Original Article

Prevalence and risk factors of postpartum depression in mothers attending child immunization clinic of a Teaching Hospital in Kathmandu

Khakurel G[1], Chalise P[2], Karki PK[1], Mahotra NB[3]

[1]Department of Physiology, Kathmandu Medical College, Sinamangal, Kathmandu, Nepal,

[2]Department of Psychiatry, Kathmandu Medical College, Sinamangal, Kathmandu, Nepal,

[3]Department of Clinical Physiology, Maharajgunj Medical Campus, Institute of Medicine, Maharajgunj, Nepal.

Correspondence: Dr. Gita Khakurel, Department of Physiology, Kathmandu Medical College, Duwakot, Bhaktapur, Nepal.

Email: khakurelgita@gmail.com

Abstract

Introduction: Postpartum depression is a major health problem in developing countries like Nepal. The objective of this study was to determine the prevalence and risk factors of postpartum depression in Nepalese women.

Methods: This was a cross sectional study conducted in Kathmandu Medical College and Teaching Hospital during the month of January-May 2018. A total number of 162 women in 4 to 14 weeks postpartum period were included in the study. A questionnaire with sociodemographic, obstretic and psychosocial variable as well as the Edinburgh Postnatal Depression Scale was used for data collection. Chi square test was used to determine the association of postpartum depression with different variables.

Results: The prevalence of postpartum depression (defined as Edinburgh Postnatal Depression Scale ≥12) was found to be 22.2 %. There was a statistically significant association of postpartum depression with nuclear family, low family income, cesarean section delivery, history of miscarriage, pregnancy complications and exposure to domestic violence.

Conclusion: There is high prevalence of postpartum depression among women in our settings. It is important to educate the women and their family about the outcomes of postpartum depression.

Keywords: Nepal, Postpartum depression

Introduction

Postpartum depression (PPD) is an important public health problem which has a significant impact on the mother, her partner and the family. It affects the mother-infant bonding and has a long term negative effect on emotional and cognitive development of the baby.[1] The term postpartum depression refers to a non-psychotic depressive state that starts in the postpartum period.[2]It usually begins within four weeks after delivery and the risk may extend upto one year.[3]It is one of the common complication of childbearing, occurring in 10-15 % of women after delivery.[4]

The etiology of PPD remains unclear, as several biological, psychological and social predisposing factors may be contributing.[5]A study done by Robertson E et al found that the risk factors like anxiety during pregnancy, experience of stressful life events during pregnancy, low levels of social support and previous history of depression are the strongest predictors of postpartum depression.[6]

Most of the postpartum mothers as well as the family members in our society are unable to identify the symptoms of depression because of inadequate knowledge. The present study aims to study the

prevalence and risk factors of postpartum depression among mothers attending the child immunization clinic for vaccination of their babies. This helps in early identification of PPD in women and intervention can be provided to those who are suffering.

Methods

This was a cross sectional study. The study population consisted of 4 to 14 weeks postpartum mothers attending the child immunization clinic of Kathmandu Medical College and Teaching Hospital during the month of January-May 2018.The sample was chosen by convenient sampling method from those who registered in the clinic for immunization of children.

Sample size was calculated using statistical formula
$n= Z^2pq/L^2$
where,
z= 1.96,p = 12%= 0.12(assuming prevalence of PPD = [12%][7]
q = 1– p = (0.88),Allowable error (L) = 5%, and level of significance =5%.
The sample size was estimated to be 162 at 95 % confidence limit.

The women with personal and family history of psychiatric disorder and with serious medical illness were excluded from the study. Ethical clearance was taken from the institutional review committee of Kathmandu Medical College and Teaching Hospital. Informed written consent of the subject was taken.

Data was collected using a questionnaire consisting of sociodemographic characteristics, obstetric factors(history of miscarriage, mode of delivery, pregnancy complications),and psychosocial stressors (relationship with husband, domestic violence, death of family member). These factors were assessed by yes or no type questions. To assess the depression in postpartum mothers the Edinburg Postpartum Depression Scale (EPDS) proposed by Cox et al in 1987 was used.[8]The EPDS is a ten item questionnaire. Responses are scored as 0, 1, 2 and 3 according to the increasing severity of the symptoms. Total score is calculated by adding each score of the each 10 items. The value of score can range from 0 to 30.[9] A woman with an EPDS score ≥12 was considered having postpartum depression, while a score <12 ruled out postpartum depression.[10]

The data was analyzed using the Statistical Package for Social Science (SPSS version 22.0). Descriptive Statistics (including frequencies and percentage) were calculated for the sociodemographic, obstetric, and psychosocial variables. Chi square test was used to determine the association of postpartum depression with different variables. p value < 0.05 was considered statistically significant.

Results

A total number of 162 women in 4 to 14 weeks postpartum period were included in the study. The age ranged from 17 to 40 years with a mean age of 29.14 ± 5.49 years. Thirty six women had EPDS score ≥ 12 and were considered having postpartum depression. The prevalence of PPD was found to be 22.2 %.

Table 1: Association of sociodemographic characteristics and postpartum depression

Variables	Postpartum depression		
	Present Frequency (%)	Absent Frequency (%)	p value
Age of mother			
<25	15 (35.7)	27 (64.3)	
25-30	6 (15.7)	32 (84.2)	
31-35	13 (20.3)	51 (79.7)	
>35	2 (11.1)	16 (88.9)	0.08
Religion			
Hinduism	29 (21.3)	107 (78.7)	
Buddhism	3 (25)	9 (75)	
Christianity	3 (27.3)	8 (72.7)	
Muslim	1 (33.3)	2 (66.7)	0.92
Education			
Illiterate	4 (33.3)	8 (66.7)	
School level	24 (28.2)	61 (71.8)	
Intermediate	6 (13.3)	39 (86.7)	
Bachelor and above	2 (10)	18 (90)	0.09
Occupation			
Housewife	17 (20.7)	65 (79.3)	
Service	8 (20)	32 (80)	
Business	6 (23.1)	20 (76.9)	
Labour	5 (35.7)	9 (64.3)	0.63
Type of family			
Nuclear	24 (32.8)	49 (67.1)	
Joint	12 (13.4)	77 (86.5)	<0.01
Family Income per month (Nrs)			
<20000	15 (53.6)	13 (46.4)	
20000-50000	13 (16.7)	65 (83.3)	
51000-100000	6 (18.8)	26 (81.2)	
>100000	2 (8.3)	22 (91.7)	<0.01

Table 1 shows the sociodemographic characteristics of the women and their association with PPD. Of the total participants, 136 (83.95 %) were Hindus, 85 (52.46 %) women had school level education, 82 (50.61 %) were housewives and 78 (48.14 %) women had family income in range of 20000 to 50000 Nepalese Rupees per month.

Of the studied women, 73 (45.06 %) were staying in nuclear family, of whom 24 (32.87 %) showed PPD with a significant association ((p=0.003). We found that those women having family income less than 20000 Nepalese Rupees were at increased risk of developing PPD. There was no association of postpartum depression with other sociodemographic variables like age, religion, education, occupation (Table 1).

Table 2: Association of obstetrics characteristics and postpartum depression

Variables	Postpartum depression		p value
	Present Frequency (%)	Absent Frequency (%)	
Present pregnancy			
Planned	18 (14.1)	110 (85.9)	<0.01
Unplanned	18 (52.9)	16 (47.1)	
History of miscarriage			
Yes	17 (44.7)	21 (55.3)	<0.01
No	19 (15.3)	105 (84.7)	
Mode of delivery			
Normal	10 (11.4)	78 (88.6)	<0.01
Cesarean section	26 (35.1)	48 (64.9)	
Sex of baby			
Male	12 (18.8)	52 (81.2)	0.39
Female	24 (24.5)	74 (75.5)	
Baby health problem			
Yes	6 (42.9)	8 (57.1)	0.05
No	30 (20.3)	118 (79.7)	
Pregnancy complication			
Yes	21 (52.5)	19 (47.5)	<0.01
No	15 (12.3)	107 (87.7)	

Table 2 shows the obstetric and infant characteristics of the participants and their association with PPD. Factors such as unplanned pregnancy (p< 0.01), history of miscarriage (p< 0.01), cesareansection delivery (p<0.01) and pregnancy complications (p<0.01) were found to be significantly associated with increased risk of depression.

Table 3: Association of psychosocial stressors and postpartum depression

Variables	Postpartum depression		p value
	Present Frequency (%)	Absent Frequency (%)	
Domestic violence			
Yes	22 (45.8)	26 (54.2)	<0.01
No	14 (12.3)	100 (87.7)	
Relationship with husband			
Good	24 (19.4)	100 (80.6)	0.11
Bad	12 (31.6)	26 (68.4)	
Support from husband			
Yes	21 (23.9)	67 (76.1)	0.58
No	15 (20.3)	59 (79.7)	
Serious illness or recent death of family member			
Yes	8 (23.5)	26 (76.5)	0.83
No	28 (21.9)	100 (78.1)	
Financial problem			
Yes	24 (24.5)	74 (75.5)	0.39
No	12 (18.8)	52 (81.2)	

Table 3 shows the psychosocial stressors and their association with PPD in the participants. Our study showed that domestic violence was associated with increased risk of developing PPD (p< 0.01).

Discussion

The prevalence of PPD in the present study was found to be 22.2 % which is slightly higher than that observed in a study done by Bhusal BR et al[9]where the prevalence was found to be 17.1%. A higher prevalence of 29 % was observed in women who deliver at Dhulikhel Hospital of Nepal.[11] Similarly a prevalence of 30 % was seen in a study conducted in Maternity Hospital in Kathmandu. In contrast to these findings, a prevalence of 12.27 % was reported in a study done among Rajbansi women of Nepal.[12]

Sociodemographic variables like age, religion, education and occupation were not significantly associated with PPD. This findings corroborates with other studies.[3,11]

In the present study, we found that there was increased risk of postpartum depression in women staying in nuclear family than that of joint family and the association was statistically significant (p< 0.01). This finding could not be compared with other study because of lack of literature. We observed that low

family income was significantly associated with PPD. A previous study in Nepal showed significant association of depressive symptoms with low income.[13]In contrast, family income was not associated with PPD in study done by Khalaf SK.[3] Thereis increased maternal and infant morbidity and mortality in countries with low income because of lack of early diagnosis and treatment of postpartum depression.[14]

Our study showed that unplanned pregnancy had a significantly higher risk of developing PPD than those with planned pregnancy (52.9 vs 14.1 %). Similar results were reported in a study done by Maharjan PL et al (30.3 vs 11.4 %).[4]This finding is in contrast to the study done in Dhulikhel Hospital where there was no significant association of unplanned pregnancy and PPD.[11]

We observed that history of miscarriage was significantly associated with postpartum depression. In contrast, there was no association of PPD with history of miscarriage in a study done in Dhulikhel Hospital.[11]

Women who delivered baby by cesarean section had a significantly higher risk (35.1 %) of PPD than those women who delivered normally (11.3 %). This finding is in contrast to the study done by Kunwar Det al[11] where women who delivered normally had a significantly higher risk of PPD than those giving birth by cesarean section. In a study done by Adama ND et al[10] and Maharjan PL et al[4] there was no association of type of delivery with PPD.

In our study, a significant association was found between pregnancy complications and postpartum depression. This is in accordance with other studies.[4,11]A statistically significant relationship between exposure to domestic violence and postpartum depression was found in this study. This result is in agreement with the study done by Khalaf SK et al[3] among 8 to 12 weeks postpartum mothers in Iraq. There was a strong association of domestic violence with PPD in women attending primary care clinics in Africa, Chile.[15]

There are few limitations in the study. As this was a cross-sectional study done in post partum mothers in 4-14 weeks we could not follow up them in later part of their postpartum period. The participants were women visiting immunization clinic of Kathmandu Medical College and Teaching Hospital so the results cannot be generalized to the Nepalese women.

Conclusion: There is high prevalence of postpartum depression in mothers attending immunization clinic of KMCTH. Low family income, unplanned pregnancy, history of miscarriage, cesarean section delivery, pregnancy complications and exposure to domestic violence were significantly associated with increased risk of postpartum depression.

Acknowledgements

We would like to thank all the participants and supporting staff of child immunization clinic of Kathmandu Medical College and Teaching Hospital for their support and co-operationduring data collection.

Conflict of Interest: None declare

References

1. Desai ND, Mehta RY, Ganjiwale J. Study of prevalence and risk factors of postpartum depression. Nat J Med Res. 2012; 2(2): 194-198.
2. Giri RK, Khatri RB, Mishra SR, Khanal V, Sharma VD, Gartoula RP. Prevalence and factors associated with depressive symptoms post-partum mothers in Nepal. BMC Res Notes. 2015; 8(1).
3. Khalaf SK. Prevalence and risk factors of post partum depression in a sample of women in Basrah. Zanco J Med Sci. 2015; 19(2): 991-997.
4. Maharjan PL, Lamichhane S, Shrestha PD, Mathias J, Gautam KR, Shah SK. Sleep Hypn. 2018; 21(1): 60-8.
5. Sadiq G, Shahzad Z, Sadiq S. Prospective study on prevalence and risk factors of post natal depression in Rawalpindi/Islamabad, Pakistan. Rawal Med J. 2016; 41 (1): 64-67.
6. Robertson E, Grace S, Wallington T, Stewart DE. Antenatal risk factors for postpartum depression: a synthesis of recent literature. Gen Hosp Psychiatry. 2004; 26 (4): 289-95.
7. Regmi S, Sligl W, Carter D, Grut W, Seear M. A controlled study of postpartum depression among Nepalese women: validation of the Edinburgh Postpartum Depression Scale in Kathmandu. Trop Med Int Health. 2002; 7(4): 378-82.
8. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. Br J Psychiatry. 1987; 150: 782-86.

9. Bhusal BR, Bhandari N, Chapagai M, Gavidia T. Validating the Edinburgh Postnatal Depression Scale as a screening tool for postpartum depression in Kathmandu, Nepal. Int J Ment Health Syst. 2016; 10:71.
10. DjodaAdama N, Foumane P, Kamga Olen JP, SamaDohbit J, Ngo Um Meka E, Mboudou E. Prevalence and risk factors of postpartum depression in Yaounde, Cameroon. OJOG.2015; 5:608-17.
11. Kunwar D, Corey EK, 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.
12. Subba NR. Postpartum depression among Rajbansi women in Nepal. Researcher. 2013; 1 (1).
13. Clarke K, Saville N, Shrestha B, Costello A, King M, Manandhar D et al. Predictors of psychological distress among postnatal mothers in rural Nepal: a cross-sectional community-based study. J Affect Disord. 2014; 156: 76-86.
14. Savitha, George LS, Shyamala G, Noronha JA, Mayya S. Associated risk factors of postnatal depression in South Asian region- a narrative review. MJNHS. 2018; 4 (1):45-8.
15. Quelopana AM. Voilence against women and postpartum depression: the experience of Chilean women. Women Health. 2012; 52 (5); 437-53.