

Gestational Diabetes Mellitus and Its Impact on Quality of Life Among Pregnant Women – A cross-sectional study

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KEYWORDS

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ABSTRACT:

GDM is defined as “glucose intolerance that is detected during pregnancy” or “carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first acknowledgment in the course of pregnancy. The main aim of the study to assess the quality of life and impact on pregnant mothers with gestational diabetes. The present study adopted cross sectional study design. The present study was conducted in Sree Balaji medical College and hospital at Chennai. The required study sample size was calculated as 160. Using the convenient sample technique method the sample were selected for the study. The study revealed that the overall mean QOL score of 7.1 ± 1.2 suggests a moderate level of satisfaction, but the variability across different domains indicates that certain aspects of life are more affected than others. The study concluded that the study indicates that have a moderate level of quality of life (QoL). The study clearly indicates that quality of life among women with gestational diabetes mellitus is a complex phenomenon.

INTRODUCTION

Gestational diabetes mellitus (GDM) is a condition where diabetes is diagnosed for the first time during pregnancy, in women who did not previously have type 1 or type 2 diabetes [1,2,3]. According to the study the overall prevalence rate in Canada and united states was 6.9% [4]

As for the estimation of the global prevalence of GDM varies mainly due to differences in diagnostic criteria. In a recent meta-analysis, Saeedi et al. in 2021 estimated studies using International Association of Diabetes and Pregnancy Study Groups (IADPSG) diagnostic criteria, considered to be the most widely used screening method worldwide, with a conclusion that the prevalence of GDM is at 14.7% [5]. A study demonstrated the prevalence of GDM varying within the country, from 3.8% in

Kashmir to 6.3% in Mysore, and as high as 17.9% in Tamil Nadu. These figures estimate that at any given time, there are approximately 4 million women in India with GDM. [6]

Gestational diabetes mellitus (GDM) could lead to a number of physical, psychological, and social-related complications that greatly impact the quality of life (QOL) among affected mothers [7,8] Health-related QOL is defined as the range of physical and social activities and mental health and is considered one of the key measures and constituents of health [9,10].

Quality of life is greatly affected when a woman is presented with the challenge of coping with a pregnancy complicated by gestational diabetes mellitus. The deprivation from food, style of living, and worry for the baby's good condition create a void between the real way of life and expectations [11]. The research was done by Tratnowski et al. using the WHOQOL-Bref questionnaire on the quality of life in mothers. The findings have shown that the mean scores are decreasing from mid to late pregnancy for the physical, mental, and social levels [12]. The diagnosis of GDM often requires significant lifestyle changes, including dietary modifications, increased physical activity, and regular monitoring of blood glucose levels. These changes can create a substantial burden on the affected women, leading to a decline in their quality of life [13,14,15]

The review of literature on the quality of life in pregnant women with GDM shows that few studies have been carried out to determine the quality of life in relation to gestational diabetes mellitus. The main aim of this study is to assess the quality of life and impact on pregnant mothers with gestational diabetes.

MATERIAL AND METHODS

The present study adopted cross sectional study design. The present study was conducted in Sree Balaji medical College and hospital at Chennai. The required study sample size was calculated as 160. Using the convenient sample technique method the sample were selected for the study. Pregnant women with GDM who are attending antenatal OPD in selected hospital were included in the study. Pregnant mother who are not having GDM and GDM mother who had other complication were excluded.

Tools:

The demographic questionnaire contained variables on age, level of education, employment status, monthly income, and gravidity. The quality of life was measured on the WHOQOL-BREF scale, which taps into the domains of physical health, psychological well-being, social relationships, and environmental factors. Other associated factors included a family history of diabetes, BMI, physical activity, dietary habits, and smoking.

Data Collection Procedure:

Ethical clearance was taken from the concerned institution and hospital. Demographic data were collected based on written consent from pregnant mothers using demographic questionnaires. The study used the WHOQOL-BREF scale to evaluate the Quality-of-Life score. Data were collected in Excel.

Statistical Analysis:

Data were analyzed by the use of SPSS software version 26. The test used in the assessment is employing descriptive statistics to determine the frequency and percentage distribution of the pregnant mothers. The Chi-square test was employed to analyze the significance level of the associated factors.

RESULTS:

Demographic variables:

Among the 160 pregnant women in the study, the majority were aged 26-30 years (31.25%). Most of the participants had completed secondary education (37.5%), and there was an equal distribution between primigravida and multigravida women, with each group comprising 50% of the participants. [Table 1]

Quality of life:

Majority of the pregnant women with GDM physical health was rated mainly "Good" in most of the cases (37.5%). In a similar proportion, psychological health was rated as either "Fair" or "Good" (31.25% each). Most of the social relationships were predominantly rated either "Fair" or "Good," with 37.5% for each. The majority of it was described as "Fair" regarding environmental health. [Table 2]

[Figure 1] revealed that the mean score for overall quality of life was 7.1 ± 1.2 . The physical health domain had a mean score of 6.8 ± 1.2 , while psychological health scored slightly higher with a mean of 7.0 ± 1.3 . Social relationships were rated lower, with a mean score of 6.5 ± 1.4 . Environmental health had a mean score of 6.9 ± 1.1 , indicating a relatively balanced perception of quality of life across different domains.

Associated factors:

Pregnant women were significantly associated with the outcome variable: 50% had a family history of diabetes ($p = 0.05$), 37.5% had normal BMIs, 31.25% were overweight, and 25% were obese ($p =$

0.03). Additionally, 62.5% were sedentary ($p = 0.01$), 56.25% had unhealthy dietary habits ($p = 0.04$), and 12.5% smoked ($p = 0.02$). These findings suggest important associations between these factors and the outcome under study. [Table 3]

Table 1: Demographic variables of pregnant women with GDM

Variable	Categories	Frequency (n=160)	Percentage (%)
Age (years)	18-25	40	25%
	26-30	50	31.25%
	31-35	45	28.12%
	36-40	20	12.5%
	41 and above	5	3.12%
Educational Level	No Formal Education	10	6.25%
	Primary	20	12.5%
	Secondary	60	37.5%
	Higher Secondary	40	25%
	Graduate and Above	30	18.75%
Employment Status	Employed	70	43.75%
	Unemployed	90	56.25%
Monthly Family Income	< ₹20,000	60	37.5%
	₹20,000 - ₹40,000	70	43.75%
	> ₹40,000	30	18.75%
Gravida	Primigravida	80	50%
	Multigravida	80	50%

Table 2: Quality of Life (QOL) Table

QOL Domain	Categories	Frequency (n=160)	Percentage (%)
Physical Health	Poor	30	18.75%

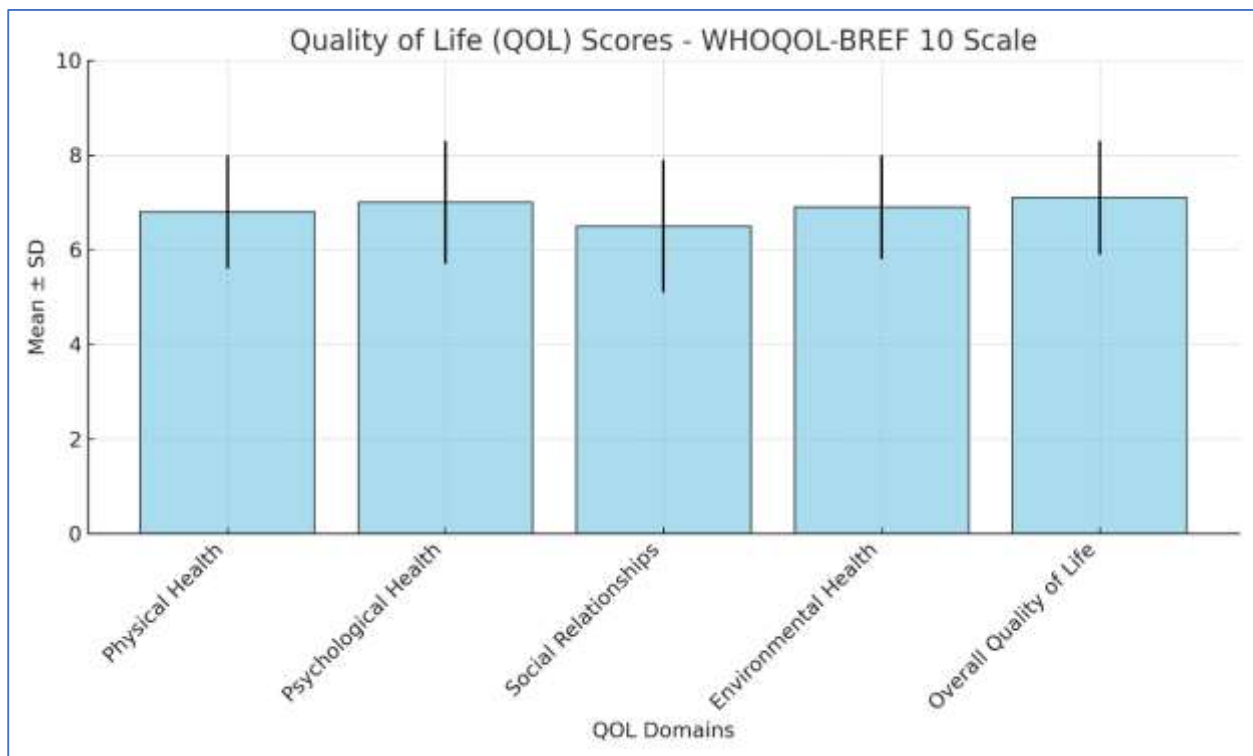
	Fair	50	31.25%
	Good	60	37.5%
	Excellent	20	12.5%
Psychological Health	Poor	40	25%
	Fair	50	31.25%
	Good	50	31.25%
	Excellent	20	12.5%
Social Relationships	Poor	20	12.5%
	Fair	60	37.5%
	Good	60	37.5%
	Excellent	20	12.5%
Environmental Health	Poor	30	18.75%
	Fair	70	43.75%
	Good	40	25%
	Excellent	20	12.5%

Table 3: Associated factor of pregnant mother with GDM

Factors	Categories	Frequency (n=160)	Percentage (%)	p-value
Family History of Diabetes	Yes	80	50%	0.05
	No	80	50%	
Body Mass Index (BMI)	Underweight (<18.5)	10	6.25%	0.03
	Normal (18.5-24.9)	60	37.5%	
	Overweight (25-29.9)	50	31.25%	
	Obese (≥ 30)	40	25%	
Physical Activity	Sedentary	100	62.5%	0.01
	Moderately Active	50	31.25%	

	Highly Active	10	6.25%	
Dietary Habits	Healthy	70	43.75%	0.04
	Unhealthy	90	56.25%	
Smoking	Yes	20	12.5%	0.02
	No	140	87.5%	

Figure 1: Mean and SD score of QOL



DISCUSSION

The study was aimed to assess the quality of life and impact on pregnant mothers with gestational diabetes. The data reveals that the assessment of Quality of Life (QOL) among pregnant women with gestational diabetes mellitus (GDM) reveals that this condition significantly impacts various domains of their lives. The overall mean QOL score of 7.1 ± 1.2 suggests a moderate level of satisfaction, but the variability across different domains indicates that certain aspects of life are more affected than others.

Consequently, this study highlights the pivotal role that the various associated factors play in the quality of life of a pregnant woman with GDM. The major factors that influenced QOL were history of diabetes in the family, BMI, physical activity, dietary habits, and smoking [16,17].

One of the most immediate impacts of GDM is the imposition of dietary restrictions. Women diagnosed with GDM are often required to adhere to a specific meal plan that limits carbohydrate intake and emphasizes balanced nutrition [18,19].

Renu Malik et al. reported that 74.5% of antenatal women diagnosed with gestational diabetes mellitus had a moderate quality of life, while 25.5% had a high quality of life. Importantly, no woman belonged to the low-quality category. In the support domain, 60% of antenatal women reported high QoL, and 25.5% reported low QoL in the complications of GDM domain. The QoL was found to have a significant association with some of the socio-demographic variables [20].

CONCLUSION

In conclusion, pregnant women with gestational diabetes mellitus (GDM) were found to have a moderate level of quality of life (QoL). The study clearly indicates that quality of life among women with gestational diabetes mellitus is a complex phenomenon. Key associated factors such as family history of diabetes, BMI, physical activities, dietary habits, and smoking were significantly contributing to quality of life in pregnant women. Results drawn from this suggest the need to intervene in a targeted way to alleviate these factors and enhance overall well-being for a woman with GDM. Lifestyle changes, psychological, and community-based initiatives would strengthen the function of QOL within this vulnerable subgroup.

CONFLITS OF INTEREST:

No conflicts of Interest.

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