

Editorial

Depression and Diabetes: A Major Public Health Problem

Lia Gentil*

Department of Medicine and Health Sciences, University of Sherbrooke, Canada

***Corresponding author:** Gentil, Lia, 150 Place Charles-Le Moyne, Suite 200, P.O. Box 11, Longueuil, Quebec J4K 0A8, Canada, Tel.: 450-466-5000; Fax: 450-670-4135; Email: Lia.Gentil@USherbrooke.ca**Received:** June 15, 2015; **Accepted:** June 22, 2015;**Published:** June 25, 2015

Editorial

Depression is a significant comorbid condition in people with diabetes. Approximately 30% of them suffer from depression [1]. Meta-analyses also determined that the risk for diabetes in depressed individuals is up to 60% higher than for those people who are not depressed [2]. The association between depression and diabetes is unclear. However, depression may develop because of stress and anxiety related to managing diabetes. Depressive symptoms may lead to unhealthy habits and sedentary lifestyles such as physical inactivity, high-fat diet, central obesity, or smoking, and increase risk factors for type 2 diabetes [3].

The relationship between diabetes and depression may be bidirectional and involve multiple mechanisms and/or indirect causes [4]. This interaction has been extensively studied in cross-sectional and longitudinal studies over the past decade [5]. However, the temporal association between these variables remains unclear and requires further investigation.

Previous reports indicated that the prevalence of depression does not appear to differ according to the type of diabetes [6]. A range of factors may be involved in increasing the risk of developing depressive symptoms. Previous reports suggested a prevalence of depression in women with both type 1 and type 2 diabetes is greater than that observed in the general population [6].

In addition, prevalence rates for severe depressive episodes/major depressive disorder are higher among certain groups of older adults, especially those with a comorbid medical illness. Depression is a common complication associated with diabetes, especially among older people. Elderly patients with type 2 diabetes seem to be a high-risk group; in a seven-year longitudinal study, this outcome was demonstrated by a five-fold increase in mortality without any substantial differences between mild and severe depression. Older adults with diabetes and depression are less likely to adhere to self-management regimens, increasing their risk of complications. Education level has been associated with higher depression rates in patients with type 2 diabetes. Individuals living alone, those who report a lack of social support, and those with lower socioeconomic status are also more likely to suffer from depression [7].

Egede and colleagues suggest that the effect of depression on all-cause mortality in people with and without diabetes is independent of sociodemographic characteristics, major cardiac risk factors, and

comorbidity. Their study showed that the combination of diabetes and depression is associated with an increased risk of death beyond that due to having either diabetes or depression alone. People with both diabetes and depression had a 1.3-fold increased risk of death from all causes compared with people with only diabetes, a 2-fold increased risk of death from all causes compared with people with only depression, and a 2.5-fold increased risk of death compared with people without either diabetes or depression [8]. Another report showed a greater mortality risk in post-myocardial infarcts patients with both diabetes and depression [8]. Therefore, more aggressive strategies are needed to initiate and optimize treatment for depression among individuals with diabetes

In people diagnosed with type 1 or type 2 diabetes, depression increases the risk for persistent hyperglycemias, micro vascular and macro vascular complications, and mortality [5,9,10]. The association between depression and diabetes has a synergic effect on medication adherence, health outcomes and healthcare costs [11]. Patients with depression and diabetes adhere less to treatment recommendations [9].

Rates of adherence to medication regimens ranged from 36% to 93%, depending on the type of medication studied, the population examined and the method used to measure adherence [12]. Medication non-adherence in individuals with diabetes was associated with increased all-cause hospitalizations [13]. Studies have shown that an increase in depressive symptoms is associated with a decrease in diabetes self-care. People who suffer from both disorders have less adequate glycemic control because self-care deteriorates, which can result in long term complications. The most common complications include: retinopathy, nephropathy, neuropathy and peripheral vascular disease and cardiovascular disease. Previous study has reported that the coexistence of diabetes and depression was associated with increased two fold healthcare costs [11].

Individuals with diabetes should be regularly screened by their healthcare provider for psychological distress and psychiatric disorders (e.g. depression and anxiety). Unfortunately, depression in diabetes is often under diagnosed and undertreated. For example, the results of a US study that included more than 9000 patients with diabetes revealed a recognition rate for major depression of 51%, whereas 43% of the patients received one or more antidepressant prescriptions and only 6.7% received four or more psychotherapy sessions over a 12-month period [14].

The role of a previous history of depression in future depressive episodes remains unclear, and large population-based prospective studies are needed to examine this aspect further. In addition, medication non-adherence is prevalent in people with diabetes and associated with adverse clinical outcomes. Assessment of medication adherence should be incorporated in routine clinical practice. It is crucial to screen for depressive symptoms in diabetic patients and intervene with effective treatment methods as early as possible.

References

1. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: a meta-analysis. *Diabetes Care*. 2001; 24: 1069-1078.
2. Ali S, Stone MA, Peters JL, Davies MJ, Khunti K. The prevalence of comorbid depression in adults with Type 2 diabetes: a systematic review and meta-analysis. *Diabet Med*. 2006; 23: 1165-1173.
3. Engum A. The role of depression and anxiety in onset of diabetes in a large population-based study. *J Psychosom Res*. 2007; 62: 31-38.
4. Golden SH, Lazo M, Carnethon M, Bertoni AG, Schreiner PJ, Diez Roux AV, et al. Examining a bidirectional association between depressive symptoms and diabetes. *JAMA*. 2008; 299: 2751-2759.
5. Lustman PJ, Anderson RJ, Freedland KE, de Groot M, Carney RM, et al. Depression and poor glycemic control: a meta-analytic review of the literature. *Diabetes Care*. 2000; 23: 934-942.
6. Engum A, Mykletun A, Midthjell K, Holen A, Dahl AA. Depression and diabetes: a large population-based study of sociodemographic, lifestyle, and clinical factors associated with depression in type 1 and type 2 diabetes. *Diabetes Care*. 2005; 28: 1904-1909.
7. Lloyd CE, Dyer PH, Barnett AH. Prevalence of symptoms of depression and anxiety in a diabetes clinic population. *Diabet Med*. 2000; 17: 198-202.
8. Egede LE, Nietert PJ, Zheng D. Depression and all-cause and coronary heart disease mortality among adults with and without diabetes. *Diabetes Care*. 2005; 28: 1339-1345.
9. Katon WJ, Rutter C, Simon G, Lin EH, Ludman E, Ciechanowski P, et al. The association of comorbid depression with mortality in patients with type 2 diabetes. *Diabetes Care*. 2005; 28: 2668-2672.
10. Black SA, Markides KS, Ray LA. Depression predicts increased incidence of adverse health outcomes in older Mexican Americans with type 2 diabetes. *Diabetes Care*. 2003; 26: 2822-2828.
11. Ciechanowski PS, Katon WJ, Russo JE. Depression and diabetes: impact of depressive symptoms on adherence, function, and costs. *Arch Intern Med*. 2000; 160: 3278-3285.
12. Cramer JA. A systematic review of adherence with medications for diabetes. *Diabetes Care*. 2004; 27: 1218-1224.
13. Ho PM, Rumsfeld JS, Masoudi FA, McClure DL, Plomondon ME, Steiner JF, et al. Effect of medication nonadherence on hospitalization and mortality among patients with diabetes mellitus. *Arch Intern Med*. 2006; 166: 1836-1841.
14. Katon WJ, Simon G, Russo J, Von Korff M, Lin EH, Ludman E, et al. Quality of depression care in a population-based sample of patients with diabetes and major depression. *Med Care*. 2004; 42: 1222-1229.