



PREVALENCE AND FACTORS ASSOCIATED WITH ANTENATAL DEPRESSION: A HOSPITAL-BASED CROSS-SECTIONAL STUDY

Psychiatry

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ABSTRACT

Background: In 2015, the World Health Organization (WHO) identified depression as the single largest contributor to worldwide disability. Depression affects about 20% of women during their lifetime. Pregnancy is the most vulnerable period for depression associated with hormonal and biological changes. Identifying factors associated with antenatal depression improves self-perception of well-being and can prevent extension into the postpartum period, which has a negative impact on the course of pregnancy, fetal and neonatal outcomes. **Aim** To study the prevalence of Antenatal depression and its associated factors among pregnant women attending routine antenatal checkup. **Objectives:** To assess the prevalence of antenatal depression in women attending tertiary care setting. To know the impact of socio demographic, obstetric and psychosocial factors on antenatal depression. **Setting:** An observational cross-sectional study among antenatal Women who were assessed using the Edinburgh Postnatal Depression Scale score, ICD-11 Classification of Mental and Behavioural disorders, and the Multidimensional Scale of Perceived Social Support Scale. **Results:** The prevalence of possible antenatal depression is around 18.1%. On univariate analysis, the correlation of socio-demographic factors like age and socioeconomic status were found to be significant. Maternal factors like H/O Abortion, H/O Stillbirth, complications in previous and present pregnancy, and current pregnancy planning were found to be significant. Women who had a spouse with a history of substance abuse were 7 times more likely to develop depression. Women with H/O abortion are four times more likely to develop depression. **Conclusion:** Depression is highly prevalent during pregnancy and is associated with obstetric factors, marital conflicts, pregnancy planning, and social support. Healthcare workers in obstetric practice have to include screening for depression as part of their routine care for early detection of antenatal depression, which is the greatest risk factor for postpartum depression.

KEYWORDS

Antenatal depression, prevalence, associated factors.

INTRODUCTION:

Pregnancy involves physiological, hormonal, and psychological changes leading to an increased probability of mental and emotional changes resulting in depression, anxiety or psychological distress in pregnant mothers. Worldwide depression is the single largest contributor to disability and most common among women during the antenatal period.

Depression in the perinatal period is common, affecting an estimated 1 in 10 women in high-income countries and one in five in low- and middle-income countries (LMICs) (1) (2) (3). According to NMHS - 2016, one in every 10 persons in India suffer from depression and 20% of them are pregnant women & new mothers. (4)

Antenatal depression (AD) is defined as the onset of depressive symptoms during pregnancy, and can occur at any time during pregnancy. AD is characterized by sad mood, loss of interest, hopelessness, decreased energy, difficulty thinking, poor concentration, disturbed sleep and trouble with appetite along with inability to feel happiness. Sometimes death wish, suicidal thoughts or attempts may also occur. AD is a significant mental and public health concern which has serious negative impact on personal, family and child development outcome. (1)

High prevalence rate of AD has been reported from many countries like Pakistan 64.6% (5), Bangladesh 18% (6), Nigeria 24.5% (7), Ethiopia 24.94% (8), and in India it ranges from 9.18% to 36.7% (9) (10)

Previous studies indicated some of the most common associated factors to AD include lower age, lower income, unemployment, low educational status, unplanned pregnancy, history of abortion, multi gravidity, less number of parities, no of children, history of obstetric

complications, psychiatric history, marital conflicts, substance use in spouse, lack of social support. (11) (12)

Importance of screening for AD is that if not diagnosed early and treated may continue as postnatal depression resulting in adverse influence on birth outcome and offspring development. With this background, the present study was carried out to determine the prevalence & factors associated with antenatal depression among pregnant women attending tertiary care hospital..

AIM

To study the prevalence of Antenatal depression and its associated factors among pregnant women attending routine antenatal checkup.

OBJECTIVES:

To assess the prevalence of antenatal depression in women attending tertiary care setting.

To know the impact of socio demographic, obstetric and psychosocial factors on antenatal depression.

METHODOLOGY:

A hospital based descriptive cross-sectional study was conducted at Government Victoria Hospital, Visakhapatnam after obtaining clearance from Institutional ethics committee, Andhra medical college. (IEC NO :). Study was conducted from January to March 2022. Convenient sampling technique was applied to all pregnant women attending routine antenatal checkups in tertiary care center. Further, antenatal women who gave written informed consent with minimum educational qualification were included and who were seriously ill, and women with known organic mental disorder, intellectual disability, neuro cognitive and neurodegenerative disorders were excluded from the study. A total of 166 antenatal

women were taken into study. Confidentiality of the study participants was assured. All the required permissions from concerned authorities were obtained.

Study Tools:

- (1) Semi structured proforma for obtaining information about sociodemographic, obstetric and psychosocial variables.
- (2) Edinburgh Postnatal depression scale (EPDS) (13)

EPDS is one of the widely used screening tools for antenatal depression 10 item rating scale used to screen possible depression .Scoring found to be 10 or >10 are likely to suffer from possible depression and require further diagnostic evaluation. It has 86% sensitivity, 78% specificity, and 73% positive predictive value in health care setting.

- (3) The ICD-10 Classification of Mental and Behavioral disorders.
- (4) Multi-dimensional scale of perceived social support (MSPSS) (14)

MSPSS is a 12 item measure of perceived adequacy of social support from 3 sources family, friends and significant others using 5-point Likert scale(strongly disagree to strongly agree).

Statistical Analysis:

Data collected were entered into excel sheet and analyzed using SPSS version 17. Data were expressed as mean and frequency for categorical variables. Presence of statistically significant difference between possibility of depression in terms of various socio economic, obstetric and psychosocial variables was ascertained. Possible depression was taken as dependent variable and other associated factors as independent variables.

Both Univariate and Multi variate analysis were undertaken to establish the association of variables. Logistic regression was used for multivariate analysis to derive statistically significant model. Later variables which came statistically significant are considered for logistic regression model.

RESULTS:

Out of 166 study participants, 30 individuals (18.1%) were screened positive for depression with EPDS Scale and subsequently the diagnosis was confirmed in them using ICD-10 diagnostic criteria.

Majority of 166 female study participants in the study are between the age groups of 18-24 (52%) followed by 25-32 (29.5%) followed by 33-40 (1.2%). Most of them are educated with 10th standard qualification (46.4%) and above 10th class (35.5%). Majority (42.8%) are from lower middle socioeconomic class followed by upper middle (25.9%) and from upper lower class (13.5%) and majority belong to Hindu religion.

Table 1: Correlation of sociodemographic risk factors and Obstetric characteristics with EPDS scores.

Socio demographic factors	Category	Possible Depression		No Depression		P Value
		N	%	N	%	
AGE	18-24	13	7.80%	87	52.40%	0.455
	25-32	15	9.00%	49	29.50%	
	33-40	2	1.20%	0	0.00%	
Place	Urban	12	7.20%	55	33.10%	0.964
	Rural	18	10.80%	81	48.80%	
RELIGION	Hindu	27	16.30%	133	80.10%	0.038
	Muslim	3	1.80%	3	1.80%	
	Christian	0	0.00%	0	0.00%	
EDUCATIO N	10 and below	13	7.80%	77	46.40%	0.186
	Above 10 th class	17	10.20%	59	35.50%	
Type of family	Joint	27	16.30%	121	72.90%	0.870
	Nuclear	3	1.80%	15	9.00%	
Socio Economic Status	Upper Class	0	0.00%	0	0.00%	0.641
	Upper middle	9	5.40%	43	25.90%	
	Lower Middle	14	8.40%	71	42.80%	
	Upper Lower	7	4.20%	22	13.30%	
	Lower	0	0.00%	0	0.00%	

GRAVIDA	Multi	19	11.40%	38	22.90%	0.001
	Primi	11	6.60%	98	59.00%	
PARITY	0	15	9.00%	101	60.80%	0.001
	1	11	6.60%	32	19.30%	
	2	4	2.40%	3	1.80%	
NO. OF CHILDREN	0	18	10.80%	104	62.70%	0.201
	1	12	7.20%	29	17.50%	
	2	0	0.00%	3	1.80%	
H/O Abortion	Yes	13	6.60%	16	9.60%	0.001
	No	17	9.60%	120	72.30%	
H/O Still birth	Yes	14	26.40%	2	1.80%	0.001
	No	39	73.60%	111	98.20%	
Trimester of current pregnancy	1st	2	1.20%	18	10.80%	0.319
	2nd	12	7.20%	64	38.60%	
	3rd	16	9.60%	54	32.50%	
Complication in previous pregnancy	Yes	15	9.00%	23	13.90%	0.001
	No	15	9.00%	113	68.10%	
Complication in current pregnancy	Yes	15	9.00%	23	13.90%	0.001
	No	15	9.00%	113	68.10%	
Current pregnancy planning	Yes	13	7.80%	27	16.30%	0.006
	No	17	10.20%	109	65.70%	

On univariate analysis the variables like religion, gravida, parity, history of abortion, history of stillbirth, complications in the previous and present pregnancy and current pregnancy planning were found to be significant.

Table 2: Psychiatric history and psychosocial support of pregnant women characteristics of pregnant women correlation with EPDS scores

		Possible Depression		No Depression		P Value
		N	%	N	%	
H/O Depression and other psychiatric illness	Yes	10	6.00%	16	9.60%	0.001
	No	20	12.00%	120	72.30%	
FAMILY H/O DEPRESSION in women	Yes	7	4.20%	1	0.60%	0.001
	No	23	13.90%	135	81.30%	
Marital conflicts in last 1 year	Yes	8	4.80%	5	3.00%	0.001
	No	22	13.30%	131	78.90%	
Adverse life events	Yes	7	4.20%	12	7.20%	0.001
	No	23	13.90%	124	74.70%	
H/O substance abuse in spouse	Yes	18	10.80%	22	13.30%	0.001
	No	12	7.20%	114	68.70%	

Previous history of depression and other psychiatric illness in a pregnant mother, as well as family history of depression in women and women who have had marital conflicts in the previous year, and adverse life events and substance abuse in the spouse, have all been found to be statistically significant.

Table3: Social support score vs Depression

Social Support	Possible Depression		No Depression		P value
	N	Column N %	N	Column N %	
LOW	7	23.30%	10	7.40%	0.001
MEDIUM	18	66.90%	91	60.00%	
HIGH	5	16.70%	35	25.70%	

There is a very strong association between the social support score and the presence of depression in Ante-natal mothers. The woman with low and medium social support is having more possible depression when compared to non-depressed antenatal women.

Table 4: A multivariate analysis of the relationships between predictors of depression during pregnancy

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Adverse life events	0.674	0.684	0.97	1	0.325	1.962	0.513	7.502
H/O substance abuse in spouse	2.038	0.506	16.243	1	0.001	7.676	2.849	20.683

H/O Depression & other psychiatric illness	0.796	0.593	1.801	1	0.18	2.216	0.693	7.088
Current pregnancy planning	0.363	0.525	0.477	1	0.49	1.437	0.514	4.023
H/O Abortions	1.416	0.543	6.801	1	0.009	4.122	1.422	11.952
Constant	-1.837	0.763	5.793	1	0.016	0.159		

A logistic regression was used to ascertain the effect of predictors with depression revealed that, Substance abuse in the spouse, history of abortions are important predictors for a pregnant woman in developing depression. The logistic regression model was statistically significant ($p=0.0005$, Chi square = 35.32). The model explained 18.1 percent of the variance in developing possible depression and correctly classified 81.9 percent of patients.

Further regression analysis showed that women with a history of substance abuse (AOR = 7.6 (2.84-20.68) and H/O abortions (AOR = 4.12 (1.42-11.95)). Women who had a spouse with a history of substance abuse were 7 times more likely to develop depression. Women with H/O abortion are four times likely to develop depression.

DISCUSSION

In this study, we measured the prevalence of antenatal depression and its association with socio demographic characteristics, obstetric history and psychosocial factors.

Prevalence of antenatal depression was found to be 18.1% which is suggestive of high probability of depression among the study participants .A similar prevalence study by Nasreen et al (15) from Rural Bangladesh reported 18% . Another community based Indian study by Aditya Priya et al reported a high prevalence of 25.5% (16).

Most of our participants belong to age group range between 18-24 years reflects upon Indian cultural tradition of marriage and parenthood. According to modified Kuppuswamy Scale(17) majority of our participants belong to lower middle income group but we could not document a significant association of Socio Economic Status with risk of depression .Similar to our results no association of socioeconomic status with AD was seen in study by Ayele et al (18).

Among the obstetric risk factors ,unplanned pregnancy, multigravidity, less number of parities, history of abortions and pregnancy related complications had significance on univariate analysis which was similar to the study done by Bavle et al (19) in a tertiary care setting. Among all the factors, history of abortion showed significant association with antenatal depression on multivariate analysis in our study .Most likely reason could be these stressful events increases the vulnerability for depression.

In this study, psychosocial variables like substance abuse in spouse, adverse life events, social support ,marital conflicts ,past and family history of psychiatric illness were found significant on univariate analysis. Medium and low social support were significantly related to AD which was similar to study findings done by Westdahl et al (20).Low social support increases mental stress and predispose to interpersonal conflicts leading to depression which was also documented by Nongrum et al (21).

History of mental illness can pose as risk factor for depression ,in our study two respondents appeared to have such a history (Faisal et al,2007).

Marital conflicts seemed to predict presence of depression, in our study marital conflicts were observed in nearly 13 women out of which 8 were having possible depression. A study by Lau y et al (22) reported similar influence of marital conflict on AD.

In our study it was found that Major adverse life events was an important risk factor for AD. Our study findings were consistent with the study results reported by Shakeel et al (23). Another Study by Bayrampour et al (24) also reported negative life events lead to high risk of onset of antenatal depression.

Strengths of Study:

Current Study was focused on antenatal depression which has less attention than postnatal depression.

Scales used to measure the variables had good psychometric properties.

Limitations of Study:

Study was done in government hospital setting findings and this could limit the generalizability of study findings

EPDS is a self reporting tool which may lead to response bias.As the study design is cross sectional ,the causal relationship was not established.

CONCLUSION

Depression is highly prevalent during pregnancy and is associated with obstetric factors, marital conflicts, pregnancy planning, and social support as significant associated factors for antenatal depression. Antenatal women who had a spouse with a history of substance abuse were 7 times more likely to develop depression. Antenatal women with H/O abortion are four times more likely to develop depression. Healthcare workers in obstetric practice have to include screening for depression as part of their routine checkup for early detection of antenatal depression, which is the greatest risk factor for postpartum depression.

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