

**ORIGINAL RESEARCH**

# Prevalence of depression amongst diabetics in a Tertiary Care Centre-A Cross-sectional Study

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**ABSTRACT**

**Background:** Diabetes mellitus (DM) is a chronic metabolic disorder characterized by persistent hyperglycemia. The present study was conducted for assessing the prevalence of depression amongst diabetics. **Materials & methods:** The present cross-sectional study was conducted for assessing the prevalence of depression amongst diabetics. A total of 100 diabetic subjects were enrolled. Complete demographic and clinical details of all the subjects were obtained. Hematological profile and glycemetic profile were assessed in all the patients. A Performa was made and Hamilton Depression Rating Scale was used for assessing prevalence of depression among diabetic patients. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis using SPSS software. **Results:** A total of 100 subjects were evaluated. Mean age of the patients was 48.3 years. Majority proportion of patients were males. Majority proportion of patients were of rural residence. Mean duration of diabetes was 8.7 years. Depression was seen in 43 percent of the patients. While assessing the correlation between depression and various clinic-demographic variables, higher incidence of depression was seen among patients with higher duration of diabetes. **Conclusion:** Significant proportion of diabetic patients are affected by depression.

**Key words:** Diabetes, Depression

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**INTRODUCTION**

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by persistent hyperglycemia. It may be due to impaired insulin secretion, resistance to peripheral actions of insulin, or both. According to the International Diabetes Federation (IDF), approximately 415 million adults between the ages of 20 to 79 years had diabetes mellitus in 2015. DM is proving to be a global public health burden as this number is expected to rise to another 200 million by 2040.<sup>1-3</sup>

Diabetes with its ever-increasing global prevalence has emerged as one of the most important and challenging health issues confronting the human population of the present world. The increase in the prevalence of diabetes in most regions across the globe has been parallel to the rapid economic development, leading to urbanization and adoption of modern lifestyle habits.<sup>4, 5</sup> The evidence base for the interrelationship of diabetes with mental illness has increased over the past 13 years. In 2001, Anderson et

al conducted a meta-analysis which indicated that the presence of diabetes doubled the risk of comorbid depression. A systematic review of more recent literature, published in 2012 by Roy and Lloyd, found rates of depression in people with type 1 and type 2 diabetes three times and twice those in the general population, respectively.<sup>6, 7</sup> Hence; the present study was conducted for assessing the prevalence of depression amongst diabetics.

**MATERIALS & METHODS**

This hospital based cross-sectional study was conducted during October to December 2023 among diabetics attending endocrinology OPD in the Patna Medical College & Hospital

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was made and Hamilton Depression Rating Scale was used for assessing prevalence of depression among diabetic patients. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis using SPSS software.

## RESULTS

A total of 100 subjects were evaluated. Mean age of the patients was 48.3 years. Majority proportion of patients were males. Majority proportion of patients were of rural residence. Mean duration of diabetes was 8.7 years. Depression was seen in 43 percent of the patients. While assessing the correlation between depression and various clinic-demographic variables, higher incidence of depression was seen among patients with higher duration of diabetes.

**Table 1: Prevalence of depression among diabetics**

Depression	Number	Percentage
Present	43	43
Absent	57	57
Total	100	100

**Table 2: Correlation of depression with age, gender and duration of diabetes**

Variable	R-value	p-value
Elderly age	0.258	0.338
Male gender	0.332	0.945
Duration of diabetes more than 10 years	-1.235	0.001 (Significant)

## DISCUSSION

Diabetes is a heterogeneous complex metabolic disorder characterized by elevated blood glucose concentration secondary to either resistance to the action of insulin, insufficient insulin secretion, or both. The major clinical manifestation of the diabetic state is hyperglycemia. However, insulin deficiency and/or insulin resistance also are associated with abnormalities in lipid and protein metabolism, and with mineral and electrolyte disturbances. The vast majority of diabetic patients are classified into one of two broad categories: type 1 diabetes mellitus, which is caused by an absolute or near absolute deficiency of insulin, or type 2 diabetes mellitus, which is characterized by the presence of insulin resistance with an inadequate compensatory increase in insulin secretion.<sup>8-10</sup> An important issue with significant management implications among individuals having both diabetes and psychiatric disorders is that of treatment adherence. Psychological, cognitive, and emotional issues associated with psychiatric disorders make the issue complicated. Individuals with comorbid diabetes and psychiatric illness are more likely to receive poor diabetes care. Poor treatment adherence is seen with both medication use as well as investigations. Self-management is an essential component of diabetes care. The presence of comorbid psychiatric illness can make self-

management difficult to implement. It has also been seen that increased healthcare utilization for comorbid psychiatric disorder could improve treatment adherence for diabetes as well.<sup>11-12</sup>

Majeed Met al estimated the prevalence of psychiatric morbidities among rural diabetic patients. The findings revealed that the prevalence of psychiatric morbidity in the study participants was 38.9%, 68.5% and 25.64% for depression, anxiety and stress, respectively. Psychiatric morbidities were slightly higher in female patients and were significantly associated with age, marital status, sedentary lifestyle, history of substance abuse, duration of diabetes, presence of complications and underlying morbidities. The prevalence of anxiety and depression among rural diabetic patients was found to be quite high.<sup>13</sup> Chaudhry R et al assessed the prevalence of psychiatric morbidity among diabetic patients using standardized rating scales for depression and anxiety. One hundred diagnosed patients of diabetes were assessed on the Hamilton rating scale for depression and the Hamilton rating scale for anxiety, who were attending the diabetic clinic. They were assessed on sociodemographic profile, duration of illness, type of treatment, and oral vs insulin, and then the data were analyzed on different domains. About 84% of the patients had comorbid depression. Females showed a high percentage of depression and anxiety, and the severity level was also higher in the females.<sup>14</sup>

The prevalence rates of depression and anxiety among diabetics are known to be higher than those in normal individuals, with a staggering 50-100% increased risk of depression among patients with diabetes.<sup>15</sup> The prevalence of diabetes in depressed adult patients is much higher in women than in men.<sup>16</sup> A study performed by Golden et al<sup>17</sup> also identified a bidirectional adverse relationship between diabetes and depression. Over a 3-year follow-up period, the depressive symptoms in patients correlated with an increased risk for diabetes. Gemeay et al<sup>18</sup> studied the frequency of depression among Saudi patients, and established a correlation between the level of depression and diabetes. Their study established that 37% of type 1, 37.9% of type 2, and 13.6% of gestational diabetic patients had depression. In addition, Das et al<sup>19</sup> correlated the depressive symptoms in patients known to have diabetes with the HbA1C levels and quality of life. They found that 46.15% of the diabetic patients in their study had depression, and among this group 36.7% had a moderate level of depression. The average level of HbA1C was higher among patients with depression than among the non-depressed group. These authors concluded that the presence of depression in patients with type 2 diabetes mellitus was associated with an impaired quality of life.

**CONCLUSION**

Significant proportion of diabetic patients are affected by depression.

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