

## ORIGINAL RESEARCH

# Assessment of depression amongst diabetics

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### ABSTRACT

**Background:** Diabetes mellitus is a chronic metabolic condition marked by abnormalities in the metabolism of fats, carbohydrates, and amino acids. The present study was conducted to assess depression amongst diabetics. **Materials & Methods:** 145 diabetics of both genders were included and the Beck depression inventory (BDS-II) was used to assess depression. **Results:** Out of 145 patients, males were 80 and females were 65. Marital status was married 97, unmarried 13 and divorced/widow 35. Family history of diabetes was seen in 60. Duration of diabetes was <5 years in 12, 5-10 years in 39 and 10-15 years in 94. Fasting blood sugar was <110 mg/dl in 2, 110-125 mg/dl in 11 and >125 mg/dl in 132 patients. The difference was significant ( $P < 0.05$ ). Beck's Depression Inventory showed minimal in 49, mild in 11, borderline in 42, moderate in 35 and severe in 8 cases. The difference was significant ( $P < 0.05$ ). **Conclusion:** The prevalence of depression in type II diabetes patients was high. Hence, a careful assessment is required in long standing diabetes cases.

**Keywords:** Beck's Depression Inventory, Diabetes mellitus, Fat

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### INTRODUCTION

Diabetes mellitus is a chronic metabolic condition marked by abnormalities in the metabolism of fats, carbohydrates, and amino acids. These abnormalities can be attributed to a decrease in insulin secretion or a loss in the body's cells' sensitivity to insulin.<sup>1</sup> It is a disease that can become pandemic in nature and is one of the main risks to human health in the twenty-first century. It has been estimated that between 8 and 15% of India's urban population has Type 2 diabetes mellitus, with a trend toward large increases over time.<sup>2</sup> An estimated 350 million individuals worldwide suffer from depression, making it a widespread ailment. Depression can develop into a dangerous medical disease, particularly if it persists for a long time and is moderately or severely intense. The affected individual may experience severe distress and perform poorly in job, school, and in the family. Depression is a prevalent issue among those with diabetes mellitus.<sup>3</sup>

Depression and severe psychological distress are often co-occurring conditions with diabetes mellitus (T2DM) and are linked to decreased adherence to medication and healthy lifestyle practices, worse glycemic control, and more complications.<sup>4,5</sup> T2DM and depression are major public health concerns; globally, the number of people with T2DM is estimated to be over 365 million, and the number of people with major depression is close to 300 million.

By 2030, these conditions are expected to rank among the top five causes of disease burden.<sup>6</sup> Depression can be considered a modifiable independent risk factor for the development of T2DM and for the progression of complications from either type 1 or T2DM. Identification and treatment of this association can have significant implications for both prevention and treatment.<sup>7</sup> The present study was conducted to assess depression amongst diabetics.

### MATERIALS & METHODS

The present study was conducted on 145 diabetics of both genders. All were informed regarding the study and their written consent was obtained.

Data such as name, age, etc. was recorded. The information about diabetes includes body mass index (BMI), length of diabetes, type and duration of therapy, complications brought on by diabetes, and family history of the disease. Using fasting and postprandial blood glucose levels, as well as HbA1c values, the degree of diabetes control was evaluated. A measure of the patient's adherence to medicine was taken using the eight-item Morisky medication adherence scale (MMAS-8) and the Beck depression inventory (BDS-II) was used to assess depression. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 145		
Gender	Male	Female
Number	80	65

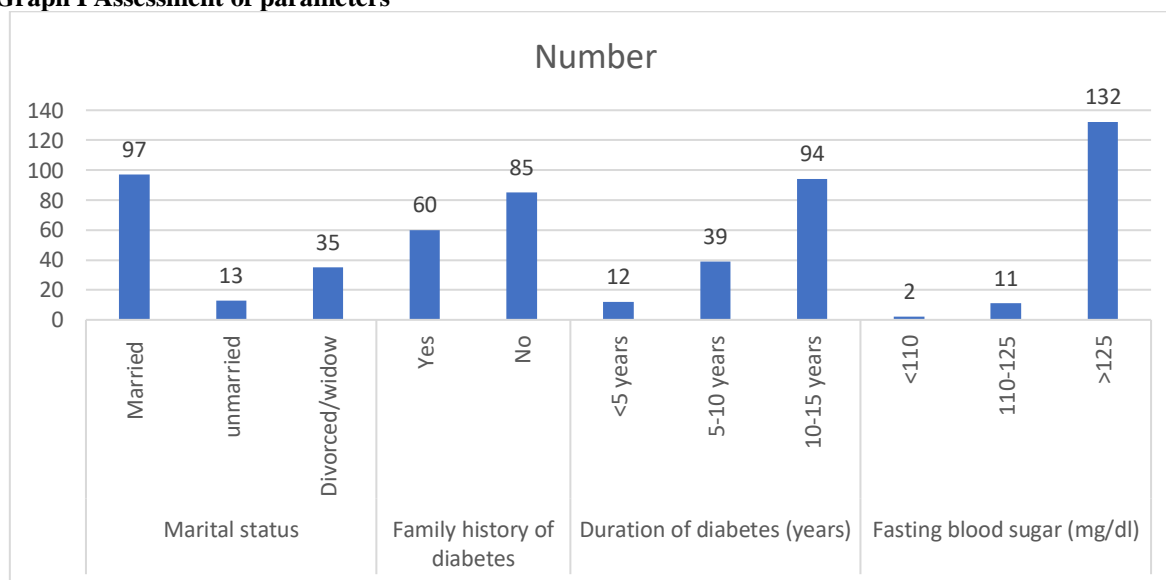
Table I shows that out of 145 patients, males were 80 and females were 65.

**Table II Assessment of parameters**

Parameters	Variables	Number	P value
Marital status	Married	97	0.03
	unmarried	13	
	Divorced/widow	35	
Family history of diabetes	Yes	60	0.37
	No	85	
Duration of diabetes (years)	<5 years	12	0.01
	5-10 years	39	
	10-15 years	94	
Fasting blood sugar (mg/dl)	<110	2	0.02
	110-125	11	
	>125	132	

Table I shows that marital status was married 97, unmarried 13 and divorced/widow 35. Family history of diabetes was seen in 60. Duration of diabetes was <5 years in 12, 5-10 years in 39 and 10-15 years in 94. Fasting blood sugar was <110mg/dl in 2, 110-125mg/dl in 11 and >125mg/dl in 132 patients. The difference was significant (P< 0.05).

**Graph I Assessment of parameters**



**Table II Beck’s Depression Inventory**

Beck’s Depression Inventory	Number	P value
Minimal	49	0.05
Mild	11	
Borderline	42	
Moderate	35	
Severe	8	

Table II shows that Beck’s Depression Inventory showed minimal in 49, mild in 11, borderline in 42, moderate in 35 and severe in 8 cases. The difference was significant (P< 0.05).

**DISCUSSION**

It is possible to consider depression as a modifiable independent risk factor for the onset of type 2 diabetes

and the advancement of its complications, whether they are type 1 or type 2. The prevention and treatment of various conditions may be significantly

impacted by the identification and management of this connection. Roughly 80% of individuals with type 2 diabetes live in low- and middle-income nations (LMICs).<sup>8,9</sup> However, a large portion of the study on depression in individuals with diabetes has been carried out in high-income nations (HICs). Diabetes is frequently accompanied by depression, which is linked to unfavorable results. Nevertheless, there aren't many Indian data on this significant association.<sup>10</sup> Research on the prevalence of depression among diabetic patients is especially pertinent to India, a middle-income nation where the frequency of both conditions is considerable. Given the high prevalence of both depression and diabetes in India, a middle-income nation, research on the subject is especially pertinent to this population. Studies have demonstrated the connection between depression and diabetes.<sup>11</sup> The present study was conducted to assess depression amongst diabetics.

We found that out of 145 patients, males were 80 and females were 65. Simon et al<sup>12</sup> studied the prevalence of depression among patients with diabetes mellitus type 2. Majority of the potential cases of depression (33%) were in the age group of 51-60 years. 62% of the patients were male. Majority of the patients (40%) were in the age group of 51-60 years. 73.4% of the married patients were potential cases of depression. 78% of the patients were having family history of type 2 diabetes mellitus. Majority of the patients (72%) were overweight or obese (BMI>25kg/m<sup>2</sup>).

We found that marital status was married 97, unmarried 13 and divorced/widow 35. Family history of diabetes was seen in 60. Duration of diabetes was <5 years in 12, 5-10 years in 39 and 10-15 years in 94. Fasting blood sugar was <110 mg/dl in 2, 110-125 mg/dl in 11 and >125 mg/dl in 132 patients. Knol et al<sup>13</sup> found out association of various risk factors with depression among elderly people. A total of 240 elderly persons were interviewed using pretested and pre-designed questionnaire from GDS-30. Data was analysed using percentages and  $\chi^2$ -test. Results: The prevalence of depression in elderly persons was 26.6%; among these, 18% were mildly depressed and 8.3% severely depressed. Depression was more prevalent in those who were physically inactive (48.27%) than those who were active (14.37%). About 26.41% of illiterates were found to be depressed than literate ones (24.7%). A significant association was found between illiteracy and depression. Significant association was found between age related morbidities such as neurological disorders, locomotor disorder and depression.

We found that Beck's Depression Inventory showed minimal in 49, mild in 11, borderline in 42, moderate in 35 and severe in 8 cases. Frederick et al<sup>14</sup> in their study found that the patients were primarily Indo-Trinidadians (49%), over 50 years (79.7%) and women (60%). The prevalence of depression was 17.9% of Type 2 diabetic patients reporting mild to moderate levels of depression. Female Type 2

diabetics had higher scores of depression (M = 42.13, SD = 9.83, p = 0.011) than male Type 2 diabetics (M = 38.71, SD = 8.9). Patients with coexisting medical complications had higher levels of depression (M = 44.01, SD = 9.52) than those with diabetes alone (M = 37.74, SD = 8.79, p = 0.000).

The shortcoming of the study is small sample size.

## CONCLUSION

Authors found that the prevalence of depression in type II diabetes patients was high. Hence, a careful assessment is required in long standing diabetes cases.

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