

Predictors of Psychological Health among the Postnatal Mothers

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ABSTRACT

Background: Postpartum is a period of remarkable transition in the life of women with multiple challenges associated with assuming the role of a mother, thus making her vulnerable to psychological distress. Maternal anxiety and maternal depression are the most common complications of childbirth, impacting up to 1 in 5 women. About 22 percent of Indian mothers suffer from postpartum depression (PPD) which was recently reported by WHO.

Objectives: This study was aimed to assess psychological health among the postnatal mothers and their association with the predictors.

Methods: Quantitative- prospective survey method was adopted for this study. The data was collected from 302 postnatal mothers recruited through purposive sampling at Shree Sardar Smarak Hospital, Bardoli, Gujarat. Data were collected from mothers using Maternal Postpartum Stress Scale, Edinburgh Postnatal Depression Scale (EPDS) to identify the psychological health and an inventory checklist to identify the predictors of psychological health.

Results: Majority 249 (82.5%) of postnatal mothers were in the age group 21-25 years, 137 (45.4%) had secondary education, 295 (97.7%) were homemakers, 284 (94%) belonged to joint family, 177 (58.6%) were primi, 266 (88.1%) had 38-40 weeks of gestation at the time of delivery, 158 (52.3%) had normal vaginal delivery, 169

(56%) of babies weighed between 1.5-2.5 kg, 245 (81.1%) of babies were on exclusive breast feeding and 103 (34.1%) had support from husband and family. Mild stress was reported by 290 (96%) mothers whereas mild depression was reported by 295 (97.7%) mothers. The Fisher exact test revealed that there was significant association between gestational age, presence of baby with mother, birth weight, method of feeding and social support with postpartum stress and depression whereas age of the mother had no significant association with postpartum stress and depression.

Conclusion: Understanding the factors associated for postpartum stress and depression is considerable for planning mental health services rendered to the mothers in their postnatal period to make puerperium healthy for themselves as well as their babies and family.

Keywords: Predictors, Psychological health, Postnatal mothers, Postpartum Stress, Postpartum Depression

BACKGROUND AND INTRODUCTION

Postpartum is a period of remarkable transition in the life of women with multiple challenges associated with assuming the role of a mother, thus making her vulnerable to psychological distress. [1] During the immediate postpartum period, about 50–80% of women experience some type of

mood disturbances which include anxiety, getting upset easily, feeling of being alone, fear of unknown and/ or feeling guilty. [2] Maternal anxiety and maternal depression are the most common complications of childbirth, impacting up to 1 in 5 women, yet they are not universally screened for, nor treated. [3] Worldwide about 10% of pregnant women and 13% of women who have just given birth experience a mental disorder, primarily depression. In developing countries this is even higher, i.e. 15.6% during pregnancy and 19.8% after child birth. [4] Approximately 1 in 10 women will experience postpartum depression (PPD) after giving birth, with some studies reporting 1 in 7 women. [5] The prevalence of PPD reportedly ranges from 0.5% to 60% globally and from 3.5% to 63.3% in Asian countries, in which Pakistan and Malaysia had the highest and lowest rates, respectively. [6] About 22 percent of Indian mothers suffer from PPD and the country requires more resources for capacity building in maternal health care which was highlighted in recently published report by WHO (August, 2021). [7] Post Traumatic Stress Disorder (PTSD) related to childbirth is a recognized entity in recent times, with a prevalence of around 4%. [8] Hence, this study was carried out to assess the psychological health among the postnatal mothers and find out association between predictors and psychological health.

MATERIALS & METHODS

Quantitative research approach with non-experimental cross-sectional survey design was used for the study. The study was conducted at Shree Sardar Smarak Hospital, Bardoli, Surat, Gujarat from the duration of 20th December, 2023 to 15th March, 2024. The sample size was calculated using online sample size calculator considering 95% confidence interval and 5% margin of error. 302 postnatal mothers who were in the early puerperium and willing to participate in the study were recruited in the study through non probability- convenience sampling technique.

Ethical approval was obtained from the institutional ethics committee of the college and from the concerned hospital authority to use hospital records for data collection. Tool was designed by the researcher under four sections as follows:

Section.1: Socio demographic data of mother consisted of age, occupation, education, residence and type of the family

Section.2: Five point Likert scale based on maternal postpartum stress scale to assess stress which consisted of neonatal and maternal needs

Section.3: Standardized Edinburgh Postnatal Depression Scale (EPDS) for assessment of depression which is an open source and had ten items.

Section.4: Inventory checklist for assessment of predictors of psychological health which consisted of obstetrical factors, neonatal factors and other factors.

Tools were validated by three experts from the field of obstetrics & gynecological nursing with CVI of 0.88 for socio demographic data, 0.81 for five point Likert scale and 0.82 for inventory checklist. Pearson correlation coefficient reliability r was 0.91 for socio-demographic, 0.86 for five point Likert scale, 0.88 for inventory checklist and 0.83 for EPDS.

STATISTICAL ANALYSIS

The data were analyzed using the statistical software i.e. R version 4.3. Descriptive statistics were used to describe the characteristics of variables. Fisher exact test was used to find out association between predictors and psychological health of postnatal mothers.

RESULT

Socio-demographic data of mother:

Socio-demographic characteristics of mothers revealed that majority 249 (82.5%) of the postnatal mothers belonged to the age group of 21-25 years, and 3 (1%) of them were from the age group of 31-35 years. 137 (45.4%) of them were educated up to secondary education level and 16 (5.3%) of them were graduates. 295 (97.7%) of them

were homemakers, 158 (52.3%) of them resided in urban area and 284 (94%) of them were staying in joint family.

Prevalence of psychological health among the postnatal mothers:

In relation to psychological health, level of postpartum stress and depression was

identified. Maximum mothers experienced mild level of post partum stress (96%) and mild level of PPD (97.7%). None of the postnatal mothers had reported severe postpartum stress and depression. The prevalence of post partum stress was 3.97% (12/302) and PPD was 8.52% (26/302). (Fig.1)

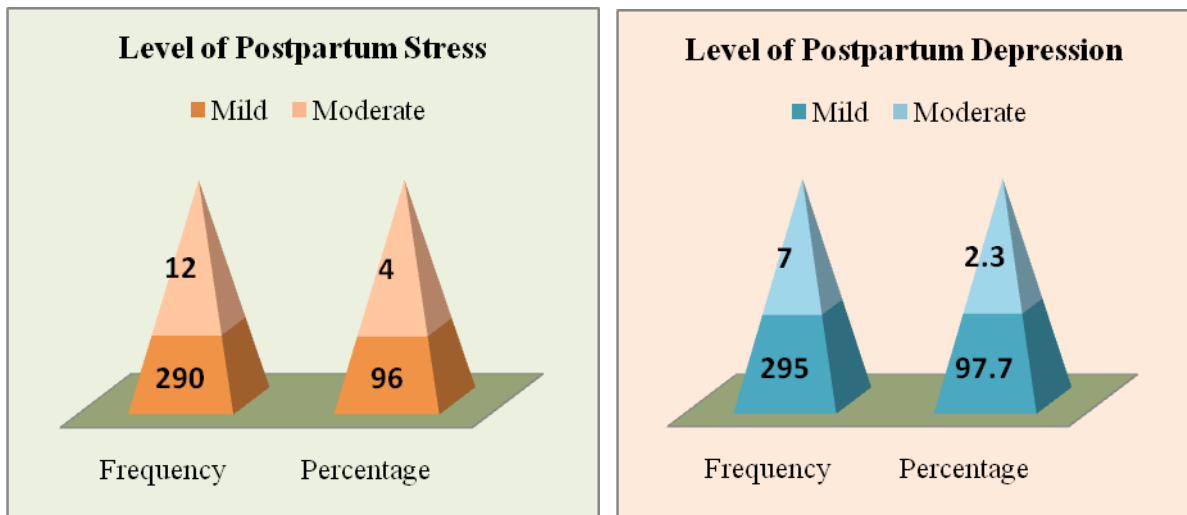


Fig.1. Level of postpartum stress and postpartum depression

Predictors for psychological health among the postnatal mothers:

Data from table.1 reveals that 177 (58.6%) postnatal mothers were primi, 266 (88.1%) had gestational age 38-40 weeks at the time of delivery, 158 (52.3%) had normal vaginal

delivery, 248 (82.1%) had baby with them, 169 (56.0%) of their babies weighed 1.5-2.5 kg at the time of birth, 269 (89.1%) had financial support and 103 (34.1%) had support from husband and family.

Table 1: Predictors of psychological health n=302

OBSTETRICAL FACTORS					
Parameters	f (%)	Parameters	f (%)	Parameters	f (%)
Parity		Gestational age at the time of delivery		Mode of delivery	
Primi	177 (58.6%)	< 37 weeks	24 (7.9%)	NVD	158 (52.3%)
Second	101 (33.4%)	38-40 weeks	266 (88.1%)	AVD	7 (2.3%)
Multi	24 (7.9%)	> 41 weeks	12 (4.0%)	CS	146 (48.3%)
Experience of present delivery		Health of mother			
Enjoyable	158 (52.3%)	Healthy	299 (99.0%)		
Traumatic	90 (29.8%)	Unhealthy	3 (1.0%)		
Painful	49 (16.2%)				
NEONATAL FACTORS					
Parameters	f (%)	Parameters	f (%)	Parameters	f (%)
Presence of baby with mother		Desired sex of baby		Actual sex of baby	
Yes	248 (82.1%)	Male	175 (57.9%)	Male	123 (40.7%)
No	54 (17.9%)	Female	127 (42.1%)	Female	179 (59.3%)
Weight of baby at birth		Method of feeding			
<1.5 kg	34 (11.3%)	EBF	245 (81.1%)	SF	41 (13.6%)
1.5-2.5 kg	169 (56.0%)	FF	3 (1.0%)	No feeding	4 (1.3%)
>2.5 kg	99 (32.8%)	KSF	9 (3.0%)		

OTHER FACTORS					
Parameters	f (%)	Parameters	f (%)	Parameters	f (%)
Financial support after delivery		Support system for taking care of baby after delivery		Stressful event in family	
Yes	269 (89.1%)	Husband	58 (19.2%)	No	302 (100%)
No	33 (10.9%)	Husband & Family	103 (34.1%)		
		Husband & HCP	4 (1.3%)		
		Family	66 (21.9%)		
		All of above	68 (22.5%)		

NVD- Normal vaginal delivery, AVD- Assisted vaginal delivery, CS- Cesarean section, EBF- Exclusive Breast Feeding, FF- Formula Feeding, KSF- Katori-Spoon Feeding, SF- Syringe Feeding, HCP-Health Care Professionals

Association between predictors and psychological health among postnatal mothers

Fisher exact test showed that there was significant association between education, parity, gestational age, mode of delivery, and presence of baby with mother, birth weight, and method of feeding and social

support with stress among the postnatal mothers. There was significant association between gestational age, presence of baby with mother, expected sex, actual sex, and birth weight, method of feeding and social support with depression among the postnatal mothers. (Table. 2)

Table 2: Fisher’s exact test for association between predictors and psychological health among the postnatal mothers N=302

Predictor	Post Partum Stress		p value	Post Partum Depression		p Value
	Mild	Moderate		Mild	Moderate	
Age						
21-25	237	12	0.317	242	7	0.633
26-30	50	0		50	0	
31-35	3	0		3	0	
Education						
No formal education	61	0	0.000*	61	0	0.126
Primary	49	0		49	0	
Secondary	137	0		133	4	
Higher secondary	27	12		36	3	
Graduation & above	16	0		16	0	
Parity						
Primi	165	12	0.009*	170	7	0.103
Second	101	0		101	0	
Multi	24	0		24	0	
Gestational age at the time of delivery						
<37 weeks	20	4	0.021*	21	3	0.023*
38-40 weeks	258	8		262	4	
>40 weeks	12	0		12	0	
Mode of delivery						
Assisted vaginal delivery	7	0	0.001*	7	0	0.764
Cesarean section	146	0		142	4	
Normal vaginal delivery	137	12		146	3	
Presence of baby with mother						
Yes	42	12	0.000*	47	7	0.000*
No	248	0		248	0	
Expected Sex						
Female	119	8	0.132	120	7	0.002*
Male	171	4		175	0	

Actual Sex						
Female	171	8	0.767	172	7	0.044*
Male	119	4		123	0	
Birth weight						
<1.5 kg	34	0	0.004*	31	3	0.019*
1.5-2.5 kg	157	12		165	4	
>2.5 kg	99	0		99	0	
Method of feeding						
Exclusive breast feeding	245	0	0.000*	245	0	0.000*
Formula feeding	3	0		3	0	
Katori-spoon feeding	9	0		9	0	
No feeding	4	0		0	4	
Syringe feeding	29	12		38	3	
Social support after delivery						
Husband	58	0	0.000*	55	3	0.039*
Husband and Family	103	0		103	0	
Husband and Health care professionals	4	0		4	0	
Family	66	0		66	0	
Health care professionals	3	0		3	0	
Husband, family and healthcare professionals	56	12		64	4	

p *<0.05 level of significance

DISCUSSION

This research was carried out to identify the psychological health of postnatal mothers and predictors of psychological health i.e. stress and depression. In this study, majority 249 (82.5%) postnatal mothers belonged to the age group of 21-25 years which was supported by a study conducted by Modi V (2018) at Ahmedabad, Gujarat. [9] Majority 137 (45.4%) mothers had secondary education and least 49 (16.2%) had primary education and 295 (97.7%) mothers were homemakers which was similar to the findings of Agarwala A (2019). [10] Dadhwal V (2020) [11], and Patel H [12] had reported that majority of mothers were staying in joint family which was similar to findings of our study. In relation to obstetric data, majority 177 (58.6%) mothers were primi and 158 (52.3%) had normal vaginal delivery. These similar findings were reported by Daliri D B (2023) and Dadhwal V (2020) in their studies. [11, 1]

Concerning neonatal factors, present study reported 179 (59.3%) were female baby delivered by postnatal mothers which was contrary findings to the study conducted by Dadhwal V [11] in Tamil Nadu, India where majority of male babies were delivered.

Exclusive breast feeding was the most practiced method of feeding in this study which was contrary to the findings of a study performed by Chalise M (2020). [12]

In relation to psychological health among the postnatal mothers stress and depression was identified. Stress was assessed by modified five point Likert scale based on maternal postpartum stress scale (MPSS). Considering the cut off score of >25 on the five point Likert scale, the prevalence of stress in current study was 3.97%. To estimate the prevalence of postpartum depression, commonly used EPDS screening tool was used. An EPDS cut off of 10 or more was used in this study as it has been suggested that this cutoff has the highest sensitivity (76%) and specificity (100%) for research work. [13] However, the prevalence of depression among the postnatal mothers was high i.e. 8.52% with cut off score of ≥ 10 which was not similar in findings with other studies. [14-21]

Fisher exact test found significant association between education, parity, gestational age and birth weight of baby and postpartum stress which was contrary to the study carried out by Shenoy H (2022) [22] in Kerala, India whereas mode of delivery has

same findings. Wang Y (2023) [23] has reported significant association between social support and postpartum stress which was similar to current study.

This study identified no significant association between age, education of mother, parity and mode of delivery with postpartum depression which was supported by Wildali D (2024), [24] Dadhwal V (2018) [1] and Chalise M (2020) [12] respectively. The significant association was found between social support and postpartum depression which is similar in a study carried out by Wildali D (2024) and Cho H. (2022). [24, 25] Expected sex, actual sex and birth weight of the baby were significantly associated with postpartum depression. These findings were in contrast to the study reported by Wildali D (2024). [24] Similarly significant association was found between method of feeding and postpartum depression in present study which was in contrast to the study of Chalise M. [12]

Limitation of the Study:

As it was a cross-sectional study that assessed the psychological health among the postnatal mothers in a single health facility, the findings cannot be generalized. The prevalence of psychological health identified by the study may be underestimation as it was not assessed regularly on specific duration of interval. Hence, more extensive studies with larger sample size can be helpful to identify the psychological health and associated risk factors.

CONCLUSION

This study concludes that, postpartum stress and depression are the main psychological health issues in the puerperium. Age, education, parity, mode of delivery, gender of baby, method of feeding and social support are the significant factors which play an important role in maintaining psychological health of postnatal mothers. Early identification & prompt management helps in reducing further complications. Understanding the factors associated for

postpartum stress and depression is considerable for planning mental health services rendered to the mothers in their postnatal period to make puerperium healthy for themselves as well as their babies and family.

Declaration by Authors

Ethical Approval: Approved

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REFERENCES

1. Dadhwal V, Rajesh Sagar, Debabani Bhattacharya, Shashi Kant, Puneet Misra, Vandana Choudhary & Perumal Vanamail, Prevalence of postpartum depression & anxiety among women in rural India: Risk factors & psychosocial correlates, Indian J Med Res 158, October 2023, pp 407-416
2. Patel H, Jaishree D. Ganjiwale, Archana S. Nimbalkar, Shashi N. Vani,1 Rohitkumar Vasa,4 and Somashekhar M. Nimbalkar, Characteristics of Postpartum Depression in Anand District, Gujarat, India by Journal of Tropical Pediatrics, 2015, 61, 364-369
3. Maternal Mental Health, Available from- <https://www.2020mom.org/mmh-disorders>
4. Psychological health in postnatal mothers, Available from- <https://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/maternal-mental-health>
5. Post partum depression statistics, available from- <https://www.postpartumdepression.org/resources/statistics/>
6. Chitwan Mariya Chalise, Isha Karmacharya, Maheshor Kaphle, Ayurma Wagle, Natasha Chand, Laxmi Adhikari, Hindawi, Factors Associated with Postnatal Depression among Mothers Attending at Bharatpur Hospital, Depression Research and Treatment Volume 2020, Article ID 9127672, available from- <https://doi.org/10.1155/2020/9127672>
7. WHO report, <https://speciality.medicaldialogues.in/22-of->

- new-mothers-in-india-suffer-from-postpartum-depression-who
8. Desai G, Chandra PS. Perinatal mental health in India: Time to deliver! *J Psychiatry Spectr* 2023;2:1-3. Available from: https://journals.lww.com/jops/fulltext/2023/01000/perinatal_mental_health_in_india__time_to_deliver_.1.aspx
 9. Modi VP, Parikh MN, Valipay SK. Prevalence of postpartum depression and correlation with risk factors. *Ann Indian Psychiatry* 2018;2:27-32
 10. Agarwala A, P. Arathi Rao, Narayanan P, Prevalence and predictors of postpartum depression among mothers in the rural areas of Udipi Taluk, Karnataka, India: A cross-sectional study, *Clinical Epidemiology and Global Health* 7, 2019, 342-345
 11. Daliri DB, Afaya A, Afaya RA, Abagye N. Postpartum depression: The prevalence and associated factors among women attending postnatal clinics in the Bawku municipality, Upper East Region of Ghana. *Psychiatry Clin Neurosci Rep.* 2023;2:e143. <https://doi.org/10.1002/pcn5.143>
 12. Chalise M, Karmacharya I, Maheshor Kaphle, Ayurma Wagle, Natasha Chand, and Laxmi Adhikari, Factors Associated with Postnatal Depression among Mothers Attending at Bharatpur Hospital, Chitwan, Hindawi Depression Research and Treatment Volume 2020, Article ID 9127672, 7 pages, <https://doi.org/10.1155/2020/9127672>
 13. Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression: development of the 10-item Edinburgh postnatal depression scale. *Br J Psychiatry.* 1987;150:782–786
 14. Shivalli S, Gururaj N. Postnatal depression among rural women in south India: do socio-demographic, obstetric and pregnancy outcome have a role to play? *PLoS One.* 2015;10(4):e0122079.
 15. Gupta S, Kishore J, Mala Y, Ramji S, Aggarwal R. Postpartum depression in North Indian women: prevalence and risk factors. *J Obstet Gynaecol India.* 2013;63(4):223–229.
 16. Desai ND, Mehta RY, Ganjiwale J. Study of prevalence and risk factors of postpartum depression. *Natl J Med Res.* 2012;2(2):194–198.
 17. Sudeepa D, Madhukumar S, Gaikwad V. A study on postnatal depression of women in rural Bangalore. *Int J Health Sci Res.* 2013;3(1):1–6.
 18. Kalar MU, Fatima I, Nabila K, et al. Prevalence and predictors of postnatal depression in mothers of Karachi. *Int J Collab Res Intern Med Public Health.* 2012;4(5):830–837
 19. Shrestha N, Hazrah P, Sagar R. Incidence and prevalence of postpartum depression in a rural community of India. *Journal of Chitwan Medical College.* 2015;5(2):11–19.
 20. Giri RK, Khatri RB, Mishra SR, Khanal V, Sharma VD, Gartoula RP. Prevalence and factors associated with depressive symptoms among post-partum mothers in Nepal. *BMC Res Notes.* 2015; 8:111.
 21. Adama ND, Foumane P, Olen JPK, Dohbit JS, Meka ENU, Mboudou E. Prevalence and risk factors of postpartum depression in Yaounde, Cameroon. *Open J Obstet Gynecol.* 2015;5(11):608–617.
 22. Heera Shenoy T, Remash K, Sheela Shenoy T. The burden of postnatal depression and perceived stress in mothers – what do we observe and learn?. *The New Indian Journal of OBGYN.* 2023; 10(1): 135-41.
 23. Wang Y Jian Gu, Feng Zhang and Xujuan Xu, The effect of perceived social support on postpartum stress: the mediating roles of marital satisfaction and maternal postnatal attachment, Wang *et al. BMC Women's Health* (2023) 23:482 <https://doi.org/10.1186/s12905-023-02593-9>
 24. Wildali D, Saja Nazzal, Suha Hamshari and Souad Belkebir, Prevalence and risk factors of postpartum depression among women attending primary healthcare centers in northern of West Bank/ Palestine: a cross-sectional study, 2022, Wildali *et al. BMC Women's Health* (2024) 24:43 , <https://doi.org/10.1186/s12905-024-02887-6>
 25. Cho H, Kyeongmin Lee, Eunji Choi, Ha Na Cho, Boyoung Park, Mina Suh, Yumie Rhee & Kui Son Choi, Association between social support and postpartum depression, *scientific Reports,* (2022) 12:3128, <https://doi.org/10.1038/s41598-022-07248-7>

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