Italian Journal of
Gynæcology & Obstetrics
June 2021 - Vol. 33 - N. 2 - Quarterly - ISSN 2385 - 0868

# A study of postpartum depression and its risk factors in a Tertiary Hospital in India

N. Mahale[1], M. Prabhu[1], K. Pai[2], A. Mahale[3], A. Nayak[4]

[1]Department of Obstretics and Gynaecology Kasturba Medical College, MAHE, Mangalore, Dakshina Kannada, Karnataka, India
[2]Department of Psychiatry, Kasturba Medical College, MAHE, Mangalore, Dakshina Kannada, Karnataka, India
[3]Department of Radiodiagnosis, Kasturba Medical College, MAHE, Mangalore, Dakshina Kannada, Karnataka, India
[4]Department of Medicine, Kasturba Medical College, MAHE, Mangalore, Dakshina Kannada, Karnataka, India

## ABSTRACT

**Background**. To determine the proportion of postpartum depression in women attending a Tertiary Hospital and to determine and study the risk factors associated with postpartum depression.
**Methods**. The present study was a Hospital based Cross-sectional study in which 561 women were assessed on the 3rd postnatal day and at 6 weeks postpartum for depression and significant risk factors associated with it.
**Results**. Total number of 600 postnatal women participated in the study. 39 women were lost to follow up at 6 weeks. Final sample size for analysis 561. Out of the total 561 postnatal women, 135 of them had a score of > 13 on the EPDS on the 3rd postpartum day, indicating 24.1% of the postnatal women with "Postpartum Blues". The proportion of postpartum depression was 7.7%.
**Conclusions**. The present study found factors like Age of the woman, low level of education, low socio-economic status, age at marriage, primiparity, obstetric complications, previous miscarriage, preference for a male child, neonatal complications, psychiatric disorder, living in joint families, marital conflict, lack of family support and alcohol abuse by the husband were the risk factors for Postpartum depression. There was no association between postpartum depression and factors like age at first pregnancy, whether the pregnancy was planned or unplanned, infertility treatment, mode of delivery (vaginal or caesarean, medical comorbidities and adverse life event during pregnancy).

## SOMMARIO

**Contesto.** Determinare la percentuale di depressione postpartum nelle donne che frequentano un ospedale terziario e studiare i fattori di rischio associati alla depressione postpartum.
**Metodi.** Il presente studio era uno studio trasversale basato sull'ospedale in cui 561 donne sono state valutate per la depressione ed i fattori di rischio significativi ad essa associati, il terzo giorno dopo il parto ed a 6 settimane.
**Risultati.** 600 donne hanno partecipato allo studio a seguito del parto. 39 donne sono state perse al follow-up a 6 settimane. La dimensione del campione finale per l'analisi è pari a 561. Sul totale di 561 donne postnatali, 135 di loro avevano un punteggio > 13 sull'EPDS il terzo giorno dopo il parto, indicando una percentuale pari al 24,1% delle donne postnatali con "sindrome del terzo giorno". La percentuale di depressione postpartum era del 7,7%.
**Conclusioni.** Il presente studio ha trovato che i fattori di rischio per depressione postpartum sono: età della donna, basso livello di istruzione, basso stato socio-economico, età al matrimonio, primiparità, complicazioni ostetriche, precedente aborto spontaneo, preferenza per un figlio maschio, complicazioni neonatali, disturbo psichiatrico, convivenza in famiglie comuni, conflitti coniugali, mancanza di sostegno familiare e abuso di alcol del coniuge. Non c'era alcuna associazione tra depressione postpartum e fattori come l'età alla prima gravidanza, se la gravidanza era pianificata o non pianificata, trattamento dell'infertilità, modalità di parto (vaginale o cesareo, comorbidità mediche ed eventi avversi della vita durante la gravidanza).

**Corresponding Author:** Nina Mahale
E-mail: mahalenina@gmail.com


**DOI**: 10.36129/jog.33.02.06

**Key words**
*Postpartum; depression; risk factors; Tertiary Hospital; India.*

## INTRODUCTION

Depression is an important cause of morbidity worldwide especially in developing countries (1). The rate of depression in women is found to be twice as that in men. Pregnancy, childbirth and motherhood are very crucial phases in a woman's lifetime. Mothers are highly prone to develop psychiatric disorders in the postnatal period. The term "Postpartum Depression" (PPD) is an umbrella which includes many mood disturbances that occur following delivery. Postpartum depression (PPD) is found to affect 10-15% of postnatal women, but is as much as 35% in a few populations (2). PPD is frequently underdiagnosed and continues to be one of the most commonly occurring complications of childbirth and the most commonly found psychiatric disturbance in the postpartum period, in which women are found to be at a maximum risk within their first postpartum year. The causes why PPD remains undiagnosed are due to limitations like time and the acceptability of screening methods by the society. The social stigma and fear of being referred to as an 'unhappy mother' is one of the major causes why PPD cases remain undiagnosed (3). Upon formal screening, most of the women who are prone to develop PPD completely admit to feeling depressed, realizing that the feelings are neither transient nor minor. However they refuse to accept the term "postpartum depression" because it implies that the depressive thoughts maybe due to their newborns (4). For such mothers, it is the stigma associated with the disorder of depression which is the cause for shame, worry, embarrassment and feelings of guilt (5). These women as a result, suffer worrying about the various factors leading to this disorder, a condition that can actually be treated and even prevented.
When left untreated, postpartum depression can result in several adverse effects affecting the woman and her baby. For the woman, it may lead to recurrent episodes of depression. For the child, it can cause serious impairment of cognitive, intellectual and emotional development. Despite the serious negative outcomes that it can lead to, less than half of mothers suffering from depression are diagnosed and treated. It is thus essential to determine the factors that contribute to the development of PPD so that the women at risk can be identified which can help in early diagnosis and treatment if necessary.
It is very important to differentiate between the several types of psychiatric disorders that follow childbirth, as each one of them may differ in their modalities of treatment or might not need any treatment at all. These disorders may have many similar overlapping symptoms, but have many unique, distinguishing features (6).

## AIMS AND OBJECTIVES

To determine the proportion of postpartum depression in women attending a Tertiary Hospital; to determine and study the risk factors associated with postpartum depression; to identify the women at risk for postpartum depression for early follow-up and intervention.

## MATERIALS AND METHODS

The present study was a Hospital based Cross-sectional study, conducted in teaching hospitals belonging to Kasturba Medical College, Mangalore–Government Lady Goschen Hospital and KMC Hospital, Attavar, Mangalore, Karnataka, India. Period of the study was from October 2014 to July 2016. 561 postnatal women following delivery by vaginal route or caesarean section on 3$^{rd}$ postnatal day and at 6 weeks postpartum were selected as subjects. Subjects were selected as per the inclusion criteria. All subjects were enrolled in the study after having been informed and subscribed a written consent. Detailed clinical history was taken along with other details on a detailed proforma.

### *Formula used to calculate sample size*

$N = Z^2 P Q/d^2$
Z = SNV at 95% confidence level = 1.96, P = estimated prevalence of PPD, Q = 100-P, d = relative precision.
It was calculated taking 95% confidence level and 80% power with prevalence of postpartum depression as 15.8% based on previous study (8). Taking 3.2 as relative precision the sample size was calculated to be 504. Adding 10% as non-response error, the final sample size to be studied was 560.

### *Inclusion criteria*

Postnatal women following delivery by vaginal route or caesarean section on 3rd postnatal day and at 6 weeks postpartum.

### *Exclusion criteria*

Those who did not give consent.
The study was started after obtaining approval from Institutional Ethics Committee (IEC) of Kasturba Medical College, Mangalore. The Edinburgh Post Natal Depression Scale (EPDS) is a 10-item self-report measure designed to screen women for symptoms of emotional distress during pregnancy and the postnatal period. A total score of 13 and above on this scale requires further assessment and appropriate management as the likelihood of depression is high. The original EPDS scale was used to create translated version of the scale in Kannada and Malayalam. Each of the study subjects was given the validated Kannada/Malayalam version of the questionnaire to fill up and was guided in case of any queries. All the participants were briefed about the objectives of the study in their vernacular language and written informed consent was taken from those who agreed to participate in the study. The questionnaires were distributed to those participants who were able to read, and interview was conducted for those participants who were not able to read. The data was collected using a pre-tested, semi-structured questionnaire consisting of various sections based on the risk factors associated with postnatal depression like socio-economic status, level of education, marital and obstetric factors such as relationship with husband or in-laws, number of pregnancies, planned/unplanned pregnancy, gender of the infant.

### *Data analysis*

Data was entered in Microsoft Office Excel worksheet and analysed using statistical software SPSS version 17.0. The results were analysed using the Chi square test and the Fisher's Exact test, $p < 0.05$ was considered evidence of a statistically significant difference between predictive and outcome variables. Multivariate Logistic Regression Analysis was used to determine the most important risk factors.

## RESULTS

Total number of 600 postnatal women participated in the study. 39 women were lost to follow up at 6 weeks. Final sample size for analysis 561. Out of the total 561 postnatal women, 135 of them had a score of > 13 on the EPDS on the 3rd postpartum day, indicating 24.1% of the postnatal women with "Postpartum Blues" (**figure 1**).
43 postnatal women out of them continued to have depressive symptoms with a score of > 13 on the EPDS at 6 weeks postpartum, thus the prevalence of Postpartum Depression in this study was found to be 7.7% (**figure 2**).

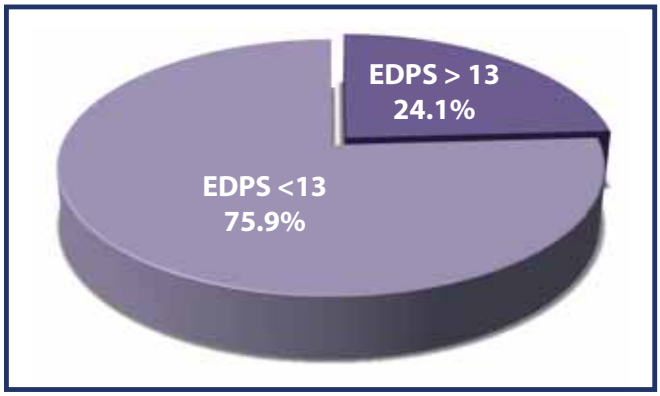


**Figure 1.** *Postpartum Blues.*

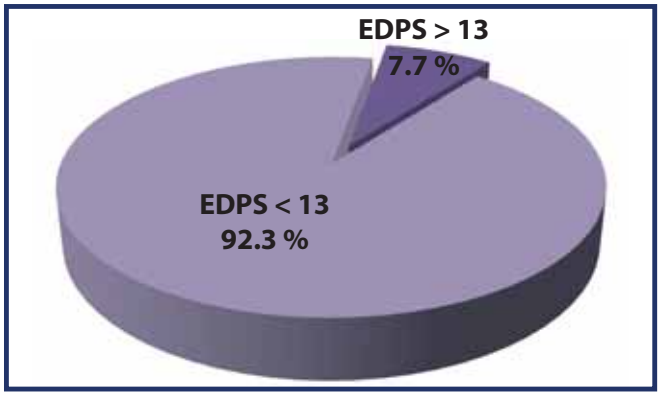


**Figure 2.** *Postpartum depression*

### *Risk factors*

1. Age (**table I**): women between the ages of 26 and 30 years were more at risk for postpartum depression.

**Table I.** *Age.*

| Age (years) | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Under 20 | 0 (0) | 48 (9.3) |
| 21-25 | 6 (14) | 180 (34.7) |
| 26-30 | 32 (74.4) | 220 (42.5) |
| 31-35 | 5 (11.6) | 62 (12) |
| > 35 | 0 (0) | 8 (1.5) |

p Value – 0.001.

2. Level of education (**table II**): women with an educational status of less than Class 10 had a higher risk of developing postpartum depression.

**Table II.** *Level of education.*

| Level of education | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| < Class 10 | 32 (74.4) | 210 (40.5) |
| Class 10-12 | 11 (25.6) | 239 (46.1) |
| Graduation | 0 (0) | 69 (13.3) |

p Value – 0.000.

3. Socio-economic status (**table III**): women belonging to Low Socio-economic status were at a higher risk for postpartum depression.

**Table III.** *Socioeconomic status.*

| Socio-economic status | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Lower | 34 (79.1) | 443 (85.5) |
| Upper lower | 9 (20.9) | 43 (8.3) |
| Lower middle | 0 (0) | 27 (5.2) |
| Upper middle | 0 (0) | 5 (1) |

p Value – 0.035.

4. Age at marriage (**table IV**): women with an age at marriage between 26 and 28 years were at risk for postpartum depression.

**Table IV.** *Age at marriage.*

| Age at marriage | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Under 20 | 9 (20.9) | 150 (29) |
| 21-22 | 4 (9.3) | 61 (11.8) |
| 23-25 | 9 (20.9) | 166 (32) |
| 26-28 | 15 (34.9) | 101 (19.4) |
| > 28 | 6 (14) | 40 (7.8) |

p Value – 0.031.

5. Parity (**table V**): primiparae were found to be more at risk for the development of postpartum depression in comparision with Multiparae.

**Table V.** *Parity.*

| Number of children | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| 0 | 4 (9.3) | 1 (0.2) |
| 1 | 22 (51.2) | 365 (70.5) |
| 2 | 3 (7) | 122 (23.6) |
| 3 | 8 (18.6) | 27 (5.2) |
| > 4 | 6 (14) | 3 (0.6) |

p Value – 0.000.

6. Obstetric complications (**table VI**): women with Obstetric complications were more at risk for postpartum depression than those without.

**Table VI.** *Obstetric complications.*

| Obstetric complications | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Yes | 8 (18.6) | 33 (6.4) |
| No | 35 (81.4) | 485 (93.6) |

p Value – 0.000.

7. Previous miscarriage (**table VII**): women with a history of previous Miscarriage were more at risk for postpartum depression.

**Table VII.** *Previous miscarriage.*

| Previous miscarriage | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Yes | 10 (23.3) | 28 (5.4) |
| No | 33 (76.7) | 490 (94.6) |

p Value – 0.000.

8. Gender of the baby (**table VIII**): preference for a male baby while a female baby was born was found to be a significant risk factor for postpartum depression.

**Table VIII.** *Gender of the baby.*

| Gender preference of the baby | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Wanted male delivered female | 27 (62.8) | 130 (25.1) |
| Wanted male delivered male | 1 (2.32) | 145 (28) |
| Wanted female delivered male | 2 (4.6) | 24 (4.63) |
| Wanted female delivered female | 13 (30.2) | 219 (42.2) |

p Value – 0.000.

9. Neonatal complications (**table IX**): mothers whose newborns had complications were found to be at a higher risk for postpartum depression.

**Table IX.** *Neonatal complications.*

| Neonatal complications | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Yes | 6 (14) | 29 (5.6) |
| No | 37 (86) | 489 (94.4) |

p Value – 0.000.

10. Psychiatric disorder (**table X**): history of psychiatric disorder was significantly associated with the risk of developing postpartum depression.

**Table X.** *Psychiatric disorder.*

| Psychiatric disorder | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Yes | 8 (18.6) | 3 (0.6) |
| No | 35 (81.4) | 515 (99.4) |

p Value – 0.000.

11. Type of family (**table XI**): women living in Joint families were more at risk for postpartum depression than those living in nuclear families.

**Table XI.** *Type of family.*

| Type of family | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Joint | 33 (76.7) | 197 (38) |
| Nuclear | 10 (23.3) | 321 (62) |

p Value – 0.000.

12. Marital conflict (**table XII**): postnatal women with history of marital conflict were at risk for postpartum depression.

**Table XII.** *Marital conflic.*

| Marital conflict | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Yes | 13 (30.2) | 10 (1.9) |
| No | 30 (69.8) | 508 (98.1) |

p Value – 0.000.

13. Family support (**table XIII**): risk of developing Postpartum Depression was more in women who had inadequate support from the family.

**Table XIII.** *Family support.*

| Family support | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Yes | 11 (25.6) | 474 (91.5) |
| No | 32 (74.4) | 44 (8.5) |

p Value – 0.000.

14. Alcohol abuse by the husband (**table XIV**): women who gave history of Alcohol Abuse by the husband were more at risk for postpartum depression.

**Table XIV.** *Alcohol abuse by the husband*

| Husband's alcohol abuse | EPDS > 13 n = 43 (%) | EPDS < 13 n = 518 (%) |
|---|---|---|
| Yes | 9 (20.9) | 11 (2.1) |
| No | 34 (79.1) | 507 (27.9) |

p Value – 0.000.

There was no association between postpartum depression and the following factors:

1. age at first pregnancy;
2. planned or unplanned pregnancy;
3. H/o infertility treatment;
4. Mode of delivery – vaginal or caesarean;
5. presence of medical comorbidities;
6. adverse life event during pregnancy.

The results were subjected to Multivariate Logistic Regression and the following were found to be the most significant risk factors:

1. **Age**: women in the age group of 26-30 years had 1.97 times more chances of developing PPD when compared to rest of them (p value – 0.001, OR – 1.97).
2. **Socio-economic status**: women belonging to low socio-economic status carried a 1.8 times higher risk than others for developing PPD (p value – 0.03, OR – 1.8).
3. **Previous miscarriage**: women with a previous history of miscarriage were 22 times more at risk for developing PPD when compared to those without miscarriages in the past (p value – 0.04, OR – 22.8).
4. **Family support**: women who had inadequate support from the family had 4.8 times more chances of developing PPD (p value – 0.06, OR – 4.8).
5. **Gender preference of the baby**: women who had a preference for a male baby but delivered a female baby had 4.8 times more chances of developing PPD than the others (p value – 0.005, OR – 4.8).

## DISCUSSION

The objectives of the present study were to determine the proportion of postpartum depression and to identify the various risk factors that were signif-

icant in contributing towards the development of postpartum depression in a Tertiary Care Hospital. According to this study, 7.7% of the postnatal women were found to be at an increased risk for developing PPD. The risk factors that were significantly associated with PPD were low level of Education, low socio-economic status, age at marriage, parity, obstetric complications, previous miscarriage, preference for a male baby, neonatal complications, history of psychiatric disorder, living in joint families, lack of family support and history of marital conflict and alcohol abuse by the husband.

In a previous study conducted by Gupta Swapan *et al.* (7) in 2013 among North Indian women, 15.8% of them were diagnosed to have postpartum depression. The PRIME MD Today questionnaire was used for assessment. The significant risk factors that were found in this study were low educational level, low socio-economic status, delivered a female baby when there was preference for a male baby, history of psychiatric disorder in the past and lack of support from the family. History of adverse life event and alcohol abuse by the husband were also considered as significant risk factors according to this study. However, there was no association seen between obstetric risks and the development of PPD, unlike in the present study where women with obstetric complications were found to have symptoms of depression postnatally. The North Indian study highlights the impact of cultural practices prevalent in countries like India that can aggravate the symptoms of depression.

According to a study in Gujarat, by Desai Nimisha *et al.* (8), postpartum depression was detected in 12.5% of the mothers. A Semi structured proforma that incuded the DSM-IV TR criteria for diagnosis of depression and a predictive index of postnatal depression was used by the Gujarat study. The predictors of PPD according to this study were found to be factors such as Multiparity, previous miscarriage, delivery of a girl child and poor relationship with the partner.

A study by Vikram Patel *et al*. (9) in Goa, found 23% of the women to have postnatal depression. The participants were recruited through the General Health Questionnaire with a semi-structured interview. Assessment was done during the last trimester of pregnancy antenatally, at 6 weeks and 6 months postpartum with the help of Edinburgh Postnatal Depression Scale. In this study, the significance of factors like poor marital relations, history of marital violence, antenatal history of psychiatric illness and preference for male baby and financial difficulty is well established. In addition, a planned pregnancy was considered to be a significant risk factor for PPD in this study but the present study showed no significance when comparing planned and unplanned pregnancies. The Goan study attributes the presence of psychiatric illness antenatally as a significant contributor towards PPD.

In a study in Tamil Nadu by Chandran. M. *et al*. (10), 11% of the women were found to have postpartum depression. The study was conducted through a structured interview, the revised Clinical Interview Schedule. Poor relationships with family members, adverse events during pregnancy, preference for male baby were the factors associated with the risk of PPD. Low level of education was not found to be significant in this study unlike in the present study, where women with low educational attainment were more at risk for the development of PPD.

The prevalence rates of PPD vary within and across different countries. In a study conducted among Bahraini women, a prevalence rate of postpartum depression of 37.1% was obtained (11). The Arabic version of the Edinburgh Postnatal Depression Scale was used for screening the postnatal women. Unlike in the present study where the age of the mother, her age at marriage and her level of education, presence of neonatal complications had a significant role in the development of PPD, there was no significant association found with these factors in the Bahrain study. There was however, significant association seen with a past history of depression and lack of support from the family according to the study as in the present study.

In another similar study conducted in Iran (12), the prevalence of PPD was found to be 34.8%, which was found to be slightly higher than that in other national and international studies which could be attributed to the differences in culture and socio-economic status.

It is evident that the prevalence of postpartum depression varies when the above discussed studies were compared with the present study. This could be a consequence of differences in screening tools used, the various cut-off points chosen in the tools, the point of time when the screening was conducted, antenatal or postnatal and also the various socio-cultural aspects assessed in the study.

The present study aims at focussing on the major health issue of postpartum depression and the risk factors associated with it so that measures can be taken for its prevention or early treatment if necessary. The limitation of this study was the lack of

awareness and the loss of patients to follow up at 6 weeks postpartum. Practical constraints prevented assessment of personality and other variables that might be risk factors for post-partum depression, such as sexual abuse and marital violence. There is a need for further research in this direction to incorporate more accurate instruments into the maternal and child health programs to help detect the problem of postpartum depression and to elucidate appropriate treatment modalities as early as possible.

## CONCLUSIONS

The present study found factors like age of the woman, low level of education, socio-economic status, age at marriage, parity, obstetric and neonatal complications, history of a psychiatric disorder, previous miscarriage, preference for a male child, living in joint families, marital conflict, lack of family support and alcohol abuse by the husband as predictors for postpartum depression.

There was no association found between the development of PPD and factors like age at pregnancy, whether the pregnancy was a planned or an unplanned one, history of taking infertility treatment, mode of delivery – whether vaginal or caesarean, presence of medical co morbidities and history of adverse events during pregnancy.

When the results were subjected to Multivariate Logistic Regression analysis, age of the woman, low socio-economic status, previous miscarriage, lack of family support and preference for a male baby were the most significant risk factors for postpartum depression.

This study correlates with most of the results obtained from previous studies. The associated risk factors provide significant information about the role played by socio-cultural environment and practices especially in developing countries. These risk factors can be identified during routine Antenatal visits and hence these issues must be addressed by the Health care providers and the women themselves must be made aware too so that women at risk are identified early for further follow up and intervention. This can be further achieved by the incorporation of Mental health care programs into the Maternal Health Care system. Further studies in this direction will help to improve the quality of care and reduce maternal morbidity as a result of depression and neglect.

## ACKNOWLEDGEMENTS

We thank to Kasturba Medical College MAHE Mangalore, Government Lady Goschen and KMC Hospitals Mangalore.

## CONFLICT OF INTERESTS

The authors declare that they have no conflict of interests.

## REFERENCES


1. Atkinson RL. Hilgard's introduction to psychology Eds. (Sixth ed.). Tehran: Roshd press 2006, 493-6.
2. Kunwar D, Corey E K, Sharma P, Risal A. Screening for Postpartum Depression and Associated Factors among Women who Deliver at a University Hospital, Nepal. Kathmandu Univ Med J 2015;49(1):44-8.
3. Karolyn K, Sheeder J, Kelly LS. Identifying Postpartum Depression: are 3 questions as good as 10? Pediatrics 2008;122(3):e696-e702.6.
4. Lumley J. Attempts to Prevent Postnatal Depression Have Not Included Mental Health Workers, and Have Failed. Br Med J 2005;331:5-6.
5. Beck CT. Postpartum Depression: It isn't just the blues. Am J Nurs 2006;106(5):40-50.
6. Perfetti J, Clark R, Fillmore CM. Postpartum Depression: Identification, screening, and treatment. Wisconsin Med J 2004;103(6):56-63.
7. Gupta S, Kishore J, Mala YM, Ramji S, Aggarwal R. Postpartum depression in North Indian Women: Prevalence and Risk Factors. J Obstet Gynaecol India 2013;63(4):223-9.
8. Desai Nimisha D, Mehta Ritambhara Y, Ganjiwale J. Study of prevalence and risk factors of postpartum depression. Nat J Med Res 2012;2(2):194-8.
9. Patel V, Araya R, Lima MS, Rodrigues M, De Souza N. Gender, poverty, and postnatal depression: a study of mothers in Goa, India. Am J Psychiatry 2002;159:43-7.
10. Chandran M, Tharyan P, Muliyil J, *et al*. Post-partum depression in a cohort of women from a rural area of Tamil Nadu, India. Incidence and risk factors. Br J Psychiatry. 2002;18:499-504.
11. Al Dallal FH, Grant IN. Postnatal depression among Bahraini women: prevalence of symptoms and psychosocial risk factors, Eastern Mediterranean Health J 2012;18(5):439-45.
12. Taherifard P, Delpisheh A, Shirali R, Afkhamzadeh A, Veisani Y. Socioeconomic, Psychiatric and Materiality Determinants and Risk of Postpartum Depression in Border City of Ilam, Western Iran. Depression Research and Treatment 2013.