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MENTAL HEALTH PROBLEMS AMONG PREGNANT PAKISTANI WOMEN: A QUANTITATIVE STUDY

Original Article

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ABSTRACT

Background: Pregnancy is a physiologically and emotionally demanding period that increases vulnerability to mental health disturbances, particularly depression, anxiety, and stress. Globally, substantial evidence highlights the prevalence of these conditions among pregnant women; however, research within the Pakistani context remains limited. Sociocultural constraints, poor awareness, and lack of access to mental health resources further compound this issue, emphasizing the need for localized data to inform public health interventions and improve maternal psychological well-being.

Objective: To examine the relationship between depression, anxiety, and stress among pregnant Pakistani women aged 18 years and above.

Methods: A cross-sectional correlational research design was adopted. Using snowball sampling, data were collected from 208 pregnant women who met inclusion criteria of being at least 18 years old and possessing a minimum intermediate education level. Mental health was assessed using the 21-item Depression Anxiety Stress Scale (DASS-21), a validated psychometric tool. Descriptive statistics, Pearson's correlation, and subgroup analysis were conducted using SPSS version 29. Ethical approval was obtained from the institutional review board, and written informed consent was secured from all participants.

Results: The mean age of participants was 37.84 years (SD = 9.62). Significant positive correlations were found between depression and anxiety ($r = 0.43$, $p < .01$), depression and stress ($r = 0.28$, $p < .01$), and anxiety and stress ($r = 0.54$, $p < .01$). Severity distribution showed that 32 participants had moderate depression, 71 moderate anxiety, and 20 moderate stress, while 19 participants reported severe anxiety. Subgroup analysis revealed higher mean psychological scores among women in the first trimester.

Conclusion: This study confirms a significant interrelationship between depression, anxiety, and stress among pregnant Pakistani women. The findings underscore the urgent need for culturally tailored mental health interventions, awareness campaigns, and policy-level support to enhance maternal well-being and public health outcomes.

Keywords: Anxiety, Depression, Mental Health, Pregnancy, Psychological Stress, Public Health, Women's Health.

INTRODUCTION

Pregnancy is a unique and transformative physiological state during which one or more offspring develop within a woman's uterus. It generally spans approximately 40 weeks from the last menstrual period to delivery and is clinically segmented into three trimesters for medical monitoring and care. While it often results from natural conception, advancements in assisted reproductive technologies have expanded the means through which pregnancy can be achieved. This period is not only marked by profound physical changes but is also accompanied by significant psychological and emotional shifts. Mental health disturbances, particularly depression, anxiety, and stress, are increasingly recognized as prevalent and impactful complications during pregnancy (1–3). These conditions not only compromise the well-being of the expectant mother but may also adversely affect fetal development, birth outcomes, and long-term child health. Depression during pregnancy is typically characterized by persistent sadness, diminished interest in daily activities, fatigue, feelings of hopelessness, and, in severe cases, suicidal ideation. Anxiety manifests through excessive and often uncontrollable worry, accompanied by physical symptoms such as tachycardia, tremors, and hypervigilance. Stress, meanwhile, reflects an individual's response to perceived emotional or physical pressures, and when chronic, can have lasting effects on both maternal and fetal outcomes (4,5). The psychological vulnerability experienced during pregnancy is influenced by hormonal fluctuations, changing familial and social roles, and the anticipation of childbirth, often exacerbating underlying mental health concerns (6).

A growing body of research highlights the global prevalence of these psychological conditions among pregnant women. For instance, a study conducted in Jeddah, Saudi Arabia, reported the prevalence of depression, anxiety, and stress among pregnant women to be 37.5%, 54.0%, and 25.0%, respectively, with the severity of anxiety ranging from minimal to severe levels. Notably, family support and obstetric history emerged as influential risk factors (7). In Pakistan, findings from a study involving 500 pregnant women revealed a mean perceived stress score of 12.93 ± 5.19, with women suffering from depression and anxiety reporting higher levels of stress. Socio-relational stressors, particularly those involving familial dynamics, were significant contributors (8). Similarly, in Malaysia, screening of 288 pregnant women indicated that over 23% in the second and third trimesters suffered from mental health disorders, with low socioeconomic status being a prominent determinant (9). During the COVID-19 pandemic, while overall levels of depression and anxiety among pregnant women did not significantly deviate from pre-pandemic levels, women who directly attributed their stress to the pandemic exhibited significantly elevated psychological distress (10). Despite the increasing recognition of antenatal mental health issues globally, there remains a paucity of region-specific research within Pakistan. The psychosocial, cultural, and economic context of Pakistani women—often marked by patriarchal family structures, financial dependency, and limited access to mental health services—necessitates a localized exploration of these issues (11). Understanding the prevalence and contributing factors of antenatal depression, anxiety, and stress within this demographic is vital for designing effective public health interventions and support frameworks. Therefore, this study aims to investigate the association between mental health problems—specifically depression, anxiety, and stress—among pregnant Pakistani women, with the objective of bridging existing knowledge gaps and informing culturally relevant healthcare practices.

METHODS

The study utilized a cross-sectional correlational research design to examine the relationship between depression, anxiety, and stress among pregnant women residing in Pakistan. This approach was appropriate for evaluating psychological health parameters during pregnancy within a defined period. A total of 208 pregnant women participated in the study. Recruitment was carried out through snowball sampling, which enabled the researchers to access a broad yet interconnected population. While effective for reaching participants in a culturally sensitive context, this method may have affected sample representativeness. Eligible participants were required to be currently pregnant, at least 18 years of age, and possess a minimum of intermediate-level education to ensure comprehension of the self-administered questionnaire. Exclusion criteria included pre-existing psychiatric disorders, use of psychotropic medications, or any diagnosed medical condition that could interfere with psychological assessment, as these factors might confound the association between pregnancy and mental health status. The Depression Anxiety Stress Scale-21 (DASS-21) was employed to assess the psychological symptoms of depression, anxiety, and stress (12). This self-report instrument consists of 21 items divided into three subscales, each rated on a four-point Likert scale from 0 ("Did not apply to me at all") to 3 ("Applied to me most of the time"). The DASS-21 has demonstrated strong psychometric properties, with Cronbach's alpha values of 0.88 for depression, 0.82 for anxiety, and 0.90 for stress. Higher scores indicate greater symptom severity across each domain.

Data collection was conducted in a single session, with participants completing the questionnaire in approximately 10 minutes. Ethical clearance was obtained from the Institutional Review Board (IRB). Informed written consent was secured from all participants after

explaining the study's purpose, confidentiality measures, and their voluntary right to withdraw at any point without penalty. The researchers also obtained permission from both the author of the DASS-21 and the academic department responsible for overseeing the study. Data were analyzed using SPSS version 29. Descriptive statistics were used to summarize demographic and psychological variables, while inferential statistics—including Pearson's correlation coefficient and linear regression analysis—were applied to examine associations among depression, anxiety, and stress scores. A significance threshold of $p < 0.05$ was adopted for all analyses.

RESULTS

The analysis of demographic characteristics revealed that the mean age of the 208 pregnant participants was 37.84 years, with a standard deviation of 9.62, indicating a broad age distribution. In terms of gestational stage, the highest proportion of women were in their first trimester (n = 92; 44%), followed by those in the second trimester (n = 63; 30%) and third trimester (n = 53; 26%). Educational qualifications varied, with 92 participants (44%) having completed intermediate-level education, 63 (30%) holding a bachelor's degree, 28 (14%) with a master's degree, and 25 (12%) holding a PhD. The correlational analysis demonstrated statistically significant positive relationships between the primary psychological variables. Depression was moderately correlated with anxiety ($r = 0.43$, $p < .01$) and weakly correlated with stress ($r = 0.28$, $p < .01$). Anxiety showed a stronger positive correlation with stress ($r = 0.54$, $p < .01$), suggesting that elevated anxiety levels were more likely to co-occur with heightened stress among pregnant women in this sample. These findings suggest a notable interconnection between psychological stressors during pregnancy.

The analysis revealed that the mean depression score among participants was 10.00 (SD = 3.93), anxiety was 9.11 (SD = 3.91), and stress was 11.91 (SD = 5.06), indicating overall moderate psychological symptomatology within the sample. Subgroup analysis by trimester showed that participants in the first trimester reported relatively higher mean scores across all psychological domains compared to those in the second and third trimesters. This suggests a potential decline in emotional distress as pregnancy progresses. Further exploration of symptom severity levels, categorized according to DASS-21 subscale cutoffs, showed that 108 women (51.9%) had normal depression levels, while 68 (32.7%) experienced mild depression and 32 (15.4%) reported moderate depression. Notably, none of the participants were classified with severe or extremely severe depression. Anxiety severity revealed that 76 women (36.5%) were within the normal range, whereas 42 (20.2%) experienced mild anxiety, 71 (34.1%) moderate anxiety, and 19 (9.1%) severe anxiety. Stress scores showed that 141 participants (67.8%) were within normal limits, while 47 (22.6%) experienced mild stress and 20 (9.6%) moderate stress, with no cases of severe or extremely severe stress observed.

Table 1: Demographic Characteristics of the Participants (N=208)

Characteristics	Frequency	Percentage	Mean	Standard Deviations
Age			37.84	9.62
Pregnancy Trimester				
First Trimester	92	44		
Second Trimester	63	30		
Third Trimester	53	26		
Education				
Intermediate	92	44		
Bachelor	63	30		
Master	28	14		
PhD	25	12		

Table 2: Correlational Analysis between Study Variables (N=208)

Variables	1	2	3
1.Depression	-	.43**	.28**
2.Anxiety		-	.54**
3.Stress			-

Note. **p<.01*

Table 3: Mean and Standard Deviation for Depression, Anxiety, and Stress

	Mean	Standard Deviation
Depression	9.79	4.02
Anxiety	9.59	3.83
Stress	12.7	4.85

Table 4: Subgroup Analysis by Trimester

Trimester	Depression	Anxiety	Stress
First	10.17	9.26	12.6
Second	9.87	9.6	12.73
Third	9.12	10.1	12.82

Table 5: Frequency of Severity Levels

	Depression	Anxiety	Stress
Mild	68	42	47
Moderate	32	71	20
Normal	108	76	141
Severe	0	19	0

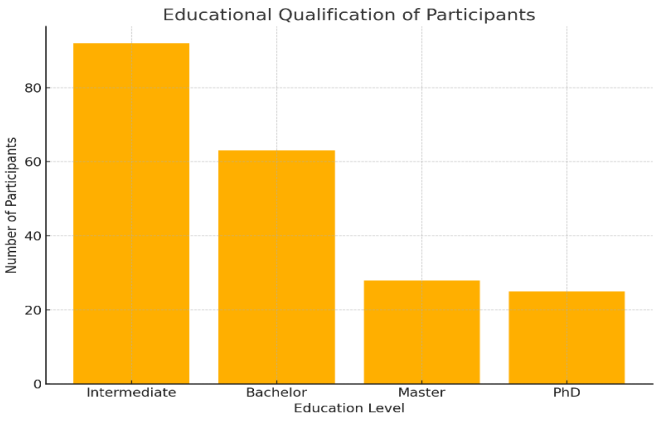

Figure 2 Education Qualification of Participants

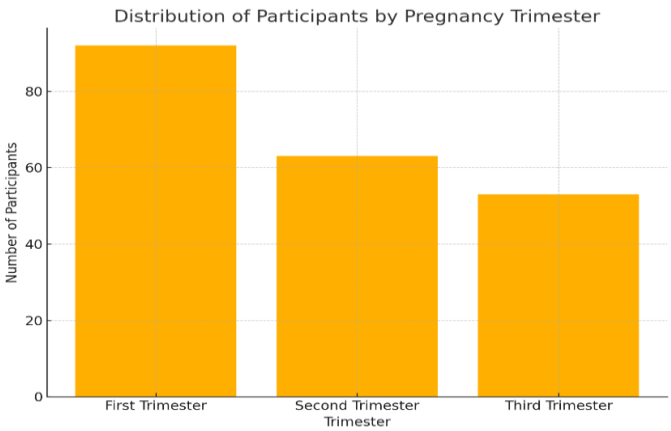

Figure 1 Distribution of Participants by Pregnancy Trimester

DISCUSSION

The present study investigated the mental health status of pregnant women in Pakistan, focusing on the interconnectedness of depression, anxiety, and stress. The findings supported the initial hypothesis, as significant positive correlations were observed among all three psychological variables. These results contribute valuable evidence to the limited literature on perinatal mental health within the Pakistani context, a region where cultural, social, and economic dynamics may uniquely influence psychological well-being during pregnancy (13). The findings are consistent with previous research conducted in other regions. A study in Saudi Arabia reported comparable rates of depression, anxiety, and stress among pregnant women, further linking these conditions to psychosocial factors such as family support, obstetric history, and prior pregnancies (4). Similarly, research within Pakistan demonstrated that pregnant women experiencing higher anxiety and depression levels also exhibited elevated perceived stress scores, with familial conflict and inadequate

social support identified as primary stressors (15). These parallels suggest that psychological distress during pregnancy is not only prevalent but also influenced by a shared set of psychosocial stressors across cultural contexts.

In the Pakistani setting, the intersection of psychological burden and socio-cultural factors may intensify emotional vulnerability among expectant mothers. The prevalence of male-dominated household structures, lack of awareness regarding mental health during pregnancy, limited access to maternal care, and poor nutritional practices all contribute to an environment that may exacerbate emotional distress (16,17). Furthermore, insufficient social support and stigmatization of psychological symptoms can prevent women from seeking timely help, ultimately increasing the risk of untreated maternal mental health conditions. The study's cross-sectional correlational design allowed for a timely snapshot of psychological symptomatology but limited the ability to establish causal inferences. A longitudinal design would have provided greater insight into the progression and potential fluctuations of depression, anxiety, and stress across different stages of pregnancy. Additionally, the relatively small sample size may not accurately represent the broader population of pregnant women in Pakistan, particularly those from rural settings or with lower educational attainment. Despite these limitations, the use of a validated psychometric tool and the inclusion of participants from various educational backgrounds strengthened the reliability of the findings.

Several avenues for future research are evident. Expanding sample sizes and including participants from both urban and rural regions would enhance generalizability. Including diverse pregnancy-related variables—such as parity, planned versus unplanned pregnancy, and presence of obstetric complications—could offer deeper insight into specific risk factors (18). Moreover, incorporating less-educated women and providing translated assessment tools would increase inclusivity and cultural sensitivity. The use of multivariate analysis in future studies could also aid in identifying the most significant predictors of perinatal mental health outcomes. The implications of these findings are considerable. Raising awareness about perinatal mental health should be prioritized at both community and national levels. Mental health professionals play a pivotal role in initiating dialogue, screening pregnant women, and offering psychosocial interventions. Men, as primary partners in the maternal journey, must also be educated to offer emotional, nutritional, and logistical support during pregnancy (19). Governmental and institutional stakeholders need to integrate mental health services within routine antenatal care and implement policies that safeguard maternal psychological well-being. Media campaigns can complement these efforts by reducing stigma and promoting help-seeking behavior through culturally resonant messaging. By highlighting the prevalence and interrelated nature of psychological challenges among pregnant women in Pakistan, this study underscores the urgent need for comprehensive, multidisciplinary strategies to address maternal mental health within culturally complex and resource-constrained settings (20).

CONCLUSION

This study concluded that depression, anxiety, and stress are significantly interconnected among pregnant women in Pakistan, affirming the objective to explore the psychological burden experienced during pregnancy within this population. These findings highlight the urgent need to prioritize maternal mental health, especially in culturally sensitive and resource-limited settings. By shedding light on the emotional challenges faced by expectant mothers, the study offers meaningful contributions to both clinical practice and public health policy, reinforcing the importance of integrating mental health support into routine antenatal care.

Author Contribution

Author	Contribution
Mashiat Zahra*	Substantial Contribution to study design, analysis, acquisition of Data Manuscript Writing Has given Final Approval of the version to be published
Aurang Zaib Ashraf Shami	Substantial Contribution to study design, acquisition and interpretation of Data Critical Review and Manuscript Writing Has given Final Approval of the version to be published
Samha Rafique	Substantial Contribution to acquisition and interpretation of Data Has given Final Approval of the version to be published
Sundus Fatima Bhatti	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Muhammad Adnan Khan	Contributed to Data Collection and Analysis Has given Final Approval of the version to be published
Sania Zehra	Substantial Contribution to study design and Data Analysis Has given Final Approval of the version to be published
Ambreen Fatima	Contributed to study concept and Data collection Has given Final Approval of the version to be published

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