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ASSESSING BURNOUT WITH THE PAID QUESTIONNAIRE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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ABSTRACT

According to the International Diabetes Federation's Diabetes Atlas estimates, in 2015, 1 in 11 adults had diabetes (415 million), and 1 in 2 adults with diabetes (46.5%) were undiagnosed, meaning they were unaware they had diabetes. It was found that 12% of global health expenditures were spent on diabetes (US$673 billion), and 1 in 7 births were affected by gestational diabetes. According to the Federation's estimates, by 2040, 1 in 10 adults will have diabetes (642 million), and health expenditures for diabetes-related diseases will exceed US$802 million. Over the past decades, diabetes mellitus (DM), along with cardiovascular diseases and cancer, has become an increasingly common pathology, reaching the proportions of a non-communicable epidemic. Patients with DM experience psychological stress due to the inability to maintain their previously adopted lifestyle, a sense of inferiority, a reduction in social activity due to the development of complications, and dependence on strict adherence to a daily routine, diet, physical activity, and medication. Patients also face social problems, limitations in their professional life, and insufficient social and psychological support. Studying the individual personality traits of patients with diabetes, the interaction between the cognitive, emotional, and motivational components of the "internal picture of the disease," and establishing the relationship between their somatic state and the "internal picture of the disease" helps improve medical and psychological care and the quality of life of this category of patients. Dysfunction of emotion regulation mechanisms leads to the development of depression and lowers mood, with a negative and pessimistic assessment of oneself, one's situation in reality, and one's future. In diabetic patients, the relationship between disease perception and anxiety-depression levels is believed to be an important factor affecting the monitoring and treatment of the disease. Disease perception is defined as the cognitive view of the disease state. When faced with a disease, people try to explain their disease in light of their personal experiences, knowledge, values, beliefs, and needs in order to understand and cope with the disease; they create their own models and representations of the disease.

KEYWORDS

Type 2 Diabetes Mellitus, Internal Picture of The Disease, PAID Questionnaire, Attitude Toward The Disease

CITATION

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Introduction

Burnout is described as a core set of additional, psychologically related symptoms that aggravate the course of the disease, influence behavior, and contribute to the development of adaptive or maladaptive effects. Numerous studies have been published in recent years on emotional burnout. Stress and depression negatively impact patients with diabetes.

Diabetes is one of the major health challenges of the 21st century. In the United States, it is estimated that about 12% of the adult population has diabetes, and this percentage will probably rise to 28% by 2050 (Centers for Disease Control, 2017). Diabetes is a condition the patient must manage on his own and negatively influences everyday life, with the psychosocial and emotional burden. Diet, exercise, ordinary medication, and daily blood glucose monitoring are the therapeutic obligations of patients with diabetes mellitus. The patient must always keep his blood sugar levels stable, and if a person does not achieve autonomy in the emotional and physical characteristics, it will affect his health condition. In diabetes mellitus, patients often complain about feelings of distress and frustration, anxiety and depression. Diabetes patients who experience burnout can express symptoms of stress that negatively influence blood sugar levels and lead to non-compliance with managing their therapy (Fisher, et. al, 2012).

Prediabetes (preDM) and diabetes, as complex conditions, place considerable tension on medical providers. Moreover, physicians' awareness regarding patient barriers has a positive association with their probability of prescribing metformin for preDM. A reduced prevalence of prediabetes will occur if the rate decreases or if the median duration of the condition decreases. The duration of prediabetes will tend to minimize as a target of increased screening activity because of the re-classification of individuals to normoglycaemia, reducing the prediabetes rate. The association between psychosocial behavior and diabetes management revealed that participants with emotional burnout due to diabetes-related stress showed poor glycemic control (89.4%) compared to the group with low stress (55.6%). Diabetes is mainly a self-managed disease with a major psychological impact on the lives of patients and their families (Helgelson, 2021). The impact of attitudes and illness beliefs as determinants of patients' health behaviors is essential. Misperceptions concerning the severity and proper management of diabetes can slow down the energetic participation of the patient in the treatment, such as unwillingness to start insulin therapy. Finally, increasing negative experiences can result in a state of "learned helplessness" or "diabetes burnout". Another point of interest is that there is an important difference between couple burnout, sexual claim ability, and dysfunctional sexual viewpoints in women with diabetic and non-diabetic husbands. Women with non-diabetic husbands have a higher average score in sexual assertiveness compared to women with diabetic husbands, whereas in couple burnout and sexual dysfunctional beliefs factors, women with diabetic husbands have a higher average score (Jafari et.al., 2024).

When patients receive a diagnosis, they often develop various beliefs about their condition. These beliefs form key aspects of behavior for managing the illness. Changing patients' perceptions and ideas about the illness is a dynamic process that also leads to changes in their response to treatment. These perceptions or cognitive processes directly affect behaviors such as the individual's emotional response to the illness and adherence to treatment. In this context, it seems that patients with chronic illnesses such as diabetes can gain skills to manage themselves, cope with the anxiety and depression caused by the illness, and overcome the daily stress that accompanies the illness, by positively changing their perceptions about their illness (Roy et.al., 2020).

Literature review

Diabetes mellitus (diabetes) is a chronic physical illness that can lead to a range of mental, emotional, social, and psychosexual problems and conflicts for the patient. Mental state affects the course of diabetes, and diabetes and its complications, as a physical illness, also affect mental state. Emotional tension leads to blood sugar disturbances by affecting the treatment and monitoring of diabetes both through neuroendocrine and hormonal pathways and indirectly. It is known that anxiety stimulates epinephrine secretion, which reduces the effect of insulin. Even the simplest psychosocial stress and mental conflict increase free fatty acids, cortisol, and blood sugar. Stress and anxiety are significant factors in patients whose blood sugar cannot be regulated despite medical treatment. In such cases, psychosocial assessment is crucial before increasing insulin dose (Yerevdekar, 2018). The relationship and interaction between mental state and blood sugar in a diabetic patient can be summarized as follows:

Blood sugar disorders can impair brain function and lead to organic brain syndrome.

Psychosocial stressors and psychological conflicts can cause fluctuations in blood sugar.

Diabetes can trigger the development of mental disorders.

Mental-behavioral state can affect the course, progression, and response to treatment of diabetes.

Anxiety, depressive mood, and adjustment disorders may develop due to diabetes, its complications, or treatment methods (Gunduz et.al., 2016).

According to studies the sooner the person recognizes he is in diabetes burnout, the sooner he can pull himself out of it. Some common signs that he is overwhelmed may include:

- Not checking blood glucose levels frequently enough or even not at all;
- Missing or skipping medications;
- Not wearing or utilizing diabetes technology;
- Unhealthy eating habits or not counting carbohydrates;
- Infrequent or no exercise;
- Detaching from family, social and healthcare team support;

If they're in diabetes burnout, they may also experience:

- Strong negative feelings about diabetes, such as frustration, anger and the feeling of being overwhelmed;
- Feeling diabetes has control of them;
- Feeling powerless;
- Feeling isolated or alone with diabetes;
- Ignoring or trying to forget about the disease.

The mental burden of managing a chronic health condition is often enough to lead to feelings of burnout. However, many factors can contribute to someone experiencing the condition, including:

- A person's baseline mental health status;
- Lack of access to a supportive healthcare team;
- Inadequate support systems, including social and peer support;
- Unrealistic treatment goals: For example, if someone's A1C remains above their target range they may feel a sense of failure or inadequacy;
- Self-management barriers: Diabetes-related comorbidities, lack of adequate access to the right type and amount of medication, insurance plan problems, and experiencing hyperglycemia and hypoglycemia (low blood sugar) (Giri et.al., 2018).

Diabetes distress can occur when concerns about managing your diabetes start to impact on your daily life, including your work, school, family or social life. If you are feeling overwhelmed by the demands of diabetes, frustrated that you can't control your blood glucose readings or feel guilty that you are 'failing' when things get a bit off-track, you may be experiencing diabetes distress.

Diabetes burnout is the term given to the state of disillusion, frustration and perhaps a level of submission. It occurs when your distress intensifies and it feels like managing diabetes is too much to cope with. Often it will be a state of mind that is reached after years of dealing with diabetes.

Sometimes an event or situation can trigger diabetes burnout. For example:

- Stress in our family or at work that makes your diabetes seem less important
- A new diabetes-related health problem that makes you ask: "What's the use?"
- Stress about the money and time people give to diabetes
- Feeling worn out from years of looking after their health (Jafari et.al., 2024)

Common signs and symptoms include:

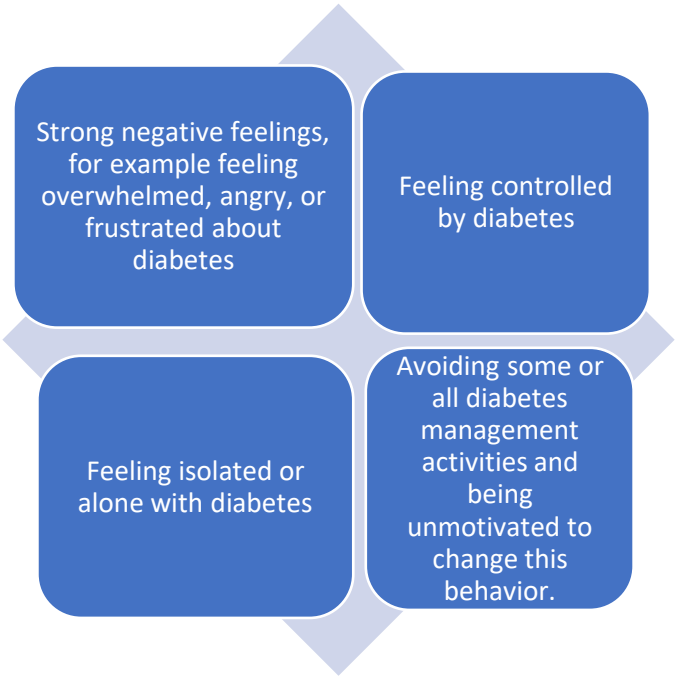

Fig. 1. *Common signs of diabetes burnout problem*

At times of diabetes burnout, people may participate in negative behaviours such as not checking blood glucose levels at all, stopping medications or only taking them irregularly, and estimating quantities of insulin rather than checking their levels and injecting accurate amounts. Unfortunately, the outcome of the above is to potentially increase people's risk of diabetes complications, including hypoglycaemia. It is important to look for help and support when they are feeling like this.

Method: The PAID questionnaire was used to identify emotional burnout. The questionnaire consists of 20 questions. The PAID scale was developed by the Joslin Diabetes Center in Boston (Polonsky et al. 1995). It has been widely used and translated into several languages.

Results: The sample consisted of 164 patients with type 2 diabetes, including 94 women and 70 men. The average disease duration was 7.7 years. The scores for each question can be used to assess eating disorders, problems with social support, emotional distress, and burnout. Most of the participants were married (85%, n = 140), employed or part-time employed (54%, n = 90), had undergone surgery (for concomitant diseases) more than 18 months ago and completed courses of therapy (60%, n = 102). The average age of patients was 59.1 ± 10.8 years. Most respondents were aged 45–63 years (48%), women (57%) and married (64%). Approximately 90% of respondents had professions. According to the survey results, depression was lower in married patients (68.2%; p = 0.03) and patients with a high level of education (69.8%; p = 0.04). Duration of the disease ranged from 0.25 to 35 years. In 51% of patients, the duration of the disease is more than 10 years. In 39% of patients, no one in the family had diabetes. Eating disorders and excess weight are noted in 56% of patients. Patients with higher levels of depressive symptoms were less educated and had a lower income. Based on the data, three levels of distress with corresponding values can be identified: low (0-16), moderate (17-39), and high (40-100) levels of diabetes-related distress. The level of distress is associated with age, gender, and disease duration. Women with diabetes for more than 10 years and secondary complications have high levels of emotional burnout.

At older ages (65 and older), men tend to have lower levels of distress. High rates of stress and emotional burnout in women are associated with their emotional state and attitude toward the disease. High blood glucose levels also negatively impact the patient's psyche. People with low blood glucose levels also have lower levels of distress. This version of the questionnaire is a psychometric questionnaire recommended for use in clinics for the early detection of emotional burnout and the prevention of its consequences.

The Problem Areas in Diabetes (PAID) scale in sample with type 2 diabetes in Azerbaijan:

Diabetes mellitus is a major global clinical and public health challenge with a prevalence of 1.6–7.5% in Azerbaijan. The prevalence of diabetes worldwide was estimated at 2.5% in 2015 and is projected to rise to 4.5% by 2030, predicting a

worldwide epidemic. Diabetes is one of the most psychologically challenging chronic illnesses, posing life-threatening complications and disabilities, and requiring demanding self-care.

Adults with type 2 (T2) DM are twice as likely as adults in the general population to experience serious psychological distress. Diabetes related distress in turn could have a negative impact on self-care and quality of life (QoL) of people with diabetes and also on their disease management and glycaemic control. For clinical practice, it is therefore of key importance to develop an appropriate screening instrument to specifically identify diabetes-related distress.

The study population consisted of 140 patients with a known history of DM. The PAID is a 20-item self-reported questionnaire that assesses diabetes-specific emotional distress including a wide range of feelings related to living with DM and its sequalae.

The mean age was 67.87 ± 7.65 years, with 23.7% of the patients younger than 60, without difference in age distribution between genders ($P = 0.187$). The mean duration of diabetes was 14.45 ± 6.8 years. The majority of the patients were women (60%), 27,8% of the patients had more than three medical comorbidities (heart failure, chronic pulmonary disease, arthritis). Most subjects (73,5%) were married.

The participants' treatment and health problems were described in the following diagram and table:

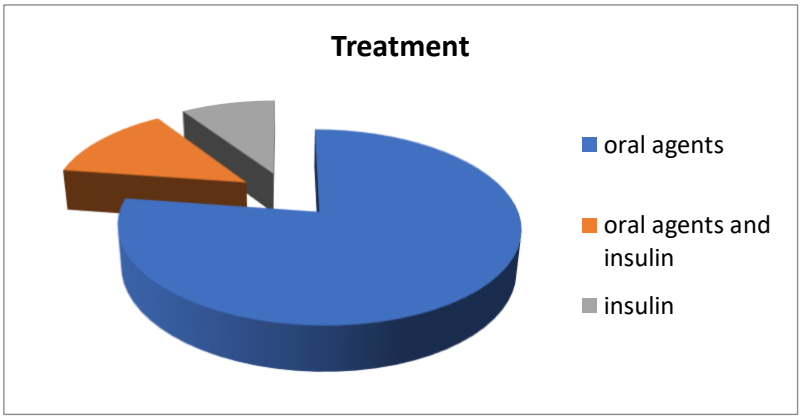

Fig. 2. *Treatment of diabetes patients*

Table 1. Physical issues of patients

Retinopathy	no 146 (89.0%)	Non-proliferative 10 (6.0%)	Proliferative 8 (5.0%)
Polineuropatie	no 134 (82.%)	yes 12 (8.0%)	
hypertension	no 111(67.6%)	yes 53 (32.4%)	
Diabetic foot deformities	no 144 (88%)	yes 20 (12%)	
Diabetic nephropathy	no 146 (89.0%)		
Chronic renal failure	18 (11.0%)		

Conclusions

Diabetes presents various challenges every day for those affected. Many diabetics complain about how the disease impacts their daily lives. In addition, there is the fear of developing secondary illnesses. These ongoing challenges can become a persistent emotional burden and lead to constant stress. Experts call this "diabetes distress."

In a state of chronic stress, the body produces more cortisol. Cortisol, in turn, raises blood sugar to quickly provide the body with more energy when needed. High levels of stress also stimulate the release of the appetite hormone ghrelin. This appetite hormone increases the craving for sweets and carbohydrate-rich foods, thus increasing the likelihood of further increases in blood sugar levels due to increased food intake. A number of studies have shown that in diabetes distress, a person's care for their diabetes often decreases. This can affect the success of treatment: If diabetes is neglected, metabolic control deteriorates, and the risk of diabetes-related secondary illnesses increases.

There are a number of learnable methods and measures to reduce diabetes distress. Seeking and accepting help is also important. Strategies for coping with stress are referred to as "coping strategies" in psychology.

Concerns, worries, and fears related to diabetes can contribute to emotional overload. A number of studies confirm that people with diabetes report anxiety more frequently and exhibit symptoms of depression approximately twice as often as metabolically healthy people of the same age. It is estimated that almost 10 percent of people with diabetes (10 out of every 100) are affected by “true” depression, and approximately 25 percent (25 out of every 100) suffer from depressed moods. In general, women with diabetes are more likely to develop depression than men.

A person's motivation to consistently adhere to their diabetes treatment is often diminished by a depressed mood or depression. As a result, blood sugar levels increase. Stress hormones also have negative effects on blood sugar levels during psychological stress. However, in the long term, high blood sugar levels increase the risk of secondary diabetes-related diseases in the blood vessels, heart, eyes, and kidneys. Consistent treatment of depression can improve metabolic status in diabetes.

Diabetes-related burnout, a state of emotional exhaustion and decreased motivation resulting from the chronic stress of diabetes management, is a common phenomenon among patients. Burnout is associated with patients feeling overwhelmed by the complex and ongoing nature of diabetes, leading to a loss of motivation towards managing the disease and ultimately a tendency to lose their capacity to cope with diabetes (Nuari, 2020). Responsibilities in diabetes management, such as continuous blood glucose monitoring, dietary adjustments, medication use, and adherence to physical activity, can lead to emotional fatigue over time, triggering diabetes burnout (Snoek and Skinner, 2006; Helgeson, 2021). Diabetes burnout can lead to negative long-term consequences such as non-adherence to treatment, diabetes complications, and depression (Abdoli et al., 2021). Patients experiencing diabetes burnout may struggle to fulfill these responsibilities in diabetes care and their adherence to treatment may significantly decrease. This situation particularly negatively affects treatment adherence and disease management, and consequently can disrupt the stability of blood glucose levels, leading to hyperglycemia (Nicolucci et al., 2013; Soyoon and Ekaterina, 2022). Hyperglycemia increases the risk of diabetes complications and can lead to the development of serious health problems such as cardiovascular diseases, neuropathy, nephropathy, and retinopathy in the long term (Giri et al., 2018). At this point, nursing care is crucial in addressing these issues. Effective nursing interventions can help reduce burnout by providing emotional support, education, and better self-management strategies, ultimately improving both the quality of life and glycemic outcomes for patients (Kontoangelos et al., 2022).

On the other hand, burnout negatively affects not only glycemic control but also quality of life. The quality of life of diabetic patients; It is affected by multifaceted components such as physical health, social functioning, emotional well-being, and overall life satisfaction (Nuari, 2020).

In particular, the presence of diabetes-related complications and inadequate support in treatment processes can lead to a significant decrease in patients' quality of life (Arnold et al., 2022; Soyoon and Ekaterina, 2022). This study aims to contribute to the literature by addressing the interaction between diabetes-related burnout, quality of life, and glycemic control from a holistic perspective. While current research generally examines the direct effect of burnout on glycemic control or quality of life, this study will evaluate the mediating role of glycemic control between burnout and quality of life. Thus, how levels of glycemic control shape the quality of life of individuals experiencing burnout will be better understood, and it will contribute to the development of more targeted interventions in nursing care.

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Recommendation

Based on these results, in order to raise awareness among patients, those diagnosed with diabetes should be assessed for anxiety and depression at regular intervals and provided with regular psycho-educational support. Our research results are limited as they represent only one hospital. However, we hope that our findings will be useful in future studies on this subject. It is recommended that future studies be conducted on a larger population.

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