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# Frequency and Determinants of Postpartum Depression among Mothers Living in Karachi

Fareeha Shahid, Quratulain Javaid, Umama Shakeel Ahmed, Fatima Farooq, Neelam Kumari, Qalandar Shah

**ABSTRACT**

**Objective:** To determine the frequency of Postpartum Depression (PPD) among mothers living in Karachi and to find out the determinants of predispose mothers to Postpartum Depression.

**Study Design and Setting:** The study was cross sectional analytical and was carried by online survey of mothers living in Karachi

**Methodology:** Total duration was six months from 1st January, 2020 to 31st July, 2020. The calculated sample size of study was 369. The study was approved by the Ethical Review Committee of Bahria University Health Sciences Campus, Karachi. Random sampling technique was used to recruit subjects. 294 participants were part of the research. Mothers with previous history of depression and those who had given birth to healthy babies were included in the study. Mothers who have had miscarriage or pre-mature babies were excluded. Questionnaires in both English and Urdu languages were used for the research. PPD was assessed by the help of Edinburgh Post Natal Depression Scale (EPDS). The score of greater than 12 was considered to be indicative of PPD.

**Results:** A total of 294 mothers were enrolled in the study, 187 mothers had an EPDS score >12 giving prevalence of PPD as 63.6%. This study showed that mothers with PPD were more likely not to breastfeed their child (p=0.01), had lack of family support (p=0.00) and had previous history of depression as well (p=0.00).

**Conclusion:** The present study concluded that frequency of postpartum depression was 63.6%. Lack of breastfeeding, previous history of depression and lack of family support were among the determinants that predispose mothers to postpartum depression.

**Key words**: Postpartum, depression, determinants, mothers

**How to cite this Article:**
Shahid F, Javaid Q, Ahmed US, Farooq F, Kumari N, Shah Qalandar. Frequency and Determinants of Postpartum Depression among Mothers Living in Karachi. J Bahria Uni Med Dental Coll. 2022; 12(4):202-6 DOI: https://doi.org/10.5 1985/ JBUMDC202158



## INTRODUCTION:

Postpartum depression is a type of mood related disorder that is manifested within three months after the child's birth. There appears weakening of bond between the mother and the child along with ego-dystonic thoughts. The depressive thoughts can lead to a mother harming a child and even end up killing her own baby.[1] Depression, anxiety, multiple pregnancies are considered to be important risk factors. Lack of breast feeding and absence of care towards the mother by the spouse are also considered as vital social factors contributing to the disorder along with low socioeconomic status and smoking history.[2,3] Life style factors include decrease physical exercise, food low in healthy nutrients along with disturbed sleep pattern.[2] Azad et al in their study have identified several factors including unintentional pregnancy, job work after child birth, loss of job due to pregnancy, past history of still born child, miscarriage, death of the child, poor marital life relationship, violence from the spouse, low socioeconomic status and unintended pregnancy as the causes leading to PPD.[4]

The prevalence of postpartum depression in adult mothers range in between 10% to 15%. Anokye reported the prevalence to be 7% in Ghana population.[5] A study conducted in Turkey found overall prevalence to be 23.8% with 21.2% rate in the developed cities as compared to 25% prevalence

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Received: 09-Sep-2021
Accepted: 22-Sep-2022

in the developing cities.[3] A research study carried in Dhaka, Bangladesh has documented the prevalence to be 39.4% within first year of delivering a child. On an average out of every 100 women, 40 were declared as having PPD.[4] Postpartum disorder is commonly seen illness among the females of Pakistan. The prevalence rate is variable and ranges in between 28% to 63%. Several factors contribute to the development of PPD in Pakistan, including environmental, cultural and social factors.[6] A study conducted in Islamabad has documented the frequency of PPD to be 17.3%.[7]

Postpartum depression presents significant problems not only for mothers but also for children. A recent study has mentioned that the after effects of the disorder can even lead to infanticide and suicide.[8] The general public lacks awareness and that is the reason behind the neglect given to this disorder.[9] PPD is considered to be among the illnesses which are given high priority by the public health.[10] Despite of various treatment options, females living in Pakistan are not treated.[8] This disorder should be treated as it can lead to disturbing bond between the mother and the child along with several psychosocial issues in the child.[1] Among the treatment options, psychosocial support is considered to be among the most effective ones.[5] Effective treatment modalities should take into account the cultural aspects and the cost of treatment.[4]

There are several studies on postpartum depression that have been predominantly conducted in western societies. The lack of research on postpartum depression in developing countries like Pakistan could lead to a gap in assessing the global burden of disease. Therefore the study was planned with the objectives of determining the frequency of postpartum depression and its determinants that predispose the mothers to PPD. The findings of this study will help to fill the gaps in the literature about PPD in Pakistan and along with that it can help decision makers to ensure better planning, resource allocation and delivery of health services.

## METHODOLOGY:

The present research was a cross-sectional study. The study was approved by the Ethical Review Committee of Bahria University Health Sciences Campus, Karachi (ERC number is 45/2020). It was carried out through online survey. The sample size for this study was calculated from StatCalc sample size calculator tool with 95% confidence level and 5% margin of error. The calculated sample size of the study was 369. Before the start of survey, consent was taken from all the participants. Total number of responses received was 446 and finally the valid number of responses among these was 294. Random sampling technique was applied and each respondent was given equal chance of selection. All mothers including first time mothers, mothers with previous history of depression and have given birth to healthy babies were included in the study. Mothers who have had miscarriage or pre-mature babies were excluded from the study. The web-link of the survey questionnaire was shared by the help of text-based instant messaging (WhatsApp). The study was conducted through a period of 7 months (1 January, 2020 to 31st July, 2020). The recruited participants were then identified as suffering from PPD and also the determinants associated with Postpartum Depression (PPD) were noted.

Since, this was an online research therefore questionnaire was constructed through a software called Surveylegend. It consisted of a set of 10 questions from Edinburgh Postnatal Depression Scale (EPDS) This is a self-rating scale, which is used to screen mothers for postpartum depression. When the scores were greater than 12, they were considered having postpartum depression (PPD). Another set of custom designed questions regarding sociodemographic, obstetrics and newborn variables were asked to identify the determinants associated with postpartum depression. All the material had been translated into local language Urdu for the convenience of the online participants.

Data was received in the form of excel spreadsheet, was entered and analyzed by using Statistical Package for Social Sciences (SPSS), version 26. Analysis was carried through descriptive statistics to calculate the frequency and percentages of main variables like age, qualification, working status, parity, delivery type, infant gender, feeding status, and family support, previous history of depression and awareness of PPD. Multi-variable analysis was done using the Chi-Square test to compare the women with and without PPD with all sociodemographic, obstetric and medical variables. The results were considered as significant when p value was =0.05.

## RESULTS:

Out of the total 294 participants, majority were found to be suffering from postpartum depression based on the EPDS score (Figure-1). The mean of depression score turns out to be 14.4±6.1. This study showed that mothers with PPD and those without it differed in terms of breast feeding their children, support of family and previous history of depression (Table 1). The females differ in terms of awareness about the postpartum depression. (Figure 2)

Figure 1: Pie chart showing prevalence of depression in the sample based on EPDS score

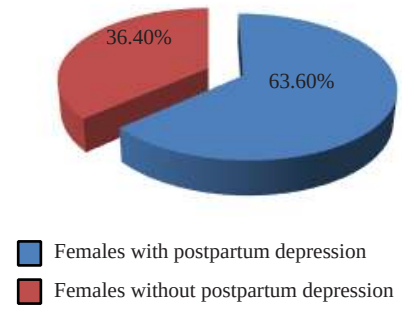
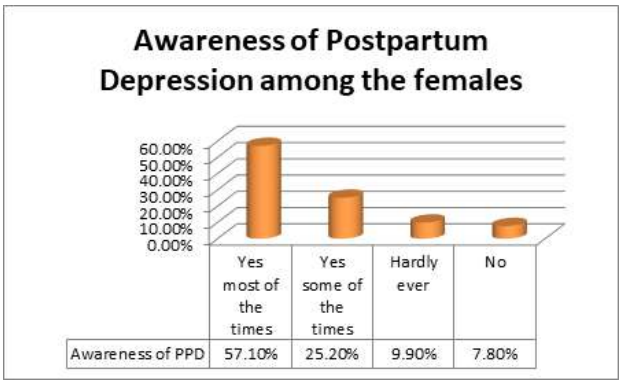


Table 1: Comparison of study variables with postpartum depression verses no depression

| Variables | Women with PPD (N=187) | Women without PPD (N=187) | P Value |
|---|---|---|---|
| | N (%) | N (%) | |
| **Age** | | | |
| Less than 20 years | 03 (1.6%) | 01 (0.9%) | 0.415 |
| 20-30 years | 134 (71.6%) | 71 (66.3%) | |
| 30-40 years | 40 (21.3%) | 24 (22.4%) | |
| More than 40 years | 10 (5.3%) | 11 (10.2%) | |
| **Qualification** | | | |
| Primary | 10 (5.3%) | 08 (7.4%) | 0.848 |
| Secondary | 01 (0.5%) | 00 (0%) | |
| Matric | 10 (5.3%) | 05 (4.6%) | |
| Intermediate | 23 (12.2%) | 20 (18.6%) | |
| Bachelors | 116 (62%) | 62 (57.9) | |
| Postgraduate | 27 (14.4%) | 12 (11.2%) | |
| **Working status** | | | |
| Housewife | 135 (72.1%) | 85 (79.4%) | 0.168 |
| Working women | 52 (27.8%) | 22 (20.5) | |
| **Parity** | | | |
| Primiparous | 100 (53.4%) | 47 (43.9%) | 0.185 |
| Multipara | 87 (46.5%) | 60 (56.0) | |
| **Delivery Type** | | | |
| Complicated | 75 (40.1%) | 37 (34.5%) | 0.348 |
| Un-complicated | 112 (59.8%) | 70 (65.4%) | |
| **Feeding Status** | | | |
| Mother milk | 116 (62%) | 81 (75.7%) | **0.01*** |
| Formula milk | 71 (37.9%) | 26 (24.2%) | |
| **Family support** | | | |
| Yes, most of the time | 98 (52.4%) | 88 (82.4%) | **0.00*** |
| Yes, some of the time | 60 (32.0%) | 11 (10.2%) | |
| Hardly ever | 20 (10.6%) | 05 (2.6%) | |
| No | 09 (4.8%) | 03 (1.6%) | |
| **Previous history of depression** | | | |
| Yes, Most of the time | 46 (24.5%) | 03 (2.8%) | **0.00*** |
| Yes, some of the time | 81 (43.3%) | 18 (16.8%) | |
| Hardly ever | 30 (16%) | 26 (24.2%) | |
| No | 30 (16%) | 60 (56%) | |

Figure 2 Demographic characteristics of enrolled participants




## DISCUSSION:

PPD is included among the mood disorders that affects ten to fifteen percent of mothers on yearly basis[5] and is seen among the females belonging to different social status around the globe.[3,4] The current study explored the prevalence of postpartum depression in females in our local setup and tried to identify associated factors which may predispose or perpetuate the disorder. In this study, the prevalence of postpartum depression among mothers of Pakistan is n=187 (63.6%) out of total participants 394. Analogous results were stated by a study carried in Peshawar mentioning the prevalence to be 62.7%.[9] The percentage of prevalence is considerably high as compared to studies conducted in various regions of our country. A research conducted at Islamabad has reported the prevalence to be 17.3%.[7] A longitudinal study in Pakistan reported the mean PPD score of 11.18 while a study conducted by Aliani R et al reported the prevalence to be 12.5%.[11,8] Postpartum depression has been seen to be affected by differences in ethical backgrounds.[12]

Although the illness exists both in the western societies and the eastern ones, the difference lies in the etiological factors.[13] There are various etiological factors that lead to the mental ailment of PPD. Previous history of depression is among the factors that are associated with a higher risk of postpartum depression. The second most important finding of our research is that mothers who have depression prior to conception are more susceptible to postpartum depression. Various studies have mentioned the relationship between postpartum depression and previous history of depression. Tariq et al in their study have documented the relation between antenatal and post natal depression.[11] A study conducted in Sweden have documented that females with history of depression have twenty times more chances of developing postpartum depression than those without the positive history of depression.[14] An Egyptian research with 33.5% of PPD prevalence has also mentioned the linkage between onset of the postpartum depression and previous depression history.[15] This suggests that postpartum depression is strongly linked to previous episodes of depression.

The result of the current study showed that those mothers who are not breastfeeding their children are likely to develop postpartum depression. A study conducted on Latino females have also documented parallel results stating that postpartum depression is correlated with cessation of breast feeding.[16] Other studies conducted in United States of America and Korea have also mentioned similar results mentioning the linkage between lack of breast feeding and development of PPD.[17,18] This signifies the protective physiological effects of breast milk in prevention of PPD.

Societal factors play a major role in the development of postpartum depression. Third important variable in the current research is family support. According to our results,

those mothers who have had lack of family support also suffer from postpartum depression. Other studies have shown significant association between the occurrence of postpartum depression and absence of family support. Another study conducted in Pakistan has also highlighted the link between high social support and prevention of PPD.[2] Studies conducted in Hazara, Rawalpindi and Islamabad have also documented the protective supportive role of family towards prevention of PPD. Those females who live in a nuclear setup are more prone to develop PPD as compared to those who live in joint family system setup.[19,20] A study in India has also thrown light on the impact of societal factors in contributing towards the females developing postpartum depression. The social setup does not allow women to seek medical advice on time. Disorders like PPD is seen as a stigmatizing event in the lives of the mothers.[13] A Japanese research has documented that the family members living with the pregnant mother are among factors that can affect the development of PPD. Postpartum depression was reported more in those females who live with their in laws as compared to those who live with their spouses and children only. Spouse support and economical support help in alleviating the symptoms.[21] Similarly, a study conducted in North Carolina has mentioned that effects of social support play an instrumental role in the prevention of development of PPD.[22] A recent study conducted in Taiwan has also endorsed the positive outcomes of psychosocial support. The study stated that first time mothers can be aided by providing family support and midwifery provision in order to cater the needs of the mothers.[23] A study conducted in France has highlighted that positive support from the spouse can nullify the effects of inequalities from the surrounding members towards the mother and hence play a vital role in combatting postpartum depression.[24] Ambrosini et al in their article have highlighted the contribution of cultural norms in facilitating the occurrence and progress of PPD.[25] Support from the family is shown to be an essential component in PPD occurrence.

The current study has few limitations. The study was conducted at a single center. Multi-centered studies would have enabled us to generalize the results. Secondly the participants were recruited from hospital setup that is why the sample is not representative of population.

Further studies with longitudinal study design could be beneficial in acquiring a follow up feedback from the patients. In future, studies with variable ethnic population should be planned to determine the effects of ethnicity on PPD.

## CONCLUSION:

The present study concluded that frequency of postpartum depression was 63.6%. Lack of breastfeeding, previous history of depression and lack of family support were among the determinants that predispose mothers to postpartum depression.

**Authors Contribution:**
**Fareeha Shahid:** Substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data
**Quratulain Javaid:** Manuscript writing, revising the article, final approval of version
**Umama Shakeel Ahmed:** Substantial contributions to conception, design and acquisition of data
**Fatima Farooq:** Substantial contributions to conception, design and acquisition of data
**Neelam Kumari:** Substantial contributions to conception, design and acquisition of data
**Qalandar Shah:** Substantial contributions to conception, design and acquisition of data

## REFERENCES:

1. Siedlecka D, Wróbel-Knybel P, Krzewicka-Romaniuk E, Mica³ W, Skoczyñski M. Postpartum depression–a mood disorder after delivery. J Educ Health Sport. 2019;9(9):1124-1130. DOI http://dx.doi.org/10.5281/zenodo.3464246
2. Ghaedrahmati M, Kazemi A, Kheirabadi G, Ebrahimi A, Bahrami M. Postpartum depression risk factors: A narrative review. J Educ Health Promot. 2017;6:1-24. DOI: 10.4103/jehp.jehp_9_16
3. Ozcan NK, Boyacýoglu NE, Dinç H. Postpartum depression prevalence and risk factors in Turkey: a systematic review and meta-analysis. Arch Psychiatr Nurs.2017;31(4):420-428. https://doi.org/10.1186/s12884-021-04016-9
4. Azad R, Fahmi R, Shrestha S, Joshi H, Hasan M, Khan AN, Chowdhury MA, Arifeen SE, Billah SM. Prevalence and risk factors of postpartum depression within one year after birth in urban slums of Dhaka, Bangladesh. PloS one. 2019;14(5): e0215735. https://doi.org/10.3390/ijerph17134727
5. Anokye R, Acheampong E, Budu-Ainooson A, Obeng EI, Akwasi AG. Prevalence of postpartum depression and interventions utilized for its management. Ann Gen Psychiatry.2018;17(1):1-8. doi: 10.1186/s12991-019-0244-4
6. Gulamani SS, Shaikh K, Chagani J. Postpartum depression in Pakistan: a neglected issue. Nurs Womens Health. 2013; 17: 147-152. DOI: 10.1111/1751-486X.12024
7. Shah S, Lonergan B. Frequency of postpartum depression and its association with breastfeeding: A cross-sectional survey at immunization clinics in Islamabad, Pakistan. Pakistan. J Pak Med Assoc. 2017;67(8):1151-1156.
8. Aliani R, Khuwaja B. Epidemiology of postpartum depression in Pakistan: A review of literature. National Journal of Health Sciences. 2017;2(1):24-30.DO1: 10.21089/njhs.21.0024
9. Bakhtiar H, Khaliq MM, Nawaz A, Asif M, Jamil S, Jamal S, et al. Risk factors associated with postpartum depression in two tertiary care hospitals of Peshawar: a comparative cross-sectional study. J Rehman Med Inst. 2020;6(3):16-9.
10. Layton H, Bendo D, Amani B, Bieling PJ, Van Lieshout RJ. Public health nurses' experiences learning and delivering a group cognitive behavioral therapy intervention for postpartum depression. Public Health Nurs. 2020;37(6):863-70. DOI: 10.1111/phn.12807
11. Tariq N, Naeem H, Tariq A, Naseem S. Maternal depression and its correlates: A longitudinal study. J Pak Med Assoc. 2021;71(6):1618-1622. doi: 10.47391/JPMA.352.

12. Guintivano J, Sullivan PF, Stuebe AM, Penders T, Thorp J, Rubinow DR, Meltzer-Brody S. Adverse life events, psychiatric history, and biological predictors of postpartum depression in an ethnically diverse sample of postpartum women. Psychol Med. 2018;48(7):1190-200. doi: 10.1017/S0033291717002641

13. Kapoor DA. A Critical Analysis of the Biopsychosocial Risks Associated with Postpartum Depression in Indian Mothers. Inquiry. 2021;13(02):1-10.

14. Silverman ME, Reichenberg A, Savitz DA, Cnattingius S, Lichtenstein P, Hultman CM, Larsson H, Sandin S. The risk factors for postpartum depression: A population-based study. Depress Anxiety 2017;34(2):178-187. doi: 10.1002/da.22597

15. Ahmed GK, Elbeh K, Shams RM, Malek MA, Ibrahim AK. Prevalence and predictors of postpartum depression in Upper Egypt: A multicenter primary health care study. J Affect Disord. 2021;290:211-218. doi: 10.1016/j.jad.2021.04.046.

16. Lara-Cinisomo S, McKenney K, Di Florio A, Meltzer-Brody S. Associations between postpartum depression, breastfeeding, and oxytocin levels in Latina mothers. Breastfeed Med. 2017;12(7):436-442. doi: 10.1089/bfm.2016.0213.

17. Webber E, Benedict J. Postpartum depression: a multi-disciplinary approach to screening, management and breastfeeding support. Arch Psychiatr Nurs. 2019;33(3):284-289. doi: 10.1016/j.apnu.2019.01.008.

18. Nam JY, Choi Y, Kim J, Cho KH, Park EC. The synergistic effect of breastfeeding discontinuation and cesarean section delivery on postpartum depression: A nationwide population-based cohort study in Korea. J Affect Disord. 2017;218:53-58. doi: 10.1016/j.jad.2017.04.048.

19. Kazmi SF, Khan M, Tahir R, Dil S, Khan AM. Relationship between social support and postpartum depression. Ann Pak Inst Med Sci. 2013;9(4):191-194.

20. 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):64-7.

21. Honjo K, Kimura T, Baba S, Ikehara S, Kitano N, Sato T, et al. Association between family members and risk of postpartum depression in Japan: Does “who they live with” matter?-The Japan environment and Children's study. Soc Sci Med. 2018;217:65-72. doi: 10.3389/fpsyt.2021.736306

22. Pao C, Guintivano J, Santos H, Meltzer-Brody S. Postpartum depression and social support in a racially and ethnically diverse population of women. Arch Womens Ment Health. 2019;22(1):105-114. doi: 10.1007/s00737-018-0882-6.

23. Sangsawang B, Deoisres W, Hengudomsub P, Sangsawang N. Effectiveness of psychosocial support provided by midwives and family on preventing postpartum depression among first-time adolescent mothers at 3-month follow-up: A randomised controlled trial. J Clin Nurs. 2021;30(11-12):1-14. Doi: 10.1111/jocn.15928.

24. Nakamura A, Lesueur FE, Sutter-Dallay AL, Franck JÈ, Thierry X, Melchior M, van der Waerden J. The role of prenatal social support in social inequalities with regard to maternal postpartum depression according to migrant status. J Affect Disord. 2020;272:465-73.

25. Ambrosini A, Stanghellini G. Myths of motherhood. The role of culture in the development of postpartum depression. Ann Ist Super Sanita. 2012;48:277-86. doi: 10.4415/ ANN_12_03_08