Original Article

Prevalence of Depression among Sudanese Patients with type-2 Diabetes Mellitus

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ABSTRACT

Background: Both diabetes mellitus and depression are common disorders, and when coexist; they lead to poor glycemic control that may ultimately increase the risk of both micro and macro-vascular complications. In Sudan, few data are available regarding prevalence of depression among subjects with type -2 diabetes mellitus.

Objectives: The aim of the study is to determine the prevalence of depression among Sudanese patients with type-2 diabetes mellitus.

Materials and Methods: A cross-sectional descriptive study, carried out among Sudanese patients with type-2 diabetes mellitus who attended medical insurance clinic in Omdurman. The patients gave consent and HADS questionnaire was filled.

Results: The study enrolled 400 patients with type 2 diabetes mellitus, 176 (44%) of them had depression. Among those with depression, 52.3% had mild depression, 29.5% and 18.2% of them, had severe and moderate depression, respectively. Sixty three percent of the study group were female. Their ages range from 30-79 years with a mean of 56.6 ±13.The average duration of diabetes was 10.3 years. 76% of patients were physically inactive and 16 (4%) of them were smokers. Fifty six (14%) had family history of psychiatric disorders, 170 (42.5%) of them showed lack of enjoyment, 77 (19.3%) of them lacked laughing, 81(20.3%) of them lost sensation of happiness, 68(17%) of them lost energy, 238 (59.5%) of them neglected their external appearance, 76 (19%) of them showed no enjoyment, and 62 (15.5%) of them lost enjoying reading or watching television.

Conclusion: Depression is common among Sudanese patients with type -2 diabetes mellitus, therefore screening for depression should be part of routine clinical evaluation of these patients.

Key words: Sudan, diabetes mellitus, depression.

Diabetes mellitus (DM) is characterized by elevation of the blood glucose level and lead to microvascular and macrovascular complications. DM is associated with a reduced quality of life and life expectancy, with a greater risk of heart disease, stroke, peripheral neuropathy, renal disease, blindness and amputation. DM falls into two principal forms, type 1 (T1DM) and type 2 diabetes (T2DM). T1DM occurs in childhood and is due primarily to autoimmune-mediated destruction of pancreatic-cell islets that lead to absolute insulin deficiency[1].

Diabetes mellitus is a common disease with a high rate of mortality and morbidity,345 million people worldwide currently suffer from diabetes and , in 2004, 3.4 million of them died of the disease [2]. Type 2 diabetes (T2DM) is accounting for about 85–95% of all diabetes cases [3]. Several factors contribute to an increase in the prevalence of this disease, such as socioeconomic development, including urbanization that lead to physical inactivity and changes in diet [2, 3].

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy and poor concentration.[4] Depression is related to old age, level of education, occupation, the problems of everyday living, and social problems[5].

There has been increased attention given to how psychological issues will affect (DM), self-management, as well as the emotional consequences of having a diagnosis. Being diagnosed with diabetes is a major life stress;

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it requires a large number of physical and mental coping strategies. Regarding health education, the patient must know about complex dietary and medical interrelations. Lifestyle, work, and school schedules may need modifications which in turn, pose a more pressure on the patient and his or her family, just as important, is the emotional adjustment. As a result of this, many newly diagnosed diabetics go through the typical stages of mourning which include denial, anger, depression and acceptance[6.]

The relation between diabetes mellitus and depression is strong, as diabetes is associated with depression and depression is more common in adults with T2DM as compared to those without. Diabetes mellitus is a vascular disease with both micro- and macro-vascular complications which associated with depression and have shown to increase the risk of mood disorder, further, poor glycemic control leads to more complications of diabetes, such patients are more prone to develop depression[7.]

Clinically significant depression is associated with a 65% increased risk of DM. Characteristics of depression frequently found in the community, namely non severe depression, persistent depression, and untreated depression may play a role in the development of diabetes in a predominantly elderly adult population[8].

Diabetes and depression are highly prevalent conditions and have a significant impact on health outcomes, according to World Health Organization report, DM contribute to 2% of all-cause mortality in Sudan[9]. The coexistence of diabetes and depression associated with significant morbidity, mortality, and increased healthcare cost[10].

The aim of the study is to determine the prevalence of depression among Sudanese patients with type-2 diabetes mellitus.

MATERIALS AND METHODS:

A cross sectional study carried out from 1st July till 1st September 2012 among 400patients suffering from diabetes mellitus. It was conducted at diabetic clinic in medical insurance center, in Sudan. Subjects of the study include all adult diabetes mellitus type 2 who agreed to participate in the study. The exclusion criteria included diabetes mellitus Type 1, mental disorder, patients who are either, deaf, mute or blind. The Hospital Anxiety and Depression Scale (HADS) Questionnaire was used as a screening tool for depression HADS Questionnaire is useful in general medical out-patient clinics but is now widely used in clinical practice and research. The questionnaire was translated in to Arabic by authors, a verbal consent was taken from the patients and data was collected by authors themselves, patients were reassured that data collected will be strictly confidential and used only for purpose of research. Data collected include age, sex, and duration of diabetes, as well as physical activity, education level, smoking, and family history of depression. The final results were analyzed according to HADS scale for depression only, anxiety was not included, and Score for depression can range from 0-21 with scores categorized as follows: normal (0-7), mild (8-10), moderate (11-14), severe (15-21).

RESULTS:

This study included 400 diabetic subjects, 63% of them were female. Their ages range from 30-79 years with a mean of 56.6 ±13. The average duration of diabetes is 10.3 years. 29.3% of patients were illiterate. Table (1) shows other patient's characteristics.

One hundred and seventy (42.5%) of patients were not enjoying life, 77(19.3%) were unable to laugh; 81(20.3%) of patients had lost sensation of happiness; 68(17%) had loss of energy; 238(59.5%) of them neglect their external appearance; 76(19%) of them did not look for enjoyment; 62(15.5%) were not enjoying reading or watching television (Table (2)).

One hundred and seventy six (44%) of the study group had depression, 23% had mild depression, 8% with moderate depression and 13% had severe depression (Figure (1)).

DISCUSSION:

Mood and psychotic disorders are among the most common psychiatric disorders in the general population[11].Depression is associated

with chronic diseases and non-psychiatric medical illnesses. There are suggestions of association between mood, anxiety disorder and diabetes mellitus[12-14.] Better understanding of depression among diabetic subjects leads to better planning and incorporation of psychiatric care among diabetic clinic care which ultimately improves glycemic control, therefore, reducing diabetic complications[15].

Table (1): Characteristics of the study group.

Characteristic	Number	%
Age (30—79)	400	100
Sex		
Male	148	37
Female	252	63
Smoker	16	4
Level of education		
Non-educated	117	29.3
Basic education	114	28.3
High education	169	42.4
Parent's education		
Non-educated	291	78.8
Basic education	109	21.2
High education	0	0
Family history of depression	56	14

The validity of HADS scale was well addressed in the literature, Bjelland et al[16], founded HADS to perform well in assessing the symptom severity and caseness of anxiety disorders and depression in both somatic, psychiatric and primary care patients and in the general population, therefore, we adopted HADS scale for patient's assessment.

In the present study, 57.6% of patients had low level of education that is similar to study conducted by Anne Engum et al[17,] that showed low level of education is present in 72% of diabetic patients associated with depression.

Table (2): Parameters used for depression's assessment in the study group

Parameter	Number	%
No enjoyment	170	42.5
Paucity of laugh	77	19.3
No pleasure	81	20.3
Loss of energy	68	17
External appearance Self neglect	238	59.5
Lack of interest	76	19
Loss of interest (reading, hearing or watching interesting media)	62	15.5

Four percent of the study group was smoker which is similar to the previous study [17].Seventy six percent of the study group is physically inactive that is similar to previous study[17] that reported physical inactivity in 77.2% of depressed diabetic patients.

The results of this study demonstrate that 176 (44%) of patients had depression which is similar to the study conducted by F. Pouwer et al[18], that showed 37–43% of T2DM patients reported depressive affect, similarly Sweileh et al[19], concluded that 40% of diabetic patients had depression which is in accordance with the current study.
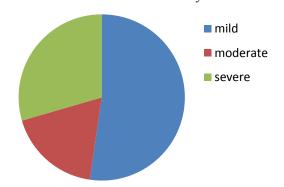

Figure (1): Severity of depression among the study group.

Approximately two thirds of patients with diabetes have concealed depression which remains unrecognized and untreated [20]despite the importance of clinical implications associated with the comorbidity occurring conditions. The care of diabetic patients is usually carried by general practitioners who underestimate the importance of impact of

emotional issues adverse effect upon diabetic patients [21]; therefore, important health consequences associated with comorbid depression and diabetes necessitate optimal treatment of both conditions to maximize overall patient outcomes.

In this study , the majority (23%) of patients had mild depression, 8% had moderate and 13% had severe depression, similar to Shahrakivahed *et al* [22] study that show the (38%) of patients had mild depression, (30%) had moderate depression, and 13% had severe depression.

In contrast to our study, Rahman M1 *et al.*'s study [23], concluded that severe depression is more common (20.2%) than mild to moderate depression (14.6%), this can be explained partially by relatively small size of the data sample in the later study.

CONCLUSION:

Depression is common among Sudanese patients with type -2 diabetes mellitus, therefore, screening for depression should be part of routine clinical evaluation of these patients.

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