DOI: 10.14744/ejmi.2018.46220
EJMI 2018;2(4):174–177

Review

# Anxiety and Depression in Diabetic Patients

**Nihan Oguz**

**Department of Psychology, Uskudar University, Istanbul, Turkey**

**Abstract**

Diabetes metillus (DM) is a life-long illness caused by insufficent production of insülin by the pancreas or by the inability of the body to use the produced insulin efficiently. The most common psychological disorders with diabetes metillus are anxiety and depression.

Pubmed, PsycINFO and Google Scholar databases published reference list were searched to identify studies that Anxiety and Depression in Diabetic patients. Patients with Type 2 DM are more likely to be particularly depressed. Diabetic Patients have increased anxiety symptoms. When Diabetic patients are scheduled for treatment, evalunations from psychological side will ensure optimal treatment conditions for these patients. In this article, the clinical manifestations of depression and anxiety of diabetic patients have been extensively reviewed.

**Keywords:** Anxiety, depression, diabetes metillus, type 2 DM

***Cite This Article:*** *Oguz N. Anxiety and Depression in Diabetic Patients. ejmi. 2018; 2(4): 174-177*

Diabetes mellitus (Diabetes) is a chronic metabolic disorder in which the cells of organisms cannot benefit from enough carbohydrates, fats and proteins due to deficiencies or defects in insulin. The prevalence of sedentary life and obesity, depending on the developing technology has led to an increasing incidence of this disease all over the world.[1, 2] World Health Organization (WHO) in 2014 adults over the age of 18 diabetes 9% of the prevalence indicates that in 2013 the number of individuals with diabetes mellitus will reach 382 million worldwide and will reach 592 million by 2035.[3]

There are 2 types of Diabetes Mellitus. (Type 1 and Type 2) Type 1 diabetes is the cause: usually occurs in people aged 30 years and younger than normal. The reason for type 1 diabetes is that the pancreas can not produce enough insulin as a result of the pancreas damage to the immune system. Type 1 diabetes usually begins in childhood, rarely in later ages. Type 1 diabetes needs to be taken seriously. It is not just a disease that can be healed with attention to weight and weight control. People with type 1 diabetes should regularly take insulin injections several times daily to prevent the sugar level from reaching the deadly level and to avoid other serious complications. Type 2 diabetes: It occurs more often in advanced ages and is seen in overweight people. Type 2 constitutes more than 90% of diabetic patients. In type 2, insulin production continues but the amount of insulin produced is insufficient or the body cells show insulin resistance. Most of the patients in this group are obese. Type 2 diabetes is usually seen in adults and is a slowly developing disease. However, nowadays the increase in the number of obese children and the incidence of type 2 diabetes in children are also increasing. These types of patients often do not need insulin needles. Oral medications, diet regulation, weight loss and exercise are sufficient for the treatment of the disease. Some of the patients with type 2 diabetes, however, require insulin later in life.

Diabetes is not only an organic disease, it is a condition with psychiatric and psychosocial dimensions; diabetic physical, emotional, social and sexual problems and con-

**Address for correspondence:** Nihan Oguz, CP. Uskudar Universitesi Psikoloji Bolumu, Istanbul, Turkey
**Phone:** +90 536 995 97 85 **E-mail:** nihanogz91@yahoo.com

**Submitted Date:** October 15, 2018 **Accepted Date:** November 07, 2018 **Available Online Date:** November 29, 2018

flicts are faced with. In 18% of adult patients with diabetes, disorders are reported to require psychiatric assistance. However, it is known that 10% of these psychopathological conditions are not recognized. Therefore, it is important to take into account the physical complaints as well as the mental, emotional and behavioural situation of the patient. Mental symptoms, especially depression and anxiety symptoms may develop against diabetes, its complications, Interventional examination and treatment methods.

The most common psychiatric conditions associated with diabetes mellitus are anxiety and depression. In patients with diabetes, depression is seen at a higher rate than in the general population.

This study is investigated the relationship between anxiety and depression in diabetic patients.

There is increasing evidence that the psychological state of diabetic patients is not over-emphasized and that anxiety and depression are present in these diabetic patients. In this review, is diabetes associated with the development of anxiety and depression in diabetic patients and increases the anxiety and depression of diabetes? The questions will be examined in the light of the literature.

## Methods

The relationship between depression and anxiety of diabetic patients. PubMed, PyscINFO and Google Scholar databases were scanned. While scanning The key words "diabetes mellitus, depression and anxiety" were used. From the sources of other chronic diseases studies with children including research on unsubstituted. After the research, only 26 articles in the English and Turkish languages were taken into consideration in this compilation study.

## Results

### Depression and Diabetes Mellitus

Type 2 diabetes mellitus and depression have been reported in many studies. The depression has been reported to be twice as common in type 2 DM patients as compared to the general population.[4,5] The prevalence in women is 28.2%, while in men it is 18%.[6-8]

In other studies, the prevalence of depression in Type 2 DM patients is between 24 and 30%.[9-11] While 30% of DM patients have depressive symptoms, only 10% of them have a diagnosis of major depression.[12] Depression in Type 1 DM patients can also be seen in up to 30-40% of cases.[13]

Diabetes is associated with depression, adherence to the patient, quality of life, response to treatment, prognosis, adverse effects of diabetes mellitus, mortality and morbidity, making it difficult to control diabetes. Depressive symptoms and diabetic symptoms affect each other in increasing ways. If the patient does not cooperate in treatment, if the medical condition is balanced, if he or she is not feeling well, if the medical condition shows lower function than is possible.[6]

Certain neuroendocrine and neurotransmitter abnormalities that are commonly identified for diabetes and depression may explain the close association in these two disorders. One of these is the activation of the immune system, which leads to increased cortisol levels leading to dysregulation of the chronic hypothalamic-pituitary adrenal axis and decreased insulin sensitivity or chronic inflammatory processes.[14]

Type 2 Diabetes Mellitus is a risk factor for depression in patients with diabetes, complications of diabetes, especially vascular complications, knowing that diabetes is the cause, long duration of diabetes, extreme caution, shortage of daily activities, smoking and obesity.[7,1,16]

However, there is limited epidemiological evidence for them. Increased levels of depression are associated with low education, female gender, or unmarried status in studies of the elderly.[10,17]

Glycaemic control was reported to be worse in Type 2 DM patients with depression in clinical trials than non-DM patients. Eren et al. Showed a negative correlation between the number of depressive episodes and the HbA1C level. In another longitudinal study, HbA1C levels were compared in patients with Type 2 DM with and without depression, and higher HbA1C was detected in patients with depression.[18]

Zenteno and Cardiel report that the presence of chronic complications is a risk factor for depression.[19] Chronic complications occur when glycaemic control is not provided, the most common being retinopathy, peripheral neuropathy and nephropathy.[20] Hermanns and colleagues found that the most common complications in diabetes were neuropathy (49.6%), retinopathy (31.4%) and nephropathy (6.2%).[21]

Complications are found to have higher levels of depressive symptoms, as well as increased complication rates if depression is not treated. The presence of depression affects the control of blood sugar and the compliance of patients with the treatment. It has been reported that insulin resistance develops in diabetic patients with depression. With all of this in mind, it is important to recognize depression and treat it appropriately in diabetic patients.[8]

### Anxiety Disorders and Diabetes Mellitus

Anxiety is the tension in which you feel threatened. Anxiety disorders are also common in diabetic patients.[9] The

main anxiety disorders associated with medical illnesses are generalized anxiety disorder and panic disorder. There is only one review of the prevalence of anxiety disorders in patients with diabetes. Grigsby et al. reported that 40% of diabetic patients had increased anxiety symptoms and 14% had anxiety disorders.[22]

Comorbid anxiety disorders and increased anxiety symptoms in diabetic patients are associated with increased weight of diabetic symptoms, increased pain, impaired blood glucose levels, decreased quality of life and increased depression, increased body mass index, and greater disability.[23,24]

## Conclusion

Numerous psychological symptoms accompany diabetic patients in diabetic patients. Treatment of depression and anxiety symptoms should be considered as an important factor in the control of diabetes. These psychiatric symptoms affecting patients' existing medical treatments and the course of their illness are often overlooked or sometimes misdiagnosed by clinicians. In conclusion, holistic consideration of diabetic patients requires diagnosis and treatment of organic psychiatric, psychophysiological and psychosocial statements accompanying the disease as well as physical therapy.

## Suggestions

It is unlikely that diabetes will prevent complications. However, complications may be delayed by a good glycaemic control periodically. Therefore, regular check-ups and tests will help in the early recognition of complications. Patients with diabetes should be treated holistically, besides metabolic control of the disease, psychological support should be provided to the patient as a risk group. Informing the diabetic patients about the diseases is important in preventing physiological and psychological problems. For this reason, periodically, patients should benefit from diabetes education. Due to the high rates of DM in psychological disorders and the interactions of diabetes and psychological disorders, it is thought that more extensive work is needed to elicit physiological and behavioural factors that may cause psychological disturbance.

### Disclosures

**Ethics Committee Approval:** Ethics committee approval was not requested for this study.

**Peer-review:** Externally peer-reviewed.

**Conflict of Interest:** None declared.

## References

1. Tanyeri F. Diabetes mellitus tanım ve sınıflandırma. Aktüel Tıp Diabet Forumu 2002;7:4–10.
2. Yılmaz T. Diabetes mellitusun tanı kriterleri ve sınıflaması. T Yılmaz, M Bahçeci, A Büyükbeşe, editors. Diabetes Mellitus'un Modern Tedavisi. 1st. İstanbul: Türkiye Diyabet Vakfı; 2003.
3. World Health Organization. Available at: http://www.who.int/en/news-room/fact-sheets/detail/diabetes. Accessed Nov 27, 2018.
4. Furuya M, Hayashino Y, Tsujii S, Ishii H, Fukuhara S. Comparative validity of the WHO-5 Well-Being Index and two-question instrument for screening depressive symptoms in patients with type 2 diabetes. Acta Diabetol 2013;50:117–21. [CrossRef]
5. Trento M, Raballo M, Trevisan M, Sicuro J, Passera P, Cirio L, et al. A cross-sectional survey of depression, anxiety, and cognitive function in patients with type 2 diabetes. Acta Diabetol 2012;49:199–203. [CrossRef]
6. Buzlu, S. Diyabetin psikososyal yönü. Erdoğan E, editor. Diyabet Hemşireliği Temel Bilgiler. İstanbul: Yüce Yayım Dağıtım; 2002. p.195–20.
7. 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;299:2751–9. [CrossRef]
8. Gülseren L, Hekimsoy Z, Gülseren Ş, Bodur Z, Kültür S. Diabetes mellituslu hastalarda depresyon anksiyete, yaşam kalitesi ve yeti yitimi. Türk Psikiyatri Dergisi 2001;12:89–98.
9. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: a meta-analysis. Diabetes Care 2001;24:1069–78. [CrossRef]
10. 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 meta-analysis. Diabet Med 2006;23:1165–73. [CrossRef]
11. Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health: results from the World Health Surveys. Lancet 2007;370:851–8.
12. Pickup JC, Harris A. Assessing quality of life for new diabetes treatments and technologies: a simple patient-centered score. J Diabetes Sci Technol 2007;1:394–9. [CrossRef]
13. Winokur A, Maislin G, Phillips JL, Amsterdam JD. Insulin resistance after oral glucose tolerance testing in patients with major depression. Am J Psychiatry 1988;145:325–30. [CrossRef]
14. Pickup JC. Inflammation and activated innate immunity in the pathogenesis of type 2 diabetes. Diabetes Care 2004;27:813–23.
15. de Groot M, Anderson R, Freedland KE, Clouse RE, Lustman PJ. Association of depression and diabetes complications: a meta-analysis. Psychosom Med 2001;63:619–30. [CrossRef]
16. Luijendijk HJ, Stricker BH, Hofman A, Witteman JC, Tiemeier H. Cerebrovascular risk factors and incident depression in community-dwelling elderly. Acta Psychiatr Scand

2008;118:139–48. [CrossRef]
17. Khuwaja AK, Lalani S, Dhanani R, Azam IS, Rafique G, White F. Anxiety and depression among outpatients with type 2 diabetes: A multi-centre study of prevalence and associated factors. Diabetol Metab Syndr 2010;2:72. [CrossRef]
18. Eren I, Erdi O, Sahin M. The effect of depression on quality of life of patients with type II diabetes mellitus. Depress Anxiety 2008;25:98–106. [CrossRef]
19. Téllez-Zenteno JF, Cardiel MH. Risk factors associated with depression in patients with type 2 diabetes mellitus. Arch Med Res 2002;33:53–60. [CrossRef]
20. Lloyd CE, Brown FJ. Depression and diabetes. Curr Womens Health Rep 2002;2:188–93. [CrossRef]
21. Hermanns N, Kulzer B, Krichbaum M, Kubiak T, Haak T. Affective and anxiety disorders in a German sample of diabetic patients: prevalence, comorbidity and risk factors. Diabet Med 2005;22:293–300. [CrossRef]
22. Grigsby AB, Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. Prevalence of anxiety in adults with diabetes: a systematic review. J Psychosom Res 2002;53:1053–60. [CrossRef]
23. Balhara YP, Sagar R. Correlates of anxiety and depression among patients with type 2 diabetes mellitus. Indian J Endocrinol Metab 2011;15:S50–4. [CrossRef]
24. Shaban C, Fosbury JA, Cavan DA, Kerr D, Skinner TC. The relationship between generic and diabetes specific psychological factors and glycaemic control in adults with type 1 diabetes. Diabetes Res Clin Pract 2009;85:e26–9. [CrossRef]