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Study Of Depression And Associated Risk Factors In Patients Of Diabetes Mellitus.

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ABSTRACT

According to studies, those who have diabetes are more likely to suffer from depression. Our goals were to identify the prevalence of and risk factors for depression in type 2 diabetes individuals. The incidence of depression among diabetics ranges from 8.5% to 32.5%, depending on the definition employed, whereas the prevalence of anxiety disorders is up to 30%. One hundred diabetes patients with a diagnosis were evaluated using the Hamilton Anxiety and Depression Scales while they were in the diabetic clinic. They were evaluated for their sociodemographic characteristics, length of disease, type of treatment, and preference for oral vs insulin, after which the results were analysed across many domains. Of the patients, concomitant depression affected about 84% of them. Women displayed a higher incidence of despair and anxiety, and their levels of severity were also higher. Males typically reported genital complaints, whereas females were more likely to report somatic symptoms. Depression was seen in one-third of type 2 diabetic individuals. The likelihood of patients having depression increased with age, thyroid disease or neuropathy, the use of insulin, and noncompliance. The accurate diagnosis and treatment of depression is a crucial part of the health care management of diabetics.

Keywords: Anxiety, depression, diabetes mellitus, psychiatric morbidity, risk factors

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INTRODUCTION

Major depression lifetime prevalence in adults is found to be 7–12% in males and 20–25% in females [1]. Diabetes affects more than 220 million patients worldwide, and it's expected to be more than double by the year 2030: approximately 90% of diabetes is type 2 (DM2) [2]. Diabetes requires long-term medical care to manage it and to limit the development of its complications [3]. Studies had confirmed that diabetic populations have a greater risk for developing depression [4]. It has been documented that 10–30% of diabetic patients suffer from major depressive disorder or sub-threshold depression [5, 6]. Diabetics are at a 24% increased risk of developing depression [7]. The factors associated with high prevalence of depression among diabetic patients include poor quality of life, higher health care costs, impaired self-care, higher diabetes complications, and increased mortality rates [8-10]. There is a marked under-treatment of depression among diabetes patients. However effective treatments are available, estimates had found that fewer than 50% of depressed patients with diabetes have been identified [11, 12]. Depressed diabetic patients are less likely to manage their self-care regimens [13, 14]. Their glycosylated hemoglobin (HbA1c) levels are higher [15]. The number and severity of complications and mortality rates are higher as well [16]. On the other hand, diabetes and its complications may lead to poorer depression outcomes [17]. American Diabetes Association guidelines (2010) recommended screening for depression among all type 2 diabetic patients [18].

The tools that had been used to asses depression were mostly patient rated questionnaires like (BDI-II) which revealed depression prevalence rates ranged from 22% [19] to 62.5% [20], Patient health questionnaire (PHQ-9) (48.7%) [21], PHQ-2 (45.8%) [22], Center of Epidemiological Studies – Depression Scale (CES-D) (49.6%) [23], and depression anxiety and stress scale 21 (DASS-21) (33.8%) [24]. However, studies that used clinical interviews identified depression in 20% [25] and 16% of diabetic patients [26]. A large meta-analysis in 2001 identified some interesting differences in the prevalence of depression among diabetic patients as it was higher in females (28%) than in males (18%), in clinical (32%) than in community (20%) samples, and when it was recognized by using patient rated tools (31%) than by standardized diagnostic interviews (11%) [27].

The heterogeneity of the studies has resulted in mixed findings in terms of prevalence, correlates and risk factors of depression among diabetic population. The aim of the present study is to assess rate of depression and to investigate some of its correlates and risk factors among type 2 diabetic patients in the Western part of India.

MATERIALS AND METHODS

After obtaining their informed agreement, the Hamilton Rating Scale for Depression (HDRS) and the Hamilton Rating Scale for Anxiety (HRSA) were administered to 100 diagnosed diabetes patients (HARS). They were evaluated for sociodemographic characteristics, length of disease, and kind of therapy, including oral hypoglycemic medications or insulin injections. The results were studied across many domains.

Inclusion criteria

- Patients who were older than 20 at the time of the trial.
- Both male and female patients were seen
- A diabetes diagnosis for the patient.
- Patients who did not receive a diagnosis of anxiety or depression prior to receiving a DM diagnosis.

Exclusion criteria

- Correlated drug and alcohol addiction.
- Existence of any severe organic disease.
- Any other serious mental disorder;
- People who have severe cognitive impairment
- The patient is currently taking a psychotropic medication for a mental disorder or schizophrenia.
- Any prior history of a mental illness.

DISCUSSION

Table 1 shows the sociodemographic profile, indicating that most of the men and women are above the age of 50 years and are educated up to matriculation.

Table 1: Sociodemographic variables

	Male	Female
Age (in years)		
<30	4	4
31–50	16	20
>50	24	34
Educational level		
Up to matric	26	34
Matric–graduation	14	14
>graduation	4	4

According to Table 2, 84% of diabetes patients also had concomitant depression. Numerous studies have shown that diabetics far more often experience depression. On the HDRS, men showed a higher percentage of mild depression (27.27%) than women did (14.29%), however women were shown to have a higher prevalence of moderate to severe depression (71.43%) than men (54.55%).

Table 2: Hamilton depression rating scale

	Male $n = 44$	Female $n=56$	Total
<8 (no depression)	8 (18.8)	8 (14.29)	(16)
8–13 (mild depression)	12 (27.27)	8 (14.29)	(20)
14–18 (moderate depression)	6 (13.64)	20 (35.71)	(26)
19–22 (severe depression)	8 (18.18)	12 (21.43)	(20)
23 and above (very severe depression)	10 (22.73)	8 (14.29)	(18)
Total	44 (81.12)	56 (85.71)	

Figures in parentheses indicates percentage

According to table 3. Diabetes patients typically report low mood, anxiety, digestive problems, and genital problems like erectile dysfunction and lack of libido, according to Table 3's list of HDRS symptoms. According to Sorren Buus' research, which found that significantly more men than women reported experiencing sexual dysfunction, men are more likely than women to report feeling ge genital symptoms (79.5%) than women are (28.57%).

Table 3: Comparative distribution of positive rating on the symptom checklist of HDRS between males and females

Symptom on HDRS	Male	Female
Depressed mood	35 (79.5)	40 (71.4)
Suicide	10 (22.72)	8 (14.28)
Insomnia	15 (34.09)	25 (44.64)
Anxiety	30 (68)	45 (80.35)
Somaticsymptoms – gastrointestinal	32 (72.72)	40 (71.4)
Somatic symptoms – general	20 (45.45)	30 (53.57)
Genital symptoms	35 (79.5)	16 (28.57)
Loss of weight	15 (34.09)	25 (44.64)

Figures in parentheses indicates percentage

In Table 4, on HARS, male showed a higher percentage in mild anxiety symptoms (81.8%) as compared with females (66.7%), whereas a moderate to severe level of anxiety symptoms is two-times higher in females (39.25%) as compared with males (18.18%). These findings are consistent with the surveys performed by many researchers, in which women presented three-times higher percentages of anxiety in comparison with men.

Table 4: Hamilton anxiety rating scale

	Male $n = 44$	Female $n = 56$	Total
<17 (mild)	36 (81.8)	34 (60.7)	70 (70)
18–24 (moderate)	4 (9.09)	12 (21.4)	16 (16)
25 (severe)	4 (9.09)	10 (17.85)	14 (14)
Total	44	56	

Figures in parentheses indicates percentage

According to Table 5, more ladies (8035%) than boys (45.45%) experienced worried emotions on the HARS symptoms checklist. This contradicts the results of studies by Lloyd and Ali [36, 37], which show that women experience three times more anxiety symptoms than men do.

Table 5: Comparative distribution of positive rating on the symptom checklist of HARS between males and females

	Males $n = 44$	Females $n = 56$
Anxious mood	20 (45.45)	45 (80.35)
Tension	28 (63.6)	40 (71.4)
Insomnia	15 (34.09)	25 (44.64)
Depressed mood	35 (79.5)	40 (71.4)
Somatic (sensory)	12 (27.27)	18 (32.14)
GI symptoms	32 (72.72)	40 (71.4)
Genitourinary symptoms	32 (72.72)	15 (26.78)
Autonomic symptoms	20 (45.45)	35 (62.5)

Figures in parentheses indicates percentage

Table 6 demonstrate that there was no statistically significant difference between the depression and anxiety rating scales when the effect of treatment for diabetics (oral vs. injectable) on the patients' psychopathology was calculated (t=0.515, P>0.05) and (t=0.118, P>0.05), respectively. This demonstrates that the symptoms of anxiety and sadness in diabetic patients are unrelated to the manner of treatment (oral vs. injectable). But a considerable difference was noted in the literature. This could be brought on by social support systems and cultural variances.

Table 6: Treatment method of diabetes and HDRS and HARS scores

Type of treatment / HDRS	Oral	Injectable
In depression (A)		
Mean HDRS	16.8	15.85
Standard deviation	6.759	6.107
In anxiety (B)		
Mean HARS	14.3	14.0
Standard deviation	8.218	9.131

$t = 0.515$, $P > 0.05$ (non-significant), $t = 0.118$, $P > 0.05$ (non-significant)

CONCLUSION

In conclusion, the current study shown that women are at two times the risk of men of developing comorbid diseases including depression and anxiety. Nearly one-third of people with type 2 diabetes experienced depression. Younger patients, those with thyroid conditions or neuropathy, people taking insulin, and disobedient people had higher rates of depression. The accurate diagnosis and treatment of depression is a crucial part of the health care management of diabetics. The addition of psychiatric-mental health staff specialties in diabetic clinics would be a positive step toward the recognition and treatment of emotional disorders. This method can be used to identify and treat patients who have signs of anxiety and sadness. This could have a favourable impact on how medical professionals handle people with DM.

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