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# Navigating the Postpartum Transition: Demographic Risk Factors and Screening for Postpartum Depression in Resource-Constrained Environments

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## ABSTRACT

Postpartum depression (PPD) is a major public health concern, with disproportionately high prevalence rates in low- and middle-income countries (LMICs) like Pakistan. Despite its severe impact on maternal and infant well-being, PPD remains heavily underdiagnosed in resource-constrained rural areas. This descriptive, correlational and cross sectional study aimed to screen postpartum women for PPD in District Bhakkar, Pakistan, and to systematically evaluate associated socio-demographic and obstetric risk factors. A sample of  $N = 200$  postpartum mothers was evaluated using a structured demographic sheet and the Urdu version of the Edinburgh postnatal depression scale (EPDS). Descriptive statistics revealed an overall mean PPD score of 10.15 ( $SD = 3.47$ ), with 64.5% of participants exhibiting mild risk, 14.5% moderate risk, and 21.0% minimal risk. Independent sample  $t$ -test demonstrated significantly higher PPD symptom scores among older mothers, those residing in joint family systems, housewives, rural residents, mothers with arranged marriages, and those who underwent normal vaginal deliveries compared to C-sections ( $p = <.001$ ). The higher occurrence of subclinical and moderate PPD risks underscores the vital need of integrating routine, culturally sensitive mental health screening into standard maternal healthcare procedures in underserved districts.



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## Introduction

Motherhood is a significant developmental stage characterized by the process of adaptation physically, psychologically, and socially. Although this stage is considered a time of great joy in families, it can be described as one of great risk regarding maternal mental well-being especially in relation to the development of postpartum depression (PPD). Postpartum depression has been identified as a major public health problem worldwide, with its prevalence rate being highly biased towards developing countries (Wang et al., 2021). The situation is very grave in Pakistan because recently, prevalence of perinatal and postnatal depression has been found to be 37% making Pakistan one of the high-risk countries in the Asian region (Padhani et al., 2024). The extent and impact of PPD includes the development of psychological disturbance among mothers as well as disruption of maternal-infant bonding and impairment of cognitive development among children in the future (Agrawal et al., 2022).

The etiology of PPD in extremely resource-deprived environments can be understood only when maternal depression is understood from the perspective of already existing theoretical paradigms, specifically the Stress and Vulnerability Model with Beck's Cognitive Theory of Depression (Beck, 1976). In Beck's paradigm, depression occurs when there is activation of dormant dysfunctional schemas due to major life stresses, which cause the formation of the so-called 'cognitive triad', a negative belief about oneself, the world around, and the future. Postpartum period in itself is a biological and psychological stress. However, in resource-deficient environments, this period is often complicated by extreme demographic and environmental difficulties. Such factors as unstable finances, insufficient healthcare services, and lack of organized social support systems themselves become a kind of stress for women. In Stress and Vulnerability theory, the presence of demographic challenges becomes a psychosocial burden for a mother, which activates the negative schemas mentioned in Beck's theory, causing PPD.

Indeed, empirical evidence has been found that supports this theoretical framework in terms of specific demographic factors associated with postpartum depression in Pakistan. Empirical studies have shown that low maternal education, rural domicile, low income level, multiparity, and joint family dynamics are key factors (Qamar et al., 2024). Moreover, disparities in medical services in resource-constrained countries imply that mothers suffering from psychosocial adversity, such as the patriarchy or marital issues, are highly exposed to the development of depression during the puerperium (Waseem et al., 2026). In the case of the country under analysis, demographic indicators are not only categories but also stressors in the environment leading to cognitive vulnerabilities. It is important to understand these demographic factors because they often play the role of the first criteria used for identifying high-risk women who have no access to psychiatric history or do not report about their previous experiences because of stigma in culture.

While there are many burdens of this nature in terms of epidemiology and there are theoretical connections of its linkages to demographic stress, PPD is vastly under-diagnosed and under-treated in rural and semi-urban areas of Pakistan. A key obstacle to treatment in this regard is lack of systematic maternal mental health screening in standard practices of postnatal healthcare delivery. Any screening needs to be done through culturally adaptable and reliable instruments which are easy to use. The EPDS (Cox et al., 1987) continues to be the benchmark instrument globally for the screening of PPD.

Although there is a lot of literature on the prevalence of PPD in cities and in tertiary care in Pakistan, there is a notable lack of empirical evidence generated in resource-poor and resource constrained districts like District Bhakkar. The social and demographic conditions prevailing in such districts with poor mental health facilities, patriarchy in families, and poverty make up a unique risk profile which cannot be created through research conducted in the city. Thus, it becomes important to understand the particular demographic vulnerabilities prevailing

in these under-studied districts before creating an intervention program.

For this reason, the major focus of the current research was the screening of mothers for postpartum depression using the EPDS in the District Bhakkar and the systematic evaluation of the demographic factors contributing to PPD in this particular region. With the help of this research, it is hoped that empirical evidence will be collected on those demographic groups which are at a higher risk for developing PPD.

### Hypotheses

1. Women living in joint family systems will report significantly higher postpartum depressive symptoms compared to those living in nuclear family systems.
2. Housewives will exhibit significantly higher levels of postpartum depression than working mothers.
3. Mothers who undergo C-section deliveries will experience significantly higher postpartum depression than those with normal vaginal deliveries.
4. Rural mothers will report significantly higher postpartum depressive symptoms compared to urban mothers.
5. A significant proportion of women identified as at risk for postpartum depression in hospital settings will be confirmed as having clinically significant postpartum depression (EPDS score > 13).

### Literature Review

#### The Epidemiological Burden of Postpartum Depression in LMICs

Postpartum depression (PPD) is a severe, debilitating psychological condition that typically manifests within the first four to six weeks following childbirth. While PPD is a global phenomenon, the epidemiological burden is disproportionately concentrated in low and lower-middle-income countries (LMICs). Studies have found that while the worldwide prevalence of PPD is estimated to be around 14%, the prevalence rate in LMICs exceeds 20% in many

cases, owing to socioeconomic disparities, poor healthcare for mothers and cultural stigmatization of mental health problems (Wang et al., 2021).

Pakistan represents a country where maternal mental wellbeing is a major concern. Research has repeatedly shown that Pakistan ranks among the countries which have the highest prevalence of maternal depression in the Asian region. In a systematic review by Padhani et al. (2024), the pooled perinatal and postpartum prevalence rate of depression has been found to be around 37% for different population groups in Pakistan. High prevalence of postpartum depression in Pakistan is an issue that can be attributed to the severe sociocultural and environmental stressors that women encounter during their puerperium. The effects of such a condition are widespread and include early weaning of infants, developmental impairment of babies, and maternal morbidity.

#### Screening Methodologies and the Utility of the EPDS

While PPD is extremely common in Pakistan, routine maternal mental health screening practices in primary healthcare services especially in rural and semi-urban areas do not exist. One of the biggest problems hindering early detection is the symptom-driven approach rather than proactive screening. Due to limited resources, women tend not to report any psychological distress due to somatic symptom masking the way they express psychological suffering through physical symptoms, in addition to cultural stigma. Thus, the use of standardized and culturally validated screening instruments becomes a key public health priority. The Edinburgh postnatal depression scale (EPDS), devised by Cox et al. (1987), remains a globally acknowledged gold standard for screening for PPD. The EPDS is made up of 10 self-report questions and works very well in LMICs since it is time efficient, non-invasive and explicitly does not contain any somatic symptoms of depression (for example, feeling tired or having sleep disorders) which can become a part of natural confounders of pregnancy. Validation studies conducted in the Pakistani setting have confirmed high reliability and cultural

acceptability of the EPDS test and showed that cut-off score of 10 or above is highly sensitive in detecting depressive symptoms.

### **Demographic Risk Factors in Resource Constrained Environments**

The process of becoming a mother is exceptionally affected by the demographic and environmental setting in which this process takes place. Under the Stress and Vulnerability model, demographic adversities can be viewed as continuous psychosocial stressors that lead to cognitive vulnerabilities and, eventually, cause PPD. As for the demographic risk factors in the setting of Pakistan, several unique ones have recently been identified in the literature.

The first important ones are SES and maternal education level. For women from rural settings who have low education levels and limited financial independence, there is a substantially increased risk of PPD. Financial difficulties become a continuous stress factor that hinders the process of acquiring proper nutrition, postpartum health care services, and other support at home (Qamar et al., 2024).

Second, the concept of parity and family structure plays a crucial role in the psychosocial burden of the mother. The fact that multiparity is consistently associated with higher PPD scores in Pakistan is because of the added physical burden and resource burden of the family. Moreover, although the joint family structure is an aid on paper, it usually serves as a major source of stress for mothers. This is mainly because of interfamily conflicts, lack of privacy, and patriarchal pressures over the sex of the new-born (boys preferred).

Finally, occupational status represents an intricate set of risks associated with it. Although it provides financial independence to women, working women without maternity leave policies and inflexible work environments along with non-working housewives face the problem of social isolation and lack of independence.

Although these demographic risk factors have been explored among urban population samples of Pakistan, the knowledge about deeply rural and

deprived regions like District Bhakkar is lacking. This profiling of specific demographic risk factors is vital because of the different socio-cultural dynamics in the country.

## **Research Methodology**

### **Study Design and Participants**

A quantitative, descriptive and correlational, cross-sectional design was conducted using a purposive sampling strategy across healthcare facilities in District Bhakkar, Pakistan (including DHQ Hospital Bhakkar, THQ Hospitals, and maternal care centres). An initial universal screening pool of  $N = 350$  postpartum women was evaluated using the Urdu version of the Edinburgh Postnatal Depression Scale (EPDS). Of the initial pool, 150 participants were excluded due to exceeding the 6-week postpartum time frame or meeting other exclusion criteria (multiparous status, age under 18, non-residency, incomplete protocols, or acute psychiatric/medical crisis). The final clinical sample retained for analysis comprised  $N = 200$  postpartum mothers aged 18-40 years within 6 weeks post-delivery.

### **Measures**

#### **Demographic Sheet**

Recorded maternal age, family structure, monthly income, educational attainment, occupational status, and mode of delivery (normal vaginal delivery vs. Caesarean section).

#### **Edinburgh Postnatal Depression Scale (EPDS)**

Postpartum depressive symptoms were screened using the 10-item Urdu version of the EPDS (Cox et al., 1987; Khan et al., 2017). Items are scored on a 4-point scale (0-3), yielding total scores from 0 to 30. Standardized severity categories (McCabe-Beane et al., 2016) were applied: 0-6 (minimal), 7-13 (mild), 14-19 (moderate), and 20-30 (severe). In present study, the scale demonstrated a Cronbach's alpha reliability as  $\alpha = .76$ .

#### **Inclusion Exclusion Criteria**

Inclusion Criteria: To participate in this study individuals had to meet the following criteria:



Mothers within the reproductive age range of 18-40 years, Residency within the geographical boundaries of District Bhakkar, mothers with one to four children currently in the immediate postpartum period (up to 6 weeks following childbirth), Completion of the universal postpartum screening via the EPDS, Mothers who delivered via either normal vaginal delivery or Cesarean section (inclusive of major and minor surgical variations). Exclusion Criteria: Individuals meeting any of the following conditions were excluded from participation: Mother under 18 years of age, Multiparity exceeding four living children, a documented clinical history or current active presentation of postpartum psychosis or other active psychotic disorders, Non-residents of District Bhakkar, Mothers experiencing severe reproductive health complications or acute physical health crises requiring intensive medical stabilization.

## Procedure

Formal administrative and ethical approvals were obtained from participating hospital authorities. Written consent was obtained from all participants upon explaining the study objectives and confidentiality of the data collected. Demographic form and EPDS questionnaires were individually administered to the participants in a quiet environment.

## Data Analyses

Data analysis was conducted in IBM SPSS Statistics version 27.0. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize sample characteristics and EPDS severity distributions.

## Results

**Table 1:** *Demographic characteristics of Participants*

| Characteristics         | N   | %    |
|-------------------------|-----|------|
| Age                     |     |      |
| 18–28                   | 99  | 49.5 |
| 29–40                   | 101 | 50.5 |
| Family Structure        |     |      |
| Nuclear                 | 64  | 32   |
| Joint Family            | 136 | 68   |
| Marriage Mode           |     |      |
| Arranged Marriage       | 180 | 90   |
| Love Marriage           | 20  | 10   |
| Delivery Method         |     |      |
| Normal                  | 60  | 30   |
| C-section               | 140 | 70   |
| Educational Level       |     |      |
| Illiterate–Primary      | 50  | 25   |
| Middle–Matric           | 50  | 25   |
| Intermediate–Graduation | 50  | 25   |
| Masters–Above           | 50  | 25   |
| Socio-Economic Status   |     |      |

|                        |     |      |
|------------------------|-----|------|
| Upper Class            | 10  | 5    |
| Middle Class           | 32  | 16   |
| Lower Class            | 158 | 79   |
| Occupational Status    |     |      |
| Working Women          | 49  | 24.5 |
| House Wife             | 151 | 75.5 |
| Obstetrical History    |     |      |
| Number of children (1) | 85  | 42.5 |
| More than one child    | 115 | 57.5 |
| Caregiver Postpartum   |     |      |
| Mother                 | 40  | 20   |
| Mother-in-law          | 51  | 25.5 |
| Sister                 | 48  | 24   |
| Sister-in-law          | 53  | 26.5 |
| Husband                | 8   | 4    |
| Monthly Income         |     |      |
| 20-30k                 | 92  | 46   |
| 40-50k                 | 85  | 42.5 |
| 60-70k                 | 11  | 5.5  |
| 80k-Above              | 12  | 6    |
| Hometown               |     |      |
| Urban                  | 100 | 50   |
| Rural                  | 100 | 50   |

Table 1 shows the participants' demographics (N = 200). A fair number of participants fell under the age groups 18-28 (49.5%) and 29-40 (50.5%). The majority of the participants belonged to joint families (68%) whereas 32% belonged to nuclear families. A large proportion of individuals had arranged marriages (90%) and had cesarean section deliveries (70%). The education level of the respondents was uniformly distributed across four distinct tiers. A clear majority of the

participants belonged to lower socio-economic status (79%). Concerning obstetrical history 42.5% (n=85) had one child, while 57.5% (n=115) had more than one child. The most common caregivers were sister-in-law (26%). The majority of the females were housewives (75.5%). Additionally, the majority of the population belongs to the 20-30 thousand per month salary domain (46%), there was an equal distribution of urban and rural participants (50% each).

**Table 2: Frequency and Percentage Distribution of PPD Symptom Severity Levels (N = 200)**

| Severity Category | Score Range | f   | %    |
|-------------------|-------------|-----|------|
| Minimal Risk      | 0-6         | 42  | 21.0 |
| Mild Risk         | 7-13        | 129 | 64.5 |
| Moderate Risk     | 14-19       | 29  | 14.5 |

Symptom severity thresholds were operationalized based on standardized clinical criteria by (McCabe-Beane et al., 2016).

summarized in the table 2 the largest proportion of participants fell into the mild depressive risk category ( $f = 129, 64.5\%$ ). Minimal depressive risk (score 0-6) was observed in 21.0% of the sample ( $f = 42$ ), whereas 14.5% ( $f = 29$ ) exhibited depressive risk with scores between 14 and 19. No participants in the current sample met the criteria for severe depressive risk (scores  $\geq 20$ ).

| PPD Severity Level           | Percentage of Participants (%) |
|------------------------------|--------------------------------|
| Minimal Risk (0–6 Scores)    | 21.0%                          |
| Mild Risk (7–13 Scores)      | 64.5%                          |
| Moderate Risk (14–19 Scores) | 14.5%                          |

**Table 3:** *Demographic Differences in Postpartum Depressive Symptoms (N = 200)*

| Demographic Characteristics | Categories (n)              | Postpartum Depression<br><i>M (SD)</i> | <i>t</i> (198) | <i>p</i> | Cohen's <i>d</i> |
|-----------------------------|-----------------------------|----------------------------------------|----------------|----------|------------------|
| Maternal Age                | 18-28 ( <i>n</i> = 99)      | 8.84 (3.49)                            | -5.76          | <.001    | .81              |
|                             | 29-40 ( <i>n</i> = 101)     | 11.44 (2.94)                           |                |          |                  |
| Family System               | Nuclear ( <i>n</i> =64)     | 7.17 (3.06)                            | -10.30         | <.001    | 1.56             |
|                             | Joint ( <i>n</i> =136)      | 11.55 (2.67)                           |                |          |                  |
| Marriage Type               | Arranged ( <i>n</i> = 180)  | 10.46 (3.31)                           | 3.87           | <.001    | .91              |
|                             | Love ( <i>n</i> = 20)       | 7.40 (3.75)                            |                |          |                  |
| Delivery Type               | Normal ( <i>n</i> = 60)     | 12.03 (1.51)                           | 5.37           | <.001    | .83              |
|                             | C-Section ( <i>n</i> = 140) | 9.34 (3.75)                            |                |          |                  |
| Employment Status           | Working ( <i>n</i> = 49)    | 6.33 (2.02)                            | -11.41         | <.001    | 1.88             |
|                             | Housewife ( <i>n</i> = 151) | 11.39 (2.88)                           |                |          |                  |

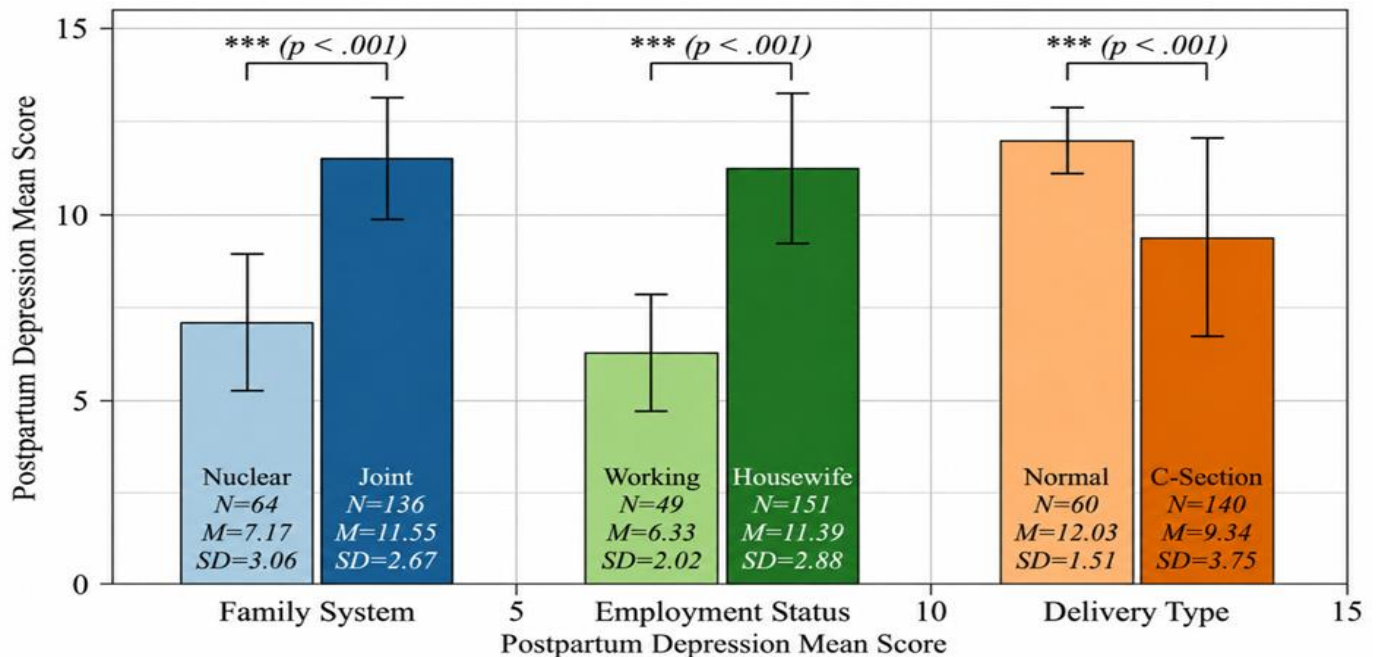
|                    |                               |              |       |       |     |
|--------------------|-------------------------------|--------------|-------|-------|-----|
| Number of Children | 1 Child ( <i>n</i> = 85)      | 8.51 (3.62)  | -6.07 | <.001 | .90 |
|                    | More than 1 ( <i>n</i> = 115) | 11.37 (2.80) |       |       |     |
| Residential Area   | Urban ( <i>n</i> = 100)       | 8.88 (3.49)  | -5.56 | <.001 | .79 |
|                    | Rural ( <i>n</i> = 100)       | 11.42 (2.95) |       |       |     |

**Note.** *N* = 200; *M* = Mean; *SD* = Standard Deviation; *t* = Independent sample *t*-test statistic; *df* = 198; *p* = Two-tailed *p*-value; Cohen's *d* = Effect size measure.

Table 3 shows the independent samples *t*-tests were conducted to examine demographic variations in PPD scores (*N* = 200). As shown in table 3, significantly higher levels of postpartum depressive symptoms were observed among older mothers aged 29-40 (*M* = 11.44, *SD* = 2.94) compared to younger mothers (*M* = 8.84, *SD* = 3.49), *t* (198) = -5.76, *p* <.001, *d* = .81. Women living in joint family systems reported significantly higher depression levels (*M* = 11.55, *SD* = 2.67)

than those in nuclear families (*M* = 7.17, *SD* = 3.06), *t* (198) = -10.30, *p* <.001, *d* = 1.56. Furthermore, housewives (*M* = 11.39, *SD* = 2.88), rural residents (*M* = 11.42, *SD* = 2.95), mothers undergoing normal vaginal delivery (*M* = 12.03, *SD* = 1.51), mothers with arranged marriages (*M* = 10.46, *SD* = 3.31), and mothers with more than one child (*M* = 11.37, *SD* = 2.80) exhibited significantly elevated PPD risk compared to their respective counterparts (all *p* <.001).

**Figure 2**



**Note.** *N* = sample size; *M* = mean; *SD* = standard deviation. Error bars represents  $\pm 1$  standard deviation. Asterisks indicate statistically significant group differences (\*\**p* <.001).

**Table 4:** Descriptive Statistics for Postpartum Depressive Symptoms Scores (*N* = 200)

| Variable        | <i>N</i> | Min | Max   | <i>M</i> | <i>SD</i> |
|-----------------|----------|-----|-------|----------|-----------|
| PPD Total Score | 200      | .00 | 19.00 | 10.15    | 3.47      |

**Note.** PPD = Postpartum Depression Total Score, *M* = Mean, *SD* = Standard Deviation, Min, Minimum score, Max = Maximum Score.

Table 4 shows the overall distribution and severity of postpartum depressive symptoms

among participants (*N* = 200), descriptive statistics were calculated for the total scores of



PPD. As illustrated in table 4, participants scores ranged from minimum of .00 to maximum of 19.00. The overall mean score for sample was 10.15 (SD = 3.47), indicating an overall mild elevated risk level across the cohorts.

## Discussion

The primary objective of this study was to screen for and determine the prevalence of clinically significant postpartum depression (PPD) among at-risk mothers in hospital settings in District Bhakkar, Pakistan. Furthermore, the study aimed to critically examine the demographic and obstetric correlates that exacerbate PPD symptoms. Overall, the findings provided robust empirical support for majority of hypotheses, whilst also revealing culturally significant, unexpected findings regarding obstetric variables. The results underscore the urgent need for integrating routine mental health screening into maternal healthcare frameworks in Low-and Middle-Income Countries (LMICS).

### Impact of Family Structure (Hypothesis 1)

As expected, the women living in joint family system showed much higher PPD scores ( $M = 11.55$ ) than those living in nuclear family system ( $M = 7.17$ ). Though joint families are considered as important source of support in collectivist South Asian societies, studies have shown that joint families are actually the center for interpersonal disputes, lack of maternal independence and high family demands (Husain et al., 2006). Being hierarchical in structure, joint families make new mothers constantly feel the pressure of criticism about their parenting methods. This intergenerational disagreement along with lack of personal space decreases the self-efficacy of the mother and leads to increase in psychological problems (Rahman et al., 2003).

### Employment Status and Financial Autonomy (Hypothesis 2)

Additionally, our results strongly supported the hypothesis that housewives have a much higher rate of PPD ( $M = 11.39$ ) compared to working mothers ( $M = 6.33$ ). Economic independence and active participation in work is considered a factor

protecting from postpartum psychological problems. Working mothers usually have large social circles, economic independence and high self-esteem, all of which make them less vulnerable to the pressure of becoming a mother. In turn, women who do not work, especially those who belong to lower socio-economic strata, usually have economic dependence and are bound to constant, monotonous domestic duties. The issue of constant domestic work together with no control over family finances makes South Asian women more vulnerable to developing depressive symptoms (Husain et al., 2006; Patel et al., 2002).

### Mode of Delivery: A Cultural Paradox (Hypothesis 3)

Surprisingly, our data disapproved of the third hypothesis, generating unexpected yet highly significant results. Initially, we assumed that women who underwent Caesarean section will have higher PPD as a consequence of trauma and longer recovery process. However, contrary to this assumption, the data revealed that women who had normal vaginal deliveries experienced significantly higher PPD scores ( $M = 12.03$ ) than the C-section group ( $M = 9.34$ ).

Though contradicting certain Western research studies, this data is very much rooted in the cultural and social fabric of South Asia. Normal vaginal deliveries in many public hospitals of rural and peri-urban areas in Pakistan are performed without the use of proper pain medication and epidural anaesthesia, leading to the extremely painful and traumatic experience of childbirth for the mother (Rahman et al., 2008). Additionally, culturally speaking, a Caesarean Section is perceived as a major surgery operation both socially and medically. Thus, the woman gets the privilege of a long period of Chilla, which means that the woman gets better family support, good food, and exemption from household chores during her postpartum phase (Husain et al., 2006; Rahman et al., 2003). In comparison, women who delivered normally are expected to get back to exhausting household duties, thus getting no opportunity for rest and recovery.

### Rural and Urban Disparities (Hypothesis 4)

In the same way, the data provided strong support for the hypothesis stating that rural mothers tend to score much higher on PPD scales than urban mothers. Such an imbalance highlights the presence of health care inequality across the peri-urban area like District Bhakkar. Rural mothers face major obstacles, which include a lack of maternal psycho-education, long distances to travel to the healthcare facility, and a great deal of stigma associated with mental health care services (Mirza & Jenkins, 2004; Rahman et al., 2008). In the rural setting, psychological issues are viewed as physical or spiritual illnesses.

### Prevalence of Postpartum Depression (Hypothesis 5)

Following the first hypothesis, a relatively high number of women were found to suffer from PPD. To be specific, 14.5% of mothers were found to have postpartum depression ( $EPDS > 13$ ), whereas another 64.5% were considered to have a risk of mild PPD ( $EPDS = 7-13$ ). It is pertinent to mention that the rate is very much aligned with the global meta-analysis, which reveals a very high vulnerability of women in developing countries to perinatal mental conditions, which ranges from 15% to 20% (Fisher et al., 2012; Gelaye et al., 2016). In the particular case of Pakistan, a systemic review shows a lot of psychological changes, socio-economic poverty, and absence of psychiatric facilities in peri-urban and rural hospitals (Mirza & Jenkins, 2004; Stein, 2014). A very high proportion of women (64.5%) falling in the category of 'mild risk' needs urgent sub-clinical and psycho-educational care.

### Clinical Implications

These results from the current study have serious clinical implications. The fact that mild-to-moderate PPD is highly prevalent means that screening is no longer a nice-to-have tool but a mandatory requirement for maternal health care. The routine uses of EPDS at hospitals, maybe within the context of vaccination of the newborns, is vital. Moreover, psycho-education programs that take culture into consideration need to be developed to reach not just the

mothers but also their extended families.

### Limitations and Future Suggestions

Though this research offers invaluable epidemiological information, there are several limitations that need to be discussed. First, a cross-sectional study design does not allow establishing any definitive causal relationships between the demographic factors and PPD. Secondly, using a self-reporting tool (EPDS), even though it is well validated and effective as the screening tool, does not equate to having a clinical diagnosis of the disorder. Last but not least, the sample used in this study was collected only in the hospitals in District Bhakkar.

### Conclusion

The results of this study show that the percentage of postpartum women with an increased risk of developing PPD is high in District Bhakkar, and this risk is greatly associated with socio-demographic and obstetric characteristics. It highlights the urgent requirement for incorporating mental health screening programs in the routine postpartum care of women in hospitals. It is essential to focus on special groups of patients, such as housewives, joint family members, rural women, and women delivering babies normally without having proper postpartum sleep.

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The authors declare that there are no conflicts of interest regarding the publication of this study.

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