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Research Article

The Impact of First-Time Pregnancy on Maternal Mental Health: Risk Factors and Coping Strategies

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Abstract

Introduction: The mental health of new mothers faces major changes during their first pregnancy because depression and anxiety become frequent issues. The research evaluated depression and anxiety prevalence rates together with risk factors and coping strategy effects in first-time pregnant women.

Materials and Methods: The study recruited 210 mothers who participated in cross-sectional research at Ayub Teaching Hospital, Abbottabad from March to August 2023. Participants used questionnaires to respond to assessments about their sociodemographic details, pregnancy backgrounds and coping approaches in addition to depression assessments based on Edinburgh Postnatal Depression Scale results and anxiety assessments through Generalized Anxiety Disorder-7 scale tests. Chi-square tests and logistic regression was done in SPSS (version 26) to understand connections between risk elements and coping patterns with mental health results.

Results: Depression affected 28.6% participants and anxiety affected 21.9% participants. The participants who showed depression symptoms exhibited a significant relationship with maladaptive coping approaches (p=0.013 and used these strategies by 70% of people who experienced depression symptoms. The research revealed no meaningful connections between depression and variables which included educational background, occupational stability and delivery complications. The use of maladaptive coping strategies by women put them at 2.7 times greater risk of developing depression (OR=2.71, p=0.007).

Conclusion: The research demonstrates that first-time pregnant individuals face elevated depression and anxiety levels because maladaptive coping methods act as significant depression risk factors. The identification of mental health issues at early stages along with behavior-driven intervention strategies would help improve maternal mental health results. Future investigations need to implement multi-century data collection from multiple centers to evaluate the effectiveness of interventions which protect mental health during pregnancy.

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Introduction

A woman experiences major physical transformations while going through pregnancy together with psychological alterations and social adjustments [1]. First-time pregnancy usually brings joy to mothers, but it also creates anxiety alongside stressful feelings [2]. The process of becoming a new mother requires learning how to handle fresh duties while meeting new standards at a time when mental health problems for new mothers become more likely [3]. First-time mothers show increased sensitivity to emotional distress which includes depression alongside anxiety and mood stability problems because of their uncertainty about pregnancy delivery and initial motherhood stages [4]. Knowledge about psychological pregnancy effects in first-time mothers serves as an essential foundation to improve maternal well-being along with achieving better pregnancy results.

Different factors affect the mental wellness of mothers during their initial pregnancy journey. The mental health progression of pregnant women involves several biological elements that impact mood patterns and genetic components that can compound stress effects while psychological conditions alongside self-image problems and maternity concerns intensify these mental patterns [5]. Social determinants that consist of marital support together with family dynamics and financial stability and cultural expectations powerfully define emotional well-being in women [6]. The problems are worsened by insufficient prenatal education as well as limited mental healthcare access and societal reluctance toward perinatal mental health issues [7]. First-time mothers need supportive environments that require proper identification and management of the risk factors which exist.

The way pregnant mothers choose to cope strongly impacts their mental health in their initial pregnancy experience [8]. The implementation of adequate coping strategies featuring partner and family emotional support alongside mindfulness practices and physical exercise and professional counseling improves resilience in women [9]. The practice of avoiding people and using drugs as well as social withdrawal leads to increased possibilities of developing postpartum depression alongside other mental health issues [10].

Medical professionals should lead expectant mothers toward beneficial coping methods while implementing mental health assistance into standard prenatal medical care according to current research [11]. Diagnosing and implementing intervention programs during pregnancy leads to diminished psychological strain along with better health results for both mothers and infants.

The growing focus on perinatal mental health has not eliminated the fundamental knowledge gap about the distinct psychological troubles of new mothers and the most beneficial intervention methods. This study aims to investigate the prevalence of depression and anxiety among first-time pregnant women, identify associated demographic and obstetric risk factors, and examine the influence of adaptive and maladaptive coping strategies on maternal mental health outcomes. By addressing these components, the research seeks to inform targeted interventions to support psychological well-being during first pregnancies.

Materials and Methods

Study Design and Setting

This cross-sectional study was conducted at the Department of Obstetrics and Gynecology, Ayub Teaching Hospital, Abbottabad. The study spanned duration of 6 months, from March 2023 to August 2023. The research investigated both the effects first-time pregnancy has on maternal mental health and the fundamental risk elements linked to psychological distress while studying effective coping mechanisms for expectant mothers' emotional wellness.

Sample Size Calculation

The Cochran method for cross-sectional research determined the sample size through

$$n = \frac{Z^2 \,.\, \mathrm{P}\,(1 - \mathrm{P})}{d^2}$$

The calculation used Z = 1.96 as the standard normal variate for a 95% confidence level combined with P = 25% for maternal mental health disorder prevalence according to previous research studies and d = 6% for an acceptable margin of error. Using these parameters, the calculated sample size was 200 participants. It was decided to use 210 as the ultimate sample size to allow for any non-response.

Study Population and Sampling Technique

The study included first-time pregnant women who attended antenatal clinics at the Department of Obstetrics and Gynecology, Ayub Teaching Hospital, Abbottabad during the study period. The method of non-probability sequential sampling was used to choose those taking part. Inclusion criteria included women aged 18–40 years experiencing their first pregnancy, willing to participate, and able to provide informed consent. Women with a history of psychiatric illness, those with high-risk pregnancies (such as preeclampsia or gestational diabetes), and those unwilling to participate were excluded.

Data Collection

The researchers conducted their study by conducting validated face-to-face interviews with structured questionnaires that contained four sections.

The initial segment of the questionnaire obtained data about respondents' demographic aspects with information regarding their age combined with education level as well as employment status alongside marital status and socioeconomic classification.

The second part of this assessment included surveying obstetric and medical data about gestational period and pregnancy difficulties along with family mental illness background.

The EPDS and GAD-7 scales were used for evaluation of postpartum depressive symptoms and anxiety in the third section.

The final part of the survey used the Brief COPE inventory to evaluate coping strategies, which were categorized as adaptive (e.g., active coping, emotional support, acceptance, planning) or maladaptive (e.g., denial, substance use, behavioral disengagement, self-blame).

This classification allowed for an analysis of how these strategies influenced maternal mental health. Research evaluated the participants through two pregnancy trimesters in order to track psychological distress evolution as pregnancy progressed.

Data Analysis

SPSS version 26 was used to analyze the data. Whereas categorical data were displayed as frequencies and percentages, continuous factors were described using descriptive statistics such as mean and standard deviation.

The chi-square test was used to evaluate the relationships between demographic characteristics and maternal mental health. To find independent risk variables for anxiety and depression in first-time mothers, binary logistic regression was used. Statistical significance was defined as a p-value of less than 0.05.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board of the institute before commencing the study. Written informed consent was obtained from all participants. Confidentiality and anonymity were maintained throughout the study, and participants were assured of their right to withdraw at any stage without any consequences.

Results

A total of 210 first-time pregnant women participated in the study, with a mean age of 26.5 ± 3.85 years (range: 16–42 years). In terms of education, the majority had secondary education (44.8%, n=94), followed by higher education (30%, n=63) and primary education (25.2%, n=53). Regarding employment status, 56.2% (n=118) of the participants were unemployed, while 43.8% (n=92) were employed. Almost all participants were married (97.6%, n=205), with a small proportion (2.4%, n=5) reporting separation. The socioeconomic distribution indicated that 45.7% (n=96) of the participants belonged to the middle class, 30% (n=63) were from the low-income group, and 24.3% (n=51) were classified as high-income. These demographic characteristics provided insight into the study population and their potential influence on maternal mental health (Table 1).

Table 1: Participant Characteristics

Variable		n	Percentage (%)
Education Level	Primary	53	25.2
	Secondary	94	44.8
	Higher Education	63	30.0
Employment Status	Unemployed	118	56.2
	Employed	92	43.8
Marital Status	Married	205	97.6
	Separated	5	2.4
Socioeconomic Status	Low Income	63	30.0
	Middle Class	96	45.7
	High Income	51	24.3

The mean gestational age of the participants was 25.4 ± 8.4 weeks, reflecting a diverse range of pregnancy stages among the study population. Pregnancy complications were reported in 25.7% (n=54) of cases, while the majority (74.3%, n=156) had no complications, indicating that most participants experienced relatively smooth pregnancies. Additionally, a family history of mental illness was present in 14.3% (n=30) of participants, whereas 85.7% (n=180) had no such history, suggesting that genetic predisposition to mental health disorders was not a common factor in this study. These findings highlight the varying medical and obstetric conditions among first-time pregnant women, which could potentially influence maternal mental health. Understanding these risk factors is crucial in identifying vulnerable individuals who may require early psychological support and intervention (Table 2).

Table 2: Obstetric and Medical History

Variable	Mean ± SD / n (%)
Gestational Age (weeks)	25.4 ± 8.4
Pregnancy Complications Present	54 (25.7%)
No Pregnancy Complications	156 (74.3%)
Family History of Mental Illness	30 (14.3%)
No Family History of Mental Illness	180 (85.7%)

Using the Edinburgh Postnatal Depression Scale (EPDS), 28.6% (n=60) of participants were classified as depressed (EPDS ≥13), while the majority, 71.4% (n=150), did not exhibit depressive symptoms. Similarly, assessments using the Generalized Anxiety Disorder (GAD-7) scale indicated that 21.9% (n=46) of participants experienced significant anxiety (GAD-7 ≥10), whereas 78.1% (n=164) did not meet the criteria for anxiety. These findings suggest that a substantial proportion of first-time pregnant women experience mental health challenges, particularly depression and anxiety, during pregnancy. Identifying these at-risk individuals early on is crucial for implementing effective interventions to improve maternal well-being and pregnancy outcomes (Figure 1).

Chi-square tests were conducted to examine the connection of depression status with various risk factors. The results revealed that education level (p=0.342), employment status (p=0.244), marital status (p=0.943), and pregnancy complications (p=0.980) were not significantly linked with depression. However, a noteworthy correlation was discovered between coping mechanisms and depression (p=0.013), indicating that participants who employed maladaptive Coping mechanisms were prone to encounter depression. This demonstrates the vital role coping mechanisms have in the mental health of mothers, suggesting that addressing maladaptive coping mechanisms could be an important focus in preventing and managing depression during pregnancy (Table 3).

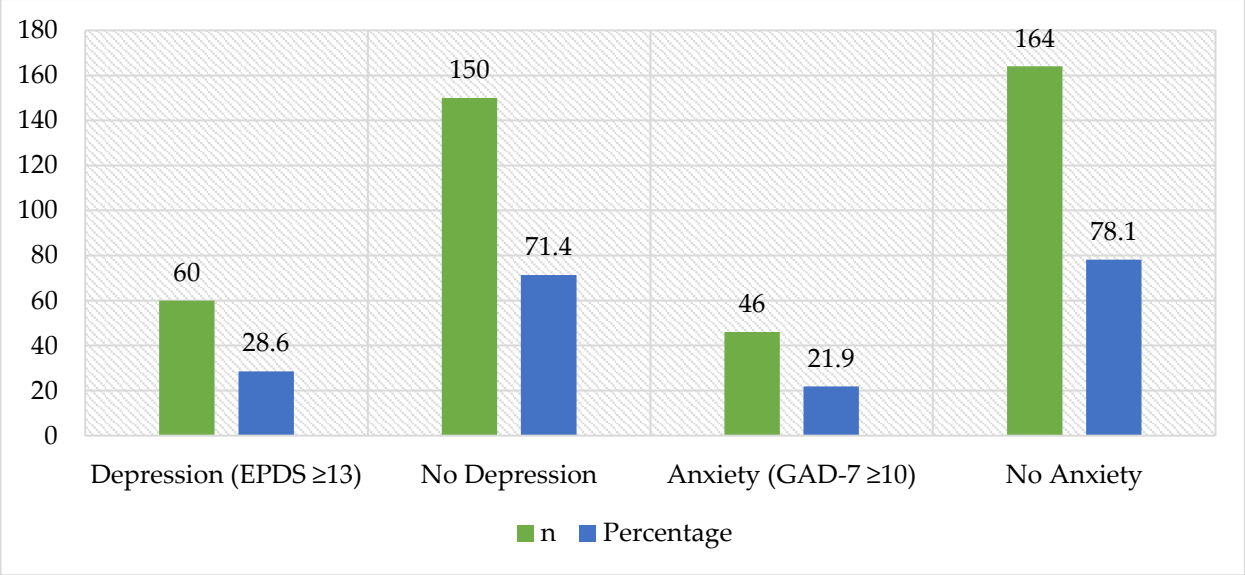

Figure 1: Prevalence of Depression and Anxiety

Table 3: Association of Risk Factors with Depression (Chi-Square Test Results)

Risk Factor	Chi-Square Value	p-Value
Education Level	2.14	0.342
Employment Status	1.36	0.244
Marital Status	0.005	0.943
Socioeconomic Status	0.101	0.951
Pregnancy Complications	0.0006	0.980
Family History of Mental Illness	0.185	0.667
Coping Mechanism	6.16	0.013

Coping mechanisms were classified as either adaptive (60.9%, n=128) or maladaptive (39.1%, n=82). Among participants with depression, 70% (n=42) employed maladaptive coping mechanisms, while only 26.7% (n=40) of non-depressed individuals used maladaptive strategies. These findings suggest a robust correlation involving the application of maladaptive coping mechanisms and the presence of depression. A chi-square test verified that this link was statistically significant (p=0.013), emphasizing the role of coping strategies in influencing mental health outcomes during pregnancy. Participants using maladaptive strategies were more likely to experience depression, underlining the importance of promoting adaptive coping techniques in maternal mental health interventions (Figure 2).

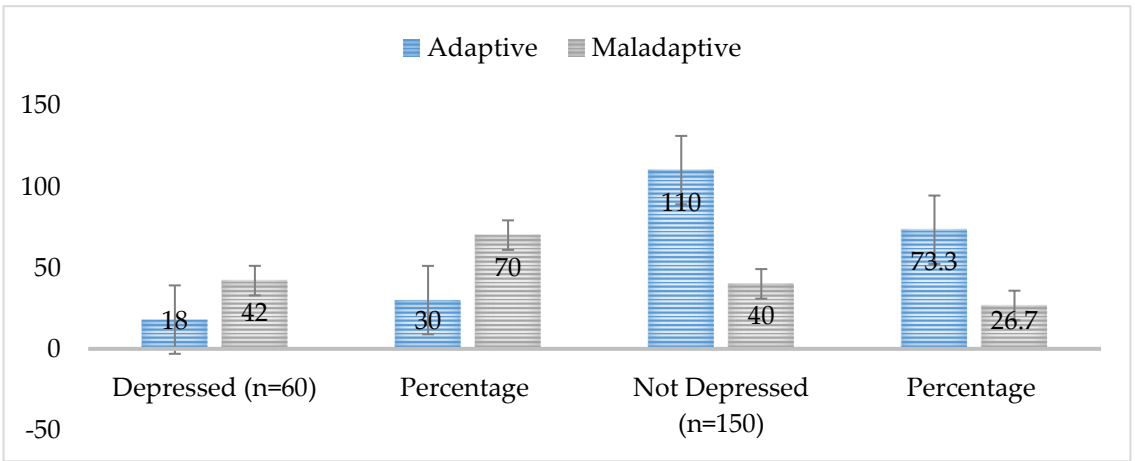

Figure 2: Coping Strategies and Depression Status

Discussion

This study assessed the impact of first-time pregnancy on maternal mental health, focusing on the prevalence of depression and anxiety, associated risk factors, and the role of coping strategies. The findings indicate that 28.6% of first-time pregnant women experienced depression, while 21.9% had anxiety.

Among the various risk factors analyzed, only coping mechanisms showed a statistically significant association with depression ($\chi^2 = 6.16$, $p = 0.013$), with participants using maladaptive strategies having 2.71 times higher odds of experiencing depressive symptoms (OR = 2.71, 95% CI: [1.30–5.67]), with 70% of depressed women using maladaptive coping strategies. Other factors such as education level, employment status, marital status, and pregnancy complications were not significantly related to depression.

The study's findings regarding the prevalence of mother anxiety and depression are consistent with those of other studies carried out in comparable contexts. Previous studies have consistently reported that around 25–30% of first-time pregnant women experience depressive symptoms, supporting the idea that pregnancy, particularly the first one, poses a psychological challenge [12]. However, some research from high-income countries has reported slightly lower prevalence rates, ranging from 15–20%, which could be attributed to better mental health awareness, access to healthcare, and social support systems [13].

The strong association between coping strategies and mental health outcomes found in this study is consistent with prior research that emphasizes the protective role of adaptive coping mechanisms [14]. Studies have shown that women who use problem-focused coping, emotional regulation strategies, and social support are significantly less likely to develop depressive symptoms [15]. In contrast, avoidance behaviors, denial, and emotional disengagement have been linked to higher depression rates [16]. These findings highlight the importance of psychological resilience in maternal well-being.

Regarding the non-significant associations with education, employment, and pregnancy complications, prior literature presents mixed findings. Some studies suggest that low education and unemployment contribute to maternal mental distress, particularly in resource-limited settings, due to financial instability and lack of access to healthcare [17]. However, other research has found that education and employment alone do not directly influence mental health, rather, it is the presence or absence of social support, relationship quality, and economic security that play more decisive role [18].

The lack of association between pregnancy complications and depression in this study contrasts with some previous findings, where gestational diabetes, hypertension, and other pregnancy-related conditions were linked to increased psychological distress [19]. This discrepancy could be due to differences in sample characteristics or healthcare access. Women receiving adequate medical care and reassurance from healthcare providers may feel more supported, reducing the psychological burden of pregnancy-related complications [20].

Limitations and Future Suggestions

This study has several limitations. First, while it contributes valuable data on the understudied topic of coping strategies during first-time pregnancy in a Pakistani context, the findings may not be generalizable to broader populations due to the single-center design. First, the research was carried out at one institution, which would restrict the findings' applicability to larger groups. Second, self-reported measures of depression and anxiety may be subject to response bias, as participants might have underreported symptoms due to stigma. Third, the study did not assess the long-term impact of mental health conditions on postpartum outcomes, which could provide a more comprehensive understanding of maternal well-being.

Future research should include larger, multi-center studies to enhance the external validity of findings. Research should monitor women across pregnancy and the postpartum phase to uncover complete mental health patterns development. Future research should evaluate the effectiveness of psychological support programs that specifically promote adaptive coping strategies among first-time mothers. These studies can inform clinical practices and guide the development of maternal mental health policies.

Conclusion

The research demonstrates that first-time pregnancy has a major negative effect on maternal mental health

while simultaneously showing high rates of depression and anxiety. Results demonstrate that maladaptive coping tactics with depression along with anxiety play a fundamental part in worsening mental health problems during pregnancy periods. While demographic and obstetric factors did not show strong associations with depression, coping mechanisms emerged as a key determinant.

The findings underline the importance of early mental health screenings and interventions to promote adaptive coping strategies, ultimately supporting the mental well-being of expectant mothers. Further research and larger studies are necessary to better understand these relationships and improve maternal mental health outcomes.

Ethical Considerations

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki. Prior approval was obtained from the Institutional Ethical Review Board of Ayub Teaching Hospital, Abbottabad. Written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity of participant information were maintained throughout the study, and participants were assured of their right to withdraw at any time without any consequences.

Authors' contributions

UK: Contributed to the conception and design of the study, literature review, and drafted the initial manuscript. Critically reviewed and revised the manuscript for important intellectual content. Gave final approval of the version to be published and agreed to be accountable for all aspects of the work.

PK: Supervised the study concept and methodology, contributed to the literature review and data synthesis, and helped draft sections of the manuscript. Provided critical revisions for intellectual content. Approved the final version and agreed to be accountable for all aspects of the work.

MWUH: Assisted in data acquisition and interpretation, contributed to drafting parts of the manuscript, and reviewed it critically for intellectual content. Approved the final version and agreed to be accountable for all aspects of the work.

RK: Contributed to literature review, drafting specific sections of the manuscript, and reviewing it critically for accuracy and intellectual content. Approved the final version and agreed to be accountable for all aspects of the work.

LB: Participated in literature search and data analysis, assisted in drafting and formatting the manuscript, and reviewed it critically for intellectual content. Approved the final version and agreed to be accountable for all aspects of the work.

Conflict of interest

The authors declared no conflict of interest.

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