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Psychological Disorders and their Relationship with Diabetes

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Abstract

The relationship between problems related to mental health and diabetes is bilateral. On the one hand, diabetics suffer psychological problems related to the management and control of the disease, however, mental problems such as anxiety and depression can be triggers for the development of diabetes. Thus, this article tries to elucidate the relationship between diabetes and psychological disorders. It is observed that people with diabetes have their own stress triggers, derived from the health conditions imposed by the disease itself, which leads to various types of psychological disorders such as depression, anxiety and binge eating, which are also triggering factors of an obesity, derived from metabolic disorders and the consumption of foods of low nutritional quality. Thus, it is important that psychological follow-up and the formation of support groups be carried out to reduce the stress levels of these patients. The empowerment of diabetic patients is essential for improving treatment and reducing the risk of comorbidities.

Keywords: Anxiety; Depression; Diabetes; Food; Self-care

Mini Review

Problems related to mental health, such as anxiety, depression, and psychiatric disorders, are considered an important risk factor for the development of diabetes [1]. Diabetes prevalence worldwide continues to snowball at an alarming rate; it is recognised as the world's fastest growing chronic condition. According to statistics, 464.1 million people (9.3 % of adults) are estimated to have diabetes worldwide. The most common type of diabetes is type 2 diabetes mellitus, accounting for around 90% of all diabetes cases [2].

Baek et al. [3] states that by the year 2030, the number of people diagnosed with diabetes in the United States will be 330 million people. In turn, the American Diabetes Association [4] estimated that diabetes-related health spending was 237 billion dollars in 2017 and this number is only going to grow. The optimal management of diabetes mellitus is a significant challenge for patients; understanding how best to motivate and support them is a similarly complex task for healthcare professionals [5], approximately 40% of people with diabetes have measurable psychological distress, which is considered a risk factor because of the diagnosis [6].

It is a chronic, relentless disease and, although manageable, it requires a level of vigilance, care, and effort on the part of the patient. This generates several psychological disorders, among them, the anguish and emotional exhaustion that develop in patients who need to dedicate a considerable amount of time and emotional energy to controlling the disease [7]. Diagnosis of diabetes and its management comes with its own set of stressors, including changes in dietary habits to control post-meal blood glucose, physical limitations, learning to manage chronic pain, higher medication costs, and increased vulnerability to other diseases due to the weakened organism [8].

Psychological disorders may be associated with poor health behaviors such as physical inactivity, smoking and high-calorie food intake that can induce diabetes [9]. Mood disorders are prevalent among people with type 2 diabetes mellitus and coexist with a host of other medical complications including obesity, heart disease, cancer, and hypertension [10,11]. Signs of distress in diabetic patients include feelings of frustration and anger in response to self-care demands; guilt over the degree to which self-management affects relationships with friends and family;

constant anxiety about food choices, blood sugar measurement and control, and exercise requirements, in addition to feelings of defeat and isolation [12].

Anxiety makes self-care management difficult for patients with diabetes [13]. De Groot et al. [6] reports that there is a 20% increased prevalence of anxiety in individuals who have diabetes, compared to the population that does not have the disease. In turn, Lin et al. [14] indicates that generalized anxiety disorder is present in 14% of patients with diabetes. According to Mezuk et al. [15], depression is more prevalent in people diagnosed with diabetes than in the general population. Collins et al. [16] state that the frequency of onset of moderate and severe depression and anxiety in patients with diabetes is more than twice that expected in the general population.

It is important to point out that the increase in diabetes-related stress can be correlated with poor adherence to disease control behaviors, that is, physical activity and a diet rich in fruits and vegetables. In this way, it is possible to reduce the individual risk of complications and comorbidities related to diabetes [17]. According to Walls et al. [18] diabetes-related stress has been associated with higher glycated hemoglobin (A1c), inadequate diet quality, and problems related to the absence of the use of correct medications by adults living with diabetes.

Beran et al. [19] performed an association between mental health problems and glycated hemoglobin. This relationship is bidirectional, depressive symptoms were associated with the development of suboptimal glycated hemoglobin, which was also associated with the risk of developing depression. On the other hand, one of the factors that leads to stress is food insecurity, which has been associated with increased chances of diabetes and poor glycemic control. Food insecurity consists of an economic and social condition at the family level whose access to food with recognized nutritional quality is limited or uncertain [20,21]. Families exposed to food insecurity consume diets of inferior nutritional quality that promote the development of obesity and diabetes due to the low prices of processed food products and high levels of sodium, sugar, and chemical additives [22].

Binge eating of ultra-processed foods has already been strongly associated with body mass index and a risk factor for the development of diabetes [23] and has been an escape valve for people with depression and anxiety. Psychological distress is a possible trigger contributing to food addiction, which is characterized by a loss of behavioral control and compulsive food intake [24]. According to Harris et al. [25] binge eating disorder in patients with diabetes appears to be much higher than the prevalence observed in the general population. Studies suggest that up to 20% of patients with diabetes have an eating disorder, which is generally underreported. Bingeing can worsen metabolic markers, including glycemic control.

In this way, it is important for the patient with diabetes to include highly nutritious foods in their diet, as several studies have suggested that increased consumption of fruits, vegetables, whole grains, and legumes decrease psychological disorders, while high consumption of processed meats, refined grains and saturated fatty acids were associated with increased psychological disorders [26,27]. Camus et al. [28] states that diabetes can increase the risk of developing depression due to the feeling of threat and loss associated with receiving the diagnosis, in addition to changes in lifestyle. Diabetes can cause thyroid dysfunction and affect several components of the metabolic syndrome, that is, it alters the mechanisms of modulatory effects of thyroid hormone on mood with the serotonin and norepinephrine neurotransmission systems [29,30]. Additionally, stress can directly affect metabolic function, leading to weight gain and insulin resistance [21].

Longitudinal population-based studies show an almost double risk of cardiovascular diseases and type 2 diabetes in psychiatric patients with a diagnosis of schizophrenia, bipolar disorder, or depression relative to the general population, even after controlling for the use of psychotropic medications [31]. This behavior is increasingly recognized that psychological stress is linked with type 2 diabetes mellitus and its late complications. According to Buckert et al. [32] psychological stress is increasingly related to type 2 diabetes mellitus and its late complications. Patients with this disease showed an exaggerated cortisol response to acute stress compared to healthy patients. Diabetes-related stress impairs self-control, psychological insulin resistance, and fear of hypoglycemia [33], and is associated with poorer biomedical outcomes; a psychological element to care is therefore important, and evidence exists to support the effectiveness of a range of psychological interventions [5].

One of the ways to mitigate the effects of diabetes at a psychological level is diabetes empowerment. It consists of a measure of psychosocial self-efficacy related to diabetes regarding a person's openness and ability to implement some healthy behaviors. This attitude may be an important predictor of diabetes control practices that may reduce the risk of death or complications from the disease [34]. Self-control represents an individual's ability to influence, regulate, and control their own psychological, behavioral, and physiological processes to achieve a long-term goal [35]. The success of approaches to improving the lifestyle of individuals with diabetes has been variable, and long-term sustained improvements have been difficult to achieve. To carry out effective changes in behavior and lifestyle, it is inevitable to pay attention to the contextual factors that influence the behavior and lifestyle of the individual and this is extremely variable [36,37].

Feltz-Cornelis et al. [38] suggest that meta-analysis data support the idea that psychological interventions can improve distress levels in diabetics and glycemic control. In addition,

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treatment of psychological disorders has been shown to improve diabetes outcomes. Furthermore, after emotional support, it is better to target self-efficacy, which consists of the patient's confidence in their ability to manage their own illness and assume responsibility for care [39].

Conclusion

Thus, we can conclude that the relationship between psychological disorders and diabetes is bilateral. Psychological disorders can trigger diabetes or diabetes can trigger psychological problems in patients. It is important that psychological follow-up and formation of support groups be carried out to reduce the stress levels of these patients. The empowerment of diabetic patients is essential for improving treatment and reducing the risk of comorbidities.

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