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RESEARCH PAPER

Newborn Gender, Mode of Delivery and Family System, as Determinants of Postpartum Depression among Pakistani Mothers

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ABSTRACT

The objective of this research aimed to investigate culturally specific characteristics that may lead to postpartum depression among Pakistani mothers, including the preference for male children, the method of childbirth, and family structure. Maternal mental health has been studied widely because it is not only important for mothers' healthy functioning but is also paramount for development of a healthy infant. Maternal mental health has been studied widely, but sociocultural and obstetric factors linked with postpartum depression are warranted independent study. A cross-sectional design, including 250 mothers in postpartum phase, with an age range of 18-25 were included. Mothers filled demographic form and Questionnaire of Postpartum Depression. Descriptive and inferential statistics were used to analyze the results. According to T-test, mothers who gave birth to female child, had a caesarian section and lived in nuclear family were prone to developing postpartum depression. These results can help health care workers and mental health practitioners to identify mothers with risk factors earlier and provide targeted interventions.

KEYWORDS Maternal Mental Health, Postpartum Depression, Pakistani Mothers

Introduction

Globally 13% of people suffer mental and neurological issues as per World Health Organization (Faruqi et al, 2020). Mental disorders along with neurological and substance use disorders are common, exceedingly disabling and significant contributors of premature death (Patel et al., 2016). Mental disorders bear huge economic burden and are more costly than physical conditions like diabetes or cancer, which is why they are prioritized globally in health policies and are a part of United Nations sustainable development goals. Eight percent of those suffering from mental health issues reside in low- and middle-income nations. When in comes to South Asia, out of all health issues, mental disorders account for 12.2 % (Ranjan & Asthana, 2017; Muzaffar, et. al., 2018) and as per review of studies from South Asia, depression and anxiety are highly prevalent amongst other disorders (Hossain, 2020). In Pakistan, 10% of people which make 20 million population is suffering from mental disorders, linking mental illness with economic burden. Most of these people, due to financial constraints, are unable to manage or treat these disorders (Khaliliy et al., 2021).

Women globally have reported significantly poorer mental health in terms of psychological distress, quality of life and depression as compared to men, and so is the case in Pakistan. According to Alvi et al, (2024) more women are having mental health issues as compared to men. The risk factors that contribute to the development of mental disorders in women include interpersonal violence, low self-esteem, discrimination and

inequality in gender roles (Kuehner, 2017). Women are particularly at risk for developing mental health disorders during reproductive years (Soyannwo et al., 2020) and are highly prone to developing depression and anxiety after becoming mothers. Maternal mental health has been studied widely because it is not only important for mothers healthy functioning but is also paramount for healthy infant development (Abdullah et al., 2024).

According to Diagnostic and Statistical Manual of Mental Health Disorders- IV as cited in Sadiq, et.al (2015) postpartum depression begins in first four weeks after childbirth, in which mother feels irritable and hopeless. Research by Kazmi, et.al (2013) draws comparison between normal maternity blues and abnormal prolonged postpartum depression. Both studies state that despite having innumerable researches, researchers still haven't found a single contributing factor in development of postpartum depression. As cited in Mason, Rice, and Records (2005) there are number of factors such as lack of social support, family setup, history of depression and socioeconomic hardship which contributes to development of postpartum depression. Etiological factors also contribute to the development of PPD and need to research for better understanding. Pakistani mothers are more vulnerable to postpartum depression due to antenatal depression as compared to their Canadian counterparts, Shah, et.al confirmed (2011).

Literature Review

Within Pakistani context, Munaf and Siddiqui (2013) showed that family setups had a major role in development of postpartum depression. They took a sample of 50 women in Karachi, who had given birth in last four weeks; 25 belonged to joint family and 25 to nuclear family system. Results showed that women living in nuclear setup were more susceptible to depression than those living in joint family setups, because later gets support from family members in pre- and post-natal period as compared to those in nuclear setup. Two more studies which were conducted in hospitals of Islamabad and in clinics of Abbottabad, used the Edinburgh Postpartum Depression scale and concluded exact same results Sadiq, et.al (2015) and Kazmi, et.al (2013). In Asian societies, new mothers must learn how to handle children from their older relatives because they are afraid of doing so. Which is readily available in a joint family setup as compared to a nuclear setup. So, a woman suffers more in a nuclear setup. Nuclear family setups don't always act as contributing factor in PPD as shown by Ghafoor, et.al (2020). They concluded that women in Faisalabad who were living with their in-laws were experiencing more stress and were predisposed to psychological problems after delivery as compared to women living in nuclear setups. In researches of Munaf & Siddiqui (2013) and Kazmi, et.al (2013) social support models are used to buffer negative effects of stress. These models focus on informational support which is guidance about infant care and emotional support by partners. Moreover, stress buffering model helps in buffering effect of stress on mothers' mental health which can occur due to living with in-laws and this model is visible in the study of Ghafoor, et.al (2020). It may be noted that researches done between 2005 & 2015 showed that mothers relied on extended family support after giving birth while mothers of today prefer their own space and living with in-laws is stressful for them, making them predisposed to psychological problems, which is why there we need to explore the current dynamics of family system and PPD.

Pakistan's society, both in rural and urban areas, prefer to have a male child, as compared to a female child, as confirmed by Sathar et al. (2015). According to the research by Bongaarts, (2013), Pakistan ranks second amongst 61 countries, for son preference. The preference for son is evidenced by the one hundred million 'missing women' across the globe, as cited by Saeed et al. (2020). A rise in the mortality rates for

female child have been noticed due to various reasons including more chances of male sick child to be treated at a hospital than a female child and malnourishment in female child in comparison to a male child, as researched by Saeed et al., (2020). However, this socio-cultural preference for a son over a daughter makes the mother really worried and adversely impacts her mental health, as she has to face the negative reactions by the society including her own in-laws and relatives, if the child is a daughter. Eventually, this leads mother going into post-partum depression and post-partum hemorrhage, which is seriously threatening mother's life (Sathar et al., (2015).

Obstetric factors have not been studied much as etiology to PPD and one such factor, which remains controversial is mode of delivery (Mod) and its link with PPD. Dissatisfaction with mode of delivery, cesarean-section, low self-esteem and somatic complains are considered to be possible etiological factors that predispose mothers to PPD. Literature shows conflicting results, as per some studies there was no significant association between MoD and PPD (Sword et al., 2011; Eisenach et al., 2008), according to few MoD was related with PPD, particularly cesarean-section was found to be linked with PPD (Yang et al., 2011). Others reported that caesarean section was linked with PPD in the earlies days after delivery and was not linked with PPD at 6 months post-delivery (Chang et al., 2015).

This study aims to investigate culturally specific characteristics that may lead to postpartum depression among Pakistani moms, including the preference for male children, the method of childbirth, and family structure. Few studies have examined these sociocultural factors, despite the high incidence of postpartum depression in Pakistan. Designing successful, situation-appropriate mental health therapies can be aided by recognizing these elements. The purpose of this study is to fill a significant gap in Pakistani research on mother mental health.

Hypotheses

It was hypothesized that

1) Mothers who give birth to a baby girl are more likely to experience higher levels of postpartum depression compared to those who give birth to a baby boy.
2) Mothers who undergo C-section deliveries are more likely to experience higher levels of postpartum depression compared to mothers who have normal deliveries.
3) Mothers living in a nuclear family system are more likely to experience higher levels of postpartum depression compared to mothers living in a joint family system

Material ad Methods

Research design

A cross-sectional research design was used in the current research.

Sample

This study used purposive sampling (N=250) to select a sample. Women were recruited from the obstetrics and gynecology outpatient departments when they visited the gynecologist after childbirth during the postpartum phase.

Inclusion criteria

- Women who have delivered a baby and were in the post-partum phase were included.
- All types or modes of deliveries within the last six weeks were included.
- Women ages 18 to 25 were included.
- Postpartum women with their first child were included.
- Unemployed Postpartum women were included.

Exclusion Criteria

- Postpartum women with stillborn were excluded.
- Widowed/Divorced postpartum women were also excluded.
- Data was not collected from Postpartum women with other types of diagnosed mental health disorders (other than PPD)
- Postpartum women with physical disability were also excluded.

Instruments

Questionnaire for Postpartum Depression (QPD)

Questionnaire for Postpartum Depression (QPD), developed by Abdullah et al. (2024) was used to screen mothers in postpartum phase for depression. QPSD is a 35 item, questionnaire developed indigenously, with a Likert scale response format for 1 "not at all" to 4 "most of the times". It has strong Alpha reliability of 0.90 (Abdullah et al., 2024).

Procedure

Study approval was obtained from the ethical review board of Riphah International University. After approval, permissions from different government hospitals of Lahore were taken to collect data. Using the Questionnaire of Postpartum Depression (QPD), all postpartum women who decided to take part in the study and came for follow-up visits in the hospitals' outpatient departments (OPD) were evaluated for postpartum depression. Urdu versions of the questionnaire were used. Participants were also requested to give original responses and not to skip any items. After collecting data, it was statistically analysed.

Data analysis

The collected data were statistically analysed using IBM SPSS Statistics. Descriptive statistics were used to summarize the demographic variables, and an independent samples t-test was used to examine the differences in postpartum depression among mothers based on the newborn gender, family system, and mode of delivery.

Ethical consideration

Ethical considerations were carefully addressed throughout the study. All participants gave their informed consent prior to data collection after being fully informed about the goals, methods, and advantages of the study. Participants were guaranteed the freedom to leave at any time without facing any repercussions, and

participation was completely optional. Confidentiality and anonymity were strictly maintained; all personal information was kept secure, and data were anonymized to protect participant identities. Ethical approval for the study was obtained from the relevant institutional ethics committee.

Results and Discussion

Descriptive statistics and an independent sample t-test were used on the collected data. The mean age of mothers was 20.02.

Table 1
Sociodemographic Characteristics of the Participants (N=250)

Variables	*n*	%
Gender of a newborn		
Baby boy	128	51.2
Baby girl	122	48.8
Mode of delivery		
Normal	131	52.4
C section	119	47.6
Family system		
Nuclear	109	43.6
Joint	141	56.4

Table 2
Independent Sample t-test analysis of newborn gender, mode of delivery, and family system on postpartum depression among mothers (N=250)

Variables	Baby boy (n=128)		Baby girl (n=122)		*t (248)*	*p*	Cohen's d
	M	*SD*	*M*	*SD*			
Postpartum depression	70.39	19.78	76.27	17.01	2.51	.01*	0.31
Variables	C-Section delivery (n=119)		Normal delivery (n=131)		*t (248)*	*P*	Cohen's d
	M	*SD*	*M*	*SD*			
Postpartum depression	76.51	17.33	70.32	19.32	2.64	.009**	0.33
Variables	Nuclear family system (n=109)		Joint family system (n=141)		*t (248)*	*P*	Cohen's d
	M	*SD*	*M*	*SD*			
Postpartum depression	79.00	14.45	68.82	20.35	4.42	.000***	0.57

Note. *P <.05, **P<.01, ***p<.001

According to the table, postpartum depression scores were substantially higher for mothers who gave birth to girls (M = 76.27, SD = 17.01) than for mothers who gave birth to boys (M = 70.39, SD = 19.78); the effect size was small (Cohen's d = 0.31). Similarly, postpartum depression was substantially higher in mothers who had C-section deliveries (M = 76.51, SD = 17.33) than in mothers who had normal deliveries (M = 70.32, SD = 19.32); the effect size was Cohen's d = 0.33, with t(248) = 2.64, p =.009. In addition, postpartum depression scores were substantially higher for mothers in nuclear families (M = 79.00, SD = 14.45) than for mothers in joint family systems (M = 68.82, SD = 20.35); the effect size was moderate (Cohen's d = 0.57), with t(248) = 4.42, p <.001.

Discussion

This study explored the impact of newborn gender, mode of delivery, and family system on postpartum depression among Pakistani mothers (N = 250) using independent samples t-tests. All three variables showed statistically significant variations in postpartum depression, according to the results.

The first hypothesis of the study was that Women who give birth to a baby girl are more likely to experience higher levels of postpartum depression compared to those who give birth to a baby boy. This hypothesis was accepted, according to the results, women who gave birth to girls scored far higher on postpartum depression than mothers who gave birth to boys. The birth of a son is frequently considered a source of pride, financial security, and social status in many Pakistani households, particularly in rural and traditional settings. In contrast, daughters are perceived as financial burdens because of dowry customs and restricted inheritance rights. A woman's chance of developing postpartum depression can be significantly increased if she experiences emotional neglect, criticism, or a decrease in family support after giving birth to a daughter.

In addition, due to societal expectations, some women have feelings of personal failure due to their inability to have a son, which can result in stress, depression, and guilt. These deeply rooted gender biases can make childbirth a source of anxiety rather than joy for many Pakistani mothers. Previous literature also supports the findings. Xie et al. (2007) Conducted a study on fetal gender and postpartum depression in a cohort of Chinese women. Findings indicate that women who delivered a girl had significantly higher odds of postpartum depression than those who gave birth to a boy. Similar findings were found from the study conducted by Naveed and Naz (2015).

Another hypothesis of the study was that Mothers who undergo C-section deliveries are more likely to experience higher levels of postpartum depression compared to mothers who have normal deliveries. This hypothesis was also accepted and found that Mothers who delivered via C-section reported significantly higher postpartum depression scores compared to those who had normal deliveries. Results are aligning with concerns regarding the physical, emotional, and social challenges associated with caesarean deliveries in Pakistan. While C-sections can be life-saving in emergencies, they are increasingly performed unnecessarily in private hospitals, often due to financial incentives or lack of proper monitoring. Many women are not mentally prepared for surgical delivery, and the longer recovery period can interfere with bonding and breastfeeding, increasing stress levels. In Pakistan, where extended maternity care and psychological support are minimal, the burden of post-surgical recovery, household responsibilities, and child-rearing often fall solely on the mother, especially in nuclear families. Cultural stigma around C-section, often seen as a sign of "weakness" or "incomplete motherhood," may further compound emotional distress, leading to greater vulnerability to postpartum depression. The results are further supported by a research by Naveed and Naz (2015). They conducted a study "to determine the risk factors for postpartum depression, interpersonal relationship anxiety, neuroticism, and social support in women with postpartum depression," . It has been discovered that anxiety, self-neuroticism, interpersonal relationships, and a lack of social support all have a significant impact on postpartum depression.

Women are usually held responsible for having female offspring in Pakistani society. When the spouse and in-laws come to know that a girl had been born, many families' perspectives shifted. The woman's husband and in-laws' lack of support causes

her to feel increasingly depressed and disturbed, which ultimately leads to signs of postpartum depression. Xu et al. (2017) conducted a recent meta-analysis on caesarean section and risk of postpartum depression, which showed that only emergency and non-elective caesarean section (ElSC) is associated with an increased risk of PPD.

The third hypothesis of the study was that Mothers living in a nuclear family system are more likely to experience higher levels of postpartum depression compared to mothers living in a joint family system. This hypothesis was also supported by the findings and the strongest association with postpartum depression emerged in relation to the family system. Mothers in joint family systems reported much lower levels of depression than mothers in nuclear families.

In Pakistan, where the joint family arrangement is still common, particularly in rural and traditional homes, this finding is especially pertinent. In joint households, in-laws and other family members frequently offer help to new mothers in childcare, housework, and emotional support. Isolation and stress related to the postpartum phase might be considerably decreased by this social support. On the other hand, mothers in nuclear families, especially those in cities, may experience a lack of support systems, a greater sense of responsibility, and an increased sense of isolation or overload. These mothers experience more mental and physical stress when they don't receive enough support from their partners or extended family, which can lead to greater levels of postpartum depression.

Furthermore, there are no official mental health facilities available to new mothers in Pakistani society, which makes social support networks like the joint family even more important. To determine the prevalence of postpartum depression among women in the Hazara Division, Kazmi et al. (2013) carried out a study. Research findings showed that women in the joint family system, who receive greater social support from their spouse, friends, or relatives, are less likely to suffer from PPD than women in nuclear families who receive less social support.

Conclusion

This study shows that cultural and structural factors, such as newborn gender, delivery mode, and family systems, have a substantial impact on postpartum depression in Pakistani mothers. Maternal health initiatives in Pakistan can be improved to promote women's psychological health during the crucial postpartum phase by recognizing the impact of these sociocultural factors.

Implications

These results highlight several key implications:

1. Prenatal and postnatal care should include culturally specific counselling to combat negative gender biases and normalize postpartum emotional difficulties.

2. The development of community-based support groups and the encouragement of family involvement, particularly in nuclear families, may provide much-needed practical and emotional support to new mothers.

3. In addition to integrating maternal mental health into public health initiatives, healthcare regulations should be implemented to prevent the overuse of C-sections.

Recommendations

Hospital staff, including gynecologists and nurses, should be trained to detect depressive symptoms and internalizing behaviors during prenatal checkups.

Widowed and divorced women in the post-partum stage should also be studied through this lens, as there will be more factors that might affect their mental well-being or the deterioration thereof.

An additional study could also be conducted on a population of post-partum women who receive counseling from the nursing staff- after training nursing staff to provide culturally specific counselling, combatting the gender biases and the emotional difficulties in the expecting mother's life.

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