

An Analysis of Depression Prevalence Among Diabetes Patients

Florica Voiță-Mekereș^{1,2}, Emilia Cristina Popa^{2,3*}, Lavinia Davidescu⁴, Dorina Galușca^{2,5}, Nicolae Ovidiu Pop^{2,4}

¹Department of Morphological Discipline, Faculty of Medicine and Pharmacy, University of Oradea, 410087 Oradea, Romania.

²County Clinical Emergency Hospital of Oradea, 410087 Oradea, Romania.

³Doctoral School of Biomedical Sciences, Faculty of Medicine and Pharmacy, University of Oradea, 410087 Oradea, Romania.

⁴Department of Surgical Disciplines, Faculty of Medicine and Pharmacy, University of Oradea, 410087 Oradea, Romania.

⁵Department of Medical Disciplines, Faculty of Medicine and Pharmacy, University of Oradea, 410087 Oradea, Romania.

*E-mail ✉ mekeres_gabriel@yahoo.com

Abstract

Depression is recognized as one of the most common mental illnesses worldwide and can be caused or exacerbated by chronic medical conditions such as diabetes. This psychiatric disorder is characterized by symptoms such as decreased interest and energy, feelings of guilt, failure, difficulty concentrating, low self-esteem, loss of appetite, suicidal thoughts, sleep disturbances, and impaired functioning. This study aimed to investigate the relationship between depression and diabetes. People with diabetes are particularly vulnerable to mood disturbances, including depression, due to the stress of managing their condition. The presence of depression not only worsens the symptoms of diabetes but also leads to harmful behaviors such as overeating, excessive drinking, neglecting medications, or even suicidal tendencies, all of which hinder effective diabetes management. Several studies have shown that the incidence of depression in diabetic patients is significantly higher compared to the general population, with certain groups, such as women, widows, or divorcees, and individuals with a family history of the condition, being more susceptible to depression. It is recommended that psychiatric evaluations and counseling be provided, especially for those at a higher risk of experiencing depressive symptoms.

Keywords: Patients, Diabetes, Depression, Psychiatrists

Introduction

Diabetes is a metabolic disorder that has become a major global health issue, with its prevalence steadily rising across the world [1-3]. The condition arises due to either inadequate insulin secretion or resistance to insulin, leading to impaired cellular uptake of glucose. This results in various complications, including nephropathy

[4, 5]. Key features of diabetes include elevated blood glucose levels, cardiovascular and renal failure, and reduced nerve function, which are among the long-term effects of the disease [6-8]. Neuropathic complications are seen in approximately 7% of newly diagnosed diabetic patients within the first year [9, 10]. Over time, patients may experience further neuropathy-related issues, including memory and cognitive impairments, pain, anxiety, depression, and reproductive behavior disorders [11-13]. Psychiatric conditions, especially depression, are common in individuals with chronic diseases like diabetes [14, 15]. Depression in diabetic patients is linked to a lower quality of life, poor adherence to treatment, and inefficient use of healthcare resources [16-18]. Additionally, individuals with

Access this article online

Website: <https://smerpub.com/>

E-ISSN: 3108-4818

Received: 03 December 2022; Revised: 05 March 2022; Accepted: 08 March 2022

How to cite this article: Voiță-Mekereș F, Popa EC, Davidescu L, Galușca D, Pop NO. An Analysis of Depression Prevalence Among Diabetes Patients. Int J Soc Psychol Asp Healthc. 2022;2:23-6. <https://doi.org/10.51847/bu4fmyUtAa>

diabetes and depression struggle more to manage their blood sugar levels, and they experience more frequent complications such as retinopathy, nephropathy, vascular problems, and sexual dysfunction [19, 20].

Depression manifests with symptoms like diminished interest and energy, feelings of guilt and failure, withdrawal, concentration difficulties, self-loathing, loss of appetite, thoughts of death or suicide, sleep disturbances, and overall dysfunction. The development and recurrence of depression are influenced by neurotransmitters like serotonin and norepinephrine, as well as external and internal stressors such as fluctuations in blood sugar, cholesterol, triglycerides, and other factors associated with chronic diseases [21-23]. While diabetes affects 3 to 5% of the global population, its prevalence is notably higher in certain regions [24, 25]. For people with diabetes, adjusting to lifestyle changes due to the disease can be difficult. Given that patients are often well aware of the potential short- and long-term complications, diabetes can be a significant source of stress, contributing to the development of mood disorders, particularly depression [26, 27]. Numerous studies have confirmed this link. For instance, Grandinetti's research revealed a depression prevalence of 61.3% among diabetic patients, with 40.6% experiencing moderate to severe depression [28]. A meta-analysis by Anderson *et al.* found that individuals with diabetes were twice as likely to suffer from major depressive disorder compared to those without diabetes [29]. Unfortunately, in many countries, depressive symptoms are often dismissed as natural consequences of diabetes. Timely diagnosis and treatment of both depression and diabetes are crucial for improving patient outcomes [30, 31]. This research aims to explore the relationship between depression and diabetes.

Materials and Methods

The research was performed by reviewing existing literature across multiple databases. Several studies on depression in diabetic patients and the factors influencing it were identified within these sources. This analysis aimed to explore the prevalence of depression among diabetic individuals and investigate the relationship between various factors, such as age, gender at diagnosis, and mental health status, concerning depression in diabetic patients.

Results and Discussion

Depression is more prevalent in women with diabetes compared to men [32], with women also being more likely to experience moderate to severe depression. This could be attributed to factors such as restricted social interactions and specific stressors related to women's conditions [33]. A direct correlation exists between the duration of diabetes and the onset of depression, as the long-term complications of the disease can worsen over time. Additionally, patients with lower literacy levels are more susceptible to depression, potentially due to a lack of understanding or coping mechanisms [32]. Individuals with a genetic predisposition to depression face a higher risk, as do those dealing with advanced complications of diabetes, compared to those without such issues. Insulin-dependent diabetic patients are more prone to depression, and employed individuals report lower levels of depression than their unemployed counterparts. Additionally, divorced, widowed, or unmarried individuals experience higher rates of depression than married ones [34, 35]. Given the high prevalence of diabetes, addressing depression, particularly in its early stages, is crucial for managing the disease. Depression can disrupt blood sugar regulation by affecting hormones that counteract insulin, and it can also lead to unhealthy behaviors such as overeating or alcohol consumption, further aggravating diabetes and its complications [31]. One potential reason for the high depression rates in diabetic patients may be the physiological impact of the disease itself, with studies showing that controlling blood sugar levels can reduce depression and its complications. Another factor is the psychological stress caused by managing a chronic illness. Research has established a significant relationship between stress due to diabetes and the prevalence of depression. As a result, stress management strategies are vital for reducing both blood sugar levels and depressive symptoms. Stress management involves techniques that help individuals cope with stress more effectively, and cognitive-behavioral training has been shown to improve both blood sugar control and reduce depression in diabetic patients [36, 37]. Furthermore, any intervention that helps control blood sugar levels or improves mood can prevent or alleviate depression in these individuals. Aerobic exercise, in particular, has been found to reduce the incidence of depression or its symptoms in diabetic patients [38].

Conclusion

Considering the widespread occurrence of depression in diabetic patients and its adverse effects on disease management and the worsening of complications, it is essential to conduct psychiatric evaluations and provide counseling, particularly for those with a higher susceptibility to depression, such as women and individuals with a personal or familial history of mental health issues. Early detection and the development of preventive and therapeutic programs are vital for improving depression in these patients. Additionally, offering psychological support and encouraging activities like aerobics or promoting blood sugar regulation can help mitigate depression. Given the gaps in research, such as the link between depression and insulin dosage, the relationship between self-care and depression severity, and the connection between hemoglobin A1C levels and depression, further studies in these areas are necessary.

Acknowledgments: None

Conflict of Interest: None

Financial Support: None

Ethics Statement: None

References

- Atalay M, Laaksonen DE. Diabetes, oxidative stress, and physical exercise. *J Sports Sci Med.* 2002;1(1):1-14.
- Cin GT, Fenkci SM, Yiğit U, Lektemur Alpan A. Periodontal parameters and periodontitis severity in type 2 diabetes patients with chronic complications. *Ann Dent Spec.* 2022;10(4):61-7.
- Malik M, Mahjabeen M, Rana S, Hussain A, Hashmi A. Quality of life and depression among postmenopausal women in Pakistan. *Arch Pharm Pract.* 2021;12(3):28-32.
- Hinkle JL, Cheever KH, Brunner and Suddarths, textbook of medical-surgical nursing. 10th ed. Williams & Wilkins; 2004. p. 1203-149.
- Alharbi SS. Diabetes mellitus as a risk factor for different types of cancers: a systematic review. *Clin Cancer Investig J.* 2022;11(4):19-24.
- Ahmann AJ. Guideline and performance measures for diabetes. *Am J Manag Care.* 2007;13:6-41.
- Shetgaonkar KA, Suragimath G, Varma S, Zope S. Two way relationship between diabetes and periodontitis: a cross-sectional survey of knowledge, awareness, and attitude. *Int J Pharm Res Allied Sci.* 2022;11(2):1-7.
- Samir D, Ouissam B, Anfal D. Antioxidant and antidiabetic effect of biosynthesis zinc nanoparticles by using polyherbal aqueous extract in Wistar rats. *J Biochem Technol.* 2022;13(1):72-80.
- Baydas G, Sonkaya E, Tuzcu M, Yasar A, Donder E. Novel role for gabapentin in neuroprotection of central nervous system in streptozotocine-induced diabetic rats. *Acta Pharmacol Sin.* 2005;26(4):417-22.
- Sharifi A, Alqahtani AS, Almousaedi IH, Almotadaris SF, Ojaym AA, Al Alnuayr MA, et al. The association between trauma and the occurrence of diabetes mellitus at the age of less than 40 years. *Pharmacophore.* 2022;13(2):107-4.
- Leonard EE. Effects of depression on work loss and disability bed days in individuals with diabetes. *Diabetes Care.* 2004;27(7):1751-3.
- Anbar GH, AlShahrani SM, Al Thubyani MM, Almarghlani A. Oral hygiene status of Bell's palsy and diabetic patient: a 23-month implants follow-up case report. *Ann Dent Spec.* 2021;9(2):72-8.
- Bashir T, Morrissey H, Ball P. Systematic review of psychological and educational interventions used to improving adherence in diabetes and depression patients. *Arch Pharm Pract.* 2021;12(3):1-11.
- Kaplan HI, Sadock BJ. Synopsis of psychiatry. 8th ed. Baltimore: Williams and Wilkins; 1998. p. 808,525.
- Moskalyova L, Rudyk S, Podplota S, Dolgova O, Litvynenko S, Kukharchuk N. Affinity of women's depression with Bulesis self-help regulations in the postpartum period. *Int J Pharm Res Allied Sci.* 2021;10(2):55-61.
- Koopmanschap M. Coping with type II diabetes: the patient's perspective. *Diabetologia.* 2002;45(7):S18-22.
- Sharma P, Choudhry AA, Kumar P, Mahapatra T. Covid-19 and diabetes mellitus: a life-threatening reciprocal association. *J Biochem Technol* 2021;12(2):38-43.

18. Ciechanowski PS, Katon WJ, Russo JE. Depression and diabetes: impact of depressive symptoms on adherence, function and costs. *Arch Intern Med.* 2000;160(21):3278-85.
19. De Groot M, Anderson R, Freedland KE, Clouse RE, Lustman PJ. Association of depression and diabetes complications: meta-analysis. *Psychosom Med.* 2001;63(4):619-30.
20. Alqurashi MY, Alharthi KF, Abdulrahman A, Alshehri YK, Sanousi MA, Abdullah A, et al. The role of DPP-4 inhibitors in type-2 diabetes patients with chronic kidney disease. *Pharmacophore.* 2021;12(3):91-4.
21. Sadock BJ. Mood disorders. In: Kaplan HI, Sadock BJ, editors. *Kaplan and Sadock's synopsis of psychiatry: behavioral sciences, clinical psychiatry.* 8th ed. Baltimore, MD: Williams & Wilkins; 1998.
22. Ahmed NF, Alqahtani AS, Albalawi NM, Alanazi FK, Alharbi FM, Alsabah BA, et al. Diabetes in adolescents and children in Saudi Arabia: a systematic review. *Arch Pharm Pract.* 2021;12(1):109-14.
23. Daulalas AD, Rallidis M. Association of depressive symptoms with coagulation factors in young, healthy individuals. *Atherosclerosis.* 2005;1(91):53-9.
24. Brownell KD, Cohen LR. Adherence to dietary regimens: an overview of research. *Behav Med.* 2002;20(4):54-149.
25. Ahmed AA, Alruwaili MN, Alanazi JF, Alanazi DF, Alanazi AS. Awareness of diabetic patients regarding diabetes complications in Saudi Arabia: systematic review. *Pharmacophore.* 2022;13(5):64-9.
26. Mohammadi M, Ghal-eriz P, Pahlevanzadeh S, Mosavei GA, Hamzei M. Competitive prevalence incidence and severity of depression in diabetic patients treated by tablets and insulin. *Arak Med Univ J.* 2001;14(4):25-9.
27. Kasper DL, Braunwald M, Fauci AS, Hauser A. *Harrison's principles of internal medicine.* 16th Ed. New York: McGraw-Hill; 2005.
28. Grandinetti A, Kaholokula JK, Crabbek M, Kenui C, Chen R, Changh K. Relationship between depressive symptoms and diabetes among native Hawaiians. *Psychoneuroendocrinology.* 2000;25(3):239-46.
29. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: a meta-analysis. *Diabetes Care.* 2001;24(6):1069-78.
30. Abasalli Zadeh A, Asadollah AH. Answer to common patient's questions about depression. 1st ed; 2000. 13 p.
31. Gelder M. *Oxford textbook of psychiatry.* 3rd ed. Oxford: medical publication psychiatry; 1995.
32. Papadopoulos AA, Kontodimopoulos N, Frydas A, Ikonomakis E, Niakas D. Predictors of health-related quality of life in type II diabetic patients in Greece. *BMC Public Health.* 2007;7(1):186.
33. Garduno-Espinosa J, Tellez-Zenteno JF, Hernandez-Ronquillo L. Frequency of depression in patients with diabetes mellitus type II. *Rev Invest Clin.* 1998;50(4):287.
34. Sevincok-L. Depression in a sample of Turkish type 2 diabetes patients, Turkey: Adnan Menderes. *Eur Psychiatry.* 2001;16(4):229-31.
35. Zahiroddin A, Sedighi G. Study of depression prevalence in diabetic patients referring to Emam Hosain and Loghman hospitals. *Med Res.* 2004;27:203-7. [In Persian]
36. Surwit RS, VanTilburg MA, Zucker N, McCaskill CC, Parekh P, Feinglos MN, et al. Stress management improves long-term glycemic control in type 2 diabetes. *Diabetes Care.* 2002;25(1):30-4.
37. McGinnis RA, McGrady A, Cox SA, Grower-Dowling KA. Biofeedback- assisted relaxation in type 2 diabetes. *Diabetes Care.* 2005;28(9):2145-9.
38. Diabetes Week. Depression: mental health treatment extends the lives of older patients with diabetes and depression. Atlanta; 2007. 10 p.