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Original Research Article

A study on prevalence and determinants of postpartum depression among mothers: a cross-sectional study

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ABSTRACT

Background: Postpartum depression (PPD) is a common affective disorder. It remains unrecognized and affects the health of mothers and the interpersonal relationships, mother infant bonding as well as emotional and cognitive behavior of baby. It occurs immediately or 2 to 6 weeks after delivery and may last for a year. This study aims at determining the prevalence of PPD among mothers, its associated factors and to correlate mothers age and parity in PPD.
Method: It is a cross sectional study conducted in department of obstetrics and gynecology (OBG) in a tertiary care hospital. we have enrolled one seventy-two (172) postpartum women within six months of their delivery after obtaining informed consent. Edinburgh postnatal depression scale was used for determining the prevalence. Sociodemographic and obstetrics questionnaire were given to identify associated factors and correlation between mothers age and parity.
Results: Out of 172 enrolled patients, we collected information about PPD, in our study the prevalence of PPD was 44%. Age, marital status, education of mother, occupation of mother, Occupation of husband, wealth index, social support by family, husband substance abuse, type of family, gender of baby, parity, mode of delivery, present pregnancy, sex preference of mother, infant illness, are the factors associated with PPD. Age and parity have no correlation with PPD.
Conclusions: The high prevalence rate of PPD and associated risk factors imply the need for strengthening and improving of postpartum care.

Keywords: PPD, Prevalence, Edinburgh postnatal depression, Cross sectional study

INTRODUCTION

Pregnancy and postpartum period are vital event in a women's life cycle which equally affects her body and mind. After birth giving women takes up the new role as a mother which alternately affects her relationship with husband, baby and family. The first month after delivery is very crucial time period for women with psychiatric symptoms with high risk of depression.[1]

Depression is one of the most common mental health disorders. During pregnancy, childbirth and sudden postpartum period woman goes through various physical, hormonal and emotional changes. Mood swings, feeling of sadness, fear, confusion and undefined own feelings to idealized social expectations are some of the feelings experienced by a woman during postpartum period.[2]

Post psychiatric disorder can be categorized into three: Postpartum blues, postpartum psychosis and PPD.

Postpartum blues can be cured within a few days to week and has very less consequences which only require comforting the affected mother. Postpartum psychosis is chronic disorder starts within four weeks of postpartum and requires hospitalization. PPD can incline to chronic or recurrent depression.[3]

PPD is a mental health disorder that yearly affects about 10-15% of mothers worldwide. It occurs immediately/2-6

weeks after delivery and may last for over year.[4] Causes of PPD are known. Some of authors found various factors to PPD. They are: history of personal and family psychiatric disorder, anxiety and depression during pregnancy, baby blues, stress due to infant, socio-economic issues, marital relationships, binding life events. Diagnosis is difficult due to varying clinical presentations.[5]

Risk factors can be categorized based on the strength of their association with PPD. Depression and anxiety during pregnancy, postpartum blues, history of depression, neuroticism, stressful life events, poor marital relationship, and poor social support, low self-esteem, as well as some cognitive emotion regulation strategies have been found to have a strong or moderately strong association. Low socioeconomic status, single marital status, unwanted pregnancy, obstetrical stressors, and difficult infant temperament have been reported to exhibit a relatively weaker association. Maternal attitudes, women's experience of a various related complications such preterm birth, prenatal hospitalization, emergency caesarean section, pre-eclampsia, and poor infant health, can also cause an elevated risk of developing PPD. These risk factors are more closely related to the social and psychological aspects rather than biological aspects.[6]

The study provides useful information about prevalence of PPD and risk factors especially socio-cultural environment. Since socio-cultural environment plays a major role in etiology of PPD.[7]

Based on above- mentioned information and data, study aims to describe prevalence of PPD and identify whether mother's age and parity is related to development of PPD.

METHODS

A prospective cross-sectional study was conducted in Basaveshwara medical college hospital and research center (BMCH and RC) Chitradurga, from May 2022-Oct 2022. Study was carried out after receiving the approval from the institutional ethical committee (IEC) 622/2022-23. Informed consent was obtained from all participants prior to enrolment in the study. All participants were given an Edinburgh postnatal depression scale (EPDS) questionnaire and questionnaire of factors associated with PPD to be filled during one-to-one interaction. EPDS is used in this study which is valuable and effective way used to estimate the prevalence of PPD. EPDS was developed by Cox et al and validated in Iran by Montazeri et al.[8] It consists of 10 questions each question will be assigned with 0-3 score depending on severity with maximum score of 30 which reflect the presence of each symptom during the last seven days. Mothers who score above 13 are likely to be suffering from depressive illness of varying severity.

Statistical analysis

The data was entered in Microsoft excel-2010 version and the results were analyzed using statistical package for social services (SPSS 25). Descriptive methods were applied to obtain the frequency and percentage, Pearson correlation was applied to determine any significant difference between quantitative variables.

RESULTS

A total of 172 participants were enrolled in the study. Out of 172 participants, 76 (44%) were under PPD and remaining were not exposed to PPD. The results are analyzed in Table 1. Factors associated with PPD included in our study were age, marital status, education of mother, occupation of mother, occupation of husband, wealth index, social support by family, husband substance abuse, type of family, gender of baby, parity, mode of delivery, present pregnancy, sex preference of mother, infant illness.

Out of 172 women enrolled in our study 101 (59%) were in the age group of 25-34. The 169 (97%) were married women. Education of the mother was a factor included in our study, showing that 58 (34%) mothers completed their secondary education. The survey found 158(92%) were housewives. The 79 (46%) husbands of women were nongovernment employees. The 94 (55%) comes under the third quantile. The 79 (46%) of women had low family support. The t127 (74%) of husbands were severely abused by substances. 109 (63%) women belong to joint family. The 96 (56%) women had a female child. The 87 (50%) mothers were primiparous. 126(73%) undergone caesarean. The 68 (39%) mothers were expecting male children. The 122 (71%) had unhealthy child. All these factors were at higher risk of developing PPD. The frequencies of following factors are given in Table 2.

We used the Pearson correlation to investigate the correlation between age and parity. From our study, we found that there is no correlation between age and parity in PPD. The result was analysed in Table 3.

Table 1: Prevalence of PPD, (n=172).

PPD	N (%)
Present	76 (44)
Absent	96 (56)

Table 2: Variables and frequency of socio-demographic and obstetrics factors.

Variables	N (%)
Age (In years)	
≤24	62 (36)
25-34	101 (59)
≥35	9 (5)

Continued.

Variables	N (%)
Marital status	
Married	169 (97)
Widowed	2 (2)
Divorced	1 (1)
Education of the mother	
Primary	23 (13)
Secondary	39 (23)
Higher Secondary	58 (34)
Degree	43 (25)
Illiterate	9 (5)
Occupation of the women	
Housewife	158 (92)
Government employee	1 (1)
Non-government employee	13 (7)
Occupation of the husband	
Jobless	2 (2)
Government employee	18 (11)
Non-government employee	79 (46)
Farmer	73 (42)
Wealth index	
Third quantile	94 (55)
Second quantile	75 (44)
First quantile	3 (1)
Social support by family	
High	76 (44)
Medium	17 (10)
Low	79 (46)
Husband substance abuse	
Non abused	38 (22)
Mild abused	7 (4)
Severe abused	127 (74)
Type of family	
Nuclear family	63 (37)
Joint family	109 (63)
Gender of baby	
Male	76 (44)
Female	96 (56)
Parity	
Primiparous	87 (50)
Multiparous	84 (49)
Grand multiparous	1 (1)
Mode of delivery	
Normal delivery	46 (27)
Cesarean	126 (73)
Present pregnancy	
Wanted and planned	6 (4)
Wanted and unplanned	52 (30)
Unwanted	114 (66)
Sex preference of the mother	
Male	68 (39)
Female	48 (28)
No preference	56 (33)
Infant illness	
Unhealthy	122 (71)
Healthy	50 (29)

Table 3: Correlation between age and parity in PPD.

Variables	Age (In years)	Parity
Pearson correlation	1	0.205
Sig. (2-tailed)	0.007	
N	172	172

DISCUSSION

This research was a cross-sectional study focused on elucidating the prevalence and associated factors of PPD. A total of 172 participants admitted to BMCHRC were enrolled in the study. Our subject criteria generally included no prenatal mothers and mothers with past psychiatric illness.

Prevalence of PPD in our study was found to be 44%. Prevalence was determined using EPDS scale in which 20% score 14 and higher interpreting probable depression. A study conducted at primary health care centers in Damascus showed that 28.2% had a score of 14 or more on EPDS scale, which refers to probable depression[9]. Another study conducted among women in Jeddah, Western Saudi Arabia found prevalence of PPD conducted among 172 women to be 20.9%.[10] The possible reasons for earlier reports on lower PPD prevalence could be due to single cantered sample collection or limiting the interview time to 8 to 12 weeks (PPD in Riyad) Our study involved 1 week to 6 months of postpartum period. A study conducted among postnatal care attendees in Debre Berhan, Ethiopia 2018 show that out of 613 mothers who gave birth and attended postpartum care and vaccination service 308 mothers where included in the study by using systematic random sampling the overall prevalence of PPD was 15.6 %.[11]

Our study evaluated the sociodemographic, and obstetrics factors in healthy mothers by using the EPDS scale. In our study age, marital status, education of mother, occupation of mother, occupation of husband, wealth index, social support by family, husband substance abuse, type of family, gender of baby, parity, mode of delivery, present pregnancy, sex preference of mother, infant illness, sleep disturbance, abortion are the factors associated with PPD. In a cross-sectional study conducted in the rural areas of Udupi thaluk Karnataka India among 410 postnatal women within 6 months of delivery shown that maternal and paternal educational status, labor complications, multiparous women, abortion, sleeping difficulty were the associated factors in PPD.[12] A study conducted at Sohag university hospital from June 2015-May 2016 among women within 6 weeks after birth shown that gender of the baby and health of the baby were significantly associated with PPD.[13] A review article on risk factors of PPD India and its management published in September 2022 suggests other risk factors for PPD poor living conditions, family disputes, concern about baby, c section, delivery stressful events in PPD. Major risk factors such as demographic, social, environmental, biological hormonal and obstetric factors are responsible for PPD.[14]

Therefore, our study found that there is no correlation between age and parity in PPD. No other studies have been conducted on the correlation between age and parity in PPD.

Limitations

We could not collect responses from mothers who were undergone abortions and given still birth, aggressive behavior and lack of education of women, Health condition of both mother and child.

CONCLUSION

Prevalence of PPD has been difficult to determine because of several factors. Women who have undergone complicated labor, previous abortions, having more than two child birth and sleeping disturbances need to be screened during the postnatal follow-ups and family members should be educated to seek medical attention if signs and symptoms of depression appear. This study provides an important contribution to fight against maternal mental illness and associated factors. More extensive studies involving community-based samples in the future might be helpful in identifying additional risk factors for PPD.

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