

ORIGINAL ARTICLE

FREQUENCY OF POSTPARTUM DEPRESSION IN OPERATIVE VS SPONTANEOUS VAGINAL DELIVERY

Sidrah Yousafzai, Nazish Hayat, Nighat Parveen

Department of Obstetrics & Gynecology, Lady Reading Hospital, Peshawar, Pakistan

ABSTRACT

Background: Postpartum depression affects approximately one tenth of postnatal women. Different factors have been found to increase the risk of developing postnatal depression including antepartum depression, psychiatric history, low self-esteem, stressful life events, and a lack of social support. The study aims to look at mode of delivery as a possible risk factor. The objective of this study was to compare postpartum depression in operative vs spontaneous vaginal delivery among women.

Materials & Methods: It was a comparative cross-sectional study, conducted in Gynae department of Lady Reading Hospital Peshawar. The study was conducted from 10th April 2023 to 10th November 2023. A total of 139 pregnant women with delivery of a live baby at term were included in the study. Patients with history of conception by assisted reproductive techniques, previously diagnosed mental or chronic medical illness and history of antenatally diagnosed fetal anomaly were excluded. Edinburgh Postnatal Depression Scale score at 6 weeks postpartum was noted. Data was entered and analyzed on SPSS.

Results: In this study mean age of the participants was 28.234 ± 2.84 years, mean gestational age 38.473 ± 2.26 weeks, mean duration of hospital stay 2.335 ± 1.00 days and mean Edinburgh Postnatal Depression Scale score was 8.183 ± 5.65 . Depression was observed in 21.58% patients. Depression was observed in 6.67% patients with spontaneous vaginal delivery, 6.3% in elective C-section and 76.6% was in patients of Emergency C-section.

Conclusion: Postnatal Depression is more frequent in women who underwent emergency caesarean section.

KEY WORDS: Pregnancy; Postpartum depression; Mode of delivery; Cesarian section; Depression scale.

Cite as: Yousafzai S, Hayat N, Parveen N. Frequency of postpartum depression in operative vs spontaneous vaginal delivery. *Gomal J Med Sci* 2024 Apr-Jun;22(2):142-6. <https://doi.org/10.46903/gjms/22.02.1613>

INTRODUCTION

Postpartum period is a time when the changes in female body, brought about by pregnancy are resolving. Care of a newborn in such a period of transition is not without stress. Understandably, clinicians come across a variety of mood disorders in new mothers. It is characterized by feelings of extreme sadness, anxiety, and exhaustion that not only interfere with daily life functioning but also with bonding with the new baby. This can have negative impact on interpersonal relationship, with potential damage to the

family. Alarmingly this can be associated with suicidal ideation. In 2020, women were 3x more likely to die by suicide during or up to six weeks after the end of pregnancy compared to 2017-19, according to the report 'Saving Lives, Improving Mothers' Care' produced by the MBRRACE-UK collaboration.¹ This makes it extremely important for sufferers to seek help of healthcare professionals to cope with this situation.

Diagnosis of postpartum depression requires that there is association with the puerperum. For depressive "episodes that are associated with the puerperium," the World Health Organization's International Classification of Diseases – 11th Revision (ICD-11) requires onset of the episode within six weeks of delivery.² According to the American Psychiatric Association's Diagnostic and Statistical Manual, Fifth Edition (DSM-5), onset of postpartum major depression can occur prior to or after parturition.³ The DSM-5 specifier "with peripartum onset" is used when onset of major depression occurs either during pregnancy or in the four weeks following delivery. The

Corresponding Author:

Dr. Nazish Hayat
Assistant Professor
Department of obstetrics and gynecology
Lady Reading Hospital
Peshawar, Pakistan
E-mail: nazish_2110@yahoo.com

Date Submitted: 28-12-2023

Date Revised: 09-04-2024

Date Accepted: 27-04-2024

psychiatric symptoms associated with postpartum depression, if rated by severity, fall between those associated with postpartum blues which are mild and transient, and postpartum psychosis where symptoms are extreme.

Postpartum depression affects around 10-15%^{4, 5, 6} of postnatal women. Regarding risk factor, a major risk factor for postnatal depression is antenatal depression or anxiety (5 times more common).⁷ Other risk factors include past or family history of depressive illness, negative life events during childhood and pregnancy⁸, social and environmental factors such as low social support, domestic violence, previous abuse, low partner support, and marital difficulties along with low socioeconomic status and migration status.^{9,10} Non-exclusive breastfeeding has also been associated with risk of postpartum depression.¹¹ Lastly, a negative delivery experience can be another contributor to the increased risk. In a meta-analysis, including 43 studies with a total sample size of 1,827,456 Sun et al. showed that the odds ratio of postpartum depression risk was 1.33 (95% confidence interval = [1.21, 1.46]) between cesarean section and vaginal delivery.¹² Likewise Dinesh et al. showed that all the individual Edinburgh Postnatal Depression Scale (EPDS) scores mean values were high in the cesarean group when compared to the normal delivery group (30% Vs 15 %).¹³ Limited work is done in our local population on this topic. The study aimed to find the frequency of postpartum depression with regards to normal Vs cesarian delivery among patients presenting to the obstetrics department in our hospital. This study may help us in devising appropriate management strategies at the time of delivery and postnatal period in terms of offering adequate counselling, better medication and positive environment to reduce the risk of developing postpartum depression.

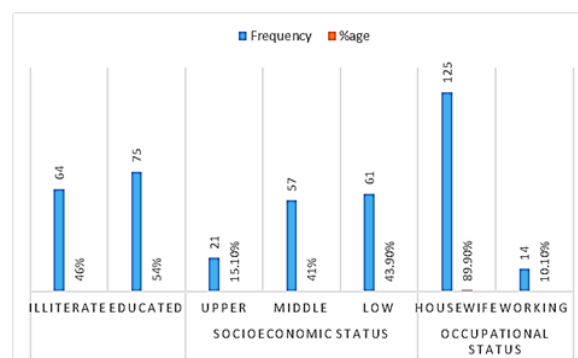
MATERIALS AND METHODS

It was a comparative cross-sectional conducted in Gynae Department of Lady Reading Hospital Peshawar. The study was conducted from 10th April 2023 to 10th November 2023. The sample size of 139, as calculated using the WHO software with anticipated proportion of postpartum depression of 10%, keeping 95% confidence level and 5% margin of error. After taking approval from hospital ethical committee (Ref No. 460/GD/MTI), patients were selected through non-probability, consecutive sampling. Inclusion criteria for selection was delivery of a live baby at term from singleton pregnancy. Exclusion criteria was history of conception by assisted reproductive techniques, history of previously diagnosed mental or chronic medical illness and history of antenatally diagnosed fetal anomaly. Informed

consent was taken. The data of the patients i.e., name, educational status, socio-economic class, occupation, locality, gestational age, maternal age, parity, gravidity, mode of delivery, and duration of hospital stay was noted. Patients enrolled were advised follow up visit in OPD at 6 weeks postpartum. At this time, they were questioned with Urdu version of Edinburgh Postnatal Depression Scale and score was noted. The data was entered and analyzed using SPSS Ver. 27.0. The quantitative variables i.e., maternal age, gestational age, duration of hospital stay, Edinburgh Postnatal Depression Scale score was presented as mean and standard deviations. The categorical variables i.e., educational status, socioeconomic status, occupational status, gravity, parity, mode of delivery, were presented as frequency and percentages. Postpartum depression was stratified by maternal age, gestational age, duration of hospital stay, socio-demographic, educational, occupational status, age groups, locality and mode of delivery. Post stratification chi-square was used at 5% level of significance.

RESULTS

In this study mean age of the participants was 28.234 ± 2.84 years, mean gestational age 38.473 ± 2.26 weeks, mean duration of hospital stay 2.335 ± 1.00 days and mean Edinburgh Postnatal Depression Scale score was 8.183 ± 5.65 . Frequency and percentage of patients according to educational status, socioeconomic status, occupational status and mode of delivery are shown in Graph-1. Most of the patients were para 1 or 2 (74%). Depression was observed in 21.58%. Stratification of Depression with respect to educational status, socioeconomic status, and mode of delivery are shown in Tables-1, 2 and 3 respectively. Depression was observed in 6.67% patients with spontaneous vaginal delivery, 6.3% in elective C-section and 76.6% was in patients of Emergency C-section.



Graph 1: Frequency and %age of patients according to educational, socioeconomic and occupational status (n=139)

Table 1: Stratification of depression with respect to educational status.

Educational status	Depression		Total (n)	p-value
	Yes	No		
Illiterate	15(23.4%)	49(76.6%)	64	0.623
Educated	15(20%)	60(80%)	75	
Total	30(21.6%)	109(78.4%)	139	

Table 2: Stratification of depression with respect to socioeconomic status.

Socioeconomic status	Depression		Total (n)	p-value
	Yes	No		
Upper	6(28.6%)	15(71.4%)	21	0.543
Middle	10(17.5%)	47(82.5%)	57	
Low	14(23%)	47(77%)	61	
Total	30(21.6%)	109(78.4%)	139	

Table 3: Stratification of depression with respect to mode of delivery.

Mode of Delivery	Depression		Total (n)	P value
	Yes	No		
Spontaneous vaginal delivery	2(6.67%)	28(93.33%)	30	0.000
Elective C-section	5(6.3%)	74(93.6%)	79	
Emergency C-section	23(76.6%)	7(23.3%)	30	
Total	30(21.58%)	109(78.41%)	139	

DISCUSSION

In our study, 21.6% of respondents were found to have depression when questioned and scored on Edinburgh Postnatal Depression Scale. Some other studies also quote higher figures than the usually quoted 10-15%. In a study by Grace et al, the detection rate of postpartum depression was as high as 35%¹⁴ using the same Edinburgh Postpartum Depression Scale as used in our study. Their mean score was 8.8±5.96, similar to our score of 8.183±5.65. The higher detection rate in both these studies can probably be attributed to the fact that the patients were screened, which leads to detection of a higher number of patients who might not have reported to healthcare professionals otherwise. In the meta-analysis by Shorey et al, the reported prevalence is 17%, close to our finding.⁵

Current study showed that although there was higher incidence of postnatal depression in illiterate women as compared to educated ones, however this difference did not reach statistical significance in our study. In our study we did not categorize educational status further. Low educational status was also found in study by Topatan¹⁵ who showed that there was a higher risk of postpartum depression in those who could just read and write or had elementary school education as compared to secondary or higher education (p value <0.00). In a systematic review by

Dadi et al., low educational status was found to be associated with risk of PND.¹⁶

In our study, we could not find any significant association of postnatal depression with socioeconomic status. While Gebregziabher et al. showed in their study that low family income and socioeconomic status was significantly associated with risk of depression¹⁷ there are studies that show that there is no significant relationship between the two.¹⁸

Our study showed that emergency cesarian section was significantly associated with risk of developing postpartum depression. Many studies conducted in the past have also shown that women undergoing caesarean section are more prone to suffer postnatal depression as compared to those undergoing a normal vaginal delivery. In a study, the rate of depression was found as 28.9% among women who delivering vaginally as against 45.8% among women who had cesarean section (OR: 2.1; C.I: 1.27 – 3.39).¹⁹ In a Pakistani study conducted by Malik et al, postnatal depression was found to be higher in post cesarian as compared to normally delivered patients (58% Vs 24%).²⁰ Another Pakistani study also found a significant difference in the rate of postnatal depression (EPDS cut-off >12) among women who delivered through cesarean section (17.8%) and through vaginal delivery (11.3%).²¹ Finally, Houston et al in their study reported that the women who had their

first childbirth and had cesarean section despite of a strong desire for normal vaginal delivery were at higher risk of developing postpartum depression.²² This unpreparedness for possible cesarian section with un-anticipated post-operative course probably made patients having cesarian section prone to postpartum depression, a possible explanation for increased risk of depression in emergency cesarian deliveries in our study also. Few studies, however, revealed that the risk of postpartum depression and mode of delivery was not significant,^{23,24} indicating that other factors may be involved.

CONCLUSION

Postnatal Depression is highly significant in women who undergo emergency caesarean section as compared to those who undergo a normal vaginal delivery.

REFERENCES

- De Backer K, Wilson CA, Dolman C, Vowles Z, Easter A. Rising rates of perinatal suicide. *BMJ* [Internet]. 2023;e075414. <https://doi.org/10.1136/bmj-2023-075414>
- ICD-11 for mortality and morbidity statistics [Internet]. Who.int. [cited 2024 Feb 24]. Available from: <https://icd.who.int/browse/2024-01/mms/en>
- Edition F. Diagnostic and statistical manual of mental disorders. *Am Psychiatric Assoc.* 2013;21(21):591-643.
- Chandran M, Tharyan P, Muliylil J, Abraham S. Post-partum depression in a cohort of women from a rural area of Tamil Nadu, India: Incidence and risk factors. *British Journal of Psychiatry.* 2002;181(6):499-504. <https://doi.org/10.1192/bjp.181.6.499>
- Shorey S, Chee CYI, Ng ED, Chan YH, Tam WWS, Chong YS. Prevalence and incidence of postpartum depression among healthy mothers: A systematic review and meta-analysis. *J Psychiatr Res* [Internet]. 2018;104:235-48. <https://doi.org/10.1016/j.jpsychires.2018.08.001>
- Banti S, Mauri M, Oppo A, Borri C, Rambelli C, Ramacciotti D, et al. From the third month of pregnancy to 1 year postpartum. Prevalence, incidence, recurrence, and new onset of depression. Results from the Perinatal Depression-Research & Screening Unit study. *Compr Psychiatry* [Internet]. 2011;52(4):343-51. <https://doi.org/10.1016/j.comppsy.2010.08.003>
- Gaillard A, Le Strat Y, Mandelbrot L, Keïta H, Dubertret C. Predictors of postpartum depression: Prospective study of 264 women followed during pregnancy and postpartum. *Psychiatry Res* [Internet]. 2014;215(2):341-6. <https://doi.org/10.1016/j.psychres.2013.10.003>
- Tebeka S, Le Strat Y, Higgons ADP, Benachi A, Dommergues M, Kayem G, et al. Prevalence and incidence of postpartum depression and environmental factors: The IGEDEPP cohort. *J Psychiatr Res* [Internet]. 2021;138:366-74. <https://doi.org/10.1016/j.jpsychires.2021.04.004>
- Norhayati MN, Nik Hazlina NH, Asrenee AR, Wan Emilin WMA. Magnitude and risk factors for postpartum symptoms: A literature review. *J Affect Disord* [Internet]. 2015;175:34-52. <https://doi.org/10.1016/j.jad.2014.12.041>
- Gaillard A, Le Strat Y, Mandelbrot L, Keïta H, Dubertret C. Predictors of postpartum depression: Prospective study of 264 women followed during pregnancy and postpartum. *Psychiatry Res* [Internet]. 2014;215(2):341-6. <https://doi.org/10.1016/j.psychres.2013.10.003>
- Alimi R, Azmoude E, Moradi M, Zamani M. The association of breastfeeding with a reduced risk of postpartum depression: A systematic review and meta-analysis. *Breastfeed Med* [Internet]. 2022;17(4):290-6. <https://doi.org/10.1089/bfm.2021.0183>
- Sun L, Wang S, Li X-Q. Association between mode of delivery and postpartum depression: A systematic review and network meta-analysis. *Aust N Z J Psychiatry* [Internet]. 2021;55(6):588-601. <https://doi.org/10.1177/0004867420954284>
- Dinesh P, Raghavan S. A comparative study of prevalence of postnatal depression among subjects with normal and cesarean deliveries. *IAIM, 2018; 5(2): 6-11.*
- Evins GG, Theofrastous JP, Galvin SL. Postpartum depression: a comparison of screening and routine clinical evaluation. *Am J Obstet Gynecol* [Internet]. 2000;182(5):1080-2. <https://doi.org/10.1067/mob.2000.105409>
- Topatan S, Demirci N. Frequency of depression and risk factors among adolescent mothers in Turkey within the first year of the postnatal period. *J Pediatr Adolesc Gynecol* [Internet]. 2019;32(5):514-9. <https://doi.org/10.1016/j.jpap.2019.03.009>
- Dadi AF, Miller ER, Mwanri L. Postnatal depression and its association with adverse infant health outcomes in low-and middle-income countries: a systematic review and meta-analysis. *BMC pregnancy and childbirth.* 2020;20:1-5. <https://doi.org/10.1186/s12884-020-03092-7>
- Gebregziabher NK, Netsereab TB, Fessaha YG, Alaza FA, Ghebrehiwet NK, Sium AH. Prevalence and associated factors of postpartum depression among postpartum mothers in central region, Eritrea: a health facility based survey. *BMC Public Health* [Internet]. 2020;20(1):1614. <https://doi.org/10.1186/s12889-020-09676-4>
- Ozmen D. Association between perceived social support and postpartum depression in turkey. *Br J Med Med Res* [Internet]. 2014;4(10):2025-36. <https://doi.org/10.9734/BJMMR/2014/6109>
- Eastwood JG, Jalaludin BB, Kemp LA, Phung HN, Barnett BEW. Relationship of postnatal depressive symptoms to infant temperament, maternal expectations, social support and other potential risk factors: findings from a large Australian cross-sectional study. *BMC Pregnancy Childbirth* [Internet]. 2012;12(1):148. <https://doi.org/10.1186/1471-2393-12-148>

20. Malik F, Malik B, Irfan M. Comparison of postnatal depression in women following normal vaginal delivery and caesarean section: A pilot study. JPMI. 2015;29:34-7.
21. Khanam M, Sultana A, Siddiqui SH, Rehman K. Screening for postpartum depression in recently delivered mothers. Pak J Med Sci. 2011;27(2):320-4.
22. Houston KA, Kaimal AJ, Nakagawa S, Gregorich SE, Yee LM, Kuppermann M. Mode of delivery and postpartum depression: the role of patient preferences. Am J Obstet Gynecol [Internet]. 2015;212(2):229.e1-7. <https://doi.org/10.1016/j.ajog.2014.09.002>
23. Muneer A, Minhas FA, Tamiz-ud-Din Nizami A, Mujeeb F, Usmani AT. Frequency and associated factors for postnatal depression. J Coll Physicians Surg Pak [Internet]. 2009;19(4):236-9. Available from: <http://dx.doi.org/04.2009/JCPSP.236239elivered> mothers. Pak J Med Sci. 2011;27(2):320-4.
24. Ozmen D. Association between perceived social support and postpartum depression in turkey. Br J Med Med Res [Internet]. 2014;4(10):2025-36. <https://doi.org/10.9734/BJMMR/2014/6109>

CONFLICT OF INTEREST

Authors declare no conflict of interest.

GRANT SUPPORT AND FINANCIAL DISCLOSURE

None declared.

AUTHORS' CONTRIBUTION

The following authors have made substantial contributions to the manuscript as under:

Conception or Design:	SY, NH
Acquisition, Analysis or Interpretation of Data:	SY, NH, NP
Manuscript Writing & Approval:	SY, NH, NP

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



Copyright © 2024. Sidrah Yousafzai, et al. This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License, which permits unrestricted use, distribution & reproduction in any medium provided that original work is cited properly.