

# Prevalence of Depression in Type II Diabetes

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**Abstract:** Diabetes is a disorder of carbohydrate, protein, and fat metabolism resulting from an imbalance between insulin availability and insulin need. Depression a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration.. Depression in patients with DM represents a complex, co-morbid condition, which is the result of complicated interactions between bio-psycho-social and genetic factors. We conducted a prospective observational study on the Prevalence of Depression in Type II DM using ICD-10. A total of 219 T2 DM subjects were observed, among them 88 subjects were found depressed, of which severe depression was prominent. Among the depressed individuals, females were found to be more depressed than males. Depression was prominent among age group 36-45 yrs.

**Keywords:** Type II Diabetes, Depression, ICD-10, Prevalence, Age group

## 1. Introduction

Diabetes mellitus (DM) is defined as a heterogenous metabolic disorder characterized by common feature of chronic hyperglycemia with disturbance of carbohydrate, fat and protein metabolism.[1]

Type II DM was previously called maturity-onset diabetes or non insulin dependent diabetes mellitus (NIDDM) of obese and non-obese type. This type comprises about 80% cases of DM.[1] With type II diabetes, body either resists the effects of insulin or doesn't produce enough insulin to maintain a normal glucose level.[2] A person with uncontrolled diabetes is unable to transport glucose into fat and muscle cells; as a result, the body cells are starved, and the breakdown of fat and protein is increased. [3]

Depression a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration.

Depression can be long-lasting or recurrent, substantially impairing an individual's ability to function at work or school or cope with daily life. At its most severe, depression can lead to suicide. Depression is a disorder that can be reliably diagnosed and treated by non-specialists as part of primary health care.[4]

Depression is commonly found as a co-morbid condition in chronic medical illnesses in general, and diabetes mellitus (DM) in particular. Depression in patients with DM represents a complex, co-morbid condition, which is the result of complicated interactions between bio-psycho-social and genetic factors. The combination of diabetes and depression is associated with decrease in functional abilities and self-care.[5] Depression can have a serious impact on a person's well being, depression is the most common psychiatric disorder witnessed in the diabetes community. [6]

## 2. Literature Survey

Mushtaque A, Gulati R [7], et al studied the prevalence of depression in patients with uncomplicated type 2 DM on 80

subjects using HAM-D. 38.75% subjects were found to be depressed. In their study results indicate 48.38% were found to be suffering from moderate depression and none were severely depressed.

Naeem Zahid,[8] et al determined the prevalence of depression amongst subjects with diabetes and associated risk factors in a rural area of Pakistan. Depression was assessed by Montgomery-Asberg Depression Rating Scale (MADRS). The prevalence of depression was 5.4%, slightly higher amongst women compared to men.

PD Jonge,[9] et al studied the association between diabetes and depression, The presence of major depression was assessed by means of a standardised psychiatric diagnostic interview. 597 subjects (12.5%) were identified as having diabetes. Prevalence of depression in cases of diabetes were 15.4% .

## 3. Materials and Methodology

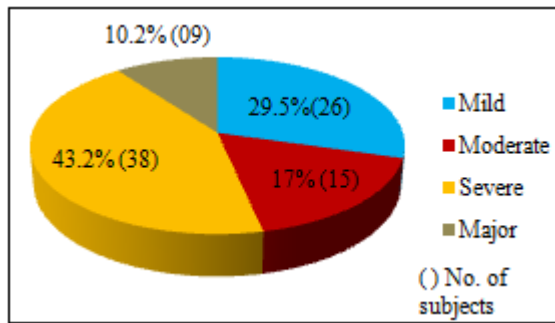
The data for present investigation has been collected at Bhaskar General Hospital, Rangareddy district, Telangana. During the study 219 type II diabetic subjects (above 25 years) were included among which 107 were males and 112 were females. The details of subjects relevant to Age, Gender, Socio-economic status and Educational status were collected through oral interview. The data of parameters such as blood sugar levels were collected. Prevalence of depression was assessed using ICD-10 Depression Inventory questionnaire. Based on the questionnaire depression is classified into Mild, Moderate, Severe and Major depressive disorder.

## 4. Results

**Table 1:** Number of depressed subjects

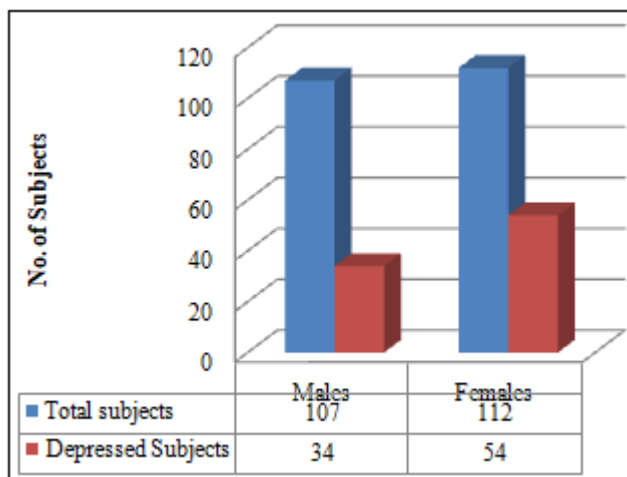
| Subjects           | No. of Subjects | Percent % |
|--------------------|-----------------|-----------|
| Total Subjects     | 219             | 100       |
| Depressed Subjects | 88              | 40.1      |

Present table 1 shows that the prevalence of depression in patients of type 2 Diabetes Mellitus is 40.1%.



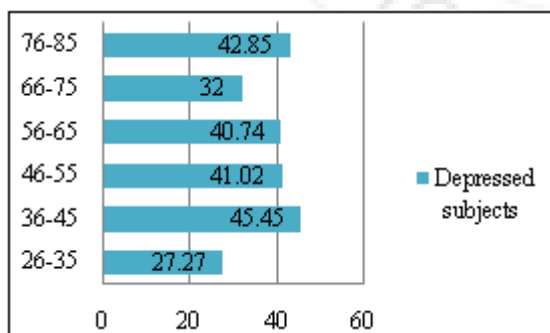
**Figure 1:** Type of depression

Present figure 1 shows that among the 88 depressed subjects 26 were found to be Mild, 15 were found to be Moderate, 38 were found to be Severe and 9 were found to be Major.



**Figure 2:** Gender and depression

Figure 2 shows that among 219 subjects, 107 were males of which 34 (38.6%) were found to be depressed; 112 were females of which 54(61.4%) were found to be depressed.



**Figure 3:** Age group and depression

Figure 3 shows that among 88 depressed subjects, 3 were found depressed in the age group 26-35; 20 were found depressed in 36-45; 32 were found depressed in 46-55; 22 were found depressed in 56-65; 08 were found depressed in 66-75; 3 were found depressed in 76-85.

## 5. Discussion

Mushtaque A,[7] et al studied the prevalence of depression in patients with uncomplicated type 2 DM on 80 subjects using HAM-D. 38.75% subjects were found to be depressed. In their study results indicate 48.38% were found to be suffering from

moderate depression and none were severely depressed. In our study prevalence of Depression was assessed using ICD-10 questionnaire. Among 219 T2 DM patients 40.1% were depressed; of which severe depression (43.2%) was most prominent.

Ryan JA[10], et al estimated the odds & prevalence of clinically relevant depression in adults with T1 or T2 DM, and found that the prevalence of co-morbid depression was significantly higher in diabetic woman than in diabetic men. In our study depression was found more prevalent among females(61.4%) than in males (38.6%).

Wayne K,[11] et al studied the behavioral and clinical characteristics of diabetes that are associated with depression and concluded that younger was associated with significantly higher likelihood of meeting criteria for depression. In our study depression was more prominent among age group of 36-45 years.

## 6. Conclusion

Depression in diabetes is a prevalent and chronic condition. Depression is usually left as undiagnosed disorder for many years. The Prevalence rate of depression is nearly twice as high in people with type II diabetes compared to those without.

The findings of this research on prevalence of depression in T2DM using ICD-10 questionnaire concludes that - Approximately 50% of the T2 diabetics are depressed, among which severe depression is prominent. Diabetic females are more depressed than diabetic males. Depression is more prevalent among the age group of 36-45yrs.

## 7. Future Scope

Since diabetes and depression is a serious issue which is usually neglected, awareness has to be created among patients and healthcare professionals such that early detection is possible and further complications can be prevented. Physicians can use easy and convenient depression scales (ICD-10, PHQ-9) for all diabetic patients to check for the depressive symptoms.

For patients with depressive symptoms counselling (CBT) can be beneficial, if the symptoms are severe and affecting the quality of life of the patient, they may be recommended to the psychiatrist where appropriate therapy (fluoxetine, fluvoxamine) will be given.

Diabetes programs that focus on behavior have been successful in helping people improve their metabolic control, increase fitness levels, and manage weight loss and other cardiovascular disease risk factors. They can also help improve sense of well-being and quality of life. There is a need for further studies in this aspect including large population.

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