

A STUDY TO ASSESS THE PREVALENCE OF DEPRESSION AND ANXIETY AMONG ANTENATAL MOTHER WITH GESTATIONAL DIABETES MELLITUS IN SELECTED HOSPITAL IN CHENNAI.

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ABSTRACT

Introduction: Gestational diabetes mellitus (GDM) is defined as glucose intolerance with onset or first recognition during pregnancy. Aim of the study: The aim of the study to assess the Prevalence of depression and anxiety among antenatal mother with gestational diabetes mellitus in selected hospital in Chennai. **Methodology:** The present study adopted a cross-sectional study design. The study was conducted at Sree Balaji Medical College and Hospital in Chennai. The required sample size for the study was calculated as 160. Using a convenience sampling technique, the sample was selected from antenatal mothers diagnosed with Gestational Diabetes Mellitus (GDM) attending the antenatal outpatient department (OPD) at the selected hospital. Pregnant women without GDM and those with other complications were excluded from the study. **Results:** The study found that among the 160 antenatal mothers with GDM, 37.5% experienced normal levels of anxiety, 25% had borderline anxiety, 18.75% showed moderate anxiety, and 18.75% had severe anxiety. In terms of depression, 43.75% of participants had normal levels, 31.25% were borderline, and 12.5% each experienced moderate and severe depression. A strong positive correlation of 0.75 was observed between anxiety and depression, suggesting that higher anxiety levels were strongly associated with increased depression levels among the study participants. **Conclusion:** The study's findings reveal a considerable prevalence of anxiety and depression among antenatal mothers with GDM, with a significant correlation between these two conditions.

INTRODUCTION

Gestational diabetes mellitus (GDM) is defined as glucose intolerance with onset or first recognition during pregnancy. It is a prevalent condition, affecting approximately 7% to 20% of pregnant women globally, and can lead to numerous adverse maternal and fetal outcomes if not properly managed (Fraser et al., 2023; Lee et al., 2019). The physiological changes associated with pregnancy can alter the body's ability to utilize insulin, leading to increased blood glucose levels. Consequently, women diagnosed with GDM face significant lifestyle adjustments, including dietary modifications and blood glucose monitoring, which can contribute to psychological stress (ÖZEL, 2024). Research indicates that women with GDM face heightened psychological challenges due to the dual stress of managing diabetes while preparing for motherhood. Those requiring insulin therapy exhibit an even higher incidence of anxiety (Fraser et al., 2023; Muhwava et al., 2020; . The requirement for continuous self-management and adherence to strict dietary and lifestyle modifications, driven by the fear of complications associated with unmanaged diabetes, compounds the emotional burden (Lee et al., 2019; Byrn & Penckofer, 2015). Moreover, the diagnosis itself may act as a significant psychological stressor, contributing to the

development of both anxiety and depressive symptoms during pregnancy (Muhwava et al., 2020; Priya et al., 2021).

A systematic review has presented evidence suggesting that anxiety and depression are highly comorbid during the antenatal period. Elevated anxiety levels have been identified as a critical risk factor for developing depression (Biaggi et al., 2016)Falah-Hassani et al., 2017). Interestingly, some studies found no significant associations between antenatal depression and adherence to prescribed interventions for managing gestational diabetes, which might suggest that the psychological strains are not necessarily reflected in behavioral adherence but rather affect overall mental well-being and quality of life (Molyneux et al., 2018; Marchetti et al., 2017). Biaggi et al. emphasized that identifying these women at risk is vital for providing appropriate mental health support, as untreated mental health issues may exacerbate complications during pregnancy (Biaggi et al., 2016). The relationship between anxiety, depression, and GDM is complex and bi-directional. Anxiety and depression can exacerbate the management of diabetes during pregnancy, adversely affecting adherence to treatment protocols and lifestyle changes (Kiepora & Kmita, 2020)(Wang et al., 2022; . Furthermore, women experiencing elevated levels of antenatal anxiety are more likely to develop depressive symptoms, leading

to co-occurring mental health disorders that can complicate pregnancy Casey et al., 2019). A study in Poland highlighted the need for comprehensive mental health screenings during the antenatal period, advocating for a dual assessment of anxiety and depression Capron et al., 2015).

Research indicates that a personal history of mental illness, particularly anxiety disorders, significantly increases the risk for antenatal depression among women with GDM (Chorwe-Sungani & Chipps, 2018; Casey et al., 2019). Additionally, sociodemographic factors, such as lower education levels and first-time motherhood, have also been associated with higher levels of antenatal anxiety and depression (Kiepara & Kmita, 2020). Effective psychological intervention strategies are critical for mitigating these risks, enhancing the overall well-being of both mothers and their infants (Wang et al., 2022; Capron et al., 2015). The main aim of this study is to assess the Prevalence of depression and anxiety among antenatal mother with gestational diabetes mellitus in selected hospital in Chennai.

MATERIAL AND METHODS

The present study adopted a cross-sectional study design. The study was conducted at Sree Balaji Medical College and Hospital in Chennai. The required sample size for the study was calculated as 160. Using a convenience sampling technique, the sample was selected from antenatal mothers diagnosed with Gestational Diabetes Mellitus (GDM) attending the antenatal outpatient department (OPD) at the selected hospital. Pregnant women without GDM and those with other complications were excluded from the study.

Tools: The demographic questionnaire included variables such as age, level of education, employment status, monthly income, and gravidity. Depression and anxiety were assessed using the Hospital Anxiety and Depression Scale (HADS), which specifically measures the severity of depression and anxiety symptoms in patients.

Table 1: Demographic variables of pregnant women with GDM

Variable	Category	Frequency	Percentage
Age (years)	18-25	30	18.75%
	26-30	45	28.125%
	31-35	40	25.00%
Educational Level	No Formal Education	10	6.25%
	Primary	20	12.50%
	Secondary	50	31.25%
	Higher Secondary	40	25.00%
	Graduate and Above	40	25.00%
Employment Status	Employed	80	50.00%
	Unemployed	80	50.00%
Monthly Family Income	< ₹20,000	30	18.75%
	₹20,000 - ₹40,000	80	50.00%
	> ₹40,000	50	31.25%
Gravida	Primigravida	70	43.75%
	Multigravida	90	56.25%

Data Collection Procedure: Ethical clearance was obtained from the concerned institution and hospital. Demographic data were collected based on written informed consent from the pregnant mothers using the demographic questionnaire.

Statistical Analysis: Data were analyzed using SPSS software version 26. Descriptive statistics, including frequency and percentage distribution, were used to summarize the demographic characteristics and the prevalence of depression and anxiety among antenatal mothers with GDM. To examine the relationships between various factors and the levels of depression and anxiety, Pearson's correlation coefficient was applied.

RESULTS:

The study evaluated depression and anxiety among 160 antenatal mothers with gestational diabetes mellitus (GDM). Demographically, 18.75% were aged 18-25, 28.125% were aged 26-30, and 25% were aged 31-35. Regarding education, 6.25% had no formal education, 12.5% had primary, 31.25% had secondary, and 25% were graduates. Half of the participants were employed, and the family income was split across three categories: 18.75% earned < ₹20,000, 50% earned ₹20,000-₹40,000, and 31.25% earned > ₹40,000. Most were multigravida (56.25%). Anxiety levels showed 37.5% normal, 18.75% severe, while depression levels showed 43.75% normal and 12.5% severe. [Table 1]

Table 2 presents the levels of anxiety and depression among the 160 antenatal mothers with GDM. For anxiety, 37.5% of participants were categorized as normal, 25% as borderline, 18.75% as moderate, and 18.75% as severe. Regarding depression, 43.75% had normal levels, 31.25% were borderline, and 12.5% each had moderate and severe levels.

Table 3 shows the correlation between anxiety and depression, with a strong positive correlation of 0.75, indicating that higher anxiety levels were associated with higher depression levels in the study population.

Table 2: HADS Anxiety and Depression Levels.

Anxiety Level	Frequency	Percentage
Normal (0-7)	60	37.5%
Borderline (8-10)	40	25.0%
Moderate (11-14)	30	18.75%
Severe (15-21)	30	18.75%
Total	160	100%
Depression Level	Frequency	Percentage
Normal (0-7)	70	43.75%
Borderline (8-10)	50	31.25%
Moderate (11-14)	20	12.5%
Severe (15-21)	20	12.5%
Total	160	100%

Table 3: Correlation Table for Anxiety (HADS-A) and Depression (HADS-D)

Variable	Anxiety (HADS-A)	Depression (HADS-D)
Anxiety (HADS-A)	1	0.75**
Depression (HADS-D)	0.75**	1

DISCUSSION

The study findings reveal important insights into the mental health status of antenatal mothers diagnosed with gestational diabetes mellitus (GDM). Among the 160 mothers surveyed, the distribution of anxiety and depression levels indicates a significant prevalence of mental health challenges within this demographic. Notably, 62.5% of participants exhibited some level of anxiety, with 37.5% reporting normal levels, 25% borderline anxiety, and 37.5% categorized as having moderate to severe anxiety. Additionally, for depression, 56.25% of participants had either borderline or symptomatic levels, reflecting a considerable psychological burden on these mothers.

These outcomes underscore the alarming association between GDM and mental health disorders, as corroborated by various studies. Previous research has consistently shown that anxiety and depression are prevalent among pregnant women, particularly those managing chronic conditions such as GDM. For instance, Ouyang et al. reported that women with adverse emotional states, such as anxiety, tend to have poorer glycemic control, which poses potential risks for both maternal and fetal health Ouyang et al. (2021). Similarly, Fraser et al. highlighted that anxiety is often not adequately addressed in clinical settings, particularly among those requiring insulin for GDM management, despite its substantial implications for pregnancy outcomes and maternal well-being (Fraser et al., 2023).

The findings also demonstrate a strong positive correlation between anxiety and depression. This significant relationship suggests that heightened anxiety levels may influence depressive symptoms among antenatal mothers with GDM. The interplay between these mental health conditions indicates that clinicians should view anxiety and depression as co-occurring issues in this group rather than independently assessed disorders. Such a perspective aligns with the findings of Baykoca et al., who found that higher levels of reported anxiety and depression correlated with a more challenging emotional and psychological experience

for mothers, which adversely affected maternal-infant bonding (Baykoca et al., 2024).

Understanding this correlation is vital for developing targeted interventions to support mothers experiencing both anxiety and depression. Addressing mental health issues related to GDM not only promotes mothers' psychological well-being but may also improve adherence to treatment plans, thereby ensuring better management of their diabetes. Studies suggest that effective mental health interventions can lead to enhanced outcomes for mothers and their infants, underscoring the necessity for integrated healthcare strategies that encompass both physical and mental health support (IŞIK & Cetişli, 2022).

Furthermore, it is essential to consider sociodemographic factors that may influence the prevalence of anxiety and depression in this cohort. Factors such as maternal age, socioeconomic status, and prior mental health history may all contribute to variability in psychological outcomes for women with GDM. Research by Malik and Roy supports the idea that a comprehensive understanding of the social and psychological dimensions of GDM is critical for improving the quality of life for affected mothers (Malik & Roy, 2024).

CONCLUSION

The study's findings reveal a considerable prevalence of anxiety and depression among antenatal mothers with GDM, with a significant correlation between these two conditions. The importance of integrating mental health screening and support services within the antenatal care framework cannot be overstated, as such measures could facilitate better maternal and fetal health outcomes. Future research should continue to explore the complexities of mental health in this population, considering the multifaceted interplay of biological, psychological, and sociocultural factors.

CONFLITS OF INTEREST:

No conflicts of Interest.

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