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Original Research Article

ANTENATAL DEPRESSION: PREVALENCE AND ASSOCIATED RISK FACTORS AMONG MOTHERS OF KANCHIPURAM DISTRICT, SOUTH INDIA

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Abstract

Background: Depression is a common mental disorder. Antenatal period is a high-risk time for both pre-existing and new onset psychiatric illnesses. Depression is twice as common in childbearing age. To estimate the prevalence and risk factors of depression among antenatal mothers. **Materials and Methods:** This study was conducted among pregnant women attending primary health centre. Sampling was done by stratified method. The sample size was estimated to be 260. A semi structured questionnaire was used to collect data. The Edinburg Postnatal Depression Scale was used to identify women at risk for perinatal Depression. Data were summarized using descriptive statistics. Chi square test was used for comparing proportions. **Result:** The prevalence of antenatal depression in this study was 14.62%. Among 260 study population, 86.15% were under 30 years of age. 99% had a higher education and above. All the women were married and living with their spouse. Age of the mother at first conception ($p < 0.043$), marital conflicts ($p < 0.001$), alcohol abuse in spouse ($p < 0.014$) and perceived lack of social support ($p<0.001$) were statistically significant with depressed mothers. **Conclusion:** Marital and social factors plays major role in antenatal depression.

INTRODUCTION

Pregnancy and childbirth are joyous events in the life of every woman, however it involves period of confusion, stress, fear, anxiety, and mood swings for some women.[1] The World Health Organization (WHO) defines maternal mental health as "a state of well-being in which a mother realizes her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her community.[2,3] Pregnancy and parenthood involves major psychological and social changes in the mother, which have been linked to symptoms of anxiety and depression.[4]Depression is a major public health problem across the globe, affecting 3.8% of the population.[5] Antenatal period is considered to be a high-risk time for both for pre-existing and new onset psychiatric illnesses.[6]The prevalence of depression was found to be 15.5% in early and mid-pregnancy, 11.1% in the third trimester, and 8.7% in the postpartum period,[7] whereas a meta-analysis on the prevalence of AD in middle- and low-income countries reported a mean prevalence of 15.6%.[8]

Some of the risk factors of antenatal depression are poor maternal care; poor nutrition; poor socio economic conditions, previous history of psychiatric disorders, and previous obstetric complications; events during pregnancy such as previous abortions; and modes of previous delivery such as past instrumental or operative delivery. In addition to these, other factors like maternal age, marital status, gravidity, unplanned pregnancy, previous history of stillbirth, previous history of prolonged labour, and level of social support also influence the occurrence of antenatal depression.[9-11]

Women who experience antenatal depression are unable to seek healthcare due to perceived stigma, particularly in developing nations like India.[12]This leads to adverse obstetric outcomes like low birth

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weight, intra uterine growth restriction and preterm birth to long term implications like malnutrition, inadequate child growth, and impaired behavioural, emotional and cognitive abilities and poor mental health in future.[13,14] This can be prevented by effective screening and identification of antenatal depression at the early stages itself.

So, this study was taken up with the intent of bridging the knowledge gap on determining the prevalence of antenatal depression and its associated risk factors among the pregnant women in the rural areas of Kanchipuram district.

MATERIALSANDMETHODS

This is a descriptive cross- sectional study conducted among pregnant women attending the antenatal clinic of Peerkankaranai Primary Health Centre, Kanchipuram District, South India.

The prevalence of antenatal depression (p) was 20% based on the Dahiya, et al study done in Delhi during 2020.[14] by using sample size formula ($Z\alpha$ pq/L2) with Z value of 1.96 at 95% confidence interval, and with limit of accuracy (L) at 5 % (Absolute precision) and allowing 5% for non-responders error, the sample size was estimated to be 260.

The study intended to cover antenatal cases more than 24 weeks of gestation attending the antenatal clinic. Pregnant women with pre-existing medical and surgical complications requiring hospitalization and pregnant women with pre-existing known psychiatric illness were excluded from this study. Stratified random sampling method was used to select every third eligible pregnant woman who consented to participate in the study. The data was collected for a period of 8 months.

A semi structured questionnaire was used to collect data on socio demographic details like age, education, occupation of mothers and obstetric details like age at marriage, age at first conception, gravida and number of abortions.

EPDS- the Edinburg Postnatal Depression Scale, is a valuable and efficient tool designed to identify women at risk for perinatal Depression. The Scale has been thoroughly validated for use in Postnatal and Antenatal Women.[15] The EPDS is a 10-items self-administered questionnaire, it consists of questions that inquire about the respondent's emotional state and depression symptoms during the previous seven days. Each item is scored on a scale from 0 to 3, with a maximum score of 30. A score of 13 out of 30 was taken as the cut-off indicative of Antenatal Depression with a sensitivity of 92% and specificity 92%.[16,17] A validated Tamil Translation of the Scale was used. 18Study participants with significant scores were referred to the District Mental Health Psychiatrist.

Approval was obtained from the Institutional Ethics Committee (IEC) (ref no.4721) before the beginning of study. The Participants were informed about the purpose of the study. Written informed consent was obtained from the participants. Confidentiality was maintained.

Statistical Analysis

Data were analysed by Statistical Package for Social Sciences SPSS (IBM) version 21.0. Quantitative data were expressed as mean ± standard deviation (SD) and Qualitative data were expressed as percentages and frequencies. Test of association was done using chi square test. A P-value of less than 0.05 was considered statistically significant.

RESULTS

In our study the prevalence of antenatal depression among the study participants was found to be 14.62 % (95 % CI: 10.8, 19.4) according to EPDS score. [Table 1]

Table 1: Distribution of Antenatal depression in study group (N=260)

EPDS SCORE	Frequency (N)	Percentage(%)	95% CI	
Depression≥ 13	38	14.62%	10.8	19.4
No depression <13	222	85.38%	80.5	89.1

The descriptive profile socio-demographic characteristics and its association with antenatal depression have been shown in [Table 2]. The mean age of antenatal mothers was 25.52 ± 3.928 with the youngest mother 18-year-old and eldest was 38 years. There was only 1 mother (0.4%) who did not have formal education. All the women were married and living with their spouse with the majority of them being homemakers (94.23%). It was found that demographic factors for mothers like age, educational and employment status of antenatal mother and type of family were not significantly associated with antenatal depression.

Table 2: Socio demographic factors associated with Antenatal Depression (N=260).

S. No	Variables	Frequency(N) %	Depression		p- value
			Present	Absent	
1.	Mothers Age in Years				
	< 30	224 (86.15)	33 (15)	191 (85)	0.89
	≥30	36 (13.85)	05 (13.9)	31 (86.1)	
2.	Educational status of mother				
	Up to middle school	25 (9.62)	0	25 (100)	
	High School	83 (31.92)	14 (16.9)	69 (83)	
	Hr. Sec /Diploma	72 (27.69)	14 (19.4)	58 (80.6)	0.1

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	Degree & above	80 (30.77)	10 (12.5)	70 (87.5)	
3.	Occupation				
	House wife	245 (94.23)	37 (15)	208 (85)	
	Working	15 (5.77)	1 (6.6)	14 (93.4)	0.369
4.	Family Type				
	Nuclear	113 (43.46)	15 (13.3)	98 (86.7)	
	Joint	102 (39.23)	19 (18.7)	83 (81.3)	0.264
	Extended Nuclear	45 (17.31)	04 (08.9)	41 (91.1)	

*p value <0.05 is significant

It was found that age at first conception of mother shad significant association with antenatal depression of mother. [Table 3]

Table 3: Association of Antenatal depression with marriage and conception related factors

S. No	Variables	Frequency N (%)	Depression		P-value
			Yes	No	
1.	Age at marriage				
	< 18	15 (5.77)	01 (6.7)	14 (93.3)	0.369
	≥ 18	245 (94.23)	37 (15.1)	208 (84.9)	
2.	Age at first conception				
	< 19	22 (8.46)	0 (0)	22 (100)	0.043*
	≥19	238 (91.54)	38 (16)	200 (84)	
3.	Gravida				
	Primi	115 (44.23)	97 (84.3)	18 (15.7)	0.673
	Multi	145 (55.77)	20 (13.8)	125 (86.2)	
4.	No of Abortions				
	< 2	249 (95.8)	36 (14.5)	212 (85.14)	0.837
	≥ 2	11 (4.2)	2 (16.66)	10 (90.90)	
5.	Birth weight of baby in kilograms				
	<2.5	28 (10.77)	7 (25)	21 (75)	0.10
	≥ 2.5	232 (89.23)	31 (13.4)	201 (90.5)	

Correlation with family and spouse related factors:

Factors such as marital conflicts (< 0.001), alcohol abuse in spouse (0.014) and perceived lack of social support were statistically significant with the prevalence of antenatal depression. [Table 4]

Table 4: Association of family and spouse related factors with Antenatal depression among study population (n=260)

S. No	Variables	Frequency N (%)	Depression		P value
			Present	Absent	
1.	Family h/o depression				
	Yes	9 (3.46)	03 (3.3)	6 (6.7)	0.106
	No	251(96.54)	35 (13.94)	216 (86.05)	
2.	Living with partner				
	Yes	255 (98.08)	38 (15)	217 (85)	0.350
	No	5 (1.92)	0 (0)	5 (100)	
3.	Marital conflicts				
	Yes	38 (14.62)	13 (34.2)	25 (65.8)	<0.001*
	No	222 (85.38)	25 (11.3)	197 (88.7)	
4.	Male child preference				
	Yes	70 (26.92)	14 (20)	56 (80)	0.136
	No	190 (73.08)	24 (12.6)	166 (87.4)	
5.	Alcohol abuse in partner				
	Yes	51 (19.62)	13 (25.5)	38 (74.5)	0.014*
	No	209 (80.38)	25 (12)	184 (88)	
6.	Perceived lack of social support				
	Yes	40 (15.38)	13 (32.5)	27 (67.5)	<0.001*
	No	220 (84.62)	25 (11.4)	195 (88.6)	

Risk Quantification: For factors which showed statistical significance (p< 0.05), prevalence odds ratio was estimated initially using univariate analysis and unadjusted odds ratio was calculated.

Table 5: Univariate analysis of statistically significant factors

S.No	Variables	Unadjusted Odds ratio (95% CI)	p value
1.	Teenage pregnancy	0.11 (0.006 -1.94)	0.134
2.	Marital conflicts	4.09 (1.86 – 9.01)	0.000*
3.	Alcohol abuse in partner	2.51 (1.18 – 5.36)	0.016*
4.	Perceived lack of social support	3.75 (1.71 – 8.20)	0.000*

Multivariate analysis of risk factors for antenatal depression: The factors that had statistically significant risk in univariate analysis were further subjected to multivariate analysis to find adjusted odds ratio and the findings are as follows

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Table 6: Factors associated with occurrence of antenatal depression.

Variables	Odds ratio	95%CI for Odds ratio		p-value
		Lower	Upper	
Marital conflicts	2.961	1.258	6.969	0.013*
Alcohol abuse in partner	1.751	0.763	4.017	0.186
Perceived lack of social support	3.155	1.397	7.122	0.006*

*p value < 0.05 is significant

It was found that women with marital conflicts have 3 times more chance of developing antenatal depression and women who perceived a lack of social support have three times more chance of developing antenatal depression. Alcohol abuse was not statistically significant. [Table 6]

DISCUSSION

In the present study, the prevalence of antenatal depression was 14.62%.The findings were lower than with other comparable studies. In a study done by Kantipudi et al, 22% of antenatal mothers attending a tertiary hospital in south India were diagnosed with antenatal depression.[18,19] In our reference study by Dahiya et al., 20% women were diagnosed with depression.14However a systematic review done by Dadi et al, based on 306 primary studies done in low and middle income countriesfound a wide range in the prevalence of antenatal depression ranging from 15to 65%.[20]

The prevalence of antenatal depression in the present study is lower compared to other studies done in India. The reason behind this may be various welfare measures taken by the Government of Tamilnadu such as the Dr. Muthulakshmi Reddy Maternity benefit Scheme which provides financial assistance to pregnant mothers.[21] In Amar D Bavel et study, financial factor was significantly associated with depression in pregnant mother.[22]

The mean age of the respondents was 25.52 ± 3.928 years, which reflects the cultural tradition of marriage and parenthood. In the present study, age of the pregnant mother was not statistically significant with antenatal depression which is similar to sheeba et al study.[23] The age of the mother is an important variable considered in all the studies but it is not always analysed in relation to antenatal depression. In this regard, the results provided by the studies are inconsistent. Few studies have recorded young maternal age (age <20 years) as an important risk factor for antenatal depression.[24,25] This may be because younger women tend to have a more unfavourable and unstable economic position. Likewise, younger age may be associated with lower educational attainment and income level, lower paying jobs, or unemployment.[26] It was found that, in our study women with advanced maternal age had higher rates of depression than younger women ($p<0.05$). The explanation behind these inconsistencies may be more related to cultural issues, and also potential difficulties in conceiving along with anxiety about obstetric and pregnancy complications associated with advanced maternal age.

In this study about 55% of the study participants, the current pregnancy was not the first (multi gravida). Though there was no significant association with antenatal depression in this study, Priyanka Arora done a systematic review in Indian setting,[27] found that multi gravidity was associated with antenatal depression.it was controversy to the present study.

In this study 4.4% of the participants had more than 2 abortions. Number of abortions was not significant with antenatal depression. kandipudi et al 14 and Neha Dahiya et al,[19]studies also supporting this present study.

In this study about 3% of the women had a family h/o depression. This is comparable to NMHS survey report which states that the prevalence of mood disorder in Tamilnadu is about 4.62%. In this study, Family history of depression was not significant factor with antenatal depression as similar to the study done by Dahiya N et al.[14]

Quality of relationship with intimate partner was significant factor in antenatal depression. Mothers who faced difficulty in intimate partner relationship in the form of marital conflict, alcohol abuse in partner and lack of social support had higher prevalence of antenatal depression compared to those mothers who did not experience such difficulties. These results are consistent with the reports from studies done in northern India and African countries.[14,23]

Alcohol abuse was not statistically significant after multivariate analysis. This may be because of problems with quantification of alcohol consumed which might be the reason for the multi variate analysis for not picking it up as a risk factor.

Our study has some limitations. Being a cross sectional study, we could arrive only at meaningful associations but not temporal sequence of association. The sample size was relatively small hence is not true representative of the whole district. The prevalence of antenatal depression was assessed by a self-report rating scale rather than a structured interview which would have confirmed the diagnosis.

CONCLUSION

Our study has shown depression among pregnant mothers to be 14.62%. Among the various risk factors for antenatal depression Subsequent multi variate analysis revealed that Marital conflicts and perceived lack of social support were the factors

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causing significant risk. These findings demonstrate the importance of screening for depression as a part of the routine antenatal check-ups so that women in need of interventions can be detected and treated early, thereby preventing adverse outcomes.

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