

Analysis of Determinants of Psychological Well-Being in People with Diabetes: A Systematic Review

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ABSTRACT

Psychological well-being in individuals with diabetes is a crucial yet often overlooked aspect of disease management, as it directly influences glycemic stability, adherence to treatment, and the risk of complications or mortality. Despite its importance, variations in demographic, psychosocial, and environmental determinants remain insufficiently synthesized in the literature. This study aims to identify factors influencing psychological well-being in people with diabetes through a systematic review of 33 peer-reviewed journals ($N = 20,282$) retrieved from Google Scholar, PubMed, Crossref, and Scopus. The review examined determinants including age, gender, socioeconomic status, self-efficacy, self-management, religiosity, mindfulness, self-compassion, gratitude, coping strategies, social support, supportive environments, and access to healthcare. The findings indicate that individuals with Type 1 Diabetes Mellitus face persistent psychosocial stress due to lifelong insulin use, whereas those with Type 2 Diabetes Mellitus are more affected by lifestyle-related factors. Overall, higher levels of psychological well-being were associated with better glycemic control, improved treatment adherence, and reduced risk of complications. The study highlights the need for effective psychosocial interventions, integration of mental health support in diabetes care, and the development of comprehensive measurement standards. These implications are critical for policymakers, healthcare providers, and community-based programs seeking to improve the holistic well-being of people with diabetes.

KEYWORDS *Type 1 Diabetes Mellitus, Type 2 Diabetes Mellitus, Psychological well-being, diabetes management.*



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INTRODUCTION

Diabetes is a chronic metabolic disease characterized by persistently high blood sugar levels due to impaired insulin production or effectiveness. Diabetes based on its cause is divided into type 1, type 2, gestational type, and other types. The International Diabetes Federation (IDF) predicts that from 2019 to 2030, the number of people with diabetes will increase from 10.7 million to 13.7 million. Diabetes has various complications in the body's organs, including the heart, blood vessels, kidneys, eyes, and nervous system (Wibisono et al., 2018).

Diabetes and mental health are closely intertwined due to the chronic nature of diabetes; strict self-management requirements and the risk of complications can lead to increased stress, anxiety, and depression (Demiroz, 2023; Jacob et al., 2024). In diabetes, patient-centered care is essential to promote psychological well-being. Psychological well-being has been shown to influence morbidity and mortality rates through health behavioral pathways, biological functions, and stress-buffering effects (Hernandez et al., 2018). Psychological well-being can be considered an important factor in reducing mortality and morbidity of chronic diseases such as diabetes mellitus due to better glycemic control and improved quality of life (Garrusi et al., 2013; Pérez-Fernández et al., 2023; ElSayed et al., 2023).

Psychological well-being is a condition in which individuals have a positive attitude towards themselves and others, can make their own decisions for their life goals, and regulate their own behavior so that they can create and manage an environment compatible with their needs, making life more meaningful. They try to explore and develop themselves, are able to be optimistic, and can face social pressures by controlling the external environment. Psychological well-being has six dimensions: self-acceptance, autonomy, environmental mastery, personal growth, positive relationships with others, and purpose in life.

The psychological well-being of people with diabetes is influenced by various factors, including internal factors (biological and psychological), external factors, and demographic factors (Young-Hyman et al., 2016). Biologically, the threat of complications and mortality affects psychological well-being. From a psychological point of view, aspects such as self-acceptance, environmental mastery, and autonomy in managing the disease play an important role in caring for the psychological health of people with diabetes. In addition, demographic factors include age, gender, education level, culture, and socioeconomic status.

Previous studies have confirmed the importance of psychological well-being in diabetes management, yet significant gaps remain. Pérez-Fernández et al. (2023), through a systematic review of adults with type 1 diabetes, found a tendency toward a negative association between subjective well-being and HbA1c. However, they concluded that the evidence was “inconclusive” due to heterogeneity in the definition and dimensions of well-being (mostly cognitive), the narrow scope limited to T1D, and varied measurement instruments, making it difficult to identify priority determinants for clinical intervention. Meanwhile, Young-Hyman et al. (2016)—the ADA Position Statement—provided comprehensive guidelines for psychosocial assessment and care across the lifespan, but it did not offer a quantitative synthesis comparing the strength of evidence among determinants (e.g., self-efficacy, mindfulness, self-compassion, social support, and healthcare access), nor did it propose standardized well-being outcomes across T1D and T2D.

Based on the above, this paper aims to identify determinant factors that affect psychological well-being in people with diabetes. The benefits are twofold: theoretically, it enriches the literature by offering an integrative determinant–intervention framework; practically, it highlights high-priority psychosocial intervention targets, recommends standardized measurement (Ryff’s domains and clinical indicators), and provides guidelines for integrated care services aimed at improving glycemic control, treatment adherence, and quality of life.

METHOD

This study used the Systematic Literature Review (SLR) approach to identify, evaluate, and interpret relevant research related to psychological well-being in people with diabetes. References were obtained from various national and international journals accessed through Google Scholar, PubMed, Crossref, and Scopus databases. The search process employed a Boolean search strategy with keywords such as Psychological Well-Being Diabetes, Diabetic Well-Being, and Diabetes Psychological Well-Being.

Journal selection occurred through several stages. Initially, 49 journals from 2012 to 2024 were identified as suitable. After screening based on inclusion and exclusion criteria, the number was reduced to 33 journals ($N = 20,282$) deemed appropriate for analysis.

The research involved searching literature through Publish or Perish software, focusing on publications from the last ten years related to people with diabetes. Data collection from relevant journals was followed by applying inclusion criteria to ensure the suitability of topics and methodologies.

The final selection consisted of 15 journals discussing Type 2 Diabetes Mellitus, 7 journals focusing on Type 1 Diabetes Mellitus, and 11 journals studying diabetes in general. The analysis was conducted systematically to explore various factors contributing to the psychological well-being of people with diabetes.

RESULTS AND DISCUSSION

Psychological well-being is a full achievement of psychological potential and a condition of an individual who can accept one's strengths and weaknesses, have a purpose in life, develop positive relationships with others, have an independent personality, are able to control the environment, and have good personal growth. The conception of psychological well-being is an integration of theories of human development, theories of clinical psychology, and conceptions of mental health.

Psychological well-being has a significant role in improving the quality of life of people with diabetes. After reviewing the publications, the factors that affect this in this study include demographic, internal, and external aspects. Each factor has a unique contribution in determining how individuals manage their illness psychologically and physiologically. By understanding these factors, intervention approaches can be developed more effectively to improve the psychological well-being of people with diabetes.

Factors Affecting the Psychological Well-Being of People with Diabetes

The psychological well-being of people with diabetes is influenced by various demographic, internal, and external factors. These factors play a role in shaping an individual's experience of managing the disease, which ultimately affects their quality of life.

Demographic Factors

Age is one of the factors that has a significant influence on the psychological well-being of people with diabetes. Type 1 Diabetes Mellitus is more commonly diagnosed in children and adolescents which has an impact on the psychosocial development of the sufferers. Meanwhile, Type 2 Diabetes Mellitus is more prevalent in adults and the elderly, with major challenges related to lifestyle changes and long-term disease management (Ramkisson et al., 2016). The increasing incidence of diabetes, especially among younger age groups, leads to an increase in the number of individuals who struggle to manage their condition due to psychological and social problems. In other studies, no relationship was found between psychological well-being and patient factors such as age, gender, and education (Umam, et al., 2024)

In addition, according to Helgeson et al. (2020) it is revealed that gender also has an effect, where women tend to experience higher levels of stress and anxiety than men, which can have an impact on their psychological well-being. This disparity can be attributed to factors such as differentiation in gender roles, family responsibilities, and lack of social support for women in managing their diabetes (Ramkisson et al., 2016). However, according to Soffa and

Nisa (2020), gender does not have a significant impact on the psychological well-being of people with type 2 diabetes.

Education also has a significant role. Individuals who are more educated tend to have better access to health information and more effective coping skills (Jahan & Nematolah, 2021). In addition, socioeconomic status also contributes to the psychological well-being of people with diabetes. According to Ludiana et al. (2022), it is stated that people with higher incomes have better access to health services, while those in low-income groups tend to experience financial stress that has an impact on their psychological state.

Based on the results found, it can be seen that there is a gap in measuring the impact of demographic factors on the psychological well-being of people with diabetes (Ramkisson et al., 2016). In addition, Type 2 Diabetes Mellitus tends to be more researched compared to Type 1 Diabetes Mellitus which ultimately impacts the gap in understanding psychosocial challenges in people with Type 1 Diabetes Mellitus (Northam et al., 2010).

Internal Factors

Internal factors include biological and psychological aspects that contribute to the psychological well-being of people with diabetes (Deci & Ryan, 2012). Biologically, genetic factors and autoimmunity play a role in determining the type of diabetes a person has. Genetic factors play an important role in predisposition to type 1 diabetes and a family history of diabetes can increase the risk. In addition, autoimmune diseases that attack pancreatic beta cells are also the cause of type 1 diabetes (Ashraf et al., 2024). Meanwhile, Type 2 Diabetes Mellitus is more often associated with insulin resistance that develops due to lifestyle factors and genetic predisposition (Wahidah & Rahayu, 2022).

In addition to biological factors, psychological well-being is significantly influenced by *mindfulness* because it can reduce symptoms of depression and anxiety, improve emotional health and foster resilience (Qona'ah et al., 2023).

Self-compassion or self-compassion is positively correlated with psychological well-being. Self-compassion as a protective factor against the negative impact of perceived stress on psychological well-being and self-care behavior in patients with type 2 diabetes mellitus (Majidzadeh et al., 2024).

Depression is positively correlated with lower psychological well-being (Ajele et al., 2022). Depression due to higher healthcare costs underscores the importance of integrating psychological well-being in diabetes management. Psychological insulin resistance and fear of hypoglycemia affect psychological well-being. This challenges the idea that psychological interventions should only be carried out if there is no significant change in HbA1c levels (Jones, 2015). 31% of participants with type 2 diabetes mellitus reported poor well-being, correlating with increased levels of anxiety and depression (Ramkisson, et al., 2016).

Higher diabetic stress is associated with lower psychological well-being in individuals with diabetes (Parviniannasab et al. 2024; Majidzadeh et al., 2022; Rasmussen et al., 2024). Individuals with diabetes who underwent insulin therapy had lower psychological well-being than individuals who were not given insulin medication due to the side effects of insulin use. (Ajele et al., 2022). People with type 1 diabetes when they have a higher body weight than people with type 2 diabetes, have an impact on feelings of shame and feeling blamed and judged as well as causing diabetes pressure (Telaak et al., 2023).

Self-efficacy is a strong predictor of diabetes management and psychological well-being in patients with diabetes. Individuals with high levels of self-efficacy have confidence that they are able to control and manage their diabetes well, leading to better glycemic control and mental health outcomes (Ashaikh et al., 2024). In contrast, individuals with low *self-efficacy* tend to have difficulties in diabetes management, which can increase their stress and anxiety levels (Berry et al., 2023).

Coping strategies also play a role in the psychological well-being of people with diabetes. Individuals who apply adaptive coping strategies, such as self-acceptance and good emotion regulation, have better psychological well-being than those who tend to avoid or reject their condition (Legault, 2017). Various coping strategies for psychological challenges that people with diabetes get, based on personal experiences, such as self-acceptance, knowledge, changing mindset to see each problem as a challenge that can be overcome. In addition, the person explains how he allocates time for himself, does reflective activities, and seeks professional support. All of these strategies aim to create balance and strengthen mental resilience, so that people with diabetes can be more effective in facing the daily challenges faced by diabetes (Mojahed et al., 2019; Yuliasari, 2018).

The psychological well-being of people with type 2 diabetes is also influenced by the level of religiosity (Eid, et al., 2023; Umam, et al., 2024; Soffa & Nisa, 2020; Bozek et al., 2020). Spiritual therapy can improve psychological well-being and self-efficacy in patients with type 2 diabetes which has the potential to lead to long-term health outcomes (Avarsin et al., 2024). Religious practices that give meaning and purpose to life, make people feel more connected and dependent on something bigger than them. In addition, providing peace of mind and the practice of relaxation and reflection helps individuals manage their stress and anxiety, as well as helps improve psychological well-being (Yuliasari, et al., 2018).

Type 2 diabetes self-management positively affects psychological well-being. This explains the importance of addressing mental health along with physical health in diabetes management will improve well-being (Glumer, 2023). Diabetes self-management training after 3 weeks can improve the psychological well-being of people with type 2 diabetes (Albikawi et al., 2016)

Personality type is related to positive interpersonal behavior and attitudes related to the psychological well-being of type 2 diabetes so that it can improve medication adherence (Kordbagheri et al., 2024).

Gratitude is significantly related to the psychological well-being of people with type 2 diabetes because it is closely related to acceptance of their disease (Soffa & Nisa, 2020).

The results of this study show that internal factors such as biological and psychological conditions can affect the psychological well-being of people with diabetes comprehensively. Positive psychological characteristics are significantly associated with fewer complications and a decrease in diabetes mortality. Unfortunately, from the literature found, there is not much discussion for type 1 diabetes and other types that can affect psychological well-being in the long term.

External Factors

External factors include social support, the environment, and access to health services. Social support felt from family, friends, and community has a big impact on the psychological well-being of people with diabetes. The following table summarizes the relationship between external factors and psychological well-being.

well-being of people with diabetes. Positive social relationships can increase confidence and reduce stress levels related to their illness (Al-Dwaikat et al., 2020; Ichsan & Nugrahawati, 2024). Different results found social support did not have a significant impact on people with type 2 diabetes (Soffa & Nisa, 2020)

The environment also has a role in determining the psychological well-being of people with diabetes. Environments that support healthy lifestyles, such as access to healthy food and exercise facilities, can assist individuals in better managing their condition (Bozek et al., 2020). Conversely, an environment with high exposure to unhealthy foods or a lack of exercise facilities can worsen their diabetes condition. Healthcare providers and caregivers should focus on fostering a supportive environment to improve patients' mental health outcomes. This can involve creating support groups or community programs that encourage social interaction and emotional support among patients (Ichsan & Nugrahawati, 2024).

Access to adequate health services is also a crucial factor. People with diabetes who have better access to health services tend to have better psychological well-being because they can receive optimal care and get education about their disease management (Mirahmadizadeh et al., 2021).

This study shows that insights into different types of digital-based social support can contribute to the psychological well-being of people with diabetes. However, there is still little research that examines social support using digital tools for the psychological well-being of people with diabetes, meanwhile, the role of communities and health workers also still needs attention in its impact on people with diabetes.

The psychological well-being of people with diabetes is generally determined by strict diabetes management, fear of complications that they will soon or slowly face, and the long experience of people with diabetes living with their disease. Diabetes management in general consists of managing a diet, regular exercise, independent blood glucose control and medication adherence that must be carried out for life. Internal and external factors in people with diabetes are negative and positive. Positive factors will improve psychological well-being and vice versa in people with diabetes

People with Type 1 and Type 2 Diabetes Mellitus have several differences in terms of psychological well-being. People with Type 1 Diabetes Mellitus often face psychological challenges related to lifelong insulin management and strict diabetes management (Northam et al., 2010). In contrast, people with Type 2 Diabetes Mellitus face more lifestyle-related challenges, such as changes in diet and physical activity (Ramkisson et al., 2016).

There are similarities in psychological well-being factors between these two types of diabetes. Both groups need the development of internal and external factors to improve their psychological well-being (Berry et al., 2023).

CONCLUSION

Research shows that psychological well-being is influenced by a variety of factors, such as demographics, internal aspects, and the external environment. Positive factors have been shown to improve psychological well-being and adherence to diabetes treatment. Internal factors that are positive in the findings of previous research are diabetes self-management, self-efficacy, religiosity, *mindfulness*, *self-compassion*, gratitude and coping strategies, In addition, external factors that support psychological well-being in people with diabetes are social

support plays an important role in managing anxiety, depression, and mental stress that often accompany the course of this disease. An environment that supports a healthy lifestyle and adequate access to services will also improve psychological well-being. This systematic review highlights several gaps in research on the psychological well-being of people with diabetes, including the lack of universal standards in measurement, differences in approaches between type 1 and type 2 diabetes, limitations of multidisciplinary psychological interventions, lack of research on digital-based social support, and lack of longitudinal studies. Further research can be done through longitudinal studies to understand how psychological well-being develops in the long term. In addition, this research may also help uncover specific mechanisms that link psychological conditions to health outcomes of people with diabetes.

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