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SOCIO-DEMOGRAPHIC FACTORS AS ASSOCIATED RISK FOR ANTENATAL DEPRESSION IN PREGNANCY- AN OBSERVATIONAL STUDY

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ABSTRACT:

Background: Antenatal depression is a significant concern worldwide, particularly in low- and middle-income countries where prevalence rates vary widely. Understanding the socio-demographic and medical factors associated with antenatal depression is crucial for effective intervention and management. This study aims to assess the prevalence of antenatal depression and its relationship with various demographic, obstetric, and medical factors among pregnant women attending a tertiary healthcare hospital in Bhopal, India.

Methods: An observational cross-sectional study was conducted over 18 months, involving 500 pregnant women attending antenatal clinics. Participants were assessed using a structured questionnaire covering demographic, obstetric, and medical factors. Antenatal depression was measured using the Edinburgh Postnatal Depression Scale (EPDS). Data analysis was performed to determine associations between depression and various factors**.**

Results: The prevalence of antenatal depression was found to be 28.4%. Significant associations were observed between depression and socio-demographic factors such as younger age, lower education levels, lower socio-economic status, and belonging to extended or joint families. Medical factors such as stage of pregnancy, parity, marital conflict, unplanned pregnancy, preference for a male child, and past history of abortion were also significantly associated with antenatal depression.

Conclusion: This study highlights the high prevalence of antenatal depression among pregnant women and identifies several socio-demographic and medical factors associated with its occurrence. Effective screening and management of antenatal depression, particularly among women with lower education levels, poorer socio-economic status, and limited family support, are essential for improving maternal and child health outcomes.

Keywords: *Antenatal, Depression, Pregnancy*

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INTRODUCTION

Antenatal depression is gaining more attention and is becoming a growing topic of concern. While the prevalence of this condition among pregnant women in high-income nations is estimated to be between 7-20%, lower and lower-middle-income countries report a wider range of values, ranging from 5.2% to 32.9% [1]. Pregnant women who exhibit symptoms indicative of depression may have a dramatic worsening of pre-existing medical conditions [2, 3].

Impaired mental health during pregnancy can result in unfavourable pregnancy outcomes, including physical abnormalities, reduced birth weight, emotional difficulties, premature birth, and postnatal depression [4–6].Research also links the presence of behavioural, cognitive, and linguistic issues in children to mothers experiencing depressive symptoms during pregnancy [7].Depression during pregnancy and the postpartum period is a significant risk factor for having thoughts of suicide.There is less research addressing the fatality rates of suicides during pregnancy in poor nations. Nevertheless, a significant number of pregnant women from low-income homes, ranging from 6.3% to 14%, have antenatal suicide thoughts [8, 9]. Consequently, it is crucial to conduct screenings for mental health disorders during pregnancy, since this provides chances for early intervention to prevent negative pregnancy outcomes. During the antenatal time, there is typically a larger emphasis on checking the physical and mental health of the expectant woman. However, the mental health aspect is often overlooked or neglected. Information obtained from four low- and middle-income countries (LMICs) confirms that none of these countries have documented the existence of a specialised maternal mental health programme [10].

Prior research conducted in India has documented a broad range of prevalence rates for prenatal depression, ranging from 9.8% to 36.75% [11–13]. The occurrence of depression in women who have medical symptoms could be of considerable significance. Although there is ample information regarding the connection between psychosocial and environmental risk factors, the link between prenatal depression and medical symptoms in low- and middle-income countries (LMICs), including India, is not well-established. Gaining knowledge about the sociodemographic and medical aspects linked to the development of depression during pregnancy should improve the surveillance of women who are at risk of developing such an illness. The current study aimed to estimate the prevalence of depression symptoms and examine their relationship with sociodemographic and obstetric characteristics, as well as physiological well-being, in pregnant women who visit our institute.

MATERIAL AND METHODS

The present Observational Cross-sectional study was conducted in the Department of Obstetrics and Gynaecology, Gandhi Medical College and Sultania Zanana Hospital, Bhopal over a period of period of 18 months from January 2021 to June 2022 after obtaining approval from IEC. All pregnant women attending antenatal OPD clinic and admitted patients in Department of Obstetrics and Gynecology, Gandhi Medical College and Sultania Zanana Hospital, Bhopal whom were willing to participate were included while patients refusing to participate, who have delivered the baby (Postnatal), requiring emergency medical attention were excluded. sample size of 500 was calculated Using $N=4pq/l^2$ (where l = 20% of prevalence (p)), it came out to be 455, which was further rounded off to **500** @ 95% confidence interval.Informed Consent was taken as per the standard procedure in

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the institution. Outpatients and Inpatients coming to Department of Obstetrics and Gynecology, Gandhi Medical College and Sultania Zanana Hospital and who fulfilled the inclusion criteria were included in the study and the patients were explained about the procedure and informed consent was obtained.Prestructured Proforma was used to collect the baseline details. The participants were interviewed using a structured questionnaire that include demographic profile, obstetric conditions, socio-cultural characteristics, history of depression, marital status, unwanted/unplanned pregnancy, unemployment, experience of violence, any addictions and the depressive symptoms were assessed using Edinburgh Postnatal Depression Scale (EPDS) which is a screening tool used internationally to assess depression during pregnancy (Antenatal) and postpartum.

The EPDS is a widely used 10 item self-reporting instrument, specifically designed for assessing both prenatal as well as postnatal depression. It has a sensitivity of 86%, specificity of 78% and positive predictive value of 73%.[14] Respondents scoring >10 were considered to be depressed.[15]

RESULTS

The table presents socio-demographic factors associated with antenatal depression, as measured by the EPDS (Edinburgh Postnatal Depression Scale) score. Significant associations were found between depression and several demographic factors. Notably, age group and education status showed significant correlations with antenatal depression. Specifically, younger age groups (less than 19 years old) and lower education levels (illiterate or primary school) were associated with higher rates of depression. Additionally, socio-economic status and type of family structure also showed significant associations, with lower socio-economic status and belonging to extended or joint families correlating with higher rates of depression. Religion did not show a significant association. These findings underscore the importance of considering socio-demographic factors in the assessment and management of antenatal depression.

Table 1: Socio Demographic Factors and Antenatal Depression.

Characteristics	No depression EPDS <10 N (%)	Depression EPDS >10 N (%)	Total	P value
Religion				
Hindu	158	52	210	**0.09**
Muslim	191	89	280	**Not**
Christian	9	1	10	**significant**
Age group (in years)				
Less than 19	46	35	81	**<0.0001**
19-24	45	34	79	**Significant**
25–29	215	35	250	
30–34	32	18	50	
More than 35	20	20	40	
Education status				
Illiterate	33	57	90	**0.0001**
Primary school	110	50	160	**significan**

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Middle + high	72	28	100	**t**
> high school	143	7	150	
Socio economic status				
Class 1	0	0	0	**0.01**
Class 2	22	3	25	**significant**
Class 3	40	10	50	
Class 4	60	15	75	
Class 5	236	114	350	
TYPE OF FAMILY				**0.04**
Nuclear	153	47	200	**significant**
Extended/Joint	205	95	300	
Total	**358**	**142**	**500**	

Table 2 outlines medical factors associated with antenatal depression, as assessed by EPDS scores. Significant correlations were observed between depression and various medical factors. Notably, the stage of pregnancy showed significant associations, with higher rates of depression in the third trimester compared to the first and second trimesters. Parity also displayed significant associations, with higher rates of depression among multi-gravida and grand multi-gravida women compared to primi-gravida. Additionally, risk factors such as marital conflict, unplanned pregnancy, preference for a male child, and past history of acute illness were significantly associated with antenatal depression. However, history of abuse, history of domestic violence, past history of chronic illness, and complications in the present pregnancy did not show significant associations. These findings emphasize the importance of considering medical factors alongside socio-demographic factors in understanding and addressing antenatal depression.

Table 2: Medical Factors and Antenatal Depression.

	NO DEPRESSION (EPDS Score < 8)	**DEPRESSION (EPDS Score ≥ 8)**	**TOTAL**	**P-VALUE**
STAGE OF PREGNANCY				
1st trimester	134	36	170	**0.000 Significant**
2nd trimester	132	38	170	
3rd trimester	92	68	160	
PARITY				
Primi-Gravida	127	50	177	**0.02 significant**
Multi-Gravida	176	70	246	**0.037 significant**
Grand Multi-Gravida	55	22	77	**0.0003 significant**
RISK FACTORS				

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MARITAL CONFLICT				
Yes	44	44	88	**0.0001**
No	314	98	412	**significant**
HISTORY OF ABUSE				
Yes	9	1	10	**0.55**
No	349	141	490	**Not significant**
HISTORY OF DOMESTIC VIOLENCE				
Yes	13	1	14	**0.07**
No	345	141	486	**Not significant**
Type of pregnancy				
Planned	317	62	379	**<0.015**
Un planned	41	80	121	
Preference for male child				
Yes	40	39	79	**<0.025**
No	318	103	421	
Past history of acute illness				
Yes	35	12	47	**<0.426**
No	323	130	453	
Past history of chronic illness				
Yes	15	9	24	**<0.212**
No	343	133	476	
Complication in present pregnancy				
Yes	70	9	79	**<0.141**
No	288	133	421	
Total	**358**	**142**	**500**	

DISCUSSION

The study included a sample of 500 pregnant women who were attending the antenatal clinic at a tertiary health care hospital's department of obstetrics and gynaecology. A comprehensive analysis was conducted to examine their socioeconomic demographic and medical traits and their correlation with depression. The incidence of depression was determined to be 28.4%. Other studies have reported comparable rates of depression, ranging from 18% to 26%. However, a small number of studies have shown greater rates of depression, ranging from 35.7% to 36.76%. These findings indicate the importance of screening prenatal women for early detection and effective treatment of depression. [16, 17, 18-19] The socio-economic characteristics linked to depression. The data reveals that the majority of women, 24.7%, identified as Hindu, while 31.8% identified as Muslim. The majority of women, accounting for 43.03%, fell within the age range of 18-25 years. This indicates that there is still a prevailing practice of early marriages and pregnancies. The prevalence of depression was observed to be 63.3% among illiterate women and 29.3% among women with primary education. The study indicated a statistically significant decrease in depression as education level increased. This is likely due to the fact that education has empowered women and given them greater control over their life, resulting in a reduced likelihood of experiencing despair. 26.5% of

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women fell into class 3 of the socio-economic class as defined by Kuppuswamy. Among these women, 28.9% exhibited positive EPDS. While a definitive correlation was not found, individuals in socially disadvantaged groups have a heightened risk of experiencing depression. This is likely due to the negative impact of lower income, which can result in subpar living circumstances and financial concerns. A large and robust association was seen between family discord and depression. Among the 31 women who had experienced family discord, nearly half (48.4%) displayed symptoms of depression. Other studies have also observed a significant correlation between marital strife within a family and depression.[18-21]The correlation between maternal variables and depression. Depression was observed to be markedly more prevalent in cases of unplanned pregnancy (34.1%) compared to planned pregnancy. This was determined to have a statistically significant result. The outcome aligned with the results of earlier research that also demonstrated a correlation between unexpected pregnancy and depression.[17,20-22] The presence of a strong desire and societal expectations for a male kid was found to have a significant correlation with depression ($p<0.025$). In India, cultural factors contribute to a strong preference and societal pressure to have a male child. Stress plays a significant role in the development of ante-natal depression. Parallel results were noted in a study conducted by Hegde *et al*.[17] Nevertheless, research conducted by Kumar *et al* and Mina *et al* revealed no correlation between gender preference and ante-natal depression.[20,21]There was no significant association between a history of acute or chronic sickness and difficulties during the current pregnancy and depression. The study observed that the prevalence of depression among women who have had many pregnancies (multigravida) was 28.46%, a statistically significant increase compared to women who were pregnant for the first time (primigravida). Consistent findings were observed in other investigations.[20,21,23]Contrary to the information provided above, a study conducted in Chennai found that the likelihood of developing depression was equal for both primigravidae (women pregnant for the first time) and multigravidae (women who have been pregnant before).[24] There was no significant association between depression and the trimester of pregnancy. However, it was observed that there was a strong correlation between depression and a past history of abortion. Among females who had a history of abortion, 39.3% were found to be depressive, whereas only 17% of those without a history of abortion were melancholy. The observed difference was determined to be statistically significant. A study conducted by Maheshwari *et al* yielded similar results, however a contrasting outcome was observed in a study by Kumar *et al*. [18,21]

CONCLUSION

The current study demonstrated a higher prevalence of prenatal depression among women with lower levels of education, poorer socioeconomic status, and limited or no family support. Male gender preference, unplanned pregnancy, multiparity, and a negative obstetric history were identified as major factors related with prenatal depression. Primary care physicians must be trained to effectively screen for and recognise ante-natal depression, as well as manage it in its early stages.

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