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Review Article

Psychologic Distress in Diabetic Patients

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Abstract

Diabetes mellitus presents a growing global health challenge, impacting millions and imposing significant burdens on individuals and healthcare systems alike. Diabetes distress encompasses the negative emotional impact of living with diabetes and holds significant clinical relevance, as it correlates with suboptimal self-care and glycemic control. This review explores the multifaceted relationship between diabetes and psychosocial factors, focusing on the concept of diabetes distress and its profound implications for patient well-being and disease management. As the prevalence of diabetes continues to rise, understanding and addressing the emotional toll of the condition becomes increasingly critical. Moreover, it explores the intricate dynamics of diabetes distress, self-care behaviors, and metabolic outcomes, emphasizing the importance of tailored interventions to alleviate distress and improve patient adherence and glycemic control. Greater diabetes distress correlates with detrimental medical and psychological outcomes, including suboptimal self-management behaviors such as reduced physical activity, unhealthy eating habits, medication non-adherence, and infrequent blood glucose monitoring. It's associated with elevated A1C levels, increased risk of severe hypoglycemia, and diminished quality of life. Identification of diabetes distress is crucial, with validated screening tools available to aid clinicians in this process. Various management strategies are outlined, ranging from psychological interventions to effective patient-provider communication and supportive group interventions. By integrating psychosocial care into diabetes management, healthcare professionals can better address the holistic needs of patients, ultimately enhancing their quality of life and overall well-being.

Keywords: Diabetes mellitus, psychological distress, Diabetic distress

Introduction

Diabetes mellitus, a chronic condition with multifaceted effects on health and well-being, imposes a significant burden on individuals. From 2011 to 2023, the number of Americans living with diabetes rose from 25.8 million to 38.4 million, representing 8.3% and 11.6% of the population respectively. Additionally, prediabetes has affected a staggering 97.6 million adults, highlighting the widespread prevalence and impact of this condition across different age groups.[1]

The relationship between diabetes and psychosocial disorders is complex, affecting glycemic control, self-care, and quality of life (QoL). When personal efforts to cope with these challenges fall short, patients face increased risk of diabetes-related complications, leading to reduced QoL, higher mortality, healthcare costs, and lost productivity. Addressing psychosocial needs can break down barriers to adherence and self-care, yielding long-term health benefits and improved glycemic control. Enhanced understanding of psychological aspects enables clinicians to develop strategies for better diabetes outcomes and reduced burden of disease.[2]

The impact of diabetes extends beyond physical symptoms, often intertwining with emotional distress and psychosocial challenges, especially in adolescents.[3] Clinical symptoms can overlap with psychiatric disorders, complicating diagnosis and management. The demanding regimen of diet and medication may lead to behavioral issues, exacerbating mental health concerns like depression and anxiety. Integrating mental health into diabetes management is crucial for addressing this complex interplay effectively.[4,5]

The objective of this article is to explore diabetes distress and its impact on patients, as well as methods to screen, assess, treat, and prevent it.

Epidemiology

The prevalence of diabetes mellitus has surged globally, posing significant challenges for public health, individuals, caregivers, healthcare systems, and society. Projections suggest a staggering increase from approximately 537 million adult diabetics in 2021 to 783 million by 2045. This burden is particularly pronounced in low- and middle-income countries, highlighting disparities in disease distribution. [6] In 2021, over half of global type 2 diabetes Disability-Adjusted Life Years (DALYs) were attributed to high Body Mass Index (BMI), with a notable 24.3% increase in its contribution between 1990 and 2021. Projections indicate that by 2050, over 1.31 billion individuals will have diabetes, with prevalence rates surpassing 10% in regions like North Africa, the Middle East, Latin America, and the Caribbean. Alarmingly, nearly half of all countries and territories are expected to have diabetes

prevalence rates exceeding 10% by 2050.[7] While diabetes mellitus prevalence rates may seem comparable between wealthy and impoverished nations, there's a notable divergence in the age groups affected. In industrialized nations, individuals aged over 64 are more prone, whereas, in developing countries, diagnosis typically occurs between ages 45 and 64.[8]

Depression, impacting 14-16% of the global population, is more prevalent among women. Early-onset diabetes mellitus is linked to higher rates of psychiatric comorbidities.[9] In the US, a study with over 22,000 diabetic patients found an age-adjusted comorbid depression rate of 8.3%.[5] Although many diabetic patients report depression symptoms, not all meet the criteria for major depressive disorder; however, depression symptom prevalence is notably higher in diabetes patients (31%). Type 1 diabetes patients have a lower depression risk compared to type 2 diabetes.[10] Another study revealed significantly higher rates of depressive symptoms (39.5% versus 12.4%) and anxiety (36.2% versus 14.4%) in diabetic patients compared to non-diabetic individuals. Factors like low income, urban residence, unmarried status, insulin therapy, and diabetic complications are associated with depression among diabetic patients, while marital status, literacy, and diabetic complications predict anxiety.[11]

Diabetic distress

Diabetes distress encompasses the negative emotional impact of living with diabetes and holds significant clinical relevance, as it correlates with suboptimal self-care and glycemic control.[12] Diabetes distress, distinct from psychiatric disorders like depression, stems from the emotional and physical burdens of managing diabetes. Often overlooked, it negatively impacts diabetes management, fueled by concerns about diet, exercise, and glucose monitoring, leading to feelings of fear and overwhelm. Younger patients, non-white females, and those on insulin treatment are more prone to diabetic distress. This emotional strain can lead to non-compliance with treatment plans, exacerbating BMI and HbA1C levels. Bridging the gap between understanding and emotional insight is crucial for improving treatment adherence and managing diabetes effectively.[13] Diabetes distress is common among individuals with type 2 diabetes mellitus (T2DM), particularly those undergoing treatment. Factors such as treatment regimen, recent hypoglycemia, diabetic retinopathy, and family support significantly influence diabetes-related distress in T2DM patients. Screening for distress is crucial, especially for those on insulin therapy, experiencing recent hypoglycemia, dealing with diabetic retinopathy, or lacking family support, to enhance diabetes management.[14] Another study revealed a diabetes distress prevalence of 18.0%, with the majority experiencing emotion-related distress (16.1%), followed by regimen-related distress (5.6%), interpersonal-related distress (1.5%), and physician-related distress (1.2%). Major predictors for high diabetes distress scores included low education level, retinopathy, neuropathy, and hypertension. Overall, emotion-related diabetes distress was most prevalent, with lower education level and diabetic complications acting as significant risk factors for high distress levels.[15]

Relationship Between Psychological Stress and Diabetes Presentation

The biopsychosocial model characterizes psychological stress as a state of tension, preoccupation, and agitation, influenced by environmental factors and individual coping mechanisms. Stress triggers metabolic changes like vasoconstriction, elevated heart rate, and increased stress hormone production, raising blood glucose levels to meet energy demands. Additionally, stress can heighten feelings of vulnerability and activate the body's "fight-flight" response.[2] Psychological stress triggers biological responses linked to type 2 diabetes, including increased glucose and lipid release, inflammation, and high blood pressure. Chronic stress disrupts glucose metabolism and neuroendocrine function, contributing to T2DM development. Depression, work stress, and early life adversity are risk factors. Stress also affects health behaviors, worsening T2DM risk. In those with diabetes, stress correlates with poor glycemic control and cardiovascular issues. Stress management interventions show promise in alleviating symptoms but their impact on disease progression is uncertain.[16]

Individual responses to stress vary, influenced by factors like abnormal stress hormone regulation, insulin presence during stress, psychological differences, and autonomic nervous system abnormalities associated with diabetic neuropathy.[17] Psychological stress is consistently linked to diabetes outcomes, affecting glycemic control and treatment adherence. Adverse life events, daily stressors, and diabetes-related distress are associated with non-adherence and poor glycemic control, while positive factors such as self-efficacy, coping strategies, and social support correlate with better treatment adherence and glycemic control.[18] In type 1 diabetes mellitus, stress impact is influenced by dysregulated stress hormone regulation, insulin availability during stress, autonomic nervous system abnormalities, and individual psychological factors.[19]

Diabetes distress, self-care, and metabolic outcomes

Living well with diabetes requires discipline and commitment, involving lifestyle changes like medication adherence, healthy eating, exercise, and regular monitoring. However, the demands of diabetes self-care can lead to "Diabetes-related Distress" (DRD), diminishing motivation and impacting overall well-being, potentially increasing complications and mortality. Patients experiencing severe DRD are less likely to engage in T2DM self-care practices.[20] Self-care activities play a crucial role in early detection and management of diabetes distress, with sustained education showing promise in minimizing distress levels. The association between diabetes distress and self-care offers opportunities for tailored self-care programs to improve distress management. Furthermore, correlations found between self-care and diabetes distress, along with significant relationships with marital status, place of residence, duration of diabetes, and diabetes distress score. Additionally, gender, place of residence, and level of education are significantly linked to diabetes self-care activity.[21]

High levels of diabetes distress are consistently linked to poorer metabolic outcomes in patients with diabetes, while elevated distress among supporters is also associated with worse metabolic markers, including higher HbA1c and non-HDL cholesterol levels and increased cardiac event risk over 5 and 10 years. High diabetes distress in people with diabetes (PWD) prompts increased support from caregivers in coordinating medical care, medication adherence, and discussing test results. However, it doesn't correlate with encouragement for exercise or healthy eating. This suggests caregivers respond to distress by aiding in medical tasks, but excessive involvement may exacerbate distress, particularly with negative support approaches.[22]

Identification of diabetic distress

Recognizing and addressing diabetes distress is crucial. National and international guidelines advocate annual screening for diabetes distress, recommending both the Problem Areas In Diabetes (PAID) scale and the Diabetes Distress Scale (DDS). Both instruments are psychometrically sound, reliable, and validated in multiple languages, with short forms available. The PAID scale lacks a robust factor structure,

while the DDS offers distinct factors aiding in identifying primary causes of distress. The PAID scale is versatile, used in both type 1 and type 2 diabetes, and even has versions for children and parents. In contrast, the DDS has separate versions for type 1 and type 2 diabetes, providing tailored assessments. Clinicians can use either tool, but the T1-DDS highlights specific causes of distress in type 1 diabetes. Overall, both scales are reliable and validated in multiple languages.[23] other such scales include Diabetes Distress Screener 2 (DDS2), Summary of Diabetes Self-Care Activities (SDSCA), and Multidimensional Diabetes Questionnaire (MDQ).

Management of diabetic distress

Diabetes distress entails a perceived lack of coping mechanisms. To address this, the following steps can be taken:

- Promote self-awareness and self-perception.
- Enhance coping mechanisms.
- Reduce the burden experienced by patients.

Positive communication and relationships with diabetes care providers reduce diabetes distress, improve outcomes, and enhance self-care and confidence. Collaborative care involves listening, learning, sharing ideas, and supporting goal achievement. Respectful professional attitudes foster rapport and confidence. Person-centred approaches like motivational interviewing and empowerment support autonomy and motivation. Emotional support through attentive listening and empathy is crucial. However, professionals often limit emotional discussions, needing more training. Attentive listening can be as effective as complex interventions. Practical guidance includes exploring, acknowledging, summarizing, normalizing feelings, and follow-up. Regular follow-up supports progress and problem-solving. More research and training are needed on communication behaviors' impact on distress. Effective communication skills are vital for improving patient care and outcomes, requiring consistent application and further training.[23]

Psychological interventions like Supportive psychotherapy (ST), Psychodynamic psychotherapy (insight oriented therapy), Interpersonal therapy (IPT), Interpersonal and social rhythm therapy (IPSRT), Cognitive behavior therapy (CBT) and Behavioral therapy (BT) offer effective strategies for managing emotional distress in diabetes patients, addressing issues from cognitive distortions to interpersonal challenges Additionally, alternative therapies like neuro and biofeedback, distraction techniques, relaxation, and imagery therapy offer additional avenues for managing emotional distress associated with diabetes. These diverse approaches collectively contribute to improving the psychological well-being of individuals living with diabetes.[24]

Emotion-focused interventions target self-management practices, while cognition-focused ones involve education and skill training to alleviate diabetes distress in individuals with type 2 diabetes mellitus (T2DM). These interventions can be administered in person, in groups, digitally, by peers, caregivers, or healthcare professionals.[25] Group interventions, including peer support for type 1 diabetes patients, offer validation, reduce loneliness, and foster a sense of community. These interventions, incorporating goal-setting, problem-solving, and mindfulness-based stress reduction, have been effective in reducing diabetes distress.

Conclusion

Diabetes distress is a pervasive issue affecting individuals with diabetes, impacting their emotional well-being and complicating disease management. The increasing prevalence of diabetes globally underscores the urgency of addressing psychosocial challenges alongside medical care. Screening for and recognizing diabetes distress is crucial, with validated tools available for assessment. Integrating psychological interventions into diabetes management offers promising avenues for addressing emotional distress and improving patient outcomes. Effective communication between patients and healthcare providers, coupled with supportive group interventions, further enhances coping mechanisms and fosters a sense of community among individuals living with diabetes. Recognizing the impact of social interactions on diabetes distress is essential, and improving communication and providing psychosocial interventions can significantly benefit patients. By addressing diabetes distress comprehensively, healthcare professionals can better support patients in achieving optimal health and well-being.

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