ORIGINAL ARTICLE:

FREQUENCY OF ANXIETY AND DEPRESSION AND ITS PSYCHOSOCIAL CORRELATES AMONG WOMEN RECEIVING ANTENATAL CARE IN A TERTIARY CARE HOSPITAL IN KARACHI

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ABSTRACT

OBJECTIVE

To determine the proportion of women suffering from antenatal depression and anxiety visiting a tertiary care hospital for routine antenatal visits to evaluate the psychosocial factors associated with their depression and anxiety.

STUDY DESIGN

A descriptive cross-sectional study

PLACE AND DURATION

Department of Gynaecology & Obstetrics Ward 9B, Jinnah Postgraduate Medical Center (JPMC), Karachi from January 2024 to May 2024.

METHODS

The study was conducted with 249 pregnant women via non-probability, consecutive sampling. The Urdu validated version of Hospital Anxiety and Depression scale was used to assess anxiety and depression. Psychosocial stressors were also recorded. The data was entered and analyzed using SPSS for Windows version 23.0.

RESULTS

The study showed that 20% of women in their 2nd and 3rd trimesters of pregnancies were anxious and 5% were depressed. Critical psychosocial factors included low education, marital stressors such as low social support from husband and/or in-laws, living separately from husband, and intimate partner violence, financial stressors such as husband unemployment and pregnancy-related factors such as unplanned pregnancy and narrow birth spacing.

CONCLUSION

The study provides a significant burden of antenatal mental health issues in our region and their specific associated psychosocial factors. The study emphasizes upon the need for Biopsychosocial support systems as well as interventional measures to mitigate any risk of developing antenatal depression and to optimize the maternal health, both mental and physical, during this crucial period.

KEYWORDS

Antenatal, Anxiety, Depression, Hospital Anxiety and Depression Scale, Perinatal Mental health, Pakistan

INTRODUCTION

Childbearing is a significant biopsychosocial event that has a substantial impact on the overall health of women which includes physical, psychological, social, and emotional components. The process of bearing a child entails considerable physiological and psychological changes. Pregnancy requires major adaptations to be made psychologically which renders the process of childbearing as a "psychological stress." [1]. Women are prone to having depressive and anxiety disorders during pregnancy than at any other time in their lives. The characteristic feature of antenatal depression is that it is an episode that ranges from mild to severe, is non-psychotic, and that it typically occurs during pregnancy. In various reports it has been showed that globally, the prevalence of antenatal depression ranges from 15-65% [2]. The perinatal depression in low-to-middle-income countries (LMICs) in a recently published meta-analysis showed a pooled prevalence of 24.7% [3]. Similarly, the antenatal anxiety symptoms across LMICs shows pooled prevalence of 29.2% and that of anxiety disorders was 8.1% [4]. Predominantly, antenatal anxiety disorders are preexisting psychiatric co-morbidity and are exacerbated by the stressors (biological, psychological and social) linked with pregnancy. Currently there is a lack of any nationwide data regarding the prevalence of antenatal depression and anxiety reported from Pakistan. In one of the cross-sectional studies based in Mardan, which had 212 pregnant women enrolled in the study, 20.8% suffered from mild anxiety, 29.2% reported moderate anxiety, and 17% had severe anxiety [5].

The development of prenatal depression and anxiety can be linked back to several risk factors. Antenatal depression is reported to be three times more frequently present in women who have disturbed marital relationships [6]. Other locally explored factors include older age, low education, separation from husband, interpersonal conflicts with in-laws, burden of household chores, and fear of childbirth [5,7-9].

The mental state and mood during the most of antenatal period may determine the consequent postpartum mood which will in turn anticipate the quality of mother-baby bonding in the nascent phase of the newborn's life. It leads to lasting effects on the overall bonding of the mother and the child as well as the whole family unit in general and more specifically, the neurodevelopmental growth and outcomes of the child [10,11]. Good mental health is fundamental for antenatal and postnatal wellbeing of mother and child both. Hence, it is essential to give antenatal depression and anxiety their due importance in terms of scientific evidence as well as early detection and management. This study aimed to identify the frequency of women suffering from the antenatal

depression and anxiety symptoms, visiting a tertiary care hospital for routine antenatal visits to evaluate the psychosocial factors associated with their depression and anxiety.

METHOD

A cross-sectional study was carried out at the Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Center (JPMC), Karachi from January 2024 to May 2024.

Non-probability, consecutive sampling technique was adopted. The sample size was calculated using OpenEpi version 3, open-source calculator-SSPropor. With an estimated frequency of 80% of women screened positive combined for anxiety and depression on HADS [12], absolute precision of 5%, and confidence interval of 95%, the sample size calculated was 246.

The inclusion criteria comprised women aged 18-35 years attending the obstetric outpatient clinic for their routine antenatal visit. Women with known medical comorbidities such as diabetes mellitus, hypertension, and cardiovascular diseases were excluded as they can act as confounding variables to anxiety and depression.

The study was initiated after attaining approval from the Institutional Review Board of JPMC. Patients fulfilling the inclusion criteria of the study will be recruited and informed consent was taken. Data was collected on a semi-structured proforma comprising two parts – (i) socio-demographic characteristics and psychosocial correlates and (ii) the Hospital Anxiety and Depression Scale (HADS). HADS is a validated and reliable [13] self-rated tool that has 14 items (7 for anxiety and 7 for depression). Each item is rated on a 4-point Likert scale ranging from '0' (not at all) to '3' (most of the time). The standard scoring algorithm was used= sum of items (anxiety) 1, 3, 5, 7, 9, 11, 13 and depression=sum of items 2, 4, 6, 8, 10, 12, 14, where starred items were reverse record. Total scores on these subscales ranged from 0 to 21. A score of 0–7 is considered normal, 8–10 as borderline, and 11–21 as either anxious or depressed [13]. HADS has been validated in the Urdu language by Lodhi and colleagues. Cronbach's alpha coefficient is 0.82 for the anxiety subscale and 0.64 for the depression subscale, while the overall alpha of the HADS (Urdu version) is 0.84 [14].

All data was collected on anonymous sheets to maintain patient confidentiality. Data was only shared with the primary research team. All physical data was stored in the department locker and electronic data was stored in password-protected files. Patients who were screened positive for HADS for anxiety and depression were referred to the Department of Psychiatry for detailed assessment and management.

Data was entered and analyzed using SPSS for Windows version 23.0. For quantitative data mean and standard deviation (SD) were calculated. Parametric test was applied after testing the data for normal distribution using Shapiro-Wilk Test. P-value ≥0.05

indicated normal data. HADS was analyzed according to the scoring criteria mentioned above. Frequency and percentages of qualitative data were calculated. Effect modifiers were stratified to see their effect on the outcome variables. The chi-square test was applied after stratification. However, if the frequency is ≤5 in any cell Fisher's Exact Test was applied. A p-value of ≤0.05 was taken as significant.

RESULTS

Two hundred and forty-nine pregnant women with a mean age of 25.85 ± 4.32 years were included in the study. Their anxiety and depression scores on HADS are summarized in Table 1 which shows that almost half of the sample (54%) was borderline anxious or anxious and 34.5% of the women were borderline depressed or depressed (table 1).

	Normal n (%)	**Borderline n (%)**	**Anxious / Depressed n (%)**	**Total n (%)**
Anxiety	115 (46.2%)	85 (34.1%)	49 (19.7%)	249 (100%)
Depression	157 (63.1%)	79 (31.7%)	13 (5.2%)	249 (100%)

Table 1: Anxiety and Depression scores on Hospital Anxiety and Depression Scale

The psychosocial correlates included in the study comprised socioeconomic factors and pregnancy-related factors as summarized in table 2. As shown in Table 2, as education status increased, the depression scores significantly decreased. In terms of financial stressors, women involved in domestic home chores were more significantly depressed as compared to women occupied in paid labor. Furthermore, for participants whose husbands were unemployed, depression was significantly severe. Women with unplanned pregnancies were more significantly depressed as compared to those where the pregnancy was planned. Women in their second trimester and women with the closer gap between children (1-3 years) were more significantly depressed as compared to women with >3 years of gap between pregnancies.

Psychosocial correlates of the participants	**Total n (%)**	**Depression categories n (%)**			
		Normal	**Borderline**	**Depressed**	**P value**
Age					

18-25 years	153 (61.4%)	92 (60.1%)	53 (34.6%)	8 (5.2%)	0.456
26-35 years	96 (38.6%)	65 (67.7%)	26 (27.1%)	5 (5.2%)	
Education					
No education	52 (20.9%)	37 (71.2%)	9 (17.3%)	6 (11.5%)	***0.000***
Primary to secondary	110 (44.2%)	38 (34.5%)	65 (59.1%)	7 (6.4%)	
Matric to intermediate	50 (20.1%)	45 (90.0%)	5 (10.0%)	0	
Bachelors and above	37 (14.9%)	37 (100%)	0	0	
Marital status					
Living with husband	241 (96.8%)	149 (61.8%)	79 (32.8%)	13 (5.4%)	0.089
Separated from husband	8 (3.2%)	8 (100%)	0	0	
Occupation					
Unskilled labor	14 (5.6%)	14 (100%)	0	0	***0.005***
Domestic chores	187 (75.1%)	104 (55.6%)	70 (37.4%)	13 (7.0%)	
Husband employment					

Employed	208 (83.5%)	157 (75.5%)	51 (24.5%)	0	***0.000***
Unemployed	41 (16.5%)	0	28 (68.3%)	13 (31.7%)	
Social support					
No Support	35 (14.1%)	8 (22.9%)	14 (40.0%)	13 (37.1%)	***0.000***
Support from husband	192 (77.1%)	141 (73.4%)	51 (26.6%)	0	
Support from in-laws	22 (8.8%)	8 (36.4%)	14 (63.6%)	0	
Family planning					
Planned	171 (68.7%)	128 (74.9%)	36 (21.1%)	7 (4.1%)	***0.000***
Unplanned	78 (31.3%)	29 (37.2%)	43 (55.1%)	6 (7.7%)	
Pregnancy Trimester					
2nd	58 (23.3%)	22 (37.9%)	30 (51.7%)	6 (10.3%)	***0.000***
3rd	191 (76.7%)	135 (70.7%)	49 (25.7%)	7 (3.7%)	
Birth Spacing					
1st Pregnancy	7 (2.8%)	0	7 (100%)	0	***0.000***
1-3 years	167 (67.1%)	103 (61.7%)	58 (34.7%)	6 (3.6%)	

>3 years	21 (8.4 %)	21 (100 %)	0	0	
Intimate partner violence	13 (5.2 %)	0	0	13 (100%)	***0.000***
Family Psychiatric History	13 (5.2 %)	8 (61.5%)	5 (38.5%)	0	0.632
Past History of deliberate self-harm	21 (8.4 %)	0	14 (66.7%)	7 (33.3%)	***0.000***

Table 2: Association of psychosocial factors with severity of depression

The association of anxiety scores with the psychosocial factors was not also very different; although no participant scored on severe anxiety. Similar to the pattern of depression scores, anxiety scores were less severe for more educated participants. All of the women living separately from their husbands, those whose husbands were unemployed, and those with no social support scored significantly high on moderate anxiety. Women with planned pregnancies scored normal-mild on anxiety scale and those with unplanned ones scored significantly anxious. Similarly, none of the women with longer birth spacing scored moderate on anxiety. All of the women with intimate partner violence and a past history of self-harm scored moderately on the anxiety scale. The differences were statistically significant as shown in table 3.

Psychosocial correlates of the participants	**Total n (%)**	**Anxiety categories n (%)**			
		Normal	**Mild**	**Moderate**	**P value**
Age					

18-25 years	153 (61.4 %)	71 (46.4 %)	50 (32.7 %)	32 (20.9%)	0.756
26-35 years	96 (38.6 %)	44 (45.8 %)	35 (36.5 %)	17 (17.7%)	
Education					
No education	52 (20.9 %)	29 (55.8 %)	17 (32.7 %)	6 (11.5%)	***0.000***
Primary to secondary	110 (44.2 %)	45 (40.9 %)	30 (27.3 %)	35 (31.8%)	
Matric to intermediate	50 (20.1 %)	26 (52.0 %)	24 (48.0 %)	0	
Bachelors and above	37 (14.9 %)	15 (40.5 %)	14 (37.8 %)	8 (21.6%)	
Marital status					
Living with husband	241 (96.8 %)	115 (47.7 %)	85 (35.3 %)	41 (17.0%)	***0.000***
Separated from husband	8 (3.2 %)	0	0	8 (100%)	
Occupation					
Unskilled labor	14 (5.6 %)	7 (50.0 %)	7 (50.0 %)	0	0.088
Domestic chores	187 (75.1 %)	69 (36.9 %)	69 (36.9 %)	49 (26.2%)	
Husband employment					

Employed	208 (83.5 %)	115 (55.3 %)	85 (40.9 %)	8 (3.8%)	***0.000***
Unemployed	41 (16.5 %)	0	0	41 (100%)	
Social support					
No Support	35 (14.1 %)	0	0	35 (100%)	***0.000***
Support from husband	192 (77.1 %)	107 (55.7 %)	85 (44.3 %)	0	
Support from in-laws	22 (8.8 %)	8 (36.4 %)	(%)	14 (63.6%)	
Family planning					
Planned	171 (68.7 %)	94 (55.0 %)	48 (28.1 %)	29 (17.0%)	***0.000***
Unplanned	78 (31.3 %)	21 (26.9 %)	37 (47.4 %)	20 (25.6%)	
Pregnancy Trimester					
2nd	58 (23.3 %)	10 (17.2 %)	42 (72.4 %)	6 (10.3%)	***0.000***
3rd	191 (76.7 %)	105 (55.0 %)	43 (22.5 %)	43 (22.5%)	
Birth Spacing					
1st Pregnancy	7 (2.8 %)	7 (100 %)	0	0	***0.004***
1-3 years	167 (67.1 %)	74 (44.3 %)	59 (35.3 %)	34 (20.4%)	

>3 years	21 (8.4 %)	9 (42.9 %)	12 (57.1 %)	0	
Intimate partner violence	13 (5.2 %)	0	0	13 (100%)	***0.000***
Family Psychiatric History	13 (5.2 %)	0	13 (100 %)	0	***0.000***
Past History of deliberate self-harm	21 (8.4 %)	0	0	21 (100%)	***0.000***

Table 3: Association of psychosocial factors with severity of anxiety

DISCUSSION

The study reports that 20% of women in their 2nd and 3rd trimester of pregnancies suffered from moderate anxiety and 5% suffered from moderate to severe depression. Critical psychosocial factors elicited in this study included low education, marital stressors such as low social support from husband and/or in laws, living separately from husband, and intimate partner violence. Financial stressors such as husband unemployment and pregnancy-related factors such as unplanned pregnancy and narrow birth spacing were also highlighted as significant stressors in our sample.

The local evidence is extensive in terms of small cross-sectional studies. In a previous study with a cohort from 2004-2005 carried out in Karachi, 24% of women were screened for antenatal depression [15]. In 2010, a cross-sectional study done to assess the rates of suicide in pregnant women utilized The Aga Khan University Anxiety and Depression Scale – Short Form (AKUADS-SF) and reported that 18% of their sample from Hyderabad was screened positive for depression/anxiety [16]. In a cross-sectional study from 2011-2012 carried out in Peshawar, 45% of the screened women showed composite signs of antenatal distress on Depression, Anxiety and Stress Scale 21 (DASS-21) [17]. A study from a private hospital in Karachi which was carried out in 2016 shows that 45% of women were screened for moderate to severe antenatal depression on Patient Health Questionnaire-9 (PHQ-9) [18]. In another study based in Karachi in 2016-2017, HADS was employed. This study showed that 25% of women had anxiety and 42.3% had depression [19]. Additionally, a study was published in 2019 from Karachi,

which showed that 30% of pregnant women were screened for anxiety and depression on PHQ-9 [20]. There were two local studies that extensively studied antenatal anxiety; they reported that 21% of pregnant women have mild anxiety, 29% have moderate anxiety, and 17% have severe anxiety. Overall, 49% women were found to be anxious [5, 21]. Globally, the data from other LMICs is somewhat similar. In a study with a sample of 946 South African women, 27% were suffering from antenatal depression and 15% were having antenatal anxiety [22]. Data from five studies conducted in Ethiopia showed the pooled prevalence to be 25% [23]. In India there was a recent meta-analysis done which showed the pooled prevalence of CAMDs was 22% [24].

The study identified several factors significantly associated with antenatal depression, echoing findings from various global studies. Marital status and partner support emerged as key factors, consistent with research conducted in Poland, Nigeria, Kenya, and Ethiopia [25-28]. This correlation suggests that the support provided by partners—both psychological and practical—may have a pivotal role in mitigating the risk of depression during pregnancy. In a similar manner, a family history of depression was linked to antenatal depression, reflecting genetic and psychosocial influences within family dynamics.

Pregnancy planning also surfaced as a contributing factor, with findings paralleling studies from Nigeria and Ethiopia [25, 26]. This presses upon the importance of psychological readiness and preparedness for conception in influencing maternal mental health during gestation. Additionally, the study highlighted the impact of social support, aligning with research from the United States and Kenya [28, 29]. It highlights the protective role of social support in bolstering mental well-being and buffering against depression during pregnancy.

Moreover, intimate partner violence emerged as a significant correlate, mirroring findings from South Africa, Kenya, and Ethiopia [28,30,31]. This suggests the detrimental effects of abuse by intimate partners, which may be physical, psychological or sexual, especially within the duration of pregnancy, on maternal mental health. Overall, the study highlights the complex interplay of psychosocial factors in influencing antenatal depression, emphasizing the need for strong support systems and interventions to safeguard maternal health during pregnancy, especially the mental health.

In conclusion, the study provides valuable insights into the frequency and correlates of antenatal anxiety and depression in pregnant women. While it offers important contributions to the existing literature by highlighting specific psychosocial factors related with maternal mental health during pregnancy, it is not without its share of limitations. Subsequent studies should plan to address these limitations by employing longitudinal designs, ensuring representative sampling, and incorporating

comprehensive assessment methods to further advance our understanding of maternal mental health during pregnancy and inform effective interventions. Overall, the study emphasizes upon the need for biopsychosocial support systems and interventions to mitigate the risk of antenatal depression and safeguard maternal well-being during this critical period.

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AUTHOR(S) CONTRIBUTION