



## Original Article

## Association of Postpartum Depression with Social Support: A Cross-Sectional Study in a Hospital Setting of Rawalpindi-Islamabad, Pakistan

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## ARTICLE INFO

## Key Words:

Postpartum Depression, Social Support, Maternal Health, Mental Health

## How to Cite:

Riaz, N. ., Mahmood, H. ., Khan, J., Habib, M. F. ., Saeed, I. ., Minhas, A. ., Kazmi, S. F. Z. ., Saeed, M. ., Khan, N. ., & Raisani, S. A. (2023). Association of Postpartum Depression with Social Support: A Cross-Sectional Study in A Hospital Setting of Rawalpindi-Islamabad, Pakistan: Postpartum Depression with Social Support. Pakistan Journal of Health Sciences, 4(06), 02-07. <https://doi.org/10.54393/pjhs.v4i06.818>

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Received Date: 23<sup>rd</sup> May, 2023

Acceptance Date: 26<sup>th</sup> June, 2023

Published Date: 30<sup>th</sup> June, 2023

## ABSTRACT

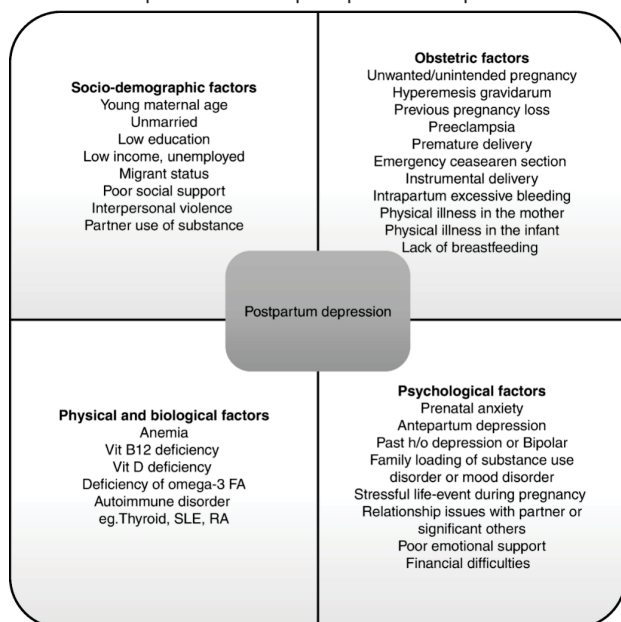
In Pakistan, the association of factors related to depression needs to be explored a little more because here when a woman discusses or shares her problems, her concerns are dismissed and turned down, the same reason women don't express their feelings and seek help. **Objective:** To determine the association between postpartum depression and social support among women presenting at a hospital in Rawalpindi-Islamabad, Pakistan. **Methods:** This cross-sectional study included 310 women presenting to the obstetrics and gynaecology OPD, vaccination center and psychiatric OPD of Tertiary Care Hospital within postpartum phase. Participants were recruited via convenience sampling. The Structured questionnaire included demographics and gynaecological history. Edinburgh postpartum depression scale (EPDS) was used to classify patients at risk of postnatal depression. Social support was scored on multidimensional scale of perceived social support. Data analysis included descriptive statistics such as frequency & percentages and inferential statistics consisted of Pearson Chi-Square, independent samples t-test and Multiple Linear Regression. Statistical analysis done using IBM SPSS version-26. **Results:** The results indicated that the social support from significant other and family members is significantly associated with the development of postpartum depression (p-value <0.05). Furthermore, age of the mother, type of delivery, baby feeding habits, and history of being unwell during pregnancy did not present to have significant association with the development of postpartum depression. **Conclusions:** The findings of the study conclude that the development of postpartum depression is most importantly affected by lack of support from the family and husband after childbirth.

## INTRODUCTION

Childbirth and postpartum is a most important life experience in a woman's life. Symptoms related to mental illness following the birth of a child have been termed postpartum symptoms and were first mentioned by Hippocrates in the fourth century BC. Post-partum depression (PPD) is a severe psychological ailment that new mothers might experience in the initial four to six

weeks after child's birth (ICD 10) [1, 2]. There's no definite average length of time PPD might stay as it might present from a couple of weeks to one year after giving birth. A review of postpartum research suggests that the symptoms of PPD improve over time, where most cases of depression getting better after 3 to six months of appearance [3]. In numerous cultures, the mother and the

infant both are considered to be weak and vulnerable during the post-delivery period. Mothers, infants and their families all are effected by the devastating effects of the postpartum depression [4]. In some women, postpartum blues may become more severe after birth and might progress into severe depression in certain instance. Postpartum depression is characterized by ineptness, feelings of remorse, loss of desire for food, being teary and trouble falling asleep as well as feelings of being inadequate and incapable of taking care of the infant, poor concentration and memory, weariness and irritability. Some women may consider themselves as not capable enough or unloving mothers and worry excessively about the baby's health or nursing habits. Risk factors such as past history of depression, anxiety and depression during the course of pregnancy, lack of confidence, post-delivery blues, traumatic life events (including stressors related to care of the child), absence of understanding with the husband, and lack of support from family and friends contribute to the development of PPD and have reasonable amount of associations with PPD. Social, psychological, and risk factors related to environment for PPD reflect those that occur outside of the postpartum period [5]. Occasionally hormonal fluctuations during or after pregnancy are accountable for the PPD but it also presents in the women with lower socio economic status and mothers with less social support and affection from husband, family and friends [6]. The development of a new relationship with the child can take a toll on the mother that can be a cause of mood disorder [7]. Enhancement of parental support and maternal self-efficacy could greatly help reduce the level of depressive symptoms[8]. Figure 1 describes the predictors of postpartum depression.



**Figure 1:** Predictors of Postpartum Depression

**Source:** www.researchgate.net

The prevalence of PPD varies across Asian countries greatly (3.5 - 63.3%), [9] with the lowest rates found in Malaysia (<4%), and some extremely high rates in Pakistan (28-63%)[10, 11]. Violence caused by the significant other, family preference for a male child and low support from in-laws are significant factors associated with the development of depression among pregnant women in most of the South Asian region [12]. The variation in estimate of PPD prevalence seen in studies across and within countries could be linked to the different assessment measures, screening methodology, postnatal stage, and cut-off scores used in these studies. In Pakistan, the association of factors related to depression needs to be explored a little more because here when a woman discusses or shares her problems, her concerns are dismissed and turned down. Also the fear of being labelled as a patient of mental illness is also a barrier that women don't express their feelings and seek help. Type of family structure also plays an important role in terms of available social support during the postpartum phase. Occurrence of PPD is influenced by the family structure and social support. Women residing in extended joint family have more support and are less subject to development of depressive symptoms in comparison to women living independently in nuclear families who have reduced social support from extended family. It is reported that social support is one of the significant predictors of PPD, yet this is overlooked and not routinely assessed at postnatal visits [13]. Specific indicators can be identified, by assessing the perception of new mothers regarding their level of support, to learn how to support women effectively who are transitioning into motherhood. Social support is thought to be very important for the well-being of mothers of newborns. This study intends to identify and explore the depression among women in postpartum phase and its association with social support.

**METHODS**

The study was conducted at major tertiary care setup in Rawalpindi which provide services to approximately majority of general population residing in Rawalpindi. The data were collected from the Benazir Bhutto Hospital, Rawalpindi & Social Security Hospital. A simple non-probability convenience sampling technique was used for recruitment of participants. The participants were chosen based on their availability and willingness to participate in the study. A sample size of 310 women was considered at 95% confidence interval [CI] with 5% type 1 error and a power of 80%. All women presenting to the obstetrics and gynecology outpatient department, vaccination/ Immunization center and psychiatric outpatient

department; within postpartum phase (Birth to 6 months after birth) were eligible to participate. All types of delivery or modes of deliveries within the period of last six weeks were included. All religions, ethnicities and women ages 18 and above were included. Women with history of diagnosed anxiety disorders/major depression and who used medication for that, women with significant ongoing health problems; diabetes mellitus, hypertension, thyroid dysfunction, mothers having children with congenital abnormality were excluded. The dependent variable, postpartum depression, was measured with the Edinburgh postnatal depression scale (EPDS) [14] which is a self-stated questionnaire with 10 items scored in the range of 0 and 3, giving a potential scale score range of 0-30. The questionnaires were also translated into Urdu language, due to the participant's limited English language. For those who were unable to read or write, the questionnaires were read to them, and their responses were documented by the researcher. A cut-off of >13 was defined a case of PPD [15] and those scoring below a cut of 13 were considered without PPD. The severity range categories were established for the EPDS as follows [16]: Without Postpartum depression (0-13), moderate depression (14-19) and severe depression (19-30). The reliability of the scale was found out to be 0.82 through Cronbach's Alpha coefficient in our study. The independent variable, perceived social support, was measured by the Multidimensional Scale of Perceived Social Support (MSPSS)[17] which is a concise research tool developed to measure perceptions of support from three sources: Family, Friends, and a Significant Other. The scale constitutes a total of 12 items, each subscale of support having 4 items. Low support falls in mean scale score ranging from 1 to 2.9; a score of 3 to 5 considered moderate support and high support is considered in a score range from 5.1 to 7. The reliability of the scale was found out to be 0.83 through Cronbach's Alpha coefficient in our study. Other demographic and Gynecological data were collected through a structured questionnaire. The data were analyzed using SPSS-26. Chi-square test was performed on categorical variables to assess significant differences between social support and PPD between women scored as a case of PPD and women without PPD groups. Independent sample t-test was applied for comparing the means of two variables i.e., PPD and social support and its subscales. Multiple linear regression model was also applied to assess the independent association between social support and PPD. Descriptive statistics were analysed as mean and standard deviation for interval variables and for categorical variables, frequency with percentages were calculated.

## RESULTS

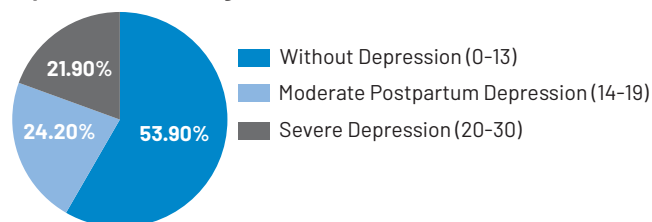
A total of 310 women were included in this study. The mean age of participants was  $26.8 \pm 3.4$  years ranging from 20-36 years as listed in Table 1.

**Table 1:** Mean age of respondents

Female	Mean Age $\pm$ SD
310	26.8 $\pm$ 3.4

The categorical variables were analysed as numbers, frequency and percentages for all the women who participated. The educational status of women was assessed to ascertain if it had any influence in the development of PPD, it was determined that 41.6% had attended school till class 8<sup>th</sup>, 25.8% women had received education either till matriculation or Intermediate while 19.70% women had done Graduation or received higher education. 12.9% reported to have never attended any school. Majority of the participant women's husbands were employed (88.7%) and the remaining (11.3%) were unemployed. More than half of the participants (66.8 %) lived in an extended family with a joint family setup; whereas only 33.2% lived independently as a nuclear family setup. The Odds ratio for the type of family, that the participants without PPD live in reduced odds of exposure than participants with PPD was found to be 0.65, indicating there is a protective effect of extended family. There was 35% reduced risk of PPD in participants who lived in joint setup with extended families. The results revealed that out of 310 women, 53.9% women did not suffer from PPD after child birth, 24.2% were screened to have moderate postpartum depression and 21.9% had severe depression. On average total sample's depression screening score lied in the moderate range that is  $14.23 \pm 5.9$ . Figure 2 describes the depression screening score.

**Depression screening**



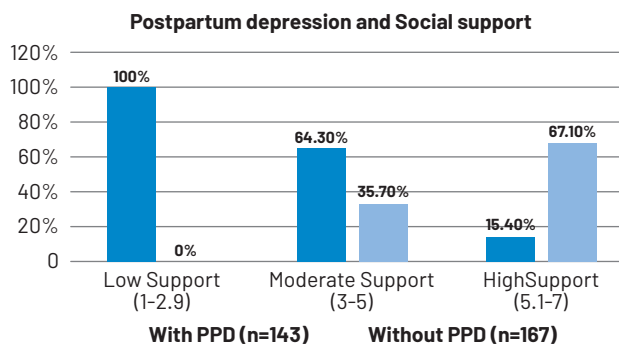
**Figure 2:** Depression Screening Score and categories

All those sociodemographic variables that show a significant relationship with the development of postpartum depression included educational status of the mother, husband's employment status and type of family. The type of delivery and newborn feeding habits displayed very mild association. The results are displayed in the following table 2.

**Table 2:** Summary of relationship of sociodemographic variables and PPD

Socio-demographic Characteristics	All Women N= 310	Women with PPD: EPDS >13 (n= 143)	Women without PPD: EPDS <13 (n= 167)	p-value
	N (%)	N (%)	N (%)	
<b>Mother's Educational Status</b>				
None	40 (12.9 %)	33 (82.5%)	7 (17.5%)	0.001
Class 1-8	129 (41.6%)	60 (45.8%)	69 (54.1%)	
Matriculation/ Intermediate	80 (25.8%)	31 (30.7%)	49 (69.3%)	
Graduation and Higher	61 (19.7%)	19 (31.1%)	42 (68.9%)	
<b>Husband's Employment</b>				
Employed	275 (88.7%)	111 (40.4%)	164 (59.6%)	0.001
Unemployed	35 (11.3%)	32 (91.4%)	3 (8.6%)	
<b>Type of Family</b>				
Nuclear	103 (33.2%)	62 (60.2%)	41 (39.8%)	0.001
Extended	207 (66.8%)	81 (39.1%)	126 (60.9%)	
<b>Type of Delivery</b>				
Normal Vaginal Delivery	159 (51.3%)	53 (37.1%)	106 (63.5%)	0.04
C-Section/ Instrumental Delivery	151 (48.7%)	90 (62.9%)	61 (36.5%)	
<b>Newborn Feeding Habit</b>				
Exclusive Breast Feeding	99 (31.9%)	29 (20.3%)	70 (41.9%)	0.04
Bottle feeding	84 (27.1%)	62 (43.4%)	22 (13.2%)	
Combination of both	127 (41%)	54 (36.4%)	75 (44.9%)	

The results revealed that out of 310 women, 7.1% women belonged to low social support group, 49.7% belonged to moderate social support group and 43.2% had high social support. On average sample's perceived social support lies in the moderate range having a score in the range of 3-5 with a frequency of 154 (49.7% of the sample). The women diagnosed with symptoms of PPD and without symptoms of PPD were compared on the scale variable including MSPSS and its subscales. The figure 3 summarizes the results.



**Figure 3:** Relationship between PPD and Social support

The mean score of all the women who participated on EPDS scale was calculated to be  $14.2 \pm 5.8$ , the mean total social support score of all women was found out to be  $4.5 \pm 0.91$ , mean score for significant other support was  $4.7 \pm 1.1$ , family support score has a mean value of  $5.0 \pm 1.1$  and

friends support mean score was calculated to be  $3.8 \pm 1.3$ . The independent sample t-test was applied to compare the mean of variables including total social support score, score of significant other support, score of family support, friends support score and depression screening score. The results indicated that total MSPSS and all its subscales have significant association with the development of postpartum depression ( $p$ -value  $< 0.05$ ). Table 3 describes the comparison of women with symptoms of PPD & without symptoms of PPD on the level of social support.

**Table 3:** Comparison of women with Postpartum Depression (PPD) & Without Postpartum Depression (PPD) on level of social support

Scale	Women with PPD Mean $\pm$ SD	Women without PPD Mean $\pm$ SD	p-value
Total Multidimensional Scale of Perceived Social Support (MSPSS)	4.0 $\pm$ 0.85	5.0 $\pm$ 0.69	0.00
Significant other Subscale	3.9 $\pm$ 1.03	5.4 $\pm$ 0.78	0.00
Family Subscale	4.6 $\pm$ 1.15	5.3 $\pm$ 0.92	0.00
Friends Subscale	3.4 $\pm$ 1.33	4.1 $\pm$ 1.36	0.00

The multiple linear regression was applied to predict the relationship between predictors (our independent variable i.e., social support level) and a predicted variable (the dependent variable i.e., postpartum depression). The results explain the  $R^2$  value = 0.451, indicating that the 45.1% variance of the dependent variable i.e., PPD is explainable by independent variables. MSPSS significant other subscale ( $B=0.317$ ,  $p < 0.001$ ) and family subscale ( $B=0.170$ ,  $p < 0.001$ ) were found to be significant predictors. Other predictors included Number of children (Mean=2.82  $\pm$  1.25,  $B=-0.086$ ,  $p < 0.001$ ), number of daughters ( $B=-0.087$ ,  $p < 0.001$ ), mother's educational status ( $B=0.044$ ,  $p < 0.003$ ), Husband's employment status ( $B=0.156$ ,  $p < 0.04$ ), type of family ( $B=0.192$ ,  $p < 0.001$ ) and gender of the newborn baby ( $B=-0.115$ ,  $p < 0.019$ ) were found to be associated with PPD. MSPSS friend's subscale, age of the mother, habits of the mother, number of sons, type of delivery, baby feeding habits, and history of being unwell during pregnancy were not significantly associated with the development of postpartum depression.

## DISCUSSION

The prevalence of PPD in Pakistan accounts for the highest occurrence among the Asian countries that lies between the ranges of 28 percent to 63.3 percent [18]. This study identified the relationship of social support with the high burden of depression among women in postpartum phase. Type of family and family structure plays a major role in terms of social support, according to the literature review regarding prevalence and risk factors of postpartum depression in Pakistan it was found that those living in extended joint family system have more support than

women living in the nuclear family system and are therefore less prone to develop PPD [13]. The literature review findings from around the globe also report that adequate family support leads to slighter odds of developing PPD [19]. Out of the women who participated in our survey, more than half (66.8 %) lived in an extended family with a joint family setup; whereas only 33.2% lived independently as a nuclear family setup. Literature reports lack of attention, understanding and support from the husband as a significant predictor [20] however all the participants in our study reported the person they consider special to be their husbands which did not allow much comparison of husband's support among women presenting with postpartum depression and those without PPD. In literature, the larger the number of children and more the number of daughters than sons were associated with a higher score on depression scale and the negative association is seen between the social support and the number of daughters [6]. In our study, number of children (Mean=2.82 ± 1.25, B=-0.086, p<0.001) and number of daughters (B=-0.087, p<0.001) also showed significant association with depressive symptoms.

## CONCLUSIONS

The findings of the study conclude that the development of postpartum depression was most importantly affected by lack of support from the family and husband. The extended family setup is a blessing in our culture where the family support is readily available.

## Authors Contribution

Conceptualization: NR, MFH

Methodology: AM, SFZK

Formal Analysis: NR, IS, SAR

Writing-review and editing: NR, HM, JK, MS, NK

All authors have read and agreed to the published version of the manuscript.

## Conflicts of Interest

The authors declare no conflict of interest.

## Source of Funding

The authors received no financial support for the research, authorship and/or publication of this article.

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