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ORIGINAL ARTICLE:

ANTENATAL DEPRESSION IN LATE PREGNANCY

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ABSTRACT

OBJECTIVE

To determine the frequency of depression during the late antenatal period among women attending a tertiary care hospital for antenatal care.

STUDY DESIGN

Descriptive cross-sectional.

PLACE & DURATION OF STUDY

This research was executed at the Department of Gynecology and Obstetrics at Dow University Hospital from February 17, 2025, to August 25, 2025.

SUBJECTS AND METHODS

A total of 382 pregnant women aged 15–40 years in their third trimester were included, excluding those with psychiatric, neurological, or medical comorbidities. Depression was assessed using ICD-11 criteria and the Edinburgh Postnatal Depression Scale (EPDS). Participants were selected through non-probability consecutive sampling. Data was analysed in SPSS version 26.0 using descriptive statistics, chi-square, and t-tests, with significance set at $p \leq 0.05$.

RESULTS

The study included 382 pregnant women in their third trimester with a mean age of 27.38 ± 7.58 years. Antenatal depression, assessed by EPDS, was present in a considerable proportion of participants

CONCLUSION

This investigation underscores that antenatal depression constitutes a considerable issue throughout the third trimester of gestation, regardless of socio-demographic attributes. The results accentuate the necessity of integrating systematic mental health assessments into antenatal care utilizing validated instruments such as the Edinburgh Postnatal Depression Scale (EPDS). Prompt identification and suitable interventions can contribute to the protection of maternal health and foster more favourable pregnancy and neonatal outcomes.

KEYWORDS

Late Antenatal Period, Edinburgh Postnatal Depression Scale, Maternal Mental Health

INTRODUCTION

Pregnancy is one of the most significant stages of a woman's life, marked not only by physiological changes but also by profound emotional and psychological shifts. Although pregnancy often brings happiness and expectation, it can also result in major strains that leave women susceptible to psychiatric illnesses, particularly depression and anxiety[1]. One such illness is antenatal depression, meaning depression that begins during pregnancy (also known as the gestation period). This condition is becoming increasingly recognized due to its high prevalence and its severe effects on both maternal and fetal health. Recent scholarly articles have indicated that about 1 in every 7 pregnant women may develop depression before childbirth. These depressive symptoms tend to worsen as pregnancy progresses[2]. The mental distress experienced during this period can severely disrupt a mother's ability to bond with her foetus, and in severe cases, can lead to suicidal thoughts or self-harm[3]. Antenatal depression has been associated with a variety of obstetric and neonatal complications, such as preeclampsia (high blood pressure during pregnancy), hemorrhage, premature rupture of membranes, and substance abuse[4]. Risk factors

include a personal history of psychiatric illness, lack of social support, an uncooperative partner, socioeconomic stress, and complicated pregnancies[5]. Furthermore, antenatal depression has also been linked to low birth weight, preterm birth, intrauterine growth restriction (slowed fetal development), and cognitive development issues in infants[6]. Research suggests that immune system dysregulation may play a role in perinatal (around the time of birth) depression, with elevated levels of inflammatory proteins like interleukin-6, interleukin-8, C-reactive protein, and tumor necrosis factor reported in affected individuals[7]. This points to a possible neuroimmune pathway playing a role in depression during pregnancy.

The prevalence of antenatal depression in low- and middle-income countries has been noted to be quite high. A study performed in South-East Asia reported a prevalence rate of 46.8 percent during the late antenatal period[8]. Nevertheless, in spite of these figures, in clinical practice, antenatal depression remains under-recognized and under-treated. The Edinburgh Postnatal Depression Scale (EPDS) is highly justified to use in the course of pregnancy and represents a convenient screening tool in a clinical practice[9,10]. Nevertheless, owing to the insufficient recognition and institutional focus, in numerous healthcare systems, particularly those situated in developing nations, routine mental health assessments are often overlooked. Global health entities such as the World Health Organization have similarly acknowledged the imperative to integrate the findings from maternal mental health services within the existing reproductive and child health frameworks[11,12]. The scholars and practitioners have emphasized the long-term advantages of the early diagnosis and treatment of the mother and the child[12-15].

Given the high burden and consequences of antenatal depression, there is a critical need to explore its prevalence in the local context. In Pakistan, where socio-cultural determinants, economic challenges, and deficiencies in mental healthcare regarding antenatal depression persist, there exists a significant lack of data concerning third trimester antenatal depression. An understanding of the magnitude of this issue could contribute to evidence-based practice, improve the integration of mental health assessments into routine antenatal care, and guide early interventions aimed at enhancing the health outcomes for mothers and their infants.

SUBJECTS AND METHODS

Participants

This descriptive cross-sectional investigation was executed within the outpatient division of Gynecology and Obstetrics at Dow University Hospital. The late antenatal phase is operationally delineated as the stage of pregnancy commencing from 28 weeks onward. A sample size of 382 was calculated based on a previously reported prevalence of 46.8 percent, a 95 percent confidence level, and an absolute precision of 5 percent. Non-probability consecutive sampling will be used to recruit pregnant women aged 15 to 40 years in their third trimester attending antenatal clinics, regardless of parity. Exclusion criteria include psychiatric disorder, substance use, neurological or endocrinological disorders, antenatal or postnatal complications in current or past pregnancies, and medical or surgical comorbidities.

Instruments

Depression will be evaluated in accordance with the criteria established by ICD-11, which characterizes it as a prolonged duration of depressed mood or a notable decrease in interest in previously enjoyed activities persisting for a minimum of two weeks. This assessment will also incorporate symptoms such as suicidal ideation, alterations in appetite or sleep patterns, challenges in sustaining attention, psychomotor agitation or retardation, and pervasive fatigue, in the absence of any recorded manic or hypomanic episodes. The Edinburgh Postnatal Depression Scale (EPDS), validated for antenatal use, will be employed, with scores of 14 or higher indicating the need for further biopsychosocial evaluation.

Procedure

Data will be collected using a structured questionnaire and administered by the principal investigator or trained personnel following ethical approval and written informed consent. Quantitative variables such as age and number of children and qualitative variables such as marital status, education, and employment will be analysed using SPSS version 26.0; associations will be tested using chi-square and t-tests, with statistical significance set at $p \leq 0.05$.

RESULTS

The investigation encompassed a total of 382 individuals, exhibiting a mean age of 27.38 ± 7.58 years (95% CI: 26.61–28.14). The mean number of offspring reported was 1.64 ± 1.48 (95% CI: 1.49–1.79). A majority of the participants were first-time mothers, constituting 56.8%, while 43.2% were mothers with previous childbirth experiences. The predominant marital status among the participants was married, accounting for 95.0% and 5.0% as widowed. In terms of educational attainment, 7.9% were classified as illiterate, 22.5% achieved primary education, 37.2% attained secondary education, 10.2% completed intermediate studies, and 22.3% were university graduates. Concerning employment status, 23.3% were engaged in employment, in contrast to 76.7% who were not employed. An analysis of socioeconomic status indicated that nearly half of the participants (49.7%) reported a monthly income of less than 50,000 PKR, 38.2% disclosed an income ranging from 50,000 to 100,000 PKR, whereas 12.0% indicated an income exceeding 100,000 PKR (TABLE 1).

Among the participants in this investigation, 159 individuals (41.6%) were identified as experiencing depressive symptoms, whereas 223 individuals (58.4%) were not. The average age of women exhibiting depressive symptoms did not differ between the depressed and non-depressed pregnant women; no difference was appreciated in average number of children, in terms of parity, marital status, level of education, employment status, socioeconomic status, and monthly income (see table 2).

Table 1

Demographic and clinical characteristics of the study participants (n = 382)

Mean ± Standard Deviation		***95% Confidence Interval***
Age in years = ***27.38 ± 7.58***		*26.61----28.14*
Number of Children = ***1.64 ± 1.48***		*1.49----1.79*
Frequency n (%)		
Parity	*Primipara*	*217 (56.8)*
	Multipara	*165 (43.2)*
Marital Status	*Married*	*363 (95.0)*
	Widow	*19 (5.0)*
Educational Status	*Illiterate*	*30 (7.9)*
	Primary	*86 (22.5)*
	Secondary	*142 (37.2)*
	Intermediate	*39 (10.2)*
	Graduation	*85 (22.3)*
Employment Status	*Employed*	*89 (23.3)*
	Unemployed	*293 (76.7)*
Socioeconomic Status	*<50,000*	*190 (49.7)*
	50,000-100,000	*146 (38.2)*
	>100,000	*46 (12.0)*

Table 2

Association between patients' characteristics and depression (n = 382)

Patient Characteristics		***Depression***		***P-Value***
		Yes (n=159)	***No (n=223)***	
Age in years		*27.47 ± 7.61*	*27.31 ± 7.58*	*0.837*
Number of Children		*1.79 ± 1.45*	*1.54 ± 1.50*	*0.099*
Parity	*Primipara*	*95 (43.8)*	*122 (56.2)*	*0.327*
	Multipara	*64 (38.8)*	*101 (61.2)*	
Marital Status	*Married*	*152 (41.9)*	*211 (58.1)*	*0.665*
	Widow	*7 (36.8)*	*12 (63.2)*	
Educational Status	*Illiterate*	*11 (36.7)*	*19 (63.3)*	*0.947*

	Primary	*35 (40.7)*	*51 (59.3)*	
	Secondary	*62 (43.7)*	*80 (56.3)*	
	Intermediate	*17 (43.6)*	*22 (56.4)*	
	Graduation	*34 (40.0)*	*51 (60.0)*	
Employment Status	*Employed*	*42 (47.2)*	*47 (52.8)*	*0.224*
	Unemployed	*117 (39.9)*	*176 (60.1)*	
Socioeconomic Status	*<50,000*	*79 (41.6)*	*111 (58.4)*	*0.960*
	50,000-100,000	*60 (41.1)*	*86 (58.9)*	
	>100,000	*20 (43.5)*	*26 (56.5)*	

DISCUSSION

This study demonstrated that 41.6% of women in their third trimester experienced depressive symptoms according to the Edinburgh Postnatal Depression Scale (EPDS). This rate is consistent with the 46.8% reported by Phoosuwan et al. in Thailand[8], confirming that antenatal depression is a major health concern in Asian populations. In contrast, studies from high-income countries report lower rates of about 14% or one in seven women[2], suggesting that sociocultural, economic, and healthcare disparities contribute to the elevated burden observed in low- and middle-income countries such as Pakistan. These findings highlight the urgent need for attention to maternal mental health in resource-limited settings where antenatal depression is often overlooked.

An important aspect of this study is that none of the examined socio-demographic variables showed a statistically significant association with antenatal depression. Age did not correlate significantly with depression (p=0.837), consistent with Yin et al.[4], who emphasized that maternal age is not a consistent predictor across populations. However, some global analyses, such as Woody et al.[15] and Fisher et al.[16], identified younger age as a risk factor, particularly in low- and middle-income countries. Our findings suggest that in this context, age may not play a defining role in vulnerability to depression. Similarly, the number of children was not associated with depression (p = 0.099). This aligns with Norhayati et al.[17], who reported that parity showed inconsistent associations across studies, sometimes acting as a protective factor and at other times as a stressor depending on cultural and social conditions.

Parity itself was not significantly related to depression in our study (p=0.327), with 43.8% of primiparous and 38.8% of multiparous women affected. This contrasts with some studies where primiparity has been identified as a risk factor due to the stress of first-time motherhood [5] but aligns with other reports where no association was found[17]. Marital status similarly did not demonstrate a significant association (p=0.665). While researches highlighted poor partner support as a strong predictor of antenatal depression[1,14], our findings suggest that in this

population, marital status alone may not be a sufficient indicator, potentially due to the buffering role of extended family systems in South Asian societies.

Education level was also not associated with depression (p=0.947). This agrees with Phoosuwan et al.[8], who also did not find a significant link between education and antenatal depression in Thailand, but differs from studies in Western contexts where lower education is frequently associated with increased risk[18]. Employment status showed a higher prevalence among employed women (47.2%) compared to unemployed women (39.9%), but the difference was not statistically significant (p=0.224). This is in line with Yin et al.[4], who noted that employment-related stress or double roles may negate the assumed protective effect of employment in some populations. Socioeconomic status also did not show significant associations (p=0.960), which diverges from global evidence linking poverty with perinatal mental disorders[16]. This discrepancy may reflect homogeneity within our sample or underreporting of financial distress due to social desirability bias.

The lack of significant inferential findings in this study suggests that sociodemographic characteristics alone may not adequately explain the high burden of antenatal depression. Instead, biological and psychosocial pathways may play a stronger role. Research increasingly points to immune dysregulation, with elevated inflammatory markers such as IL-6, IL-8, CRP, and TNF among depressed pregnant women[7]. Psychosocial risk factors such as intimate partner violence, stressful life events, and low social support, which were not assessed in this study, are well-documented contributors[16,17]. Their exclusion represents a limitation of our work, as these variables may have provided greater explanatory power than demographic factors.

Our study has several strengths, including a relatively large sample size, use of ICD-11 diagnostic criteria, and application of the EPDS, a validated screening tool[9,10]. The focus on the third trimester, when depressive symptoms are known to peak[2], adds clinical importance. However, limitations include the cross-sectional design, which prevents causal inference; reliance on self-reported data, which may be prone to recall or reporting bias; and restriction to a single tertiary hospital, which may limit generalizability to urban populations. Moreover, by excluding key psychosocial variables, our ability to identify significant predictors was reduced.

The clinical implications of our findings are considerable. With over 40% of women in late pregnancy experiencing depressive symptoms, antenatal depression represents a significant public health burden. Given its association with adverse outcomes such as preeclampsia, preterm birth, and low birth weight[4,6], as well as its role as a predictor of postpartum depression[3,18], routine screening during antenatal visits should be prioritized. We recommend integrating EPDS-based screening into routine obstetric care, training healthcare workers to recognize depressive symptoms, and establishing referral pathways for specialized care. Additionally, longitudinal studies are needed in Pakistan to track symptom trajectories across trimesters and postpartum. Policymakers should align with WHO recommendations[12] to incorporate perinatal mental health into reproductive health services, while community-based interventions could reduce stigma and promote help-seeking behaviours.

CONCLUSION

This investigation underscores that antenatal depression constitutes a considerable issue throughout the third trimester of gestation, regardless of socio-demographic attributes. The results accentuate the necessity of integrating systematic mental health assessments into antenatal care utilizing validated instruments such as the Edinburgh Postnatal Depression Scale (EPDS). Prompt identification and suitable interventions can contribute to the protection of maternal health and foster more favorable pregnancy and neonatal outcomes.

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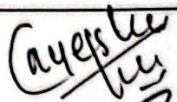
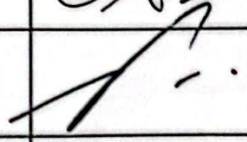
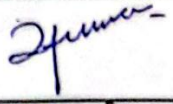
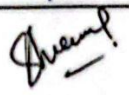
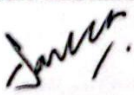
Dr Ayesha Nadeem	Conceptualization, Data Acquisition, Manuscript Drafting	
Brig Dr Shoaib Ahmed	Critical Revision of Manuscript, Supervision, Final Approval	
Dr Afshan Hasan	Data Acquisition, Critical Revision	
Dr Sheema Mustafa	Data Acquisition, Data Analysis	
Dr Fareea Mahmood	Data Acquisition, Data Analysis	
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