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EXPLORING POSTPARTUM DEPRESSION AND ITS ASSOCIATED RISK FACTORS IN PRIMIPAROUS WOMEN ATTENDING OUTPATIENT DEPARTMENTS

Irfan Ali Chandio

[6]*MSN Scholar Peoples Nursing School, Liaquat University of Medical and Health Sciences, Jamshoro*

irfanchandio40@yahoo.com

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Corresponding Author: *
Irfan Ali Chandio

Abstract

Objectives

1.To assess the prevalence of post-partum depression in primiparous women.
2.To identify demographic, and psychosocial, risk factors associated with PPD.

Methodology

A Cross sectional study was conducted at Liaquat University Hospital Hyderabad/Jamshoro. Sample size of the study was 240. Data was collected through EPDS, analyzed through SPSS.

Results

Results of this study revealed 68.8% prevalence of PPD, Significant positive association were found between socio-economic status, occupation of participants and PPD(p=0.00), significant negative correlation were found between participant's residency, ethnic group and PPD.

Conclusion

In current study prevalence of PPD was high. From study findings it is concluded that prevalence of PPD is highly associated with risk factors like, Unemployment and low socio-economic status.

INTRODUCTION

Background

Mental illnesses are becoming serious public health issues that have an impact on life expectancy, work productivity, and quality of life(1). Common mental illnesses include anxiety, depression, and suicidal thoughts (2). Among them, depression is the most prevalent mental illness, According to estimates, depression impacts 350 million people worldwide(3). Furthermore by 2030 that depression will be the second-highest cause of disability(4). Depression is described as a psychological state characterized by persistent sadness and a loss of interest in activities that one usually enjoys and is accompanied by an inability to carry out activities of daily living for at least two weeks(5). In consistent with that common mental health problems, experienced by women during their pregnancy and postpartum period is depression and self-harm(6). In women depression is 2 times more common than in men (6). That's why 17.7% women suffer from postpartum depression (PPD) in their postpartum period. PPD is a type of major depressive disorder. Both the mother's and the child's physical and mental health are significantly impacted by PPD(7). PPD is not precisely classified, we may generally split it into two categories. There are two types of PPD: postpartum onset, which occurs within four weeks of giving birth, and postpartum psychosis, which is thought to be the most severe stage and is associated with the possibility of total mental instability(9). A major global public health concern,

PPD is characterized by a range of mood disorders, from moderate mood swings to severe depressive episodes that start four weeks after childbirth and may last up to 12 months (4). Physical and mental health of the mother and child seriously affected by PPD(7). However, due to disturbed mental health. suicide deaths account for around 20% of postpartum deaths and are a major cause of maternal mortality(10). PPD is also one of the cause of maternal death, PPD is quite common among women, but unfortunately in Pakistani cultural, lack of access to mental health care, this problem is nevertheless very common because it remain un diagnosed(11). PPD not only affects mother's and the child's physical and mental health but significantly impacted to other family members (11). PPD can last for two years and the risk of recurrence was approximately 40% in either subsequent postpartum or non-postpartum(12).PPD has serious consequences: it can damage women's ability to work and their social adjustment, and quickly lead to chronic or chronic recurrent depression(7). PPD has been identified as one of the severe global public health issues in the last decade(7). Despite this, PPD is one of the least addressed types of depression today(13).

Prevalence of PPD Globally, Nationally And Locally

The worldwide prevalence of PPD is found to be around 17.7%. Women in impoverished nations have demonstrated greater rates of PPD than those in developed nations(14). Prevalence of PPD is 14.85% in Western nations and 19.99% in lower-middle-income nations(15). The prevalence of PPD usually ranges from 14% to 25%. Surprisingly, during the COVID-19 pandemic, this frequency rose to 34%(16). PPD prevalence is ranges from 28-63% in Pakistan(17). Furthermore according to the Edinburgh postpartum depression scale (EPDS), the prevalence of postpartum depression in the Sindh was 19.3%(17).

Contributing Factors of PPD

PPD is strongly predicted by a number of factors, including low socioeconomic status, unemployment, lack of social or emotional support, negative attitude toward pregnancy, obstetric complications, delivery of a preterm or low birth weight baby, first-born child status, childcare stress, sleep disturbances, low self-esteem, antenatal depression or anxiety, a history of depression, disturbed marital relationships, a history of domestic abuse, significant adverse life events in the past year, neuroticism, and perfectionism(2). Additionally, social support also has been shown in numerous studies to reduce the incidence of PPD(18). Moreover women who reported high levels of instrumental support had a roughly five-fold lower risk of developing PPD than those who reported low levels (19). Furthermore significant risk factors for the development of PPD include high levels of stress, depression during pregnancy, lack of financial support, inadequate education, a difficult birth experience, and nutritional factors such as polyunsaturated fatty acids and vitamin D deficiency (VDD)(20). In addition to that women belong to low household income were also associated with PPD incidence(21). That's why the prevalence of PPD is higher in low- and middle-income countries than in high-income countries(7).

Although the precise origin of PPD is unknown, but hormonal fluctuations, genetic predispositions, and psychosocial stressors are among possible underlying etiologies that may contribute to the development of PPD(22). Additionally, Endocrine, immune and genetic biology research has reported that mood disorders and sudden oestrogen withdrawal, oestrogen fluctuations and continuous oestrogen deficiency may lead to the development of PPD(7). PPD affects about 30% of Pakistani women, and while there are several treatment options, but none of them are practical for Pakistan, a lower-middle-income nation with a poor healthcare infrastructure(23). Moreover, PPD is intimately linked to a higher risk of maternal suicide. In order to prevent and treat PPD, it is crucial for society to ascertain the incidence of the disorder and identify its risk factors(7). Suicidal risk during the perinatal period has been found to be influenced by the postpartum mental health history (24).PPD is considered to affect the infant's social and cognitive development(25). PPD's negative consequences extend beyond an infant's early developmental stages and affect their growth into adolescence and adulthood. It has a detrimental effect on the baby's physical, social, emotional, motor, and language development(26). Furthermore, reduced breastfeeding initiation rates, poor maternal-infant attachment, higher behavioral, emotional, and cognitive impairment in infants are additional

negative consequences linked to PPD. Suicidal thoughts may occur in women with severe PPD, and maternal suicide accounts for 20% of all postpartum deaths(27). However, despite its prevalence, and consequences, PPD is often underreported, particularly in countries with cultural or social stigmas around mental health issues. In Pakistan, as developing nation, psychiatric issues are sometimes viewed as shameful and stigmatized, which could prevent PPD from being reported and treated (25). Along with given risk factors, current study also seeks prevalence of PPD in primiparous women, because it is observed from previous studies, Primiparous women are more likely to experience PPD than multiparas and it is crucial to research on them (28).Additionally, during a first-time pregnancy, there are detrimental changes in marital relationships and body image, which raises the risk of PPD(13). Primiparous women frequently struggle with PPD and anxiety, which can impair maternal-infant bonding and result in sexual abnormalities(13).These all factors are related to prevalence of PPD, current study pursues to slender the existing literature gap and provide comprehensive understanding of risk factors associated with prevalence of PPD.

Clinical Presentation

Stress, somatization (headache, tinnitus, phosphines, and stomach pain), impatience, sleep difficulties, exhaustion, and an unwarranted fear of oneself, one's child, and one's partner are all signs of PPD(29). Mothers may feel a range of emotions throughout the postpartum phase, both happy and negative(30) such as, remorse, shyness, panic, delusions, bulimia, frequent sobbing, loss of appetite, hesitation, selflessness, or concern about one's looks(29). Furthermore severe mood swings, irritability, insomnia, lethargy, anxiety, trouble bonding with the baby, feelings of worthlessness, problems with appetite, recurrent suicidal and anxious thoughts, short-term memory loss, reduced concentration, paranoia, thoughts of killing the baby, hallucinations, disorientation, self-isolation, and hyperactivity are some additional symptoms(31).

Effect of Diet on Postpartum depression

Major depression may be exacerbated by inadequate diet. It is hypothesized that hormonal changes brought on by nutritional inadequacies, which can happen during pregnancy and lactation, may make people more vulnerable to PPD(32).

PPD has been linked to inadequate maternal nutrition during pregnancy(16). Moreover, Women experience postpartum depression when they consume less vegetables and a smaller range of foods. An elevated risk of PPD was linked to an unbalanced diet(33).Deficiency of essential nutrient in diet during postpartum period, increase risk of PPD, such as low levels of vitamin D are associated with PPD. Vice versa a balanced diet has a significant impact on mood disorders and depression; it also lessens the symptoms of PPD. Nutrients found in healthful foods have the ability to regulate mood. Such as Omega-3 fatty acids, have a well-established role in the prevention and treatment of PPD(34). Moreover, Consuming turmeric lowers stress levels during the postpartum phase. Turmeric primarily consists of curcumin, a phenolic compound which reduces the symptoms of PPD, curcumin is over three times more potent than vitamin C and more than 1.5 times more potent than vitamin E, further have wide range of biological effects and pharmacological effects, including. strong antioxidant and anti-inflammatory properties, which makes it a valuable component of many health supplements(35).

RATIONAL OF THE STUDY

Mother's Mental Health is very important, because no one better cares a child then mother. PPD is common in primiparous women, and mostly remains undiagnosed. It is important to explore PPD and its associated risk factors in primiparous women, its crucial for improving maternal mental health, insuring positive mother infant outcomes, and guiding health care practices and policies. This study enhances our understanding of how to better support this vulnerable population during the critical postpartum period.

AIM OF THE STUDY

The aim of study focuses on both the prevalence and the underlying risk factors, providing a comprehensive understanding of risk factors associated with PPD in primiparous women.

OBJECTIVES OF STUDY:

1. To assess the prevalence of post-partum depression in primiparous women.
2. To identify demographic, and psychosocial risk factors associated with PPD.

Gaps in Research

PPD is very common in developing countries. Similarly, Pakistan a developing nation, PPD is common in remote areas of Sindh Pakistan, but unfortunately it is neglected and remain undiagnosed because of three main reasons, first women not have awareness about symptoms of PPD. Second families neglect depression of women after postpartum due to fear of social stigma of psychosis, and third lack of facilities of maternal mental health care at especially rural areas. Very few studies conducted on awareness about risk factors of PPD. This study focus on comprehensive understanding about risk factors of PPD, fulfill and narrow the gap of literature by finding prevalence and associated factors of PPD at LUH Jamshoro /Hyderabad.

CHAPTER TWO: METHODOLOGY

This Cross sectional study was carried out at Liaquat University of Medical and Health Sciences Hospital Jamshoro and Hyderabad after being approved from Research Ethics Committee (NO.LUMHS/REC/-619)of LUMHS University Jamshoro Sindh. The study details were explained to the participants, after which informed written consent was obtained and their secrecy was guaranteed. 240 participants were selected using, Non probability convenient sampling technique. The estimated sample size was calculated through openEpi software, by keeping prevalence= 19%, level at 95% (1.96), and margin of error at 5%, according to these total population was 237, but to avoid discrepancies, 240 was taken as sample.

The inclusion Criteria were Primiparous women who given birth to baby in previous 10 days, aged 18-40 years, attended outpatient department. Women aged < 18 and >45 and multiparous were excluded from study population

Data were collected through Edinburgh Postnatal Depression Scale (EPDS) to evaluate the presence and severity of PPD, alongside demographic and psychosocial information. The EPDS Performa was translated in the respondents' native language to ensure optimal data collection and minimize potential language barriers. The questions were thoroughly explained to the patients, and their responses were subsequently recorded on the EPDS scale. Based on their EPDS scores, the study respondents were split into two groups: Score ≥13 for the PPD group and score <13 for no PPD group.

Statistical analysis was done using SPSS (version 22). Descriptive statistics methods used for (summary, tables, graphs, mean, percentage, frequencies). Chi-square tests assessed relationships between categorical data and outcome variables, like the EPDS score. Pearson's bivariate correlation analyzed associations between continuous variables and EPDS scores.

Edinburgh postpartum depression scale

The Edinburgh Postnatal Depression Scale(EPDS) is a validated, open-access tool for measuring postpartum depression. The EPDS was developed by Cox et al. (29) in 1978 and localized by Lee et al. (30), it was used for the assessment of postpartum depression in pregnant women. There are a total of 10 items, including mood, pleasure, self-accusation, anxiety, fear, insomnia, coping ability, sadness, crying, and self-inflicted injury. Each item has a score of 4 levels (never=0 points, occasionally =1 point, frequently=2 points, always=3 points), of which 2 items are scored in reverse. The total scores range from 0 to 30 points, with higher scores indicating more severe depression. A score of 10 points and higher is considered as a cut-off for postpartum depression.

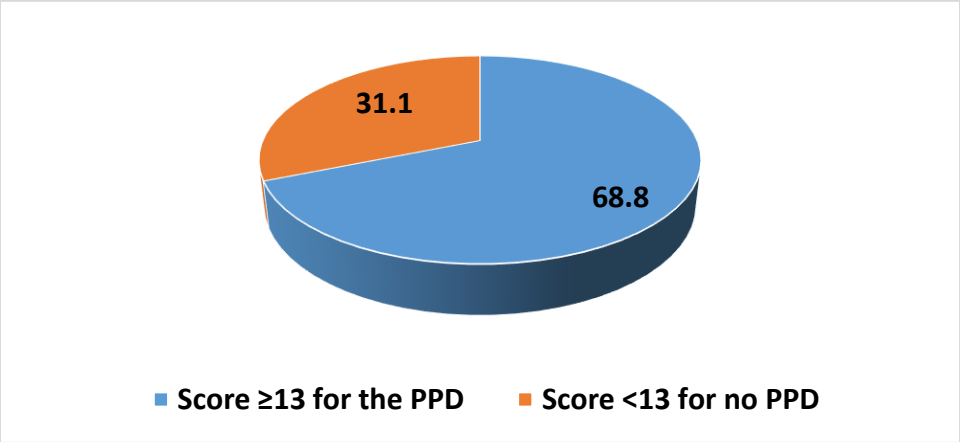
RESULTS

Results of this study revealed 68.8% prevalence of PPD. From findings PPD exposed in all ethnic groups but as compared to other ethnic groups Sindhi community had high rate of PPD both moderate and severe PPD shows in table 6. Table 5 shows that majority contributors belong to rural areas. Majority of participants were unemployed in study, in that 90.4% had PPD shows in table 4. All participants belong to middle- and lower-class families, in which 73.5% were lower class shows in table 2. Table 1 shows frequency and percentage each item of EPDS scale, in which major findings is that, 88% of respondents reported moderate to severe difficulties in enjoying things or seeing the funny side of situations, and more than 88% also felt anxious or worried without reason. 90% of individuals scoring moderate to severe Feelings of guilt and self-blame.

Similarly, around 90% reported moderate to severe sadness or misery without any specific cause. Furthermore, 48.8% contributors' respondent's that they had moderate difficulty in sleeping because they were so unhappy and sad. 42.1% females had severe difficulty in sleeping because of PPD. Further 91.3% study contributors respond that they cry most of the time for any specific reason just because of unhappiness. Alarmingly, 92.1% of respondents admitted to having thoughts of self-harm, with the majority (68.8%) scoring in the moderate range.

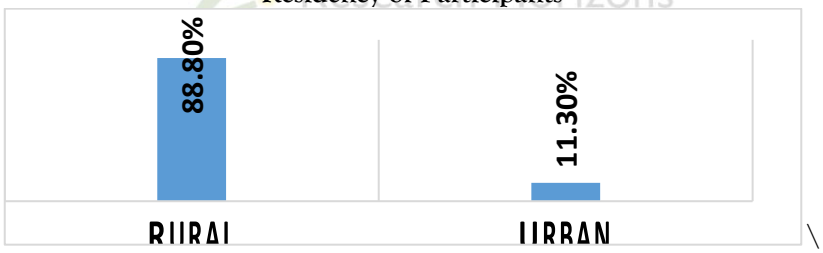
FINDINGS

Prevalence of PPD

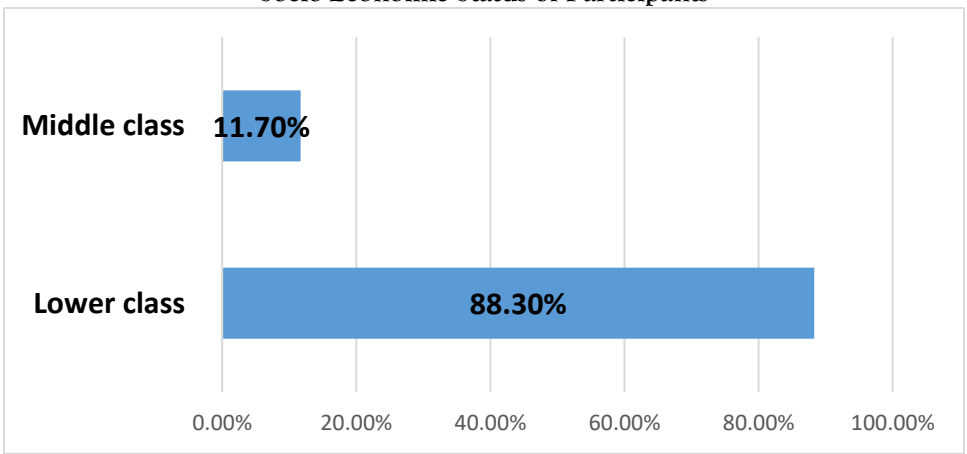


This pie chart shows prevalence of PPD from current study findings. 68.8% primiparous females were suffering from PPD.

Residency of Participants



Socio-Economic Status of Participants



Demographic Variables of Participants

Variable	N=240	%
Age group in years		
18 to 20 years	49	20.4
21 to 30 years	179	74.6
31 to 40 years	12	5.0
EPDS Score		
<13	75	31.1\3
≥13	165	68.8%
Residency		
Urban	27	11.30%
Rural	213	88.80%
Ethnic Group		
Sindhi	112	46.70%
Punjabi	77	32.10%
Balochi	42	17.50
Phakhtoon	9	3.80%
Occupational status		
Unemployed	217	90.40%
Employed	23	9.60%
Socio-economic status		
Lower class	212	88.3
Middle class	28	11.7

Table 1

This study participant belongs between 19 to 40 years of age, but mostly women belongs 21 to 30 years. Current study finding explore 68.8% prevalence of PPD in primiparous women. Further results show that participants belongs to both rural and urban areas, but majority participants belongs to rural areas 88.8% ,11.3% contributor females were urban, study participants belongs to all ethnic groups but frequently contributors were sindhi and punjabi. 46.70% were sindhi in the study ,32.10% were belongs to Punjabi ethnic group, 17.50% were Baloch and only 3.80% were Pakhtoon participants. In this study 90.40% participants were unemployed and, only 9.60% women were employed. Further results revealed that 88.3% participants belong to rural areas.

Percentage and frequency of each question of EPDS

Serial No	Items of Postnatal Depression Scale	Score 0 (No PPD)		Score 1 (Mild PPD)		Score 2 (Moderate PPD)		Score 3 (Severe PPD)	
		F	%	F	%	F	%	F	%
01	I have been able to laugh and see the funny side of things.	19	7.9	8	3.3	130	54.2	83	34.6
02	I have looked forward with enjoyment to things:	14	5.8	15	6.3	124	51.7	87	36.3
03	I I have blamed myself unnecessarily when things went wrong:	5	2.1	19	7.9	96	40.0	120	50.0
04	I have been anxious or worried for no good reason	17	7.1	9	3.8	122	50.8	92	38.3

05	I have felt scared or panicky for no good reason	12	5.0	12	5.0	123	51.2	93	38.8
06	Things have been getting to me:	8	3.3	15	6.3	83	34.5	134	55.8
07	I have been so unhappy that I have had difficulty sleeping:	11	4.6	11	4.6	117	48.8	101	42.1
08	I have felt sad or miserable:	5	2.1	19	7.9	128	53.3	88	36.7
09	I have been so unhappy that I have been crying:	8	3.3	13	5.4	101	42.1	118	49.2
10	The thought of harming myself has occurred to me	13	5.4	6	2.5	165	68.8	56	23.3

Table 2 showing percentage and frequency of EPDS items

This table shows the percentage and frequency of each items presented in Edinburgh Postnatal depression scale. In Edinburgh postnatal depression scale each statement has four options which shows score from 0 to 3, like first option has 0score means according to selected option patient has no PPD symptoms, second option has 1score shows mild symptoms d PPD, third option has 2 score it shows moderate symptoms of PPD and forth option has 3 score and calculated as severe PPD.

The data from the Postnatal Depression Scale highlights significant levels of postnatal depression symptoms among the respondents. A large proportion of participants showed signs of moderate to severe depression across most items. 88% of respondents reported moderate to severe difficulties in enjoying things or seeing the funny side of situations, and more than 88% also felt anxious or worried without reason. 90% of individuals scoring moderate to severe Feelings of guilt and self-blame. Similarly, around 90% reported moderate to severe sadness or misery without any specific cause. In Edinburgh postnatal depression scale all question are important to measure or screen PPD but some questions are very important to emphasize, as they show severity of PPD. Like questions about sleeping difficulty, crying and thoughts of self-harm and suicidal attempts. In that, 48.8% contributors' respondent's that they had moderate difficulty in sleeping because they were so unhappy and sad. 42.1% females had severe difficulty in sleeping because of PPD. 41.7%. Further 91.3% study contributors respond that they cry most of the time for any specific reason just because of unhappiness. Alarmingly, 92.1% of respondents admitted to having thoughts of self-harm, with the majority (68.8%) scoring in the moderate range. These results indicate a high prevalence of emotional distress, anxiety, and depressive symptoms among postpartum individuals.

Association of PPD with Socio-economic Status

Socio-economic status of participants	Score ≥13 for the PPD	Score <13 for no PPD	Total	P value
Lower class	157	55	212	.000
Middle class	8	20	28	
Total	165	75	240	

Table 3

The relationship between socio-economic status and PPD scores was analyzed using a 2x2 crosstabulation. Among the 240 participants, the majority belonged to the lower socio-economic class 212 participants, Among lower soci0-economic contributors 74.0% had PPD, and 55 scoring <13 indicating no PPD. In contrast, among the 28 participants from the middle class, only 8 scored ≥13, while 20 scored <13, suggesting a lower prevalence of PPD in this group.

The statistical analysis revealed a highly significant association between socio-economic status and PPD scores. The consistent results shown that p value was .000.

Association between participants' occupation and PPD.

Occupation of participants	Score ≥13 for the PPD	Score <13 for no PPD	Total	P value
Employed	11	12	23	0.000
Jobless	194	23	217	
Total	205	35	240	

Table 4

This crosstabulation investigates the relationship between participants' occupational status and PPD scores. Among 240 participants, 217 (90.4%) were unemployed, with a very high proportion 194 had symptoms of PPD, while only 23 scored <13 represents no PPD. In contrast, among the 23 employed participants, only 11 contributors had PPD, showing a notably lower prevalence of PPD in employed participants. The p value was 0.000, These findings show a strong and statistically significant relationship between occupation and postpartum depression, with employed women significantly less likely to experience PPD compared to those who are unemployed. Employment may serve as a protective factor against postpartum depression in this sample.

Association of PPD with Residency of Participants

Residency of participants	Score ≥13 for the PPD	Score <13 for no PPD	Total	P value
Rural	150	63	213	0.09
Urban	15	12	27	
Total	165	75	240	

Table 5

The crosstabulation analysis observed the relationship between the residency of participants rural vs. urban and their scores on the PPD rate. Among the 240 valid cases, 213 participants were from rural areas and 27 from urban areas. 70.4% rural participants scored ≥13 on the PPD scale, indicating probable PPD, while 29.6% were not positive for PPD. Among urban residents, 15 (55.6%) had PPD and 12 (44.4%) scored <13 represents no PPD. The p value was 0.091 indicated no significant association between residency and PPD score. Therefore, while a higher proportion of rural participants exhibited PPD symptoms, the difference between rural and urban groups was not statistically significant.

Correlation of high rate of PPD with diverse ethnicity

Ethnic group of participants	Score ≥13 for the PPD	Score <13 for no PPD	Total	P value
Sindhi	73	39	112	0.02
Punjabi	50	27	77	
Balochi	37	5	42	
Pakhtoon	5	4	9	
Total	151	89	240	

Table 6

The cross-tabulation and chi-square test results show a statistically significant association between the ethnic group of participants and the likelihood of experiencing PPD. Among the 240 valid cases, 165 participants scored ≥13, indicating PPD, while 75 scored <13, indicating no PPD. Sindhi participants had the highest number of PPD cases 73 out of 112, followed by Punjabi 50 out of 77, Balochi 37 out of 42, and Pakhtoon (5 out of 9). P-value was 0.026, indicating a significant relationship between ethnicity

and PPD at the 5% level. The data suggests that the prevalence of PPD varies across different ethnic group

DISCUSSION

This study aimed to examine the prevalence of PPD and its associated risk factors which may increase prevalence of PPD in mothers at LUH Sindh. PPD is a serious mental health condition affecting mothers after childbirth, with significant impacts on the well-being of both mother and child. The prevalence of PPD was 68.81% in the current study. This prevalence was approximately consistent with the study conducted by Abbas et al. reported66.21% prevalence of PPD(36). The global prevalence of PPD was found to be approximately 17.22%(37). Study conducted in 2024 reported, In Asia PPD is a predominant problem, according to study conducted in 2024, PPD in Asian countries shown wide-ranging from 0.82 % to 93 %, in that Japan had the highest prevalence14.5 and 11.8% (38). Another recent study conducted in 2025, exposed the prevalence of PPD in Asian countries widely varied, ranging from 5.1% to 78.7%(37).

Rate of PPD is high in developing countries as observed in this study findings, Pakistan is also in list of developing countries, similarly, Liu et al. reported developing countries, have a high prevalence of postpartum depression(7). In screening of PPD some was important question to emphasize, like sleeping, crying and suicidal ideation. Findings of this study exposed above the 90th percentile had a higher probability of risk of suicidal ideation(39).

The prevalence of PPD is closely related to risk factors of PPD, like socio-economic status, level of education, employment, relationship with partner, previous history of depression and cultural factors, some of these are analyzed in current study. Consistent with study conducted in India, reported prevalence of PPD is high may be due to underreporting, lack of awareness, illiteracy, lack of health-care facilities, and differences in sociocultural context(40). From the findings of this study it is revealed that majority of participants were jobless and there is high rate of PPD in unemployed participants, previous study indicated that lower Socio economic status is associated with a higher prevalence of PPD(41). 98.13%. Lower socioeconomic status, poor physical health(42). Another previous study had observed, the prevalence of PPD was closely interconnected to country development and national or regional income(37). Another study by panolan et al. support current findings, reported that occupations, and poverty are independent indicators for PPD(40). These all factors are associated with prevalence of PPD.

CONCLUSION

This study aimed to address prevalence and the underlying risk factor of PPD. In current study prevalence of PPD was high. From study findings it is concluded that prevalence of PPD is highly associated with risk factors like, illiteracy or low level of education, Unemployment and low socio-economic status.

RECOMMENDATIONS

To address the research and methodological shortcomings discussed in the literature, PPD studies conducted in Asian nations should investigate the influence of cultural, societal, and biological aspects in greater detail. Counseling sessions should be provided to participants in interventional research for PPD in order to raise awareness. Since most PNDs progress to PPD, research on prenatal depression is essential for early detection, treatment, and preventing its negative repercussions.

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