ISSN 2791-156X
Journal of Health and Rehabilitation Research (JHRR)

Vol. 3, Issue 2

Original Article

Assessment of Anxiety and Depression in Antenatal Women

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No conflict of interest declared | Received: 25-11-2023; Revised & Accepted: 1-12-2023; Published: 02-12-2023.
DOI: https://doi.org/10.61919/jhrr.v3i2.140

ABSTRACT

Background: Mental health, particularly anxiety and depression, among mothers of reproductive age remains a significant yet underexplored area in public health. This study aimed to assess the prevalence and factors associated with these mental health conditions in this demographic, especially in the context of a developing country.

Objective: The primary objective was to determine the frequency of anxiety and depression among mothers of reproductive age with at least one child. Additionally, the study sought to identify socio-demographic factors influencing these mental health conditions.

Methods: A cross-sectional survey was conducted with 304 mothers of reproductive age. Data were collected through an online questionnaire distributed via social media platforms, including questions based on the Hospital Anxiety and Depression Scale (HADS). The sample size was determined using Epi Info software with a confidence interval of 95% and an error margin of 5%. The study employed non-probability convenience sampling, focusing on mothers without a pre-existing mental illness. Data were analysed using IBM SPSS software version 25.

Results: The study revealed that 28% of participants had borderline depression and 22% were confirmed cases. For anxiety, 22.7% had borderline symptoms, and 38.2% were confirmed cases. Factors such as marital status, family system, and working status significantly influenced these mental health conditions. However, no significant association was found between age and the prevalence of anxiety and depression.

Conclusion: The study underscores a high prevalence of anxiety and depression among mothers of reproductive age. These findings highlight the need for targeted interventions to address mental health issues in this population, considering the influential socio-demographic factors.

Keywords: maternal mental health, anxiety, depression, reproductive age, cross-sectional survey, developing country.

INTRODUCTION

Mental health, defined as a state of well-being where individuals recognize their abilities, handle life's normal stresses, work productively, and contribute to their community, is crucial for overall well-being (1). In recent times, the mental health of antenatal women, particularly concerning anxiety and depression, has gained significant attention in public health discourse. This focus stems from an increased awareness of the impact these conditions have not only on mothers but also on the children under their care (2). Depression, or Major Depressive Disorder (MDD), is a complex and heterogeneous condition. It manifests through a spectrum of symptoms such as persistent low mood, loss of interest in enjoyable activities, energy depletion, cognitive impairments, appetite and sleep disturbances, psychomotor changes, and in severe cases, suicidal ideation (3). Concurrently, anxiety, characterized by feelings of unease, worry, fear, and apprehension, often coexists with depression. It presents through behavioral, emotional, cognitive, and physical symptoms (4). Interestingly, about 90% of patients with depression experience anxiety, suggesting a deeply intertwined relationship between these two disorders (5).

The transition to motherhood introduces various biological, psychological, and psychosocial changes, often leaving women unprepared for the significant life shift brought about by childbirth (6). Environmental factors, such as familial issues and severe chronic diseases in children, are recognized causes of mental disorders in mothers (7). Furthermore, pregnant women and mothers are particularly vulnerable to mental health problems due to factors

like socio-economic status, societal roles, unintended pregnancies, and exposure to gender-based violence (5). Intimate partner violence, for instance, increases the risk of mental health issues in women by three to five times (8, 9). The implications of maternal mental health extend beyond the individual to the child. Maternal depression in resource-limited settings is directly linked to adverse outcomes in children, including low birth weight, malnutrition, stunting, increased incidence of diseases, and delays in cognitive, social, behavioral, and emotional development (10).

In the context of global health, depression is a leading cause of disability worldwide and is projected to become the second leading cause of disease burden after heart disease by 2020 (11). The World Health Organization predicts that by 2030, depression will be the most prominent cause of disease burden globally, particularly in women across all income levels (12, 13). Notably, studies have shown that in low-income countries, like India, women are disproportionately affected by depression, with rates reaching as high as 36% (14).

Given the limited data on maternal mental health in certain regions, such as Pakistan, this study aims to fill these gaps by assessing the prevalence and risk factors of anxiety and depression among mothers (14-16). It was hypothesized that there is a significant prevalence of anxiety and depression in this demographic, with a higher likelihood of occurrence in middle-aged mothers. Understanding the prevalence and factors contributing to maternal anxiety and depression is vital for developing targeted interventions and support systems (17-19).

This study seeks to provide a comprehensive analysis of these issues, contributing valuable insights to maternal mental health research and informing healthcare policies and practices. Therefore, the objectives were to determine the frequency of anxiety and depression in mothers with at least one child, to explore the relationship between maternal age and the prevalence of anxiety and depression and to identify and analyses contributing factors to anxiety and depression in mothers (20, 21).

MATERIAL AND METHODS

A cross-sectional survey was conducted among mothers of reproductive age to assess the prevalence of anxiety and depression within this demographic. The study took place during the height of the COVID-19 crisis, from February 2020 to July 2020. In light of the pandemic restrictions, the research team opted for an online survey approach, leveraging the widespread use of social media. Questionnaires were distributed through various platforms, including WhatsApp groups, Facebook groups, and Instagram, enabling a broad and diverse reach across Pakistan.

The sample size for the study was initially calculated to be 370, using the Epi Info software with a 95% confidence interval and a 5% margin of error, assuming a prevalence rate of 40%. However, due to challenges posed by the pandemic, the expected number of completed forms was not met. Ultimately, 308 responses were collected, of which 4 were discarded due to incomplete information, leading to a final sample size of 304.

The sampling technique employed was non-probability convenience sampling, chosen for its feasibility under the constrained circumstances. Participants included in the study were women who had at least one child. The study excluded women with a pre-existing mental illness to focus on the incidence of anxiety and depression that developed during or after pregnancy.

The data collection process involved sharing an online questionnaire that included multiple-choice questions. These questions were designed to gather information on a range of demographic and personal factors such as age, marital status, family status, working status, and socioeconomic status. The participants, all of whom were mothers, were asked to fill out the questionnaire based on their experiences in the past week (22).

The questionnaire was divided into two parts. The first part collected sociodemographic information, including age, family system, marital status, working status, number of children, details of the last pregnancy, and family income. The second part was based on the Hospital Anxiety and Depression Scale (HADS) (23-25). This section comprised 14 questions – 7 aimed at identifying symptoms of anxiety and 7 for symptoms of depression. These questions explored feelings and behaviors over the past week, with each question offering four possible responses that ranged from 'always' to 'not at all.' Each response was scored from 0 (most positive) to 3 (most negative), and the results from the HADS were categorized as normal (0-7), borderline case (8-10), and abnormal case (22, 24).

The collected data were coded and entered into spreadsheets for analysis. IBM SPSS software version 25 was utilized for this purpose. Descriptive statistics, including frequencies, were calculated, and chi-square tests were used for further statistical analysis. Bar charts were also created to visually represent the frequency of various responses.

Ethical considerations were rigorously followed throughout the study. Participants were thoroughly briefed about the study's aims and procedures before inclusion, and consent was obtained in both English and Urdu. Participation was entirely voluntary, and the anonymity of the respondents was strictly maintained. The research protocol was reviewed and approved by the ethical committee of the institution conducting the study, ensuring adherence to ethical research standards.

RESULTS

In the conducted study, a thorough analysis of the demographic and socioeconomic characteristics of the participants was carried out. The sample comprised 304 respondents, distributed across various age groups: 83 participants (27.3%) were under 30 years, 162 (53.3%) were between 30 and 45 years, and 59 (19.4%) were over 45 years. Regarding marital status, the majority, 296 (97.4%), were married, while 5 (1.6%) were divorced, and 3 (1.0%) were widowed.

Table 1: Demographic and Socioeconomic Characteristics of Participants

Variable	Category	Frequency	Percent
Age	Less than 30 years	83	27.3%
	30-45 years	162	53.3%
	More than 45 years	59	19.4%
Marital Status	Married	296	97.4%
	Divorced	5	1.6%
	Widowed	3	1.0%
Number of Children	1-2 kids	142	46.7%
	3-4 kids	128	42.1%
	More than 5 kids	34	11.2%
Last Pregnancy	1-24 months (less than 2 years)	110	36.2%
	24-60 months (2-5 years)	58	19.1%
	More than 60 months (5+ years)	136	44.7%
Family System	Individual family	159	52.3%
	Joint family	145	47.7%
Monthly Income	10-20k	8	2.6%
	20-40k	29	9.5%
	40-60k	62	20.4%
	More than 60k	205	67.4%
Working Status	Housewife	220	72.4%
	Working woman	84	27.6%
N=304			

In terms of the number of children, the participants were as follows: 142 (46.7%) had 1-2 kids, 128 (42.1%) had 3-4 kids, and 34 (11.2%) had more than 5 kids. Concerning the timing of their last pregnancy, 110 participants (36.2%) had their last child less than 2 years ago, 58 (19.1%) between 2 and 5 years ago, and 136 (44.7%) more than 5 years ago. Regarding family systems, there were 159 participants (52.3%) living in individual families and 145 (47.7%) in joint family systems. Monthly income varied among the participants, with 8 (2.6%) earning between 10-20k, 29 (9.5%) earning between 20-40k, 62 (20.4%) earning between 40-60k, and a majority, 205 (67.4%), earning more than 60k. For working status, 220 (72.4%) were housewives, and 84 (27.6%) were working women.

The study also examined the frequency of depression and anxiety concerning marital status, family system, and working status. Among the married participants, anxiety and depression were reported by 110 (37.2%) and 61

(20.6%), respectively. None of the unmarried participants reported either anxiety or depression. Divorced participants had 3 (60.0%) reporting both anxiety and depression, while all 3 (100.0%) widowed participants reported both conditions.

Table 2: Frequency of Depression and Anxiety by Marital Status, Family System, and Working Status

Variable	Marital Status	Anxiety n (%)	Depression n (%)
Marital Status	Married	110 (37.2%)	61 (20.6%)
	Unmarried	0 (0.0%)	0 (0.0%)
	Divorced	3 (60.0%)	3 (60.0%)
	Widowed	3 (100.0%)	3 (100.0%)
Family System	Nuclear Family	63 (39.6%)	34 (21.4%)
	Joint Family	53 (36.6%)	33 (22.8%)
Working Status	Housewife	79 (35.9%)	50 (22.7%)
	Working Lady	37 (44.0%)	17 (20.2%)
N=304			

In terms of family systems, participants from nuclear families reported anxiety and depression in 63 (39.6%) and 34 (21.4%) cases, respectively, while those from joint families reported 53 (36.6%) for anxiety and 33 (22.8%) for depression. Examining working status, 79 housewives (35.9%) and 37 working women (44.0%) reported anxiety, while 50 housewives (22.7%) and 17 working women (20.2%) reported depression.

Table 3: Frequency of Depression and Anxiety Score

	Depression Score		Anxiety Status		
Response	Frequency	Percent	Responses	Frequency	Percent
0-7 (Normal)	152	50.0%	Normal (0-15)	142	46.7%
8-10 (Borderline)	85	28.0%	Borderline (16-21)	85	28.0%
11-21 (Case)	67	22.0%	Cases (22-42)	77	25.3%
			Normal (0-15)	142	46.7%
N=304					

Table 5: Chi-Square Tests for Age and Anxiety/Depression

	Chi-Square Value	Asymptotic Significance
Age and Anxiety	7.31	0.694
Age and Depression	3.264	0.196
N=304		

In the frequency of depression and anxiety scores, 152 participants (50.0%) were within the normal range for depression and 142 (46.7%) for anxiety. Borderline scores (8-10 for depression, 16-21 for anxiety) were observed in 85 participants (28.0%) for both depression and anxiety. Confirmed cases (11-21 for depression, 22-42 for anxiety) included 67 participants (22.0%) for depression and 77 (25.3%) for anxiety.

Finally, the chi-square tests for age and anxiety/depression showed no significant association. The chi-square values were 7.31 for age and anxiety (asymptotic significance: 0.694) and 3.264 for age and depression (asymptotic significance: 0.196), indicating that age was not a significant factor in the prevalence of anxiety and depression in this sample.

DISCUSSION

In the conducted study, it was observed that the frequency of borderline depression was 28%, and confirmed cases were 22%. Additionally, the frequency of borderline anxiety was found to be 22.7%, with confirmed cases at 38.2% among women of reproductive age having at least one child. This research aimed to illuminate a topic previously underexplored in the local context. It was discovered that factors such as unintended pregnancy, lack of understanding from significant others, low socio-economic status, and the working status of these females were more likely to contribute to anxiety and depression. With a prevalence rate of 40%, the study highlighted a strong association between anxiety, depression, and maternal status, a rate considerably higher than that found in similar

studies in other developing countries. For instance, research in Insan et al. showed a prevalence rate of 16.8% (10), while subsequent studies reported rates of 27.8% in 2016 (15, 22) and 33.5% in 2018 (21).

Contrastingly, factors such as age, monthly income, working status, family system, number of children, marital status, and time since last pregnancy did not show a significant independent association with the development of anxiety and depression among the participants. This finding is particularly noteworthy in the broader context of maternal mental health research.

One significant piece of comparative literature is a study conducted in Karachi, Pakistan, focusing on the mental health of mothers of children with cancer. This study found that a high proportion (78%) of mothers, especially those in the 30-39 age group, were experiencing depression, with varying degrees of severity (26). This finding underscores the critical impact of a child's health on the mother's mental well-being. The major strength of the current study lies in its large sample size. However, a key limitation was the inability to conduct face-to-face interactions with participants due to the COVID-19 pandemic (27). Despite this limitation, the study successfully highlighted an increased incidence of depression and anxiety among mothers in their reproductive age. Nonetheless, the data did not strongly support a definitive relationship between age and the prevalence of depression and anxiety (28).

Recommendations based on the findings suggest the need for holistic approaches that encompass mental health awareness, self-care encouragement for mothers, and the inclusion of family members, particularly spouses, in mental health education and support. Additionally, integrating mental health interventions into existing maternal and child health policies and programs, as advocated by WHO and UNFPA, is essential for a comprehensive healthcare approach (12). These strategies not only aim to improve maternal health but also contribute to the broader goal of ensuring overall family well-being.

CONCLUSION

The findings of this study hold significant implications for public health, particularly in the realm of maternal mental healthcare. The high incidence of anxiety and depression among mothers of reproductive age, with over a quarter of participants exhibiting symptoms of both conditions, calls for a more focused and empathetic approach in addressing mental health issues within this demographic. This entails not only the need for effective identification and treatment strategies but also the development of supportive environments that enable mothers to manage and overcome these challenges. Enhancing coping mechanisms, providing access to appropriate medical interventions, and fostering community support systems are crucial steps towards improving maternal mental health. Furthermore, these measures can have a cascading positive effect, potentially improving the overall quality of life for both mothers and their children, and by extension, contributing to healthier family dynamics and community well-being.

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