

Diabetes Mellitus and Depression: An Arab Perspective

Hesham Abuhegazy*

Associate Professor of Psychiatry, Al-Azhar University, Cairo, Egypt

***Corresponding Author:** Hesham Abuhegazy, Associate Professor of Psychiatry, Al-Azhar University, Cairo, Egypt.

Received: October 07, 2019; **Published:** November 01, 2019

The lifetime prevalence of major depression in adults is estimated to be 7 to 12 percent in men and 20 to 25 percent in women [1]. The current estimates of the worldwide prevalence of depression indicate that 350 million people suffer from it and similarly, the worldwide prevalence of diabetes is estimated to be more than 400 million people [2]. Projection rates of diabetes are expected to rise to over 438 million by the year 2030 [3].

Diabetes is one of the most prevalent human diseases worldwide affecting all ages. It is a chronic disease that requires long-term medical attention to limit the development of its complications and to manage them when they occur [4]. Diabetes is a serious metabolic health problem among Arab speaking countries and the prevalence is continuing to increase [5].

International Diabetes Federation (IDF) estimated that around 37 million Arab people have type 2 diabetes mellitus and this is projected to reach 68 in 2035 [6] Unpleasantly, the top six world leading countries; among Arabic speaking, countries were Kuwait, Lebanon, Qatar, Saudi Arabia, Bahrain and United Arab Emirates (UAE) [7].

Diabetes is often comorbid with clinically relevant symptoms of depression [8]; People with diabetes are twice as likely to be depressed as people without chronic diseases [9], Clinical and subclinical expressions of depression ranges between 11% [9] and 40% [10] in patients with diabetes.

Despite numerous investigations, the underlying patho-physiologies of the metabolic abnormalities related to the two diseases are poorly understood. A possible explanation could be due to the increases counter-regulatory hormone release involved in glucose homeostasis, alterations in the glucose transport function and increased inflammatory activation triggered by depression [11].

The high prevalence of depression among diabetic patients is associated with poorer quality of life, impaired self care activities, higher health care costs, a higher risk for the development of diabetes complications and increased mortality rates [12] Despite these known adverse effects and the high prevalence of depression in diabetes and the fact that effective treatments are available, there is a considerable under-detection and subsequent under-treatment of these conditions. Less than half of the depressed patients with diabetes are recognized [13,14].

The efficacy of treatment of depression in the presence of serious somatic illness has been examined in a series of studies summarized in a review published in 2010. The review showed that psychotherapeutic interventions (some of which were combined with diabetes education) had a moderate-to-large effect on depressive symptoms and a moderate-to-large effect on glycemic control. Psychopharmacological treatment with selective serotonin reuptake inhibitor (SSRI) medications also had a moderate-to-large effect on depressive disorders with lesser effects on glycemic control [15]. Although most of the studies were small in size, the findings seem to indicate that the treatment of depression by psychotherapy or with medications should be combined with education to achieve diabetes self-care and glucose control [2].

By Reviewing the studies of prevalence of depression among diabetic patients in Arab countries, all of them were cross sectional, on clinical sample of patients which have been recruited from either primary health care centers, or diabetes centers, most studies have used self assessment questionnaires to assess depression, beck depression inventory (BDI-II) was the mostly used tool; the prevalence of depression by using it ranges from 62.5% in tabuk Saudi Arabia [16] to 22% in Jordan [17]. Many other assessment tools were used for one study for each; Patient health questionnaire (PHQ-9) was revealed prevalence of depression 48.7% [18], PHQ-2 revealed depression prevalence of 45.8% [19]; Center of epidemiological studies- depression scale (CES-D) had found depression prevalence of 49.6% [20]; hospital anxiety and depression scale (HADS) has revealed depression prevalence of 34% [21] and depression anxiety and stress scale 21 (DASS-21) has revealed depression prevalence of 33.8% [22].

Couple of studies have administered interview techniques to assess depression, first study have used MINI structured interview and found depression in 20% of diabetic patients [23], while the other one used semi-structured interview and revealed MDD in 16% of diabetic patients [24].

Regarding risk factors of depression among diabetic patients, many studies detected female gender as a risk factor for developing depression [17,19,22,25]; some studies had detected low income [18,26,27], being unmarried [20], unemployed [25] and poorly educated [25,27] as an independent risk factors.

Some studies had detected older age as a risk factor [26], while some others on the opposite side detected younger age as a risk factor [22].

However There is almost consistent acknowledgment of comorbidity [19,22,25-28], diabetic complications [26,28,29] and duration of diabetes [19,22,24,28] as independent risk factors for developing depression, a single study had found that shorter duration was associated with more depressed subjects [21]. Obesity [18,25], poor adherence [25] and insulin use [19] were also detected risk factors by some investigators.

Poor glycaemic control was found by most cross sectional studies as independent risk factor for developing depression [16,20,22,24,26,28], which is consistent with systematic review of cross sectional studies that had demonstrated a significant small to medium sized correlation between depression and A1c and a trend for depression to predict A1C [30]; nevertheless some studies failed to detect such like relation [29,31]. However Abuhegzy, *et al.* (2017) [32] have detected this relation in 3-years prospective follow up study which agrees with the findings of Richardson, *et al.* (2008) [33] who demonstrated a clear association between depression and persistently high HbA1c levels over a four-years period in patients with type 2 diabetes.

It is clear that studying the prevalence of depression among diabetic patients had gained much interest from Arab researchers in last decade, however most of the studies were local and on limited number of patients, community studies are missing, as well studies which target to unravel the patho-physiology of this relation, the bidirectional supposed relation needs to be examined. There were no Arab studies according to my knowledge to address the treatment of depression in diabetic population and its long term outcomes nevertheless it is limited worldwide. I think these domains are important points to be addressed in future researches.

Although many health agencies recommended screening diabetic patients for depression, it looks that missing patients is the result of our current very specialized health care system; management of comorbidities needs more collaborative health care system than what is existed.

Conflict of Interest

No conflict of interests to be disclosed.

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Volume 8 Issue 12 December 2019

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