Frequency of Anxiety and Depression among Diabetic Patients and Association with duration of Diabetes Mellitus

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ABSTRACT

OBJECTIVE: To determine the frequency of Anxiety and Depression among Diabetic patients and association with duration of Diabetes Mellitus.

METHODOLOGY: Descriptive cross-sectional study conducted at the Out-patient Department (OPD) of Department of Medicine and Allied, Al-Tibri Medical College hospital, Karachi from August 2017 to December 2017. Total 194 patients of both gender with age range from 18 and 70 years suffering from Diabetes Mellitus type 2 were enrolled. The duration of diabetes was taken as less than 5 years, 5-7 years and above 7 years. The frequency of Anxiety and Depression were assessed by Beck Anxiety Inventory and Beck Depression Inventory. The data was analyzed by using SPSS version 20.

RESULTS: The average age of the patients was 50.35 ± 8.85. Out of 194 cases 102 (52.6%) were females and 92(47.40%) were males. Amongst total (92.80%) were married. Anxiety was found to be 47(24.2%) mild to moderate anxiety, 33(17.0%) suffering from moderate to severe anxiety and 58 (29.9%) were having severe anxiety. Depression was 28 (14.4%) mild depression, 74 (38.1%) moderate depression and 40 (20.6%) severe depression. Statistically depression was significantly associated with duration of diabetes with P-value of 0.000.

CONCLUSION: It is to be concluded that the frequency of anxiety and depression in patients of Diabetes is very high and depression is significantly associated with duration of Diabetes Mellitus.

KEY WORDS: Diabetes Mellitus, Anxiety, Depression.

INTRODUCTION

The frequency of depression and anxiety in patients having Diabetes Mellitus is impressively higher than normal and varies between 12 to 28%[1,2]. Research has established the link between diabetes duration and anxiety and depression[3]. Anxiety and depression were observed to be 58% and 45% of the outpatients with type 2 diabetes respectively, in a recent multicenter study from Pakistan[4]. Both diabetes and anxiety/depression are independently associated with increased morbidity and mortality. Co-event of these conditions adds to the cost, dreariness, and mortality[5]. Both depression and anxiety have been observed to be related with a negative impact on diabetes[6]. It has been accounted for that the patients with diabetes are around twice as liable to experience the Anxiety and Depression as the general population[7,8]. As indicated by confirmations, the relationship between these conditions is bi-directional. It is recognized that patients with both Depression and diabetes, in contrast with diabetic patients alone, have been related with poor self-care and restorative treatment, poorer glycemic control, more diabetes difficulties. Besides, melancholy in diabetes patients is connected with a higher danger of grimness and mortality[9]. It has additionally been watched that both diabetes and Anxiety/depression are related with untimely bleakness and mortality[10]. A recent study has shown the frequency of Depression and Anxiety in patients of Diabetes was 11.5% and 30.5% respectively[11].

Keeping in view the high frequency of anxiety and depression with diabetes this study is designed to see the association of anxiety and depression with duration of diabetes.

METHODOLOGY

Descriptive cross-sectional study, conducted at the Out-patient Department (OPD) of Department of Medicine and Allied, Al-Tibri Medical College hospital, Karachi from August 2017 to December 2017. Total sample of 194 patients was calculated through standard sample size calculator and non-probability (consecutive) sampling was done. Patients of both gender with age range from 18 and 70 years suffering from Diabetes Mellitus type 2 were included. The duration of diabetes were taken as less than 5 years, 5-7 years and above 7 years. Those patients having established other chronic illnesses such as chronic

renal disease, Hypo or hyperthyroidism or any other chronic medical condition were excluded from study. Those already diagnosed with Anxiety, Depression or any other psychiatric illnesses were also excluded. The ethical considerations were taken during study and informed consent was taken from clients. Ethical approval was taken from institute ethical committee. There were no any extra charges to diagnose diabetes mellitus, because the subjects were already had positive history of diabetes mellitus and were coming for follow up. For Anxiety and Depression Beck anxiety inventory and Beck depression inventory were used. Mild, moderate and severe forms of Anxiety and Depression were calculated as per score of tools used. The analysis of data was done by using SPSS version 20.

RESULTS

A total of 194 Patients diagnosed cases of Diabetes Mellitus having age ranging from 40 to 60 years with average age of 50.35±8.85 years were enrolled. Out of 194 cases 102 (52.6%) were females and 92 (47.40%) were males. Among total of 194 patients, 180 (92.80%) were married, 6 (3.10%) were single and 8 (4.10%) were widows. Majority of patients were educated till primary and were household or jobless by occupation and Balochi and Urdu speaking ethnicity. Among 194 patients of diabetes, Anxiety as assessed through Beck Anxiety Inventory was found to be 56 (28.9%) normal or minimal anxiety, 47 (24.2%) were having mild to moderate anxiety, 33 (17.0%) suffering from moderate to severe anxiety and 58 (29.9%) were having severe anxiety. Depression as assessed by Beck Depression Inventory was 52 (26.8%) were normal, 28 (14.4%) were having mild depression, 74 (38.1%) were of moderate depression and 40 (20.6%) were suffering from severe depression. Statistically depression was significantly associated with duration of diabetes with p-value of 0.000 while anxiety was insignificantly associated having p-value of 0.542.

TABLE I: DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS (n = 194)

Demographic Characteristics	n (%)
Marital status	
Single	06 (3.10)
Married	180 (92.80)
Widow	08 (4.10)
Education status	
Uneducated	16 (8.20)
Preliterate	32 (16.50)
Primary	60 (30.90)
Middle	22 (11.30)
Matric	30 (15.50)
Intermediate	14 (7.20)
Graduate	14 (7.20)
Postgraduate	06 (03.10)
Occupation status	
Jobless	72 (37.10)
Household	82 (42.30)
Professional	18 (9.20)
Shopkeeper	22 (11.30)
Language	
Balochi	84 (43.30)
Pashto	12 (06.20)
Punjabi	12 (06.20)
Sindhi	40 (20.60)
Urdu	46 (23.70)

TABLE II: FREQUENCY OF ANXIETY AND DEPRESSION AMONG PATIENTS OF DIABETES AS PER BECK DEPRESSION INVENTORY AND BECK ANXIETY INVENTORY

Anxiety as per BAI	n %
0–9: normal to minimal anxiety	56 (28.9%)
10–18: mild to moderate anxiety	47 (24.2%)
19–29: moderate to severe anxiety	33 (17.0%)
30–63: severe anxiety	58 (29.9%)
Total	194 (100%)
Depression as per BDI score	**n %**
Normal 1-16 score	52 (26.8%)
Mild 17-20	28 (14.4%)
Moderate 21-30	74 (38.1%)
31 and above severe	40 (20.6%)
Total	194 (100%)

DISCUSSION

In this study it was observed that the frequency of depression among patients of diabetes mellitus from mild to severe level was 14.4%, 38.1% and 20.6% respectively and anxiety was found to be from mild to severe as 24.2%, 17.0% and 29.9% respectively. It is slightly greater than the study published in 2015 which showed the frequency of depression and anxiety among diabetes patients as having the depression from mild to severe level (10.8%, 24.6% and 12.5% respectively) and anxiety from mild to severe level (4.6%, 27.9% and 37.1% respectively)[12]. In Qatar, a study was conducted on diabetic patients and it was observed that 13.6% of diabetes patients had severe depression, 35.3% had severe anxiety while in our study the level of severe depression and anxiety is

Muhammad Ilyas Jat, Abdul Rab Bhutto, Nasir Hussain, Waqas Anwar

TABLE III: ASSOCIATION OF DEPRESSIVE DISORDER WITH DURATION OF DIABETES

Duration of Diabetes	Depressive Disorder				Total	P-Value
	Normal	Mild	Moderate	Severe		
Less than 5 years	32(43.2%)	18(24.3%)	14(18.9%)	10(13.5%)	74(100%)	
5-7 years	4(8.3%)	0(0%)	30(62.5%)	14(29.2%)	48(100%)	0.000
Above 7 years	16(22.2%)	10(13.9%)	30(41.7%)	16(22.2%)	72(100%)	
Total	52(26.8%)	28(14.4%)	74(38.1%)	40(20.6%)	194(100%)	

TABLE IV: ASSOCIATION OF ANXIETY DISORDER WITH DURATION OF DIABETES

Duration of Diabetes	Anxiety Disorder				Total	P-Value
	Normal or minimal anxiety	Mild to moderate anxiety	Moderate to severe anxiety	Severe anxiety		
Less than 5 years	19(25.7%)	17(23.0%)	17(23.0%)	21(28.4%)	74(100%)	
5-7 years	18(37.5%)	12(25.0%)	6(12.5%)	12(25.0%)	48(100%)	0.510
Above 7 years	19(26.4%)	18(25.0%)	10(13.9%)	25(34.7%)	72(100%)	
Total	56(28.9%)	47(24.2%)	33(17.0%)	58(29.9%)	194(100%)	

20.6% and 29.9% respectively, here the level of severe depression is more as compared to previous but anxiety is less, the differences could be many as methodology, psychosocial circumstances etc[13].

A study conducted to observe the occurrence of depression in patients of diabetes and concluded that 44.5% diabetes patients had no depression, 24.5% had mild depression, 25.5% had moderate depression and 5.5% had severe depression on the Beck Depression Inventory (BDI)[14] while in our study we also had applied the same tool but the results are different as 26% had no depression while from mild to severe was 14.4%, 38.1% and 20.6% respectively, the difference could be due the previous study was conducted at Baskent University Istanbul Hospital Turkey[14] which is a developed country and our study is from a low socioeconomic area of Karachi, Pakistan where Pakistan is considered as "Third World Country". A study conducted in India had shown the frequency of depression among diabetic patients as 26.3% and anxiety as 27.6%[15] while in our study the severe depression was 20.6% and severe anxiety as 29.9%, the difference could be due that they had used Hamilton anxiety and depression scale while we have used BDI (Beck depression inventory).

A study had shown that 50% of clients attending diabetic clinic were observed having anxiety and depression while we have seen more than 50% diabetic patients having anxiety and depression, hence the variability of frequency of depression and anxiety in diabetic population has been observed. In our study depression has been linked significantly with duration of diabetes while anxiety is not linked, while in another study from Pakistan has shown that duration of diabetes has little effects on both anxiety and depression[16].

CONCLUSION

It is concluded that the frequency of Anxiety and Depression in patients of Diabetes Mellitus is very high and Depression is significantly associated with its duration of Diabetes.

Therefore management of Diabetes as well as Anxiety and Depression should be done as earlier as possible to reduce the morbidity and mortality.

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