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Prevalence and determinants of postpartum depression among postpartum mothers

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Abstract

Introduction: Postpartum depression is one of the major public health issues in developing country like Nepal, where it is often underappreciated and consequently affecting health of both mother and baby. It is mainly mood disorder causing anxiety, sadness and exhaustion, linked to maternal suicide and infanticide in developing countries. Hence this study aims to determine prevalence and determinants of postpartum depression.

Method: A descriptive prospective cross-sectional study was carried out in Bharatpur Hospital from December 15 2021 to December 14 2022, among a total of 292 postpartum mothers selected through non probability sampling technique. Validated Nepalese version of EPDS was used to screen depressive symptoms and data was collected after receiving an ethical approval letter. Data entry was done using SPSS version 20.

Result: Out of total postpartum mothers, prevalence of postpartum depression with EPDS score ≥13 was 41(14%). Most of the postpartum mothers enrolled in this study belonged to age group 20-30 years 219(75%) and majority of participants were Hindu by religion 246(84.2%). Brahmin / Chhetri were the commonest ethnicity 160(54.8%) and more than half i.e., 157(53.8%) had at least secondary level education, however, 148(50.7%) were housewife by occupation.

Conclusion: Postpartum depression in Nepalese mothers can be detected with use of EPDS, a psychological evaluation tool. This study discovered that anxiety of labour was significant factor in development of depression and postpartum depression is most common in 20–30years age group. Policies pertaining to community, public health and medical facilities should give priority to this problem.

Keywords: Depression, Postpartum, Public Health

INTRODUCTION

Postpartum depression (PPD) is a mood disorder affecting post-partum mothers causing anxiety, sadness, exhaustion, and loss of enjoyment. It can occur shortly after birth or extend from antenatal depression, requiring immediate intervention, with a global prevalence estimated to be around 100–150 cases per 1000 births.[1,2]

Postpartum depressive symptoms in developing countries have been linked to severe consequences like maternal suicide and infanticide, highlighting the under-prioritization of mental health. The rationale of this research is to address the knowledge deficit in postpartum depression epidemiology in developing countries like Nepal by providing evidence-based information for maternal mental healthcare prioritization.[2,3]

The main objective of this study is to determine the prevalence and various factors associated with depressive symptoms among postpartum mothers in a tertiary hospital of developing nation like Nepal.

METHOD

This is a descriptive cross-sectional study conducted on maternity ward of Bharatpur hospital and immunization centre, a tertiary care hospital in Nepal from December 15 2021 to December 14 2022. This study included postpartum mothers who provided written consent by herself or her attending, presenting in obstetrics and gynaecology outpatient department (OPD)/emergency department of Bharatpur hospital within 6 weeks' time duration. The exclusion criteria for this study were, postpartum mothers presenting in obstetrics and gynaecology OPD/emergency department of Bharatpur hospital > 6 weeks' time duration and the participants who presented before 6 weeks of her postpartum period but were unable to provide written or verbal consent for the research by herself or by her attendee.

The Cochran formula was used to calculate the minimum sample size, $n = Z^2pq/d^2$. Given the prevalence of postpartum depression among mothers, (p)=0.169 from the study done by Chalise M and et.al[4] and with maximum allowable error (d)=5%. The minimum sample size was 216.

Non-probability convenience sampling technique was used. The Nepali version of EPDS scale was used to measure the prevalence of depression. SPSS version 24 was used for data entry and analysis. Multivariate logistic regression was used to examine the independent risk factors that predicted the probability of depression among post-partum mothers for example maternal age, marital status, spousal relationship, education level, occupation, number of children, sex of child etc. Ethical approval was taken from IRC of Bharatpur hospital.

RESULT

Out of 292 participant mothers, 41(14%) had some postpartum depression with EPDS score ≥13. Most postpartum women enrolled in this study belong to age group 20-30 years followed by age group 30-40 years and ≤20 years which constitute 219 (75%), 52(17%) and 21(7.2%) respectively.

Table 1. Percentage and frequency of different age groups postpartum mothers with EPDS score

Variables	*f* (%)
PDS Score	
≤12	251 (86%)
≥13	41 (14%)
Age Grouping	
≤20	21 (7.2%)
20-30	219 (75%)
30-40	52 (17%)

Table 2. Demographic variables and determinants of postpartum depression

Demographic Variables	*f* (%)	Demographic Variables	*f* (%)	Demographic Variables	*f* (%)
Religion		**Occupation**		**Living Children**	
Hindu	246 (84.2%)	Agriculture	47 (16.1%)	1	164 (56.2%)
Buddhist	28 (9.6%)	Business	31 (10.6%)	2	117 (40.1%)
Christian	11 (3.8%)	Student	16 (5.5%)	3	11 (3.8%)
Muslim	7 (2.4%)	Service office work	50 (17.1%)	**Gender**	
Ethnicity		Housewife	148 (50.7%)	Male	153 (52.4%)
Brahmin/Chhetri	160 (54.8%)	**Family Structure**		Female	139 (47.6%)
Janajati	101 (34.6%)	Nuclear	153 (52.4%)	**Gender Expectation**	
Dalit	24 (8.2%)	Joint	139 (47.6%)	Yes	234 (80.1%)
Muslim	7 (2.4%)	**Marital Status**		No	58 (19.9%)
Education		Married	292		
Primary	127 (43.5%)	**Parity**			
Lower Secondary	8 (2.7%)	Primiparous	162 (55.5%)		
Secondary	70 (24.0%)	Multiparous	130 (44.5%)		
Higher Secondary	87 (29.8%)				

Table 3. Frequency and percentage of fear of labour, complications, intent of pregnancy and types of delivery in postpartum mothers

Variables	*f* (%)	Variables	*f* (%)
Fear of Labor		Medical Complication	
no	8 (2.7%)	No	255(87.3%)
yes	284 (97.3%)	Diabetes	10 (3.4%)
Complications During Pregnancy		Hypertension	23 (7.9%)
No	261 (89.4%)	Thyroid disorder	3 (1.0%)
Persistent Headache	1 (0.3%)	Postpartum Hemorrhage	1 (0.3%)
Fever	2 (0.7%)	Intent of pregnancy	
Prolonged 2nd stage of labour	9 (3.1%)	Planned	258 (88.4%)
Oligohydramnios	5 (1.7%)	Unplanned	34 (11.6%)
PIH	1 (0.3%)	Type of Delivery	
APH	3 (1.0%)	Spontaneous Delivery	152 (52.1%)
PROM	2 (0.7%)	Caesarean Delivery	135 (46.2%)
Cord Prolapse	1 (0.3%)	Vacuum Delivery	5 (1.7%)
Macrosomia	1 (0.3%)		
Fetal distress	4 (1.4%)		
Breech	2 (0.7%)		

Table 4. Independent risk factors that predict the probability of depression among post-partum mothers

Characteristics	EPDS Group		p-value	UOR (Unadjusted Odds ratio)	95%CI
	≤12 n (%)	≥13n (%)			
Religion					
Hindu	209 (85.0%)	37 (15.0%)	0.256	1.859	0.629-5.493
Non-Hindu	42 (91.3%)	4 (8.7%)		**1**	**Ref**
Ethnicity					
Brahmin/Chhetri	135 (84.4%)	25 (15.6%)	0.626	1.728	0.488-6.123
Janjati	88 (87.1%)	13(12.9%)		1.379	0.366-5.190
Other Caste	28 (90.3%)	3 (9.7%)		**1**	**Ref**
Education Level					
Primary	102 (80.3%)	25 (19.7%)	0.039*	**1**	**Ref**
Lower Secondary	8 (100%)	0 (0)		-	-
Secondary	60 (85.7%)	10 (14.3%)		0.68	0.306-1.513
Higher Secondary and Above	81 (93.1%)	6 (6.9%)		0.302	0.118-0.772
Occupation					
Housewife	125 (84.5%)	23 (15.5%)	0.211	1.799	0.794-4.075
Agriculture	38 (80.9%)	9 (19.1%)		2.316	0.853-6.290
Others	88 (90.7%)	9 (9.3%)		**1**	**Ref**
Family Types					
Nuclear	134 (87.6%)	19 (12.4%)	0.402	**1**	**Ref**
Joint	117 (84.2%)	22 (15.8%)		1.326	0.684-2.571
Parity					
Primiparous	144 (88.9%)	18 (11.1%)	0.108	**1**	**Ref**
Multiparous	107 (82.3%)	23 (17.7%)		1.72	0.884-3.346
Living Children					
1	145 (88.4%)	19 (11.6%)	0.172	**1**	**Ref**
More than 2	106 (82.8%)	22 (17.2%)		1.584	0.816-3.074
Sex					
Male	128 (83.7%)	25 (16.3%)	0.236	1.501	0.765-2.948
Female	123 (88.5%)	16 (11.5%)		**1**	**Ref**
Fear of Labour					
No	4 (50.0%)	4 (50.0%)	0.003*	**1**	**Ref**
Yes	247 (87.0%)	37 (13.0%)		6.676	1.1.600-27.849

Majority of participants were Hindu by religion, 246(84.2%) followed by Buddhist28(9.6%). Brahmin/ Chhetri was the commonest ethnicity, 160(54.8%) (n=160) followed by Janajati,101 (34.6%) of the mothers who participated in this study. More than half i.e. 157(53.8%) had at least secondary level education, however 148(50.7%) were housewife by occupation. The number of participants from nuclear family and joint was comparable with similar finding in parity of mother i.e. primi-parous vs multiparous.

A vast majority of mother, i.e.284(97.3%) had fear of labour but only 31 (10.6%) had some form of complication during labour like APH, PIH, cord -prolapse, fetal distress, prolonged second stage of labour and 37 (12.7%) had some antenatal medical issues like diabetes, HTN, thyroid disorder. The percentage of vaginal delivery and caesarean delivery was somehow comparable i.e. 53.8% vs 46.2%. About 34(11.6%) participant mothers had unplanned pregnancy.

Taking in consideration of various socio demographic parameters, antenatal medical condition of mother and factors influencing the labour and delivery, only education level of mother and fear towards labour came out to be statistically significant to predict postpartum depression.

DISCUSSION

EPDS is a commonly used tool in identifying the perinatal depression. The validity of EPDS in identifying perinatal depression was tested using a common threshold ≥ 13 and it has sensitivity and specificity of 88.9% and 93.4% respectively. The sensitivity increases up to 94.4% on lowering the EPDS threshold to 9 while specificity dropping to 90.8%.[1] We used a threshold of ≥13in EPDS score to define postpartum depression and found that 14% (n=41) postpartum women had some postpartum depression. In the global context, the prevalence of postpartum depression is 17.22%.[2] The prevalence of perinatal depression is highly variable depending upon the geographical location, socioeconomic condition, tool used to define perinatal depression and cutoff used to call it perinatal depression while using the same tool. We can also observe this wide variation with in Nepal too from 12.27% to 33.7%.[3–5] In the systematic review of studies done in Indian population, the overall prevalence is 22% and that after excluding studies reporting postpartum depression within 2 weeks of delivery is 19%.[6] The prevalence in other low- and middle-income countries is also similar to that of Indian population while that in high income countries lower, around 12.9%.[7] The lower education level of mother and fear towards labour was found to be statistically significant to predict postpartum depression in our study. Education is the foundation for employment of women which improves the family income. Having good family income, there will be less compulsion for husband to have migration for employment. When a pregnant woman finds her husband by her side during labour, the fear of labour with definitely become less. Suppression of postpartum mother's feeling and emotions when she does not get her intimate person to share can lead to depressive symptoms which can be controlled by love, caring and emotional support by their husband to enhance self-esteem and confidence.[8] Contrary to this, several studies have shown that intimate partner violence to be contributory factor for postpartum depression.[9,10]

Educated mother tends to have planned pregnancy with more ANC visits. During ANC visits, the pregnant women not only receive pregnancy related supplementation, test and scanning but also counselling and emotional support from health professionals which is quite important to enhance self-confidence and self-esteem. On the other hand, postpartum mother will identify and report the early signs and symptoms of PPD if they receive information about postpartum psychological changes during ANC visit. Singh et al. found several sociodemographic and medical care related factors like low family income, husband migration for employment, farther distance of nearest health facility, unplanned pregnancy, less ANC visits, caesarean delivery to be associated with postpartum depression.[3]

Chalise, et al. reported maternal smoking, pressure to conceive a child, and delivery-related complications as associated factors for the PPD while Pratima Dawadi et al. gave emphasis on chronic illness in family members apart from educational status of mother to contribute for PPD.[4,5]

CONCLUSION

To conclude, the application of the EPDS in normal perinatal care should enhance the diagnosis of postpartum depression because it is psychometrically valid in a variety of Nepalese contexts. The state of one's mind both during and after pregnancy is crucial. The mother's health directly affects the health of the child. The EPDS assists in identifying depression symptoms in new mothers. A psychiatrist or midwife with experience in psychiatry should assess a patient with a higher EPDS score. This is an issue that society ignores, and it ought to be prioritized in community and public health policies as well as local, provincial, and federal health institutions.

The purpose of this study was to determine the prevalence of depression symptoms in postpartum mothers and the factors that are linked to them. The prevalence of postpartum depression is high in the age group 20-30 years followed by age group 30-40 years. Majority of participants were Hindu by religion, followed by Buddhist and apart from other similar studies our study found a vast majority of mothers were afraid of labour and played significant factor for occurrence of postpartum depression.

DECLARATION

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Ethical Clearance
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Consent of Study
Written consent taken from each participant.

Consent for Publication
Taken from all the authors.

Conflict of Interest
None

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