WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH
www.wjpmr.com

PREVALENCE OF DEPRESSION IN PATIENTS OF DIABETES MELLITUS ATTENDING DIABETIC CLINIC

[1]*Dr. Saeed Akthar, [2]Dr. Hafiz Shafique Ahmad, [3]Dr. Mussarat Jahan and [4]Dr. Shoaib Ahmed

[1]Associate Professor, Department of Psychiatry, Quaid-e-Azam Medical College Bahawalpur.
[2]Assistant Professor/ Head Department of Psychiatry & Behavioral Sciences DGKMC/ Teaching Hospital DG KHAN.
[3]Senior Registrar Department of Psychiatry & Behavioral Sciences QMC/ BVH Bahawalpur.
[4]Resident in Psychiatry, Department of Psychiatry & Behavioral Sciences QMC/BVH Bahawalpur.

*Corresponding Author: Dr. Saeed Akthar

Associate Professor, Department of Psychiatry, Quaid-e-Azam Medical College Bahawalpur.

ABSTRACT

Objective: To assess the prevalence of depression in cases of type-II diabetes mellitus presenting at diabetes clinic Bahawal Victoria Hospital Bahawalpur. **Materials & Methods:** After scrutinizing by inclusion and exclusion criteria, total 200 type-II diabetics were selected from a diabetic clinic, Bahawal Victoria Hospital, Bahawalpur having age 20-65 years of both gender from 1-03-2018 to 30-09-2018 Depression was assessed in selected by using DSM-IV criteria for Depression. **Results:** Mean age was 54.37 ± 5.88 years. Out of 200 patients of diabetes, depression was noted in 46 (23%) patients. Most (98,49%) of the patients were between 51-65 years but difference of depression with age group was not statistically significant with p value 0.8958. Total 19 (20.88%) male patients and 27 (24.77%) female patients were found with depression. But depression was insignificantly associated with gender with p value 0.6315. Total 11 (14.29%) patients found with depression having duration of diabetes mellitus ≤3 years and 35 (28.46%) patients found with depression having duration of diabetes mellitus >3 years. Depression was significantly associated with duration of diabetes mellitus with p value 0.032. **Conclusion:** Our study concluded that prevalence of depression in type 2 diabetes mellitus patients was much higher and have shown positive association with extremes of ages and duration of disease.

KEYWORDS: Diabetes mellitus, depression, socioeconomic status, physical recovery.

INTRODUCTION

Diabetes mellitus is a disease with increased level of blood sugar is caused by failure to produce insulin by the pancreas or by decreased production or by lack of sensitivity of target cells to insulin produced.[1] It is not curable disease yet. It can only be managed for near normal living. Targets of the treatment are to keep the blood sugar level at normal levels and to avoid complications. Long term complications lead to damage to vasculature and two fold increase of likehood of cardiac illness.[2] Rate of depressive illness in general population is 6-17%.[3]

Depression is a common cause of sickness, decreased working capacity and increased visits to health facilities.[4]

Risk of depression in diabetics is double than in general population. It affects 20% of diabetics.[5]

Increased blood sugar and lack of sensitivity of cells to insulin leads to depression by two ways:

(1) by its effect on symptoms, for example lethargy and poor concentration & compilations and by physiological mechanisms like inflammatory processes and by decreased neurotrophic function that leads to reduced plasticity of nervous system and then to depression.[6] In addition, depression may negatively affect management of diabetes.[7-8] Depressive illness imparies physical health by physiological and psychological mechanisms. Physiological disturbance causes neurohormonal and immunologic changes in the body, which causes increased likelihood to disease. Moreover, a low mood may interfere with a patient's physical recovery. Patients of depressive illness have decreased likelihood to get treatment and treatment compliance as compared to patients not having depression.[9]

Though literature was available but there was marked variability of rate of depression in diabetic patients in national and international literature, so we conducted this study to reassess it in my setup at Bahawalpur and this would in turn increase the awareness of physicians, family and patients about the importance of co-morbid

depression in diabetics and this would help increasing the quality of management of these patients in our area.

MATERIAL AND METHODS

After scrutinizing by inclusion and exclusion criteria, total 200 type-II diabetics were selected from a diabetic clinic, Bahawal Victoria Hospital, Bahawalpur having age 20-65 years of both gender from 1-03-2018 to 30-09-2018.

Patients having history disorder like, anxiety, psychotic, mood and personality, pregnant females, patients with history of hypertension, congestive heart failure, myocardial infraction, hypothyroidism, stroke and patients with history of depression before onset of diabetes were excluded.

Type-II diabetes mellitus was defined as: having HbA1c less than 8%. DSM-IV criteria for depression was used to assess the depression. Findings were noted in term of depression (Yes/No) on pre-designed proforma. Demographic profile and socioeconomic status (Rs.<10000, Rs.10000-20000, Rs.>20000) was also noted on proforma.

Collected was analyzed by using SPSS version 20. Age and duration of disease was presented as mean and SD. Depression (Yes/No), gender (male/female) and socioeconomic status (Rs.<10000, Rs.10000-20000, Rs.>20000) were presented as frequency and percentage.

Stratification in relation to age, duration of disease, gender, socioeconomic status was done and chi-square test was used to detect the association of these with depression. P value < 0.05 was taken as significant.

RESULTS

This consisted on 200 patients with type-II diabetes mellitus. Depression was assessed by using DSM-IV criteria for depression. Mean age of the patients was 54.37 ± 5.88 years.

Out of 200 patients of diabetes, depression was noted in 46 (23%) patients. (Fig. 1).

Stratification in relation to age was done and 3 groups were made i.e. age group 20-35 years, age group 36-50 years and age group 51-65 years. Total 35 (17.5%) patients belonged to age group 18-35 years followed by 67 (33.5%) patients to age group 36-50 years and 98

(49%) patients to age group 51-65 years. Depression was noted in 7 (20%) patients, 16 (23.8%) patients and 23 (23.47%) patients respectively in age group 18-35 years, age group 36-50 years and age group 51-65 years respectively. Statistically insignificant association between depression and age group was noted with p value 0.8958. (Table 1).

Male patients were 91 (45.5%) and female patients were 109 (54.5%). Total 19 (20.88%) male patients and 27 (24.77%) female patients were found with depression. But depression was insignificantly associated with gender with p value 0.6315. (Table 2).

Patients were divided into 3 groups according to their monthly income, Rs. <10000 Group, Rs. 10000-20000 group and Rs. >20000 group. Out of 45 (22.50%) patients of Rs. <10000 group, depression was found in 10 (22.22%) patients. Total 64 (32%) patients belonged to Rs. 10000-20000 group and depression was noted in 15 (23.44%) patients. In Rs. >20000 group, out of 91 (45.50%) patients, depression was noted in 21 (23.08%) patients. But depression was insignificnalty associated with socioeconomic group with p value 0.99. (Table 3).

In 77 (38.50%) patients, duration of diabetes was ≤3 years and in 123 (61.50%) patients, duration of diabetes mellitus was >3 years. Total 11 (14.29%) patients found with depression having duration of diabetes mellitus ≤3 years and 35 (28.46%) patients found with depression having duration of diabetes mellitus >3 years. Depression was significantly associated with duration of diabetes mellitus with p value 0.032. (Table 4).
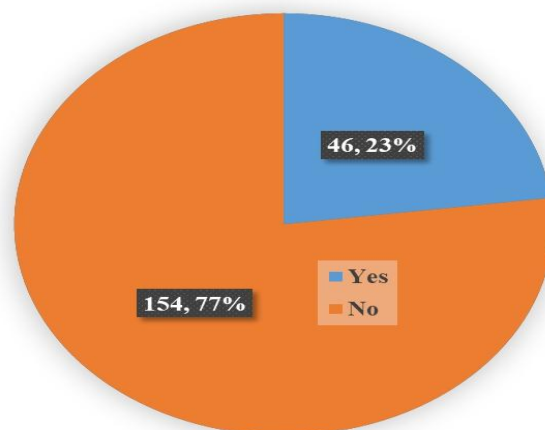

Fig. 1: Frequency of depression.

Table 1: Stratification of age groups with respect to depression.

Age (years)	Depression		Total (%)	p-value
	Yes (%)	No (%)		
20-35	7 (20%)	28 (80%)	35 (17.5%)	
36-50	16 (23.88%)	51 (76.12%)	67 (33.5%)	
51-65	23 (23.47%)	75 (76.53%)	98 (49%)	0.8958
Total	**46 (23%)**	**154 (77%)**	**200**	

Table 2: Stratification of Gender with respect to Depression.

Gender	Depression		Total (%)	p-value
	Yes (%)	No (%)		
Male	19 (20.88%)	72 (79.12%)	91 (45.5%)	
Female	27 (24.77%)	82 (75.23%)	109 (54.5%)	**0.6315**
Total	**46 (23%)**	**154 (77%)**	**200**	

Table 3: Stratification of socioeconomic status with respect to depression.

Socioeconomic status	Depression		Total (%)	p-value
	Yes (%)	No (%)		
<10000	10 (22.22%)	35 (77.78%)	45 (22.5%)	
10000-20000	15 (23.44%)	49 (76.56%)	64 (32%)	0.99
>20000	21 (23.08%)	70 (76.92%)	91 (45.5%)	
Total	**46 (23%)**	**154 (77%)**	**200**	

Table 4: Stratification of duration of disease with respect to Depression.

Duration of disease	Depression		Total (%)	p- value
	Yes (%)	No (%)		
≤3 years	11 (14.29%)	66 (85.71%)	77 (38.5%)	
>3 years	35 (28.46%)	88 (71.54%)	123 (61.5%)	0.032
Total	**46 (23%)**	**154 (77%)**	**200**	

DISCUSSION

Depressive illness has important role in the prognosis of physical diseases. Patients of depression develop hopelessness which leads to lack of interest in living. It will lead to poor compliance and physical illness will worsen due to poor treatment. It is known that diabetics with depressive illness do not follow the advice of the doctor about compliance and food restriction.[10] Result is poor blood glucose control as compared to those diabetics, whom are not having depression.[11] It results in more complications and increased rate of deaths.

Identification of patients with depression and their early treatment can lead to decreased morbidity and mortality in diabetic population.[12]

The objective of present study was to find out the frequency of depression in patients of type-II diabetes mellitus. In present study mean age of the patients was 54.37 ± 5.88 years and depression was noted in 23% patients. Similar mean age (54years and 54 years) of diabetics was reported by Balhara YPS et al,[13] and Mathew CS et al,[14] which in agreement with our study. Das R et al,[15] and James BO et al,[16] found mean age in their studies as 45 years and 46 years which is lower than our study. In our study, most of the patients were females as compared to males 109 (54.5%) vs 91 (45.5%). In many other studies female predominance was observed.

Diabetics have higher rate of depression than non-diabetic population. In diabetics depressive illness ranges from 12% to 28% in different studies.[17] But Mathew CS et al,[14] found depression in 38.8% of his patients with type 2 diabetes. Zahid et al,[18] in 2008 found a lower rate of (14.7%) in Pakistan. In Bahrain, Jameel Naseer et al,[19] in 2009, found 33% of patients of depression. However highest rate of 71.8% is reported in an Iranian study by Khamseh et al.[20]

Out study show equal rate of depression in diabetic men and women. Although rate of depression is higher in non-diabetic women as compared on non-diabetic men i.e. in general population. It needs further studies to explore this point in Pakistan.

Similarly duration of illness has been associated with depression in a study from Bahrain.[23]

However, no such association was observed in our study. In this regard our study confirms the results of study of Raval et al.[24]

Further more, when the socioeconomic status was analyzed, we found statistically no significant difference among poor/middle/upper groups. Same findings were observed in other studies.

So, it is concluded that prevalence of depression in diabetics is much higher than non diabetics. Most of these patients remain undiagnosed and untreated. So psychological assessment of these patients is must for their better quality of life and to improve their prognosis.

CONCLUSION

This study concluded that prevalence of depression in type 2 diabetic patients was very high and strong association was found between prevalence of depression and extremes of ages and duration of disease. So, we recommend that proper evaluation of the co-morbid depression in diabetics should be done, so proper

counseling and psychotherapy of these particular patients could be done in order to improve their quality of life and reduce the morbidity.

REFERENCES

1. Shoback, Gardner DG, Dolores. Greenspan's basic & clinical endocrinology. 9th ed. New York: McGraw-Hill Medical, 2011; 17.
2. Emerging Risk Factors Collaboration. "Diabetes mellitus, fasting blood glucose concentration, and risk of vascular disease: A collaborative meta-analysis of 102 prospective studies". The Lancet, 2010; 375(9733): 2215–22.
3. Mensah SA, Beavis JM, Thapar AK, Kerr MP. A community study of the presence of anxiety disorder in people with epilepsy. Epilepsy Behav, 2007; 11(1): 118-24.
4. Michaud CM, Murray CJ, Bloom BR. Burden of disease implications for future research. JAMA., 2010; 285(5): 535-39.
5. Schram TM, Baan AC, Pouwer F. Depression and quality of life in patients with diabetes. Curr Diabetics Rev., 2009 May; 5(2): 112 – 19.
6. Nouwen A, Nefs G, Caramlau I, Connock M, Winkley K, Lloyd EC, et al. Prevalence of Depression in individuals with impaired Glucose metabolism or undiagnosed Diabetes. Diabetes care, 2011 mar; 34: 752 -62.
7. Gonzalez J, Safren S, Cagliero E. Depression, Self - Care, and Medication Adherence in Type 2 Diabetes. Relationships across the Full Range of Symptom Severity. Diabetes Care, 2007; 30: 2222 -7.
8. Gonzalez JS, Peyrot M, McCarl LA. Depression and Diabetes Treatment Nonadherence: A Meta-analysis. Diabetes Care, 2008; 31: 2398-403.
9. Penninx BW, Guralnik JM, Ferrucci L, Simonsick EM, Deeg DJ, Wallace RB. Depressive symptoms and physical decline in community-dwelling older persons. JAMA, 1998; 279(21): 1720-26.
10. Ciechanowski PS, Katon WJ, Russo JE. Depression and diabetes: i mpact of depressive symptoms on adherence, function, and costs. Arch Intern Med., 2000; 160(21): 3278-85.
11. Ciechanowski PS, Katon WJ, Russo JE, Hirsch IB. The relationship of depressive symptoms to symptom reporting, self-care, and glucose control in diabetes. Gen Hosp Psychiatry, 2003; 25(4): 246-52.
12. Cronin-Stubbs D, de Leon CF, Beckett LA, Field TS, Glynn RJ, Evans DA. Six - year effect of depressive symptoms on the course of physical disability in community-living older adults. Arch Intern Med., 2000; 160(20): 3074 -80.
13. Balhara YPS, Sagar R. Correlates of anxiety and depression among patients with type 2 diabetes mellitus. Indian J Endocrinol Metab., 2011; 15(Suppl1): S50 –S54.
14. Mathew CS, Dominic M, Isaac R, Jacob JJ. Prevalence of depression in consecutive patients with type 2 diabetes mellitus of 5 -year duration and its impact on glycemic control. Indian J Endocrinol Metab., 2012; 16(5): 764 –8.
15. Das R, Singh O, Thakurta RG, Khandakar MR, Ali SN, Mallick AK, et al. Prevalence of Depression in Patients with Type II Diabetes Mellitus and its Impact on Quality of Life. Indian J Psychol Med., 2013; 35(3): 284–9.
16. James BO, Omoaregba JO, Eze G, Morakinyo O. Depression among patients with diabetes mellitus in a Nigerian teaching hospital. South Afr J Psychiatry, 2010; 16(2): 61-4.
17. Shaban MC, Fosbury J, Kerr D, Cavan DA. The prevalence of depression and anxiety in adults with Type 1 diabetes. Diabet Med, 2006; 23: 1381–4.
18. Zahid N, Asghar S, Claussen B, Hussain A. Depression and diabetes in a rural community in Pakistan. Diabetes Res Clin Pract, 2008; 79(1): 124 –27.
19. Nasser J, Habib F, Hasan M, Khalil N. Prevalence of depression among people with diabetes attending diabetes clinics at primary health settings. Behrain Med Bull, 2009 Sep; 31: 3-8.
20. Khamseh ME, Baradaran HR, Rajabali H. Depression and diabetes in Iranian patients: a comparative study. Int J Psychiatry Med, 2007; 37(1): 81–86.
21. Culbertson FM. Depression and gender. An international review. Am Psychol, 1997; 52: 25-31.
22. Ali S, Stone MA, Peters JL, Davies MJ, Khunti K. The prevalence of co -morbid depression in adults with type 2 diabetes: a systematic review and me ta-analysis. Diabet Med, 2006; 23: 1165-73.
23. Perveen S, Otho MS, Siddiqi MN, Hatcher J, Rafique G. Association of depression with newly diagnosed type 2 diabetes among adults aged between 25 to 60 years in Karachi, Pakistan. Diabetol Metab Syndr, 2010; 2: 17.
24. Raval A, Dhanaraj E, Bhansali A, Grover S, Tiwari P. Prevalence and determinants of depression in type 2 diabetes patients in a tertiary care centre. Indian J Med Res., 2010; 132: 195–200.
25. Almawi W, Tamim H, Al-Sayed N, Arekat MR, Al-Khateeb GM, Baqer A, Tutanji H, Kamel C. Association of comorbid depression, anxiety, and stress disorders with Type 2 diabetes in Bahrain, a country with a very high prevalence of Type 2 diabetes. J Endocrinol Invest, 2008; 31: 1020–4.