performing binary logistic regression to adjust for confounding variables, only age (Adjusted

Odds Ratio [AOR] = 2.75, 95% CI [1.79, 4.20]) and having two or more female children (AOR = 2.56, 95% CI [1.64, 4.00]) remained highly significant independent risk factors

While bivariate analysis suggested an association between higher parity and depressive symptoms, but the multivariate model identified high parity (>3) as a significant independent protective factor (AOR = 0.65, 95% CI [0.44, 0.96]). This suggests that when the risks associated with younger age, number of female children and type of family were controlled, increased parity may become protective. The observed protective association of higher parity, requires confirmation in larger studies. Possible explanations for this finding could be increased maternal experience, greater confidence in childcare, or established social support systems. This may also because of unique cultural and social practices of tribal population.

Furthermore, while type of family was significant in the bivariate analysis as well as in the multivariate analysis, but the estimate was unstable in the multivariate model due to quasi-complete separation, characterized by an inflated standard error and an unreliable value of 1.000.

Data were collected about breastfeeding practices via interview and its relationship with postpartum depression and education was assessed using chi-square test. Of the 200 women, 113 women started supplementary feeding and only they were further interviewed for breastfeeding practices.

To assess emotional support, women were questioned about awareness about postpartum depression, support from husband and in-laws.

Table 1: Association between postpartum depression and various sociodemographic factors using bivariate and multivariate analysis

Variable	Total N (%)	Depressed n (%)	Not Depressed n (%)	Crude OR (95% CI)	Bivariate p-value	Adjusted OR (95% CI)	Multivariate p
Age							
18–23	108 (54.0%)	62 (57.4%)	46 (42.6%)	2.79 (1.56, 4.97)	<0.001**	2.745 (1.79, 4.20)	< 0.001**
24 or older	92 (46.0%)	30 (32.6%)	62 (67.4%)		(Reference)	1.00 (Reference)	-
Type of Family							
Joint/Three-gen	185 (92.5%)	91 (49.2%)	94 (50.8%)	13.55 (1.75, 105.19)	<0.005*	20037.16 (0, Inf)	1
Nuclear	15 (7.5%)	1 (6.7%)	14 (93.3%)		(Reference)	1.00 (Reference)	-
Education							
Low (Primary or below)	97 (48.5%)	54 (55.7%)	43 (44.3%)	2.15 (1.22, 3.78)	<0.005*	1.406 (0.93, 2.12)	0.1024
High (Secondary or higher)	103 (51.5%)	38 (36.9%)	65 (63.1%)		(Reference)	1.00 (Reference)	-
Household Income							
Below Poverty Line	152 (76.0%)	77 (50.7%)	75 (49.3%)	2.26 (1.13, 4.50)	<0.005*	0.815 (0.55, 1.21)	0.3069
Above Poverty Line	48 (24.0%)	15 (31.3%)	33 (68.7%)		(Reference)	1.00 (Reference)	-
Parity							
≥ 3	80 (40.0%)	46 (57.5%)	34 (42.5%)	2.18 (1.22, 3.87)	<0.001**	0.648 (0.44, 0.96)	<0.05*
< 3	120 (60.0%)	46 (38.3%)	74 (61.7%)		(Reference)	1.00 (Reference)	-
Female Child							
≥ 2	46 (23.0%)	36 (78.3%)	10 (21.7%)	6.30 (2.91, 13.66)	< 0.001**	2.562 (1.64, 4.00)	< 0.001**
< 2	154 (77.0%)	56 (36.4%)	98 (63.6%)		(Reference)	1.00 (Reference)	-
P<0.05*-significant, P<0.001**-highly significant							

Table 2: Common Grounds for Litigation Under CPA in Healthcare

Variables	Total N (out of 113)	Supplementary feeding started before 6 months (%)	Supplementary feeding started after 6 months (%)	OR (95% CI)	Bivariate p-value
Postpartum Depression					
Depressed	54 (47.79%)	39 (72.22%)	15 (27.78))	1.43 (0.65, 3.20)	0.37319
Not Depressed	59 (52.21%)	38 (64.41%)	21 (35.59%)		
Education					
primary or below	51 (45.13%)	51 (100.00%)	0 (0.00%)	141.87 (8.37, 2403.64)	<0.001**(fisher's exact test)
secondary or higher	62 (54.87%)	26 (41.94%)	36 (58.06%)		
P<0.001**-highly significant					

Table 3: Assessment of social support of the participants

Sr.no	Questions	Answers (in percentage)	
		Yes	No
1	Are you aware about emotional distress that women go through during postpartum period	0	100
2	Are you aware that husbands are supposed to help in taking care of the mother	3	97
3	Are you aware that husbands are supposed to help in household chores	4	96
4	Are you aware that husbands are suppose in taking care of the baby	20	80
5	You received help from your in-laws in household chores during postpartum period	75	25
6	You received help from your in-laws in taking care of the baby during postpartum period	80	20
7	Your husband supported you emotionally during postpartum period	20	80
8	your in-laws supported you emotionally during postpartum period	25	75

DISCUSSION

The findings of this study highlight the worrisome prevalence of postpartum depression in the Dahod district of the Gujarat, with 46% of women exhibiting depressive symptoms, as indicated by their EPDS scores. This is higher than the pooled prevalence of postpartum depression in India, which is reported to be up to 22%.[3] This finding is consistent with the prevalence rate 48% in the Anand district of Gujarat.[8] The rate of postpartum depression is higher in Gujarat, which may be the result of the complex interplay of various sociodemographic factors and cultural factors. According to the NFHS-5 data, Gujarat experiences moderately high levels of underage marriages (below 18 years of age) among females.[20] 24.9% Of the women aged between 20-24 years are married before the age of 18years and 28% are married between the age of 15-17 years.[20] Dahod being a tribal region, majority of women are illiterate or just have primary education. This may contribute to the high prevalence of postpartum depression reported that in Dahod, around 42% of women of reproductive age have three or more children.[20] In this study, we also found that young maternal age, low education, low household income, joint family structure, high parity, and infant gender were significant sociodemographic factors associated with postpartum depression.

Dahod being tribal district, women here are often constrained by the traditional gender roles taking the responsibility as primary care giver for the family, child bearer and are expected to manage her chores without any support. Women in such vulnerable situations require love, compassion, and support from the family members. Hence, women with less support from family and friends are at a higher risk of developing postpartum depression.[9,15] In India, many communities follow the tradition of isolating of mothers until 1.5 months, which may deprive mothers from care and support from their families. Social taboos associated with depression and terror about being labelled as 'selfish' or 'failed at maternal duties' makes women hesitant to ask for help or even admit their problems.[9] Neglected emotional needs of the women may be associated with the high rate of the postpartum depression.[15] Low education and unique cultural practices of the tribal communities pose a barrier to raising awareness about postpartum depression. It is observed in this study that despite living in a family centered environment, husbands do not contribute to household chores, do not participate in infant care and do not take care of the emotional needs of women. This may increase the psychological burden on women and may lead to postpartum depression. Although other family members help with chores and care of the infant but emotional needs of the mother are neglected by them also. These findings are consistent with other studies that show that lack of social support especially from husbands is associated with postpartum depression.[11,15]

Although there are many government schemes such as the National Health Mission.[21] Pradhan Mantri Surakshit Matritva Abhiyan.[22] etc. which encourage regular ANC checkups and institutional delivery for better maternal and child outcomes. However, they do not include screening for mental health. They focus on the physical health of the mother and infant. A more holistic approach is needed, and the integration of mental health screening in these programs is required.

In this study, we did not find a significant relationship between postpartum depression and exclusive breastfeeding, which contradicts the findings of other studies, which suggest otherwise.[11,12,23] However, we found a significant relationship between exclusive breastfeeding and education. The possible explanation for such findings can be the low education; lack of awareness and unique cultural and traditional belief system may be associated with non-exclusivity of the breastfeeding. Before postpartum depression can manifest its effect on breastfeeding, women have already started supplementary feeding breaking the exclusivity. However further detailed studies with larger sample size are suggested to confirm this hypothesis.

Generalization: Findings of this study cannot be generalized due to unique cultural practices and tradition of the tribal population residing in Dahod.

Limitations: As this study is a cross-sectional type of study, it does not permit the establishment of causal relationship between the identified factors and postpartum depression. Some established risk factors such as domestic violence, marital conflict, previous psychiatric illness, and substance abuse were not assessed in this study as these topics were sensitive and participants may have been reluctant to disclose such information. Factors like mode of delivery, pregnancy complications and unplanned pregnancy were not assessed in this study. This limits the interpretation of the associated factors. Selection bias

may have occurred because participants were recruited by convenience sampling.

Efforts were made to minimize information bias by using a validated screening instrument and a standardized questionnaire administered by the investigators. Language barrier- though people here communicate through Gujarati language, but their dialect is unique and spoken in this region only. Some females might not be able to open about questions because of the lack of trust and presence family members in proximity during interview. Self-reported responses may be subjected to recall bias and social desirability bias. Limitation of the multivariate analysis in the results was the quasi-complete separation observed for the 'type of family' variable. Because the number of participants from nuclear family was relatively small (n=15) with only one case of depression in that group, the logistic regression model was unable to produce a stable Odds Ratio or a reliable p-value. A larger sample size is required for future studies to accurately assess the independent impact of nuclear versus joint family structures on postpartum depression.

CONCLUSION

This study found out that there is lack of awareness and screening for postpartum depression. In multivariable analysis, younger maternal age and having two or more female children emerged as independent predictors of postpartum depression. Although lower educational status, low household income, joint family structure, and high parity were associated with postpartum depression in bivariate analysis, these associations did not remain significant after adjustment for potential confounders. Lack of awareness about postpartum depression may contribute to emotional neglect of women by their husband and in-laws. This poor social support system was associated with postpartum depression.

Relevance to preventive medicine and Implication for clinical practice: Integration of Screening for mental health issues and their risk factors during ANC checkups and during immunization of child (in postnatal period)/ regular home visits are required. This is consistent with the preventive healthcare approach as early identification and prevention will reduce adverse effect on maternal and child health.

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