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### Prevalence and predictors of postpartum depression among mothers: A community based cross-sectional study

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#### Abstract

**Background:** Postpartum depression (PPD) is one of the most common mental disorders occurring during the postnatal period among women. Few studies examined prevalence and risk factors of PPD from rural and urban settings in Karnataka, India. This study aimed to assess the prevalence of postpartum depression and identify the associated risk factors for it among women from Taluka of Vijayanagar District.

**Materials and Methods:** A cross-sectional study was conducted in a community setting in rural and urban areas of Karnataka. All postnatal women were screened through a door-to-door survey and recruited after obtaining informed consent. A semi-structured questionnaire was used to collect sociodemographic characteristics and family related variables. Edinburgh postnatal depression scale (EPDS) was used to screen for postpartum depression.

**Results:** A total of 810 postpartum women were recruited into the study. The overall prevalence rate of PPD (Fig. 1) was 28.8% (233 out of 810 mothers) when 810 mothers were screened for postpartum depression (95% CI = 11.33, 13.16). Multivariate analysis showed postpartum depression was associated with age, locality, occupation of the mother, general illness in the mother, poor financial status and pressure to have male babies.

**Conclusion:** Prevalence of postpartum depression among women is high in rural and urban settings of Vijayanagar District, Karnataka. A multitude of factors ranging from sociodemographic, maternal, economic and family related factors confer a high risk for PPD. Comprehensive interventions are needed to address these risk factors of postpartum depression in women in the community.

**Keywords:** Postpartum depression, maternal factors, socio economic status, demographic factors and financial status

#### Introduction

Women are more likely to develop mental illnesses during pregnancy and the first year after birth. Postnatal mental health refers to a woman's mental health during her pregnancy and in the first year after giving birth. This encompasses mental health disorders that existed prior to pregnancy, as well as mental health problems that emerge or worsen during the perinatal period. Depression and anxiety are the most frequent mental health issues during pregnancy, with about 12% of women suffering depression and 13% experiencing anxiety at some stage, with many women experiencing both. Depression and anxiety affect 15-20% of women in the first year after childbirth (Bauer *et al.*, 2014) [7].

The global prevalence of postpartum depression has been estimated as 100–150 per 1000 births. The effects of postnatal depression on the mother, her marital relationship, and her children make it an important condition to diagnose, treat and prevent (Stewart *et al.*, 2003) [28]. According to research approximately 10–15% of women worldwide suffer with PPD (Arifin *et al.* 2018; Klainin *et al.*, 2009 and Upadhyay *et al.*, 2017) [5, 18, 30]. Prevalence of postpartum depression is thought to be twice as common in developing nations as it is in developed countries, yet they are underexplored (Gajaria and Ravindran. 2018) [17]. According

to a comprehensive review, 22% of Indians suffer with PPD and prevalence ranges from 3 to 47% (Shriram *et al.* 2019; Agarwala *et al.* 2019 and Upadhyay *et al.*, 2017) [25, 2, 30].

Studies have shown that in the context of developing countries, a mother's depression can contribute to her child's stunted growth and low weight (Surkan *et al.* 2011) [29]. If left untreated, this disorder will have a substantial and long-term influence on the new-born's emotional, cognitive, and intellectual development (Feldman *et al.*, 2009) [15]. Researchers have found that approximately 40% of postpartum depression episodes began at postpartum, while 33.40% occurred during pregnancy and just over a quarter started prior to pregnancy. Approximately 19.00% of mothers who screened positive for postpartum depression also showed signs of self-harm ideation. Women with postpartum depression are frequently diagnosed with co-morbid disorders. And almost two-thirds of women had co-morbid anxiety disorders, 68.50% had co-morbid unipolar depressive disorders, and 22.60% had bipolar disorders (Wisner *et al.*, 2013) [34].

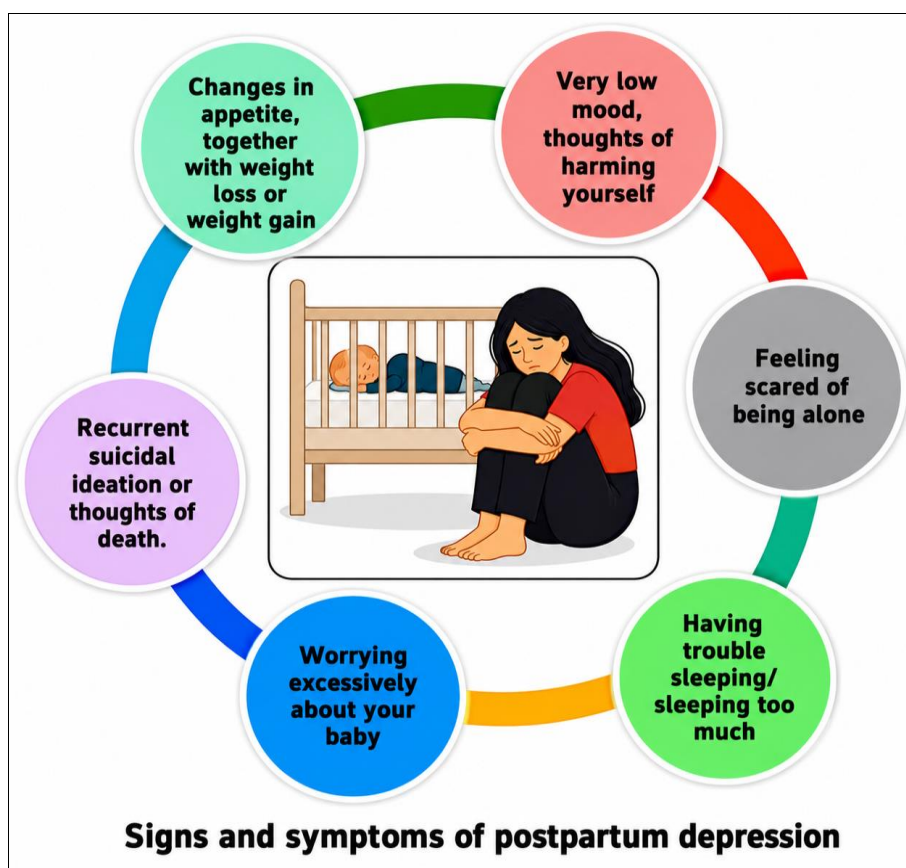
Extreme mood swings, anxiety, and melancholy are some of the emotional indicators and symptoms of postpartum depression. Low self-esteem, numbness, and emptiness are also typical, as are frustration, annoyance, restlessness, anger, hopelessness, helplessness, shame, remorse, and

worthlessness. Fatigue, inability to comfort, inability to form a link with the infant, feeling unfit to care for the child, and in extreme situations, moms may have suicidal or self-destructive ideas. Lack of enjoyment or interest in daily activities, low libido, changes in appetite, exhaustion, low energy, lack of self-care, social disengagement, insomnia, or excessive sleeping are additional behavioral indicators and symptoms of postpartum depression (Boston Women's Health Book Collective, [www.cdc.gov](http://www.cdc.gov) and Wisner *et al.* 2013) [9, 34].

Financial difficulties, domestic abuse, a history of psychiatric diseases, marital conflict, a lack of support from the husband, and the birth of a female child are all documented risk factors for PPD in India, which differ slightly from those in developed countries (Upadhyay *et al.*, 2017) [30]. Cry spells, mood fluctuations, anxiety, loss of appetite, sleeping issues, thoughts of harming oneself or a kid, and a lack of interest in the infant are all warning symptoms of PPD in women (Dhande *et al.*, 2014; Norhayati *et al.*, 2015) [13, 21]. Clavenna *et al.* (2017) [11] found considerable evidence that postpartum depression has a negative impact on mothers, infants, and their families. Anxiety, decreased focus, and a gloomy mood are all

symptoms of PPD, which have a negative impact on the maternal-child bond (Righetti-Veltema *et al.*, 2002) [22]. According to recent research, depression among new moms can lead to delayed breastfeeding initiation and early cessation of breast milk production (Slomian *et al.* 2019) [27].

Other negatively affected areas are; caretaking of the infant (e.g., feeding, diaper change and safety monitoring); providing health care to infant manifested by decreased adherence to regular checkup well-baby visits and increased frequency healthcare providers visits due to infant problems; and lastly, depressed mothers have lower rates of gratification and enjoyment in their mothering role compared with non-depressed mothers. PPD does not only affect children, but its effect on marital and family relationship can be deleterious, ranging from marital disagreements and hostility to marital separation and even divorce. Hence, the aim of the study was to assess the prevalence of postpartum depression among postpartum mothers and to know the association between personal and familial factors on the postpartum depression among mothers in talukas of Vijayanagar district, Karnataka, India.



### Materials and Methods

We did our research in Hagaribommanahalli Taluk, Vijayanagar District, Karnataka, India. Karnataka is one of India's developing states, with a high illiteracy rate and a middle-class economy. Karnataka's overall population is 61,130,704 (6.11 crore), with Vijayanagar District having a population of 1,353,628 (Census, 2011). Karnataka spends only 14% of its GDP on health, compared to other states, which spend approximately 6-8%. The maternal mortality rate in Karnataka is 92 per 100,000 live births, which is

slightly lower than the national average of 103 per 100,000. Infant mortality rates are also low.

### Study participants

All postpartum women (those currently delivered) in the selected area were identified using door to door survey method. The survey was conducted with the help of ASHA workers from Health department and Anganwadi teachers from women and child welfare department (ICDS) in both urban and rural area. Those who gave informed consent

were included for the study.

### Assessment tools

A self-structured interview schedule to elicit the demographic information and personal characteristics about mother and the infant was used and Socio-Economic Status (SES) by Aggarwal *et al.* (2005) [3] was also used for the study.

**Edinburgh Postnatal Depression Scale (EPDS) by Cox *et al.* (1987)** [12]: Edinburgh Postnatal Depression Scale is a screening tool. The EPDS consists of 10 questions. The test can usually be completed in less than 5 minutes. Responses are scored 0, 1, 2, or 3 according to increased severity of the symptom. Items marked with an asterisk (\*) are reverse scored (*i.e.*, 3, 2, 1, and 0). The total score is determined by adding together the score for each of the 10 items.

### Administration of the tools

Initially rapport was built and later, questionnaires were administered. General information schedule eliciting information on individual, familial and infant factor information was asked. Self-structured questionnaire on socio-economic status was administered on each woman respondent. Anthropometric measurements such as height, weight and MUAC were measured. Initially all 810 women were screened for postpartum depression using Edinburgh Postnatal Depression Scale (EPDS) by Cox *et al.* (1987) [12]. Based on the EPDS scores the prevalence of postpartum depression was assessed and women were categorized as depressed and non-depressed. The factors influencing postpartum depression was studied by employing the

quantitative research method. The Edinburgh Postnatal Depression Scale (EPDS) tool was translated to local (Kannada language) language and administered on participants and the reliability for EPDS tool was found to be satisfactory 0.8 (Cronbach's alpha) and the Guttman split-half co-efficient was 0.7.

**Ethical considerations:** The study protocol was approved by the Agriculture University ethics committee, Dharwad, India. The study was initiated after the ethical approval. Informed written consent was obtained from the study participants in the local language (Kannada) before recruiting them into the study. All the study participants were provided with the information on postnatal depression. Women who tested positive in the EPDS (score of 10 or higher) received counseling and appropriate care, if needed. Anonymity and confidentiality were maintained all through the study.

### Statistical analysis

The prevalence of postpartum depression was presented with 95% CI. Continuous and categorical socio-demographic profiles were summarized as mean with SD and frequencies with percentages were provided. The categorical variables were associated with the outcome (PPD and Non-PPD) using the chi-square test. All continuous variables were compared across the groups using an independent t-test or Mann Whitney U test as appropriate. Logistic regression analysis was done adjusting for confounders and risk factors.  $p < 0.05$  was considered statistically significant. Data were analyzed using SPSS software version 26.0.

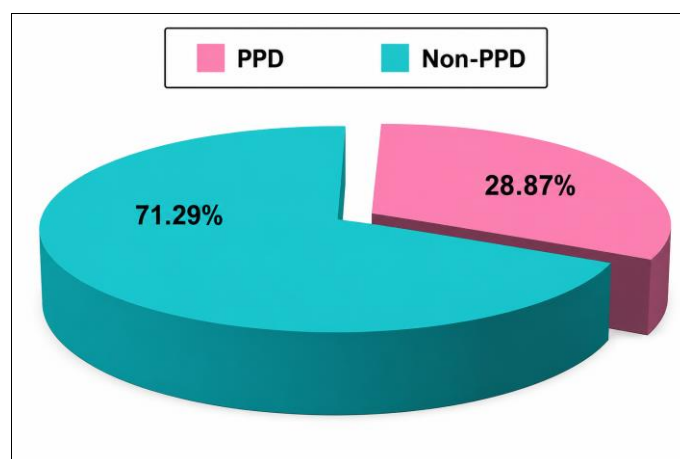


**Fig 5:** Overall prevalence of postpartum depression

### Results

The summary measures of all sociodemographic variables are presented in Table 1. The prevalence of postpartum depression among mothers. The mean (SD) age of the study participants is 24.5 (3.2). The overall prevalence rate of PPD (Fig. 1) was 28.8% (233 out of 810 mothers) when 810

mothers were screened for postpartum depression.

The results of the sociodemographic are provided in Table 1. Age of the mother, age at marriage, number of years of marriage, education and occupation of the mother, type of family and socioeconomic status of the family had significant influence on postpartum depression.

**Table 1:** Association between demographic factors and postpartum depression ( $N = 810$ )

| Variables             | Category    | Non- depressed $n = 577$ | Depressed $n = 233$ | $\chi^2$ Value | p- value |
|-----------------------|-------------|--------------------------|---------------------|----------------|----------|
| Age of the mother     | 19-23 years | 359 (79.1)               | 95 (20.9)           | 43.4***        | 0.009**  |
|                       | 24-28 years | 138 (68.7)               | 63 (31.3)           |                |          |
|                       | 29-33 years | 80 (51.6)                | 75 (48.4)           |                |          |
| Age at marriage       | 18-21 years | 326 (68.9)               | 147 (31.1)          | 9.5**          | 0.08*    |
|                       | 22-25 years | 211 (77.6)               | 61 (22.4)           |                |          |
|                       | 26-29 years | 40 (61.5)                | 25 (38.5)           |                |          |
| Education of mother   | Illiterate  | 99 (71.2)                | 40 (28.8)           | 7.8*           | 0.50*    |
|                       | Primary     | 63 (80.8)                | 15 (19.2)           |                |          |
|                       | PUC         | 176 (65.9)               | 91 (34.1)           |                |          |
|                       | Graduation  | 239 (73.3)               | 87 (26.7)           |                |          |
| Occupation of mother  | Homemaker   | 517 (72.7)               | 164 (27.3)          | 6.2**          | 0.02*    |
|                       | Working     | 60 (60.6)                | 39 (39.4)           |                |          |
| Locality              | Rural       | 112 (65.1)               | 60 (34.9)           | 3.9*           | 0.01*    |
|                       | Urban       | 465 (72.9)               | 173 (27.1)          |                |          |
| Type of family        | Nuclear     | 310 (74.2)               | 108 (25.8)          | 3.6*           | 0.05*    |
|                       | Joint       | 267 (68.1)               | 125 (31.9)          |                |          |
| Socio-economic status | High        | 147 (74.2)               | 51 (25.8)           | 5.6*           | 0.008**  |
|                       | Middle      | 355 (73.2)               | 130 (26.8)          |                |          |
|                       | Low         | 75 (59.1)                | 52 (40.9)           |                |          |

Figures in the parentheses indicate percentage

NS-Non-Significant \*Significant at 1% level

\*\* Significant at 0. 1% level

Maternal and infant factors which influenced the postpartum depression were presented in Table 2. Non-consanguineous marriage, underweight and mothers who never breastfed

their babies, birth weight of the baby, mode of delivery, pressure to have male baby were the factors that influenced the postpartum depression on mothers.

**Table 2:** Association between maternal factors and postpartum depression ( $N = 810$ )

| Variables                   | Category                             | Non- depressed $n = 577$ | Depressed $n = 233$ | $\chi^2$ Value     | p- value           |
|-----------------------------|--------------------------------------|--------------------------|---------------------|--------------------|--------------------|
| Consanguinity               | Consanguineous                       | 196 (82.4)               | 42 (17.6)           | 20.33***           | 0.001***           |
|                             | Non - consanguineous                 | 381 (66.6)               | 191 (33.4)          |                    |                    |
| BMI                         | Normal or healthy weight (18.5-24.9) | 143 (80.8)               | 33 (18.8)           | 11.21**            | 0.004**            |
|                             | Underweight ( $<18.5$ )              | 294 (68.1)               | 139 (32.1)          |                    |                    |
|                             | Overweight (25- 29.9)                | 140 (69.7)               | 61 (30.3)           |                    |                    |
| Birth weight of the infant  | Normal ( $\geq 2.5$ kg)              | 220 (78.9)               | 59 (21.1)           | 12.05**            | 0.01*              |
|                             | Low birth weight ( $\leq 2.5$ kg)    | 357 (67.2)               | 174 (32.8)          |                    |                    |
| Mode of feeding             | Exclusively breast fed               | 138 (76.2)               | 43 (23.8)           | 18.31**            | 0.01*              |
|                             | Complimentary feed                   | 164 (80.8)               | 41 (20.0)           |                    |                    |
|                             | Never breast fed                     | 275 (64.9)               | 149 (35.1)          |                    |                    |
| Parity                      | Primiparity                          | 258 (76.1)               | 81 (23.9)           | 2.23 <sup>NS</sup> | 0.08 <sup>NS</sup> |
|                             | Multi parity                         | 319 (67.7)               | 152 (32.3)          |                    |                    |
| Type of pregnancy           | Intended                             | 513 (74.1)               | 179 (25.9)          | 2.90 <sup>NS</sup> | 0.42 <sup>NS</sup> |
|                             | Unintended                           | 64 (54.2)                | 54 (45.8)           |                    |                    |
| Pressure to have male child | No                                   | 252 (76.4)               | 78 (23.6)           | 0.56 <sup>NS</sup> | 0.34 <sup>NS</sup> |
|                             | Yes                                  | 324 (67.6)               | 155 (32.4)          |                    |                    |
| Mode of delivery            | Normal                               | 367 (69.1)               | 146 (30.9)          | 0.89 <sup>NS</sup> | 0.56 <sup>NS</sup> |
|                             | C – section                          | 250 (74.2)               | 87 (25.8)           |                    |                    |
| General health status       | Mildly affected                      | 526 (72.9)               | 196 (27.1)          | 8.69*              | 0.01               |
|                             | Moderately affected                  | 41 (56.9)                | 31 (43.1)           |                    |                    |
|                             | Severely affected                    | 10 (62.5)                | 6 (37.5)            |                    |                    |

Figures in the parentheses indicate percentage

NS-Non-Significant

\*Significant at 1% level

\*\* Significant at 0. 1% level

### Bivariate analysis showing risk factors of postpartum depression

The adjusted odds ratio analysis was presented for the variables which were significant in analysis in Table 3. Older mothers, working mothers, mothers from rural area, mothers who had non-consanguineous marriage, pressure to have male baby and anemic mothers had significant influence on postpartum depression among mothers.

Significant association between age of the mother and postpartum depression in which mothers between 29 to 33 years had higher odds of risk ( $OR = 2.05$ ,  $95\% CI = 1.33$ ,  $3.16$ ) of having postpartum depression. The depression severity was high among mothers in the age group of 29-32 years.

Mothers who were working (39.4%) were more depressed compared to who were home makers (27.30) and working

mothers had higher odds of risk (OR = 1.73, 95% CI = 1.12, 2.67) of having postpartum depression. Mothers from rural locality (34.90%) were more depressed in comparison with mothers from urban locality (27.10%) and rural mothers had higher odds of risk (OR = 1.44, 95% CI = 1.01, 2.06) of developing postpartum depression than urban mothers. Mothers from poor SES had 1.99 times higher odds of

developing postpartum depression (OR = 1.99, 95% CI = 1.24, 3.21) followed by middle class (OR = 1.05, 95% CI = 0.72, 1.53) and reference category. Non-consanguineous marriage had 2.33 times higher odds of risk of having (OR = 2.33, 95% CI = 1.60, 3.40) postpartum depression in comparison with mothers with consanguineous marriage (Table 3).

**Table 3:** Bivariate analysis of risk factors influencing postpartum depression among mothers (N = 810).

| Variable                            | Category                   | OR (95% CI)       | P value            |
|-------------------------------------|----------------------------|-------------------|--------------------|
| Age of the mother                   | 19-23 years                | 1                 | 0.000***           |
|                                     | 24-28 years                | 0.58 (0.39, 0.84) |                    |
|                                     | 29-33 years                | 2.05 (1.33, 3.16) |                    |
| Age at marriage                     | 18-21 years                | 1                 | 1.20 <sup>NS</sup> |
|                                     | 22-25 years                | 0.64 (0.45, 0.90) |                    |
|                                     | 26-29 years                | 1.38 (0.81, 2.37) |                    |
| Occupation of the mother            | Home maker                 | 1                 | 0.01*              |
|                                     | Working                    | 1.73 (1.12, 2.67) |                    |
| Locality                            | Rural                      | 1                 | 0.05*              |
|                                     | Urban                      | 1.44 (1.00, 2.06) |                    |
| Type of family                      | Nuclear                    | 1                 | 0.05*              |
|                                     | Joint                      | 1.34 (0.99, 1.82) |                    |
| Size of the family                  | 1-5 members                | 1                 | 0.62 <sup>NS</sup> |
|                                     | 6-10 members               | 1.59 (1.15, 2.19) |                    |
|                                     | >10 members                | 1.28 (0.72, 2.29) |                    |
| Socio economic status of the family | High                       | 1                 | 0.004**            |
|                                     | Middle                     | 1.05 (0.72, 1.53) |                    |
|                                     | Poor                       | 1.99 (1.24, 3.21) |                    |
| Consanguinity                       | Consanguineous             | 1                 | 0.000***           |
|                                     | Non – consanguineous       | 2.33 (1.60, 3.40) |                    |
| BMI                                 | Normal weight (18.5-24.9)  | 1                 | 0.97 <sup>NS</sup> |
|                                     | Underweight (<18.5)        | 2.04 (1.33, 3.14) |                    |
|                                     | Overweight (25- 29.9)      | 1.88 (1.16, 3.06) |                    |
| Parity                              | Primiparity                | 1                 | 0.82 <sup>NS</sup> |
|                                     | Multi parity               | 1.51 (1.10, 2.08) |                    |
| Type of pregnancy                   | Intended                   | 1                 | 0.43 <sup>NS</sup> |
|                                     | Unintended                 | 2.41 (1.62, 3.60) |                    |
| Mode of delivery                    | Normal                     | 1                 | 0.61 <sup>NS</sup> |
|                                     | C – section                | 1.45 (1.07, 1.98) |                    |
| Pressure to have male child         | No                         | 1                 | 0.007**            |
|                                     | Yes                        | 1.54 (1.12, 2.12) |                    |
| Birth weight of the baby            | Normal (≥ 2.5 kg)          | 1                 | 0.42 <sup>NS</sup> |
|                                     | Low birth weight (≤2.5 kg) | 1.81 (1.29, 2.55) |                    |
| Mode of feeding                     | Exclusively breast fed     | 1                 | 0.81 <sup>NS</sup> |
|                                     | Complimentary feed         | 0.80 (0.49, 1.30) |                    |
|                                     | Never breast fed           | 1.73 (1.17, 2.58) |                    |

Figures in the parentheses indicate percentage

NS-Non-Significant

\*\* Significant at 1% level

## Discussion

The overall prevalence (Fig 1) rate of PPD was 28.8 (233 out of 810) which is alarming and calls for attention to the rise in the problem. Similar results were observed in the studies conducted in Maharashtra, India by Gaikwad *et al.* (2019) [16] who reported that prevalence rate was 12.7%, by Sivapragasam *et al.* (2019) [26] in Chennai (25%) by Baishya and Das (2020) [6] showed 26% prevalence rate in Assam and Neelakantli in Bangalore reported a prevalence rate of 31.3%.

We observed that mothers who were 29 to 32 years old had increased risk of PPD two-fold. This has been observed by many others as well (Alikamali *et al.*, 2020, Cantilino *et al.*, 2010, Bener *et al.*, 2012) [4, 10, 8]. This may be due to greater risk of obstetric complications and severe maternal morbidities experienced by women in older group including

thyroid problems, gestational diabetes, previous miscarriages, infertility issues and delayed pregnancies. In the present study, mothers expressed that they worried about their pregnancies, which increased their anxiety and stress level which leads to postpartum depression.

There are many factors like difficulty in parenting during older age and lack of partner support as a result of deviations from social standards about maternal age, have been linked to increased risk of postpartum depression. Mothers who were married at the age of 26 to 29 years had 1.38 times higher odds of risk of having postpartum depression. This might be due to the fact that a woman's mentality is significantly affected by the age at which she marries. In the present study women who married later reported higher adjustment problems with their spouse and mother-in-law and health issues which may be cause of

postpartum depression. Similar results were reported by many others. (Abdullahi *et al.*, 2014 and Alikamali *et al.*, 2020) <sup>[1, 4]</sup> also reported that postpartum depression increases with marital age. This may be due to the fact that women with higher maternal age are susceptible to hormonal changes and fluctuations. It is common knowledge that early pregnancy causes major changes for new mothers as they try to balance their own and the baby's development. But in later age mothers were worried about the development of the baby (Table 3). Various factors such as location of the study and tools used could account for the wide variations in the reported prevalence of postpartum depression in India. A slightly higher rate was observed in our study. This difference could be due to the fact that the women being from a rural disadvantaged community had to contend with multiple social risk factors contributing for depression.

Other studies from the disadvantaged communities have also shown higher prevalence of postpartum depression when compared to the national average (Shivalli and Gururaj, 2015) <sup>[24]</sup>. The prevalence of postpartum depression was higher among women who were residing in rural area than urban mothers. The rural mothers had 1.44 times higher odds of risk of postpartum depression. This may be because rural mothers do not have much financial support. They may not receive support from their family, no food diversity in diet, had poor awareness about nutrition. This might be due to interpersonal violence in family, lack of self-perceived health, lack of social support which contribute to stress and depression and also stigma attached with patriarchal society. Similar results were reported by Villegas *et al.* (2011) <sup>[32]</sup> who showed that prevalence of PPD was higher (27%) in rural mothers and had significant association with postpartum depression. Baishya and Das (2020) <sup>[6]</sup> also found that rural mothers had higher risk of postpartum depression than urban mothers. However, contradictory results were reported by Vigod *et al.* (2013) <sup>[31]</sup>, who showed that postpartum depression was higher in urban mothers than in rural mothers. The contradiction may be due to socio-cultural differences in the study population.

Mothers from poor SES (1.99 times) and low SES group (26.8%) showed higher prevalence rates of postpartum depression. This might be due to mothers of poor socioeconomic status having a financial burden, inadequate living conditions and psychosocial stress. Neelakanthi *et al.* (2021) <sup>[20]</sup> showed mothers with low socioeconomic status had higher risk of postpartum depression than mothers in other groups and also Wang *et al.* (2019) <sup>[33]</sup>, Edward *et al.* (2006) <sup>[14]</sup> showed in which mothers from lower socioeconomic status had higher rate of prevalence of postpartum depression.

Mothers with non-consanguineous marriage had 2.33 times higher odds of risk of having postpartum depression. This might be due to the fact that familiarity in the consanguineous marriage helps the women adjust to their spouse and family easily, where as in non-consanguineous marriage, the women may initially have some difficulty in adjusting to their spouse and his family. These findings are in line with the findings of Sheeba *et al.* (2019) <sup>[23]</sup> and Bener *et al.* (2012) <sup>[8]</sup>, which found that women who were not consanguineous were more likely to experience postpartum depression than mothers who were.

Major strengths of this study are that it was a community-based study recruiting all the postnatal women in the study

site using door-to-door surveys. We used a standardized instrument to screen for postpartum depression. Our sample size is quite large and the authors have received considerable training to ensure their integrity in administering EPDS.

**Major limitations of the study are:** Standard tools to collect family and economic variables could not be used. This information was collected as subjective reports. We had to minimize the interview time and the number of tools used due to lack of time and feasibility of conducting confidential interviews in these settings; being a cross-sectional design, we could arrive only at meaningful associations but not causal directions of associations. Screening of postpartum depression among pregnant women and lactating women at community level. Longitudinal studies are needed to estimate the incidence and examine risk and protective factors that contribute to postpartum depression. Based on these results, longitudinal study to assess the impact of psychological intervention to prevent postpartum depression among postpartum mothers can be conducted. Interventional studies targeting important, locally relevant risk and protective factors need to be tested for the prevention of postpartum depression leading to better maternal and child outcomes in the short- and long-term.

## Conclusion

Postpartum depression was more prevalent in mothers aged 25 to 30 years. Depression was associated with sociodemographic characteristics such as mother's age, lower education levels, and low socioeconomic status. Working women were more likely to suffer from depression. There is a need to develop appropriate programmes to treat postpartum depression in postpartum mothers. Eliminating these risk factors can dramatically improve women's mental well-being during the important postnatal period. The study concludes that adopting screening measures such as EPDS should be practical and the norm for all patients in order to offer care for the total physical and mental well-being of both mother and child. Our findings could help policymakers and healthcare practitioners address mental health difficulties among postpartum mothers. These findings highlight the need to raise public knowledge regarding PPD and its risk factors, including as stressful life events, poor prenatal attendance, and a history of obstetric complications.

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