Original Article

Frequency of Depressive Disorder Among Patients with Type-I Diabetes Mellitus

Ajay Kumar[1], Anoop Kumar Juseja[3], Muhammad Ilyas Jat[5], Vijia Kumar Gemnani[4], Anil Kumar Wadhwani[6] and M. Zaman Shaikh[2]

ABSTRACT

Objective: To identify the frequency of depressive disorder among patients with type 1 diabetes mellitus.
Study Design: A descriptive cross-sectional study
Place and Duration of Study: This study was conducted at the Outpatient Department (OPD) of Medicine & Allied, Sir Syed Hospital, Karachi from July, 2022 to November 2022.
Materials and Methods: All patients diagnosed with diabetes mellitus type I were selected for the study, and those patients who had depressive disorders were diagnosed before diabetes mellitus. Those who use any type of psychoactive substance Those who had other chronic medical conditions with type-I diabetes mellitus were excluded from the study. Data would be collected after approval from the ethical committee. SPSS version 22 was used to analyse the data.
Results: Among a total of 100 participants with a mean age of 42.26 ± 8.42 years, 55% were females and 45% were males. Among the total majority were married, educated up to intermediate, and household by occupation and Urdu speaking by ethnicity. Depressive disorder was present in 26% of participants. Of those who were having depressive disorder,the majority were mild types of depression (14%), followed by 9% having a moderate type and 3% having a severe type. Depressive disorder was statistically significant with a duration of diabetes mellitus and a duration of insulin therapy with a P value of less than 0.05.
Conclusion: In the study, patients with diabetes mellitus type-I had a surprisingly high prevalence of depression. As a result, we advise that DM patients be properly evaluated for this concomitant illness and that joint therapy for diabetes mellitus and depression be used.
Key Words: Depressive disorder, Diabetes Mellitus, Type-I, ICD-10.

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INTRODUCTION

Diabetes mellitus is one of the most prevalent chronic diseases in the world.[1] Depression affects a person's ideas, behaviour, feelings, and sense of well-being since it causes low mood and an aversion to activities.
People who are depressed might experience a variety of negative emotions, including sadness, anxiety, emptyness, hopelessness, helplessness, worthlessness, guilt, irritability, and restlessness.[2] According to reports, individuals with diabetes are more likely to experience depression than non-diabetic people, and depression is the second-leading cause of disability worldwide. According to estimates, 15% to 20% of patients with diabetes struggle with depression, most frequently a moderate-to-severe form of the illness.[3] Although its cause is unknown, depression in diabetes likely has a complicated aetiology, with genetic, biochemical, and psychological variables all remaining as possible risk factors.[3] Both depression and diabetes have a number of neurotransmitter and neuroendocrine abnormalities that support etiological hypotheses.[5] Separate conditions, diabetes and depression, both pose significant global health issues on their own. People with diabetes who also have depression may have poor medication compliance, poor metabolic control, greater complication rates, a lower quality of life, higher healthcare expenditure, increased disability and loss of productivity, and higher mortality risks.[6] Applying ICD-10, which was conducted in 60 different countries, people with diabetes had a one-year prevalence of depressive episodes at a rate of 9.3% compared to 3.2% in non-diabetics.[7] Regular evaluation and monitoring of depression in diabetes patients is recommended by the

[1.] Department of Psychiatry / Medicine[2], Sir Syed College of Medical Science Karachi.
[3.] Department of Psychiatry / Community Med:& Public Health[4], CMC, SMBB medical University, Larkana.
[5.] Department of Psychiatry, DUHS, Karachi.
[6.] Department of Psychiatry, Dr. AQ Khan Institute of Behavioral Sciences, DIMC, DUHS, Karachi.

Correspondence: Dr. Ajay Kumar, Sr. Registrar Psychiatry Dept: Sir Syed College of Medical Science Karachi.
Contact No: 03337535639
Email: nankani.ajay87@gmail.com

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International Diabetes Foundation due to the significant risk of depression in this patient group. In line with this, diabetic individuals had a considerably greater prevalence of depression than non-diabetic respondents (18.2% vs. 9.9%). Diabetes patients with depression-related comorbidities may have a variety of issues, including poor diabetes management, poor treatment compliance, a low quality of life, greater rates of complications, increased disability, higher healthcare expenses, and an increased mortality ratio.[8]

Researchers found that patients with prediabetes, undiagnosed diabetes, and previously diagnosed diabetes are more likely to have depressive symptoms than those with normal blood sugar levels (odds ratio (OR): 1.11), (OR:1.27) and OR: 1.80, respectively).

Common clinical features of diabetes and depression include changes in appetite, low energy, weight variation, and impaired concentration.[10] But depression typically goes unrecognised and undiscovered.[11] Although depression in diabetes is well recognised, it is still lacking on our part, particularly in patients with type-I diabetes mellitus. Keeping this in mind, this study has been planned.

MATERIALS AND METHODS

This descriptive cross-sectional study was carried out at Sir Syed Hospital Karachi's Department of Medicine and Allied Health, and data was collected, from July 1st, 2022, to November 30th, 2022. The sample size of 100 patients was calculated, and the sampling technique of non probability consecutive sampling was applied. All patients gave written consent and had age limits between 18 and 60 years. Cases of diabetes mellitus type-I already diagnosed by diabetologists and endocrinologists who are on treatment and follow-up in medical OPD were enrolled in the study. Depressive disorder was assessed using the ICD-10, International Classification of Diseases, 10th edition. Further, based on the ICD-10, the severity of depressive disorder was also established as mild, moderate, and severe. Those patients who had depressive disorder were diagnosed before diabetes mellitus. Those who use any type of psychoactive substance Those who had other chronic medical conditions with type-I diabetes mellitus were excluded from the study. SPSS version 22 was used to analyse the data.

RESULTS

Among a total of 100 participants with an average age of 42.26 ± 8.42 years, 55% were females and 45% were males. Among the total, 81% were married, 16% were single, and 3% were widowed. Among 100 cases, 14 (14%) were preliterate, 7 (7%) had Deeni-Taleem, 6 (6%) were primary passed, 15 (15%) were educated up to the middle, 12 (12%) were matriculated, 21 (21%) were intermediate, and 25 (25%) were graduates. Most patients were householders by occupation 48 (48%), 25 (25%) were professionals by occupation, 14 (14%) were jobless, 8 (8%) were shopkeepers 3 (3%) were students, while 2 (2%) were doing some sort of other work. The majority of 28 (28%) were speaking Urdu, followed by 26 (26) Sindhi, 18 (18%) Pashto, 16 (16) Punjabi, 5 (5%) Balochi, and 7 (7%) were speaking other languages, as shown in Table No. 1.

Table No. 1: Demographic Variables

Depressive Disorder		
Frequency	**Percent %**	
Yes	26	26.0
No	74	74.0
Total	100	100.0

Table No. 2: Depression disorder

Number of participants N= 100 (%)	
Gender	
Male	45 (45)
Female	55 (55)
Marital Status	
Married	81 (81)
Single	16 (16)
Widowed	3 (3)
Education	
None	14 (14)
DeeniTaleem	7 (7)
Primary	6 (6)
Middle	15 (15)
Matric	12 (12)
Intermediate	21 (21)
Graduate	25 (25)
Occupation	
Student	3 (3)
House-hold	48 (48)
Professional	25 (25)
Shopkeeper	8 (8)
Jobless	14 (14)
Other	2 (2)
Language (Mother Tongue)	
Balochi	5 (5)
Pashto	18 (18)
Punjabi	16 (16)
Sindhi	26 (26)
Urdu	28 (28)
Others	7 (7)

Table No. 3: Severity of Depressive Disorder

Depression	Frequency	Percent
No	74	74.0
Mild	14	14.0
Moderate	9	9.0
Severe	3	3.0
Total	100	100.0

Table No. 4: Stratification of depressive disorder with duration of diabetes mellitus and duration of insulin therapy

Duration of DM	Depressive Disorder		Total	P-value
	Yes	No		
Less than 5 years	5 (13.9%)	31(86.1%)	36(100%)	0.034
More than 5 years	12 (37.5%)	20(62.5%)	32(100%)	
More than 10 years	9 (28.1%)	23(71.9%)	32(100%)	
Total	26 (26%)	74(74%)	100(100%	
Duration of Insulin Therapy				0.000
Less than 5 years	1(2.3%)	42(97.7%)	43(100%)	
More than 5 years	20(41.7%)	28(58.3%)	48(100%)	
More than 10 years	5(55.6%)	4(44.4%)	9(100%)	
Total	26(26.0%)	74(74.0%)	100(100%)	

The patients with diabetes mellitus type I who had depression were 26%, while 74% did not have depression, as shown in Table No. 2 of those who were having depressive disorder, the majority were mild types of depression (14%), followed by 9% having the moderate type, and 3% having the severe type, as shown in Table No. 3. Depressive disorder was statistically significant with a duration of diabetes mellitus having a P value of 0.034, and it was also highly significant with a duration of insulin therapy having a P value of 0.000 as shown in Table No. 4.

DISCUSSION

Depression is a global problem irrespective of age, ethnicity, gender, or profession, and it is particularly associated with other chronic debilitating illnesses like diabetes mellitus. In this study, we found that the prevalence of depression among patients with diabetes mellitus type I on insulin therapy was 26%, which is in accordance with many previous studies.[12,13] Up to 26% prevalence of depression is quite high, and it is also reported in other studies affecting the quality of life of individuals with diabetes.[14,15] The strong association of depression with diabetes mellitus is evident from this, and the same is supported by previous research.[16] Despite the fact that many diabetic patients experience depression or other diabetes-related problems, the majority of them go untreated and without a diagnosis. Recent reviews show that major and minor depression are becoming more common in diabetic individuals. Depression is considered constant and chronic in diabetic patients. Diabetes and depression are symbiotically related. Diabetes-related stress increases the number of diabetes-related problems by itself.[17] The frequency of depression varies significantly between studies, which can be attributed to the various environmental, cultural, racial, and social contexts. For instance, a study conducted in Palestine revealed a high prevalence of depression, which may be related to the country's more stressful circumstances, such as war, violence, and unemployment.[18] A study was conducted, to identify the most prevalent mental illnesses among people who visited primary health clinics (PHC) and traditional healers (THC). It showed 55% and 48% depression prevalence among THC and PHC, respectively,[19] and is also, to some extent, higher than the prevalence of mild to moderate depression in our study. They employed the Clinical Interview Schedule-Revised (CIS-R) as their screening instrument, and their population was different from ours, which may help to explain this. According to this study, individuals receiving insulin therapy had a nearly twofold higher risk of mild to severe depression than those receiving other types of treatment. Other studies conducted in the Republic of Korea[20] and China[21] have found a relationship between insulin treatment and depression. This connection was also verified by a recent meta-analysis.[22] Typically, people have a bad opinion about insulin treatment. This results from anxiety about self-injecting insulin, changing dosages, gaining weight, developing hypoglycemia, and worrying about developing an advanced illness and subsequent problems. These psychological factors may make these patients depressed.

CONCLUSION

In the study, patients with diabetes mellitus type-I had a surprisingly high prevalence of depression. As a result, we advise that DM patients be properly evaluated for this concomitant illness and that joint therapy for diabetes mellitus and depression be used.

Author's Contribution:

Concept & Design of Study:	Ajay Kumar
Drafting:	Anoop Kumar Juseja, Muhammad Ilyas Jat
Data Analysis:	Vijia Kumar Gemnani, Anil Kumar Wadhwani, M. Zaman Shaikh
Revisiting Critically:	Ajay Kumar, Anoop Kumar Juseja
Final Approval of version:	Ajay Kumar

Conflict of Interest: The study has no conflict of interest to declare by any author.

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