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Original Research Article

Prevalence and determinants of postpartum depression among women attending tertiary care centre in North India

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ABSTRACT

Background: Postpartum depression is a mood disorder that occurs within 4 weeks-1 year after childbirth and the symptoms may range anywhere from persistent sadness or, anhedonia, fatigue, sleep disturbance to difficulty bonding with the baby, suicide, thoughts of harming the baby. Postpartum depression has unknown etiology, but various risk factors such as history of psychiatric illness, relationship with the spouse, education level, domestic violence, lack of social support, financial status, younger age at pregnancy, obstetrics stress and complications plays important role.
Methods: An analytical cross-sectional study was conducted on 504 mothers of 6 week to 1year postpartum period attending OBG OPD, private medical college, Agra for regular check-up during time span of 6 months (1st October 2025 to 30th April 2026). Data was collected on various sociodemographic, obstetrics factors along with EPDS (Edinburgh Postnatal Depression Scale) score after getting informed consent from subjects.
Results: The study finding show 42.9%women had postpartum depression. Various factors such as young age, residence, religion, education, socioeconomic status, parity, number of children, birth spacing, number of female children and birth weight showed significant association through chi-square test but on applying binary logistic regression only young age, religion, education less than high school and unplanned pregnancy where significant predictors others variables association were not established.
Conclusions: Postpartum depression goes undiagnosed due to social stigma, guilt or the perception that sadness is normal. Screening tools like EPDS must be incorporated into mother and child health programmes, capacity building of grass root level workers to be done to bring about education, support and awareness to young and low educated women of the community.

Keywords: EPDS, Obstetrics factors, Postpartum depression, Socio demographic

INTRODUCTION

Postpartum depression is a worldwide public health concern; postpartum period is a challenging phase in woman's life with pronounced biological, psychological and social changes. With birth of a child, a woman experiences an array of strong emotions ranging from joy, excitement to sadness, anxiety and even depression. A mother faces 'Postpartum Blues', which include mood swings, emotional breakdowns, anxiety and disturbed sleep patterns and these episodes subsides on its own within 2 weeks. But if the symptoms persist for more than 2 weeks, it can lead to 'postpartum depression'. Postpartum depression (PPD) is a mood disorder that occurs after childbirth, usually within the first 4-12 weeks, but it can appear anytime within the first year postpartum. Mental illness onset within 6 weeks of delivery will be termed as postpartum according to international classification of disease-10, classification of mental and behavioral disorders. Diagnostic and statistical manual of mental disorders-5 edition states symptoms must start within 4 weeks of delivery and persist for 2 weeks to term as PPD.[1] It is more severe, persistent and requires clinical attention. As reported by studies, 1 out of every 7 women is likely to encounter with postpartum depression. Globally the prevalence of postpartum depression is 7.6%

to 39% giving a ballpark estimate of 100-150 cases of postpartum depression per 1000 births.[2] A systematic review and meta-analysis analyzed 38 studies involving 20,043 Indian mothers observed 22% pooled prevalence of PPD.[3] And the symptoms may range anywhere from persistent sadness or emptiness, anhedonia, fatigue, sleep disturbance and changes in appetite to excessive guilt or worthlessness, feelings of being a bad mother, difficulty bonding with the baby, thoughts of self-sabotage or suicide, thoughts of harming the baby.

Postpartum depression has unknown etiology, but it has various risk factors such as history of psychiatric illness, relationship with the spouse, education level, domestic violence, lack of social support, financial status, younger age at pregnancy, obstetrics stress and complications, parity, unplanned pregnancy and pressure to prove others of being a perfect and competent mother, low detection rates, lack of awareness.[4]

There are various screening tool available for early detection of postpartum depression, among all (EPDS) is most acceptable. It is a self-administered assessment with 86% sensitivity and 78% specificity for EPDS score above 12 for PPD.

Mostly it goes undiagnosed due to social stigma, guilt or the perception that sadness is normal and it's a part and parcel of day-to-day life because giving birth to a child brings so many changes at such a fasting pace that to experience mood swing is perfectly normal and there's nothing to be bothered about.

But contrary to above popular belief if the mother goes through all these symptoms than its high time that we must pay attention to these symptoms in mothers and address it accordingly.[5] And if postpartum depression is not treated it can lead to recurrent episodes of depression and it majorly affects her bond with the baby not just in the growing years; but also later in life. Children of mothers with postpartum depression suffer through cognitive, behavioral problems as well as they are at higher risk of being underweight and stunted, as the mothers are unlikely to breastfeed their babies and seek medical care.

They say becoming a mother leaves no woman as it found her. It unravels her and rebuilds her. It cracks her open, takes her to her edges. It's both beautiful and brutal; often at the same time. Mothers need just as much attention as a newborn, because they too have just been born. Even though there are significant improvement in maternal and child health care services like institutional deliveries under many national health programmes, still mental issues are rarely explored in postpartum period.

PPD prevalence and its associated factors are largely affected by local cultures, social beliefs and economic burden. And there are limited studies from western Uttar Pradesh showcasing the actual scenario of postpartum depression cases. So, the present study is undertaken to assess the prevalence and associated factors of PPD in Agra, India

Objectives

Primary objective

To determine the prevalence of postpartum depression among 504 postnatal mothers using EPDS scale.

Secondary objectives

To assess socio-demographic factors and obstetric risk factors. To find out the determinants associated with postpartum depression

METHODS

An analytical cross-sectional study was carried out at F. H. medical college and hospital, Agra during the span of 1st October 2025 to 30th April 2026 for a time period of 6 - 8months. A total of 504 postpartum women with a postnatal period ranging from 4 weeks to 12 months postpartum, were selected from those who visited the OBG outpatient department (OPD) for routine postpartum follow up and also mothers accompanying the child to Immunisation clinic of the institution after obtaining written permission from paediatric department.

Those subjects who had normal vaginal delivery/lower segment caesarean section (LSCS) and those who were above 18 years were selected after taking written informed consent and those who refused to participate in the study, women with antenatal history of psychiatric or under depression disorder, mothers with babies having severe health illness or mother whose babies were still birth or IUD and those postpartum women under psychiatric medication were excluded from the study.

The study was conducted by interviewing each subject using a closed ended structured questionnaire comprising of 3 sections. The socio-demographic variables, obstetrics factors and EPDS. Socio-demographic variables like age, religion, residence, education of subject, occupation of subject, type of family, SES, etc, were used. To estimate the prevalence of postpartum depression, women were screened using EPDS in Hindi language. It is a 10-item self-rated questionnaire used extensively for the detection of PPD.

The scoring for EDPS is that for questions 1,2 & 4 (without asterisk): score vary from 0 to 3, with the top box given a score of 0 and the bottom box assigned a score of 3. For questions 3 and 5–10 (with asterisks): Scores are reversed, with the top box allocated a score of 3 and the bottom box assigned a score of 0. The maximum score achievable is 30 and a probability of depression is considered when the score is 13 or higher. Postpartum women who scored ≥13 on the EPDS were considered to have PPD.

The sample size was calculated with the 14.2% prevalence of PPD 13 found in a previous study conducted in Western India. With the help of the formula= $4pq/l^2$ and taking 3.25% of absolute error (L), the sample size derived was 462. Considering 10% as non-response rate, the final sample size was calculated to be 504.

Data collected on paper was fed into Microsoft Excel spreadsheet for analysis. Data collected was analyzed using appropriate statistical method SPSS 20. Data was described using frequency and percentages for categorical variable and mean with SD for continuous variables. Statistical tests like Chi-square were applied to find a possible association with various risk factors. All the factors with a p value <0.05 were considered for binary logistic regression to determine the predictors of depression.

RESULTS

A total of 504 postpartum women were included in the study. The mean age of the participants was 28.13±3.80 (range: 18–40 years). Based on the EPDS, 216 (42.9%) women had postpartum depression (EPDS score>13), while 288 (57.1%) had normal scores (EPDS score <13) table 1.

Table 2 shows the association between socio-demographic characteristics and postpartum depression. A statistically significant association was observed between postpartum depression and age (p-0.00006), with a higher proportion of depression among women aged 18–24 years (52/82, 63.4%) compared to those aged >24–42 years (164/422, 38.9%). Depression was seen on a higher side in women during the postpartum period of 3-6 months (42/83, 50.6%).

Residence was significantly associated with postpartum depression (p-0.0005). Depression was more common among women residing in rural areas (130/262, 50.4%) than among urban residents (84/242, 34.7%). Religion also showed a significant association (p<0.001), with a higher prevalence among Muslim women (88/148, 59.4%) compared with Hindu women (128/356, 35.9%). Maternal education demonstrated a highly significant association with postpartum depression (p<0.001). Depression was most frequent among illiterate women (18/28, 64.3%), whereas women with graduation or postgraduate education had the lowest proportion of depression (34/144, 23.6%).

Socioeconomic status was significantly associated with postpartum depression (p-0.003). Women belonging to the lower-middle (86/160, 53.7%) and middle (14/24, 58.3%) socioeconomic classes had comparatively higher proportions of depression than those in the upper socioeconomic groups. No statistically significant association was observed between postpartum depression and duration of postpartum period (p-0.072), occupation of the woman (p-0.48) or family type (p-0.291). Table 3 presents the association between obstetric and neonatal characteristics with postpartum depression. Women with an unplanned pregnancy (178/388, 48.8%) had significantly higher postpartum depression than those with planned pregnancies and also have significant association (p-0.012). Similarly, parity was significantly associated with postpartum depression (p-0.003), with depression being highest among women with parity two (130/258, 50.4%).

The number of children also showed a statistically significant association (p-0.005). Women having two children had a higher prevalence of depression (130/260, 50%) compared with women having one child (40/128, 31.2%). Birth spacing was significantly associated with postpartum depression (p-0.001). Women with an inter-pregnancy interval of 2–3 years had the highest proportion of depression (114/218, 52.2%). Likewise, the number of female children was significantly associated with postpartum depression (p-0.012), with higher proportions among women having one (130/292, 44.5%) or two (46/86, 53.4%) female children. Figure 1 is showing percentage-wise distribution of PPD; where more than half of the study subjects (57%) were having no depression, while 35% were having moderate PPD (EPDS score13-19) and 8% were having severe PPD (EPDS score 20-30).

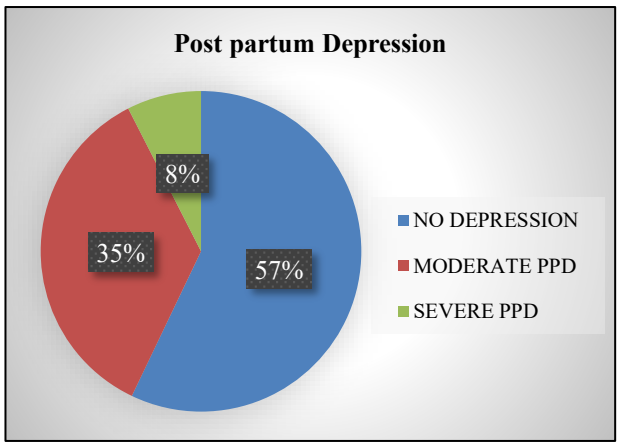

Figure 1: Percentage distribution of postpartum depression.

A significant association was observed between mode of delivery and postpartum depression (p<0.001). Depression was more common following normal vaginal delivery (164/340, 48.2%) than after caesarean section (52/164, 31.7%). Gestational age at delivery was also significantly associated with postpartum depression (p-0.008), with women delivering term infants showing a higher prevalence (200/440, 45.4%).

Women delivering low birth weight infants (<2.5 kg) had a significantly higher prevalence of postpartum depression than those delivering infants weighing ≥2.5 kg (60.0% vs. 41.7%, p-0.018). In addition, complications during delivery were significantly associated with postpartum depression (p<0.001). No statistically significant association was found between postpartum depression and

sex of the newborn (p-0.438), delayed breastfeeding (p-0.077), lack of husband's support (p-0.70), lack of in law's support (p-0.546), lack of parental support (p-0.269). Table 4 represent association of socio-demographic factors, obstetric factors with postpartum depression using binary logistic regression reveals significant association with women with age category 18-24 years have 2.4 times higher chance of developing PPD then later age (OR 2.4; CI-1.4-4.3). Women belonging to Muslim religion have 59% less odd of having PPD compared to Hindu religion family (OR 0.41; CI-0.274-0.639). Overall education show significant association mainly illiterate women show 4.2 times (OR 4.2; CI-1.5-11.2) and women with high school education show 2.7 times (OR -2.7, CI-1.6-4.6) chances of developing PPD. Among the obstetrics factors, significant factors associated with occurrence of PPD were unplanned pregnancy (OR -1.7; CI-1.08-2.8), whereas period of gestation of baby delivered (preterm, term, post term), birth weight of baby, any complications during delivery these factors showed overall significant association but as individual category compared to reference didn't establish any significance.

Table 1: Prevalence of PPD (n=504).

Postpartum depression	EPDS score	No. of women (n=504), N %
Present	>13	216 (42.9)
Absent	<13	288 (57.1)

Table 2: PPD and its association with socio-demographic variables.

Variables	Total (n=504)	Normal (n=288)	PPD (n=216)	P value
Age (in years)				
18-24	82	30 (36.5%)	52 (63.4%)	0.00006
>24-42	422	258 (61.1%)	164 (38.8%)	
Duration of postpartum (in months)				
<3	419	247 (58.9%)	172 (41.0%)	0.072
3-6	83	41 (49.3%)	42 (50.6%)	
6-12	02	0	002 (1%)	
Residence				
Urban	242	158 (65.2%)	84 (34.7%)	0.0005
Rural	262	130 (49.6%)	132 (50.3%)	
Religion				
Hindu	356	228 (64%)	128 (35.9%)	0.000
Muslim	148	60 (40.5%)	88 (59.4%)	
Education				
Illiterate	28	10 (35.7%)	18 (64.2%)	
Primary	08	06 (75%)	02 (25%)	0.000
High school	324	162 (50%)	162 (50%)	
Graduation and post-graduation	144	110 (76.3%)	34 (23.6%)	
Occupation of woman				
Housewife	442	250 (56.5%)	192 (43.4%)	0.48
Working	62	38 (61.2%)	24 (38.7%)	
Family type				
Joint	388	228 (58.7%)	160 (41.2%)	0.179
Nuclear	116	60 (51.7%)	56 (48.2%)	
Socioeconomic status				
Low	256	162 (63.2%)	94 (36.7%)	
Middle	24	10 (41.6%)	14 (58.3%)	0.003
Upper middle	44	30 (68.1%)	14 (31.8%)	
Lower middle	160	74 (46.2%)	86 (53.7%)	
Upper	20	12 (60%)	08 (40%)	

Table 3: PPD and its association with obstetric variables.

Variables	Total (n=504)	Normal (n=288)	Depressed (n=216)	P value
Planned/unplanned pregnancy				0.012
Planned	116	78 (67.2%)	38 (32.7%)	

Continued.

Variables	Total (n=504)	Normal (n=288)	Depressed (n=216)	P value
Unplanned	388	210 (54.1%)	178 (45.8%)	
Parity				
Primi	130	90 (69.2%)	40 (30.7%)	
P2l2	258	128 (49.6%)	130 (50.3%)	0.003
P3l3	84	50 (59.5%)	34 (40.4%)	
P4l4	32	20 (62.5%)	12 (37.5%)	
Gender				
Male	276	162 (58.6%)	114 (41.3%)	0.438
Female	228	126 (55.2%)	102 (44.7%)	
Child number				
1	128	88 (68.7%)	40 (31.2%)	
2	260	130 (50%)	130 (50%)	0.005
3	84	50 (59.6%)	34 (40.4%)	
4	32	20 (62.5%)	12 (37.5%)	
Birth spacing (in years)				
<1	128	88 (68.8%)	40 (31.2%)	
1-2	94	60 (63.9%)	34 (36.1%)	0.001
2-3	218	104 (47.8%)	114 (52.2%)	
>3	64	36 (56.3%)	28 (43.7%)	
Number of female children				
0	110	76 (69.1%)	34 (30.9%)	
1	292	162 (55.5%)	130 (44.5%)	0.012
2	86	40 (46.6%)	46 (53.4%)	
>3	16	10 (62.5%)	06 (37.5%)	
Delivery mode				
Normal vaginal	340	176 (51.8%)	164 (48.2%)	0.000
Ceaseran	164	112 (68.3%)	52 (31.7%)	
Period of gestation				
Preterm	54	40 (74.1%)	14 (25.9%)	0.008
Term	440	240 (54.6%)	200 (45.4%)	
Post term	10	8 (80%)	2 (20%)	
Birth weight (in Kg)				
<2.5	40	16 (40%)	24 (60%)	0.018
>2.5 kg-4	460	268 (58.3%)	192 (41.7%)	
>4	4	4 (100%)	0 (0%)	
Complications during delivery				
Present	26	24 (92.4%)	2 (7.6%)	0.000
Absent	478	264 (55.3%)	214 (44.7%)	
Delayed breastfeeding				
No	469	263 (56.1%)	206 (43.9%)	0.077
Yes	35	25 (71.5%)	10 (28.5%)	
Lack of husband's support				
Present	44	20 (45.5%)	24 (54.5%)	0.070
Absent	460	268 (58.3%)	192 (41.7%)	
Lack of in law's support				
Present	47	27 (57.5%)	20 (42.5%)	0.546
Absent	457	261 (57.2%)	196 (42.8%)	
Lack of parent's support				
Present	10	4 (40%)	006 (60%)	0.269
Absent	494	284 (57.2%)	210 (42.5%)	

Table 4: Association of socio demographic factors, obstetrics factors with postpartum depression using binary logistic regression.

Socio demographic variables	Depressed (n=216)	Adjusted OR	95% CI	P value
Age (in years)				
18-24	52 (63.4%)	2.481	1.426-4.315	0.001
>24-42	164 (38.8%)	1		
Residence				
Urban	84 (34.7%)	0.690	0.459-1.037	0.074
Rural	132 (50.3%)	1		
Religion				
Hindu	128 (35.9%)	0.418	0.274-.639	0.000
Muslim	88 (59.4%)	1		
Education				0001
Illiterate	18 (64.2%)	4.225	1.587-11.251	0.004
Primary	2 (25%)	2.115	0.380-11.772	0.393
High school	162 (50%)	2.762	1.629-4.682	0.000
Graduation and post-graduation	34 (23.6%)	1		
Occupation of woman				
Housewife	192 (43.4%)	0.930	0.485-1.784	0.827
Working	24 (38.7%)	1		
Family type				
Joint	160 (41.2%)			0.291
Nuclear	56 (48.2%)	1		
Socioeconomic status				0.00
Low	94 (36.7%)	0.435	0.152-1.248	0.112
Middle	14 (58.3%)	0.857	0.225-3.261	0.821
Upper middle	14 (31.8%)	0.351	0.105-1.179	0.090
Lower middle	86 (53.7%)	1.234	0.431-3.531	0.696
Upper	8 (40%)	1		
Obstetric factors				
Planned/unplanned pregnancy				
Planned	38 (32.7%)	1.761	1.087-2.854	0.021
Unplanned	178 (45.8%)	1		
Parity				
Primi	40 (30.7%)			
P2l2	130 (50.3%)			0.196
P3l3	34 (40.4%)			
P4l4	12 (37.5%)			
Gender of delivered baby				
Male	114 (41.3%)	0.925	0.587-1.458	0.738
Female	102 (44.7%)			
No. of child women bearing				0.005
1	40 (31.2%)	0.758	0.338-1.699	0.500
2	130 (50%)	1.667	0.783-3.549	0.185
3	34 (40.4%)	1.133	0.490-2.620	0.770
4	12 (37.5%)	1		
Birth spacing (in years)				
<1	40 (31.2%)			
1-2	34 (36.1%)			0.238
2-3	114 (52.2%)			
>3	28 (43.7%)			
Mode of delivery				
Normal	164 (48.2%)	1.756	1.127-2.736	0.013
Caesarean	52 (31.7%)	1	1	

Continued.

Socio demographic variables	Depressed (n=216)	Adjusted OR	95% CI	P value
Period of gestation				0.027
Preterm	14 (25.9%)	1.231	0.207-7.311	0.819
Term	200 (45.4%)	3.167	0.614-16.349	0.169
Post term	2 (20%)	1		
Birth weight of delivered baby (in kg)				0.013
<2.5	24 (60%)			0.999
>2.5	192 (41.7%)			0.999
>4	0 (0%)			0.011
Complications during delivery				
No	2 (7.6%)	6.970	1.575-30.844	0.011
Yes	214 (44.7%)	1		
Delayed breastfeeding				
No	206 (43.9%)	1.570	0.645-3.821	0.321
Yes	10 (28.5%)			
Lack of husband support				
Present	24 (54.5%)	0.640	0.315-1.298	0.216
Absent	192 (41.7%)	1		

DISCUSSION

One of the most common complications associated with childbirth is postpartum depression. Many studies have been conducted in to find out the link between risk factors and PPD, showing different results. The present study was carried out with the aim of finding an association between socio-demographic factors, obstetric factors and the occurrence of PPD. In the present study, a prevalence of PPD was found to be 42.9%. This finding is comparable with the results of studies carried out in Karnataka and Maharashtra, which reported 42.7% and 38.5% prevalence, respectively.[4,6] In another study conducted at Gorakhpur, Uttar Pradesh, among 280 postpartum women, the prevalence of PPD using the EPDS scale was found to be 12.14%.[7] Different studies have reported different prevalences ranging from (5.5%, 26%, 54% and 74%).[8-11] A likely explanation for this variation in prevalence is the different study areas, cultures and population characteristics.

In the present study, more than half of women (63.4%) with PPD were in the age group of 18-24 years. Maternal age was significantly associated with PPD in the present study ($p<0.05$) and similar association was found in the study conducted in Karnataka and Andhra Pradesh.[6,12] A study carried out in Gujrat found that the majority of women with PPD (57.8%) were younger than 25 years.[13] Younger mothers often experience inadequate emotional preparedness, financial dependency and limited childcare experience, which may contribute to increased psychological stress during the postpartum period.

Maternal education showed a significant association with postpartum depression. Women with lower educational attainment had higher odds of depression than graduates. Similar observations have been reported by a study done in Uttar Pradesh.[14] Lower educational status may reduce awareness regarding maternal health, limit access to healthcare services and increase dependence on family members, thereby increasing vulnerability to postpartum depression. Women residing in rural areas demonstrated significantly higher rates of postpartum depression compared with urban women. Similar findings have been reported in a study done in Maharashtra.[1] Limited accessibility to healthcare services, poor social support, financial constraints and reduced awareness regarding mental health may explain the higher burden among rural women. In contrast to the findings, some studies done in Gujarat and Tamil Nadu found out that women residing in urban areas were suffering more from postpartum depression.[9,13]

Socioeconomic status is a strong predictor of mental health. In the study, women belonging to middle socioeconomic class has more depressive symptoms of postpartum. Identical results were found in study carried out at Karnataka (63.8%) 15 and Gujrat (56.3%) 13 reported that PPD was more common in women belonging to a middle socioeconomic class. The association between socioeconomic status and PPD was found to be significant in the present study ($p<0.05$). A part from these findings, some studies claimed that PPD was more common in women of low socioeconomic class and of lower middle socioeconomic class.[1,8,10,16]

In the current study, Muslim women (59.4%) were having more PPD than Hindus. Religion and postpartum depression were significantly associated ($p<0.05$). A study executed at Gujrat showed different result as in its Hindu women (79.7%) emerged to have more PPD.[13] The first six months postpartum represent the period of greatest vulnerability to postpartum depression because of the combined effects of abrupt hormonal changes, sleep deprivation, physical recovery from childbirth, adaptation to motherhood, breastfeeding challenges, infant caregiving

demands and psychosocial stressors. The peak incidence is generally observed within the first months after delivery as was observed in the present study (50.6%) along with other study having the same observations.[4,13] In the present study, mothers with unplanned pregnancies (48.8%) were more likely to experience postpartum depression and showed statistically significance ($p<0.05$). This association may be explained by increased psychological distress, financial concerns, inadequate social and partner support, lower preparedness for motherhood and higher levels of antenatal anxiety among women with unintended pregnancies. These findings are consistent with previous studies that identify unplanned pregnancy as an important psychosocial risk factor for postpartum depression.[13,17] In the current study, women whose parity was 2 (50.4%) or more than 2 was seen having more PPD as compared to prim parous. Parity and PPD showed statistical significance ($p<0.05$). These findings were in line with studies done earlier showing PPD more in multiparous women.[8,13] In a study done in Nagaland10 differed from these results as it showed that PPD was more observed in women who are prim parous and having planned delivery.

Mothers with a short birth interval (2-3 years) as noted in the present study had higher risk of postpartum depression and statistical significance was also seen ($p<0.05$). Same discovery was also found in a study done in Gujarat.[13] This association may be explained by incomplete maternal recovery from the previous pregnancy, increased childcare responsibilities, sleep deprivation, financial stress and greater psychological burden.

Women having 2 (50%) or more children were prone to have more PPD as seen in our study and also statistical significance was seen ($p<0.05$). Mothers of female child had more PPD as noted in the current study and displayed statistically significant ($p<0.05$). Similar finding was also seen in other studies where women having female child was more inclined to suffer from PPD.[13,18]

In the present study, those women who had normal vaginal delivery (48.2%) had more PPD and also the association was statistically significant ($p<0.05$). Exact findings were also seen in other studies.[8,19] However some studies beg to differ where women delivering by Caesarean section had more chances of having PPD.[20,21] Women who delivered babies at Term (45.4%) had more PPD as perceived by the present study and also the association was significant ($p<0.05$).While another study suggested that those women who had preterm delivery were having more PPD.[17]

In the present study, 60% of mothers with low-birth-weight (LBW) babies were depressed during the postpartum period, but this association was not statistically significant. Similar findings were reported in previous studies where mothers of low-birth-weight babies developed PPD.[13,18] Age plays important role in development of postpartum depression as young mothers are emotionally immature turning into motherhood hence in our study, young age (18-25 years) shows 2.4 times odds of having PPD and is consistent with finding of study done in Gujarat (OR-6.9).[13]

Results from the Indore study also demonstrated that women belonging to religions other than Hindu to have lower odds of developing depression and rural residence less associated factor than mother of urban setting in line with our current study.[23] Education is a vital parameter in determining depression, findings are comparable with a previous study (OR-4.5) showing literacy less than high school have high odds of PDD. In our study socioeconomic status doesn't show significant association and are with SES results of other studies.[8,13,23] Working mother doesn't show any association over housewives-mother in the occurrence of PPD but it is in contrast with finding of a study.[23] Nuclear family has higher odds of depression compared to joint families in studies but it was not found significant in our study.[13,23] Unplanned pregnancy leads to emotional and stressful turn moil resulting in increased chances to develop PPD which is consistent in current study similar findings are seen other studies.[13,23]

Strength

The present hospital-based cross-sectional study used a validated screening instrument (EPDS) to estimate the prevalence of postpartum depression and assess multiple socio-demographic, obstetric, neonatal and psychosocial risk factors. Standardized data collection methods enhanced the reliability of the findings. The study provides valuable baseline evidence regarding postpartum depression among women attending postnatal services and may inform routine screening and maternal mental health interventions in similar healthcare settings.

Limitations

The cross-sectional design limits the ability to establish temporal or causal relationships between the identified risk factors and postpartum depression. Being a hospital-based, single centre study, the findings may not be generalizable to the wider community. The use of a screening tool rather than a diagnostic psychiatric assessment may have resulted in some misclassification of cases. Additionally, recall bias, social desirability bias and residual confounding due to unmeasured variables may have influenced the observed associations.

CONCLUSION

Postpartum depression in the present study demonstrated a high prevalence of 42% among postpartum women attending tertiary care centre, concluding that maternal mental issues are overlooked but are significant public health concern. The multiple variable analyses shows younger age, low educational status, unplanned pregnancy and normal vaginal mode of delivery as significant independent predictors of postpartum depression in the present study. while several other socio-demographic and

obstetric factors reported association however associations were not retained after adjusting confounders. These findings suggest the need of screening maternal mental health issues during antenatal and postnatal visits to hospital, along with counselling and awareness to recognise, report and to seek treatment.

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