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The Relationship Between Diabetes Burnout Syndrome and Quality of Life in Patients with Diabetes Mellitus

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Abstract

Background of study: Diabetes mellitus is a chronic non-communicable disease characterized by elevated blood sugar levels that can affect a person's overall quality of life. A significant factor influencing this condition is diabetes burnout syndrome, which impacts how patients manage their illness and experience their daily lives.
Aims and scope of paper: This research sought to explore the association between diabetes burnout syndrome and the quality of life among diabetic individuals.
Methods: The research used a correlational analytical method with a cross-sectional design. The sample included 38 respondents who met the inclusion and exclusion criteria. Data were analyzed using the Spearman Rho test.
Result: The findings revealed that most participants experienced a moderate level of diabetes burnout, and 31 participants (86.1%) reported a moderate quality of life. The statistical analysis showed a significant negative correlation between burnout and quality of life, with a ρ-value of 0.002 and a correlation coefficient of -0.496. This indicates that as diabetes burnout increases, the quality of life tends to decrease.
Conclusion: In conclusion, diabetes burnout significantly affects patients by reducing their quality of life, potentially leading to issues such as poor treatment adherence, increased risk of complications, and various physical, emotional, social, and environmental challenges.

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INTRODUCTION

Diabetes mellitus is one of the most severe and common chronic diseases in Indonesia and even throughout the world. The primary characteristic of this disease is elevated blood glucose levels, and it is chronic in nature (Nugroho et al., 2024). The disease accompanies the patient throughout their life and causes symptoms such as polyuria, frequent thirst, increased hunger, fatigue, unexplained weight loss, and numbness. If not managed properly, this condition can lead to complications and symptoms that may arise at any time, potentially disrupting daily activities and reducing the patients quality of life from physical, psychological, social, and environmental aspects (Sari, 2020).

Quality of life encompasses individuals' subjective evaluation of their emotional, social, and physical well-being (Ekasari et al., 2018). Among individuals diagnosed with diabetes mellitus, a multitude of determinants such as age, gender, duration of illness, educational attainment, socioeconomic background, access to healthcare services, presence of complications, and the manifestation of diabetes burnout syndrome collectively influence quality of life. Diabetes burnout syndrome denotes a psychological state in which patients experience profound exhaustion and frustration related to the ongoing demands of disease management, often resulting in lapses or prolonged neglect in self-care behaviors (Kontoangelos et al., 2022).

Empirical evidence presented by (Jafari et al., 2024) elucidates a direct adverse effect of diabetes burnout on the quality of life, indicating that individuals enduring burnout invariably report diminished well-being. Corroborating these findings, (Nuari, 2020) identified a statistically significant association between diabetes burnout and reduced quality of life among patients attending a community health facility in Kediri Regency.

Although numerous investigations have explored diabetes burnout and quality of life independently or in conjunction with other variables, research explicitly examining the interconnection between these two constructs remains scarce, particularly within primary healthcare contexts such as community health centers. (Jafari et al., 2024) emphasized that this nexus is infrequently scrutinized, especially among individuals with type 2 diabetes mellitus. The paucity of comprehensive localized studies perpetuates a knowledge gap regarding the lived experiences of diabetic patients within fundamental healthcare settings, underscoring the imperative for more rigorous, focused research aimed at informing the development of tailored support mechanisms and intervention strategies.

Based on the results of a preliminary study conducted at the Kutorejo Community Health Center through interviews with 10 diabetes mellitus patients. It was found that 7 out of 10 patients stated that they were dissatisfied with their lives due to diabetes mellitus and felt tired and bored as a result of the disease and its treatment. Three patients complained of difficulty sleeping at night, one patient expressed dissatisfaction with their sexual activities due to complications, while 3 patients complained of frequently feeling bodily pain and admitted to neglecting their treatment, only taking medication when their blood sugar levels were high. The remaining 3 patients stated that they remained satisfied with their lives despite having diabetes mellitus and did not feel bored or tired in managing their diabetes. This indicates the presence of symptoms of diabetes burnout syndrome, which may diminish their quality of life. These results underscore the imperative for intensified inquiry into the association between diabetes burnout syndrome and the quality of life among individuals with diabetes mellitus within the region. (Nuari, 2020) investigation involving 55 participants revealed that 28 individuals exhibited moderate levels of diabetes burnout syndrome concomitant with a relatively satisfactory quality of life.

Against this backdrop, the present study is driven by a scholarly impetus to examine the interplay between diabetes burnout syndrome and quality of life among diabetes mellitus patients receiving care at the Kutorejo Health Center. The evident linkage between these variables accentuates how the experience of burnout detrimentally influences patient well-being. This research aspires to generate critical insights that inform the design of enhanced intervention frameworks, particularly those addressing the psychological burdens such as diabetes burnout, with the overarching objective of augmenting the holistic quality of life for persons living with diabetes.

METHOD

Study Design

This investigation employed a quantitative methodology utilizing a correlational design, capturing data at a singular temporal juncture to elucidate the association between diabetes burnout syndrome and quality of life among diabetic patients at the Kutorejo Community Health Center. Data collection spanned a fortnight, from April 21 to May 3, 2025.

Population and Sample

The study included all 53 diabetes patients registered at the Kutorejo Community Health Center. The researchers used a non-probability sampling method called consecutive sampling, which means they selected participants who met the required criteria during a set time frame.

The sample size obtained was 38 respondents with the following criteria:

1. Inclusion criteria:
    a. DM patients ≥ 6 months
    b. Aged 35–65 years

   c. Capable of reading and writing
   d. Willing to be a respondent and sign informed consent
   e. Met in person during data collection
2. Exclusion criteria:
   a. Have comorbidities or complications
   b. Have mental disorders, dementia, or are pregnant

Study Instruments

1. Diabetes Burnout Syndrome
   The research utilized the Diabetes Burnout Scale (DBS) developed by Abdoli et al., (2021), encompassing 18 items distributed over three dimensions: fatigue (6 items), detachment (7 items), and loss of control (5 items). This instrument was meticulously translated into Indonesian and subjected to validity assessment, yielding robust correlation coefficients ranging from 0.406 to 0.761—surpassing the benchmark table value of 0.349—and demonstrating excellent internal consistency with a Cronbach's Alpha of 0.841, as corroborated by Safira et al., (2023). Responses were measured on a Likert scale from 1 to 5, where 1 corresponds to strong disagreement, 2 to disagreement, 3 to neutrality, 4 to agreement, and 5 to strong agreement.
2. Quality of Life
   the Diabetes Quality of Life (DQOL) questionnaire, originally developed by Munoz & Thiagarajan (1998), and subsequently translated by Tyas (2008) and revalidated by (Yusra, 2011), constituted the instrument for assessing quality of life in this study. After the removal of two items, the final version comprised 28 questions exhibiting strong validity (ranging from 0.428 to 0.851) and exceptional reliability, with a Cronbach's Alpha of 0.963. The questionnaire is structured around four core domains: psychological, physical, social, and environmental factors. The scoring employed a Likert scale from 1 to 4, wherein for satisfaction-related items, 4 indicates 'very satisfied,' 3 'satisfied,' 2 'dissatisfied,' and 1 'very dissatisfied.' For items assessing disease impact, favorable responses are coded as 4 = always, 3 = often, 2 = rarely, and 1 = never; conversely, unfavorable responses are scored oppositely: 4 = never, 3 = rarely, 2 = often, and 1 = always.

Study Procedure

   a. Data was collected by targeting DM patients who came for examination at cluster 3 of the Community Health Center.
   b. After approaching and explaining the research, and obtaining informed consent, respondents filled out the DBS and DQOL questionnaires.
   c. Researchers accompanied them during the filling process and ensured that all items were completed.

Data analysis

   a. Univariate: Analysis in this study included gender, age, education level, duration of diabetes mellitus, diabetes burnout syndrome, and quality of life.
   b. Bivariate: Testing the corellation diabetes burnout syndrome and quality of life using the Spearman Rho test, with a significance level of $p \leq 0.05$.
   c. Statistical Software: The analysis was performed using SPSS software.

RESULTS AND DISCUSSION

Results

1. Respondent characteristics

Table 1. Frequency distribution of respondent characteristics

Characteristics Responden		Frequency	Percentage
Gender	Male	15	39.5
	Female	23	60.5
Age	35-45 years old	4	10.5
	46-55 years old	11	28.9
	56-65 years old	16	42.1
	≥ 65 years old	7	18.4
Level of Education	No schooling	0	0.0
	Elementary school	18	47.4
	Junior high school	12	31.6
	Senior high school	4	10.5
	Higher education	4	10.5
Duration of DM	≥ 6 months -5 years	26	68.4
	6-10 years	10	26.3
	≥ 10 years	2	5.3
Total		38	100

As delineated in Table 1, the majority of the sample comprised female participants, accounting for 23 individuals or 60.5%. Approximately 42.1% of respondents, totaling 16 individuals, fell within the 56 to 65-year age bracket. Regarding educational attainment, nearly half of the cohort, specifically 18 participants (47.4%), possessed qualifications equivalent to elementary school level. Furthermore, the predominant duration of diabetes mellitus among the subjects ranged from 6 months to 5 years, encompassing 26 respondents or 68.4% of the sample population.

2. Diabetes Burnout Sydnrome

Table 2. Frequency distribution of diabetes burnout syndrome

Diabetes Burnout Syndrome	Frequency	Percentage
Low	2	5.3
Moderate	36	94.7
High	0	0.0
Total	38	100

Table 2 shows that almost all respondents experienced moderate diabetes burnout syndrome, with a total of 36 respondents (94.7%).

3. Quality Of Life

Table 3. Frequency distribution of quality of life

Quality Of Life	Frequency	Percentage
Poor	0	0.0
Average	31	81.6
Good	7	18.4
Total	38	100

Table 3 shows that almost all respondents had a moderate quality of life, with a total of 31 respondents (81.6%)

4. The corellation between diabetes burnout syndrome and quality of life in patients with diabetes mellitus

Table 4. The corellation between diabetes burnout syndrome and quality of life in patients with diabetes mellitus

Diabetes Burnout Syndrome	Quality Of Life								*ρ-value*	*Rho*
	Poor		Average		Good		Total			
	f	%	f	%	f	%	f	%		
Low	0	0.0	0	0.0	2	100	2	100		
Moderate	0	0.0	31	86.1	5	13.9	36	100	0.002	-0.496
High	0	0.0	0	0.0	0	0.0	0	0.0		
Total	0	0.0	31	81.6	7	18.4	38	100		

Table 4 illustrates that the majority of participants exhibiting moderate diabetes burnout syndrome concurrently reported a moderate quality of life, comprising 31 individuals, equivalent to 86.1% of this subgroup. Moreover, 2 respondents (100%) characterized by minimal diabetes burnout demonstrated a good quality of life. The Spearman Rho analysis yielded a p-value of 0.002, which is below the 0.05 threshold for statistical significance, thereby warranting rejection of the null hypothesis in favor of the alternative hypothesis. This denotes a statistically significant association between diabetes burnout syndrome and quality of life among diabetes patients at the Kutorejo Community Health Center. The correlation coefficient of -0.496 signifies an inverse relationship, indicating that elevated levels of diabetes burnout correspond to diminished quality of life.

Discussion

1. Diabetes burnout syndrome

The findings of the study indicated that nearly all participants experienced moderate diabetes burnout syndrome, with 36 respondents (94.7%) reporting this condition. Diabetes patients are required to consistently follow a number of therapeutic management practices, including adherence to a nutritious diet and consistent physical activity, taking medication on time, and monitoring blood glucose levels, which must be done repeatedly and continuously every day (Lyndsay et al, 2018). This monotonous treatment routine often leads to feelings of fatigue and boredom, which can result in the development of diabetes burnout syndrome in individuals with diabetes mellitus (Kriswiastiny et al., 2022). Diabetes burnout syndrome is characterized by emotional responses such as irritability toward the illness and frustration due to the constant demands of care (Safira et al., 2023).

Diabetes mellitus patients experiencing diabetes burnout syndrome can be identified through three aspects: fatigue, disengagement, and feelings of helplessness. In terms of exhaustion, diabetes mellitus patients experience mental, physical, and emotional fatigue in managing diabetes mellitus, whether due to its management or the disease itself. In terms of detachment, diabetes burnout syndrome is characterized by reduced motivation and commitment to diabetes care. This is marked by neglecting diabetes management, frequently skipping diabetes management, avoiding seeking support for diabetes management, and ignoring reminders about diabetes. Additionally, in terms of loss of control, patients feel hopeless about the management efforts made to achieve targets that do not align with expected outcomes, where patients feel they must force themselves into management, They perceive a sense of helplessness in managing their diabetes and find it challenging to maintain consistent self-care practices. Diabetes burnout syndrome poses a significant barrier to effective glycemic control and adherence to treatment regimens. If people with diabetes mellitus experience burnout, all components of management will not be carried out properly, leading to glycemic dysregulation, which in turn increases the incidence of complications from diabetes mellitus and reduces their quality of life (Kian et al., 2018).

This study is consistent with the findings of research conducted by (Zhafarina et al., 2022), which found that 51 respondents (38.3%) experienced moderate diabetes burnout. According to (Safira et al., 2023), diabetes mellitus patients experiencing moderate diabetes burnout syndrome indicate that the level of saturation or fatigue caused by diabetes mellitus is at a moderate or intermediate stage. In her study (Mauidhah, 2024), it was stated that moderate-level diabetes burnout syndrome indicates that respondents experience significant emotional and mental fatigue, but this condition has not yet reached a very severe or dangerous level.

According to the researcher, in line with the above opinion, respondents experiencing moderate diabetes burnout syndrome in this study are due to having experienced significant emotional, physical, and mental fatigue. However, respondents have not completely given up or neglected their disease management. Respondents still show efforts to maintain their diabetes management routines, although not optimally. One example is the habit of skipping or delaying diabetes management, such as not regularly checking blood sugar levels or forgetting to take medication on schedule. This condition reflects an important phase where diabetes patients require adequate support in managing their diabetes to prevent this fatigue from progressing to a more severe stage.

2. Quality of life

The study's results showed that almost all respondents, about 81.6% or 31 people, had a moderate quality of life. Diabetes mellitus is a chronic illness that can cause physical symptoms affecting daily activities and potentially lower overall quality of life (Sari, 2020). A decline in quality of life is closely linked to higher rates of illness and death, which in turn can shorten the life expectancy of those with diabetes (Amalia et al., 2024). These findings are consistent with (Amalia et al., 2024), who found that 70.2% of diabetes patients reported an adequate quality of life. Similarly, research by (Umam et al., 2020) showed that 63.7% of diabetes patients experienced a moderate quality of life.

In patients with diabetes mellitus who experience a reduced quality of life, this can be observed across four aspects: physical health, psychological well-being, social interactions, and environmental factors. In terms of physical health, diabetes mellitus patients may exhibit dissatisfaction with their diet and exercise routines, daily activities, and leisure time, as well as frequently experiencing pain due to their diabetes, cold sweats, and frequent urination, and complaining about poor sleep quality. In terms of psychological health, patients may feel dissatisfied with their knowledge about diabetes, their physical appearance, their quality of life, feeling that their life is restricted by their diet, and feeling prevented from exercising due to their diabetes. Additionally, patients may fear dying from diabetes mellitus, experiencing complications, and feeling different because of their diabetes. In the social aspect, the patient feels dissatisfied with family acceptance of their diabetes, sexual life, and social relationships and friendships, which are often disrupted due to diabetes. In the environmental aspect, the patient feels dissatisfied with the time spent on treatment, care, and medication, and often feels afraid to go on vacation or travel, as well as afraid of losing their job due to their diabetes. A low quality of life can worsen complications, which can ultimately lead to disability or death (Erniantin et al., 2018).

The researchers believe that the moderate quality of life seen in respondents is largely due to high blood sugar levels, which cause physical symptoms like pain, shaking, frequent urination, and trouble sleeping at night. These issues can make daily life uncomfortable and challenging for people with diabetes. Additionally, frustration with dietary restrictions and the limited food choices they must follow also affects how they view their quality of life. Despite these challenges, most respondents were still able to carry out their everyday activities fairly normally. Their social connections stayed strong, suggesting that their social and environmental quality of life remained relatively unaffected.

3. The corellation between diabetes burnout syndrome and quality of life in patients with diabetes mellitus

The research outcomes revealed that the vast majority of respondents experienced a moderate degree of diabetes burnout syndrome accompanied by a moderate quality of life, with 31 individuals (86.1%) classified within this category. The Spearman Rho statistical test produced a p-value of 0.002, which is below the conventional significance threshold of 0.05, thus supporting the acceptance of the alternative hypothesis. This indicates a significant association between diabetes burnout syndrome and quality of life among diabetes patients at the Kutorejo Health Center. The correlation coefficient of -0.496 reflects a moderate inverse relationship, signifying that an increase in diabetes burnout corresponds with a decline in quality of life.The research outcomes revealed that the vast majority of respondents experienced a moderate degree of diabetes burnout syndrome accompanied by a moderate quality of life, with 31 individuals (86.1%) classified within this category. The Spearman Rho statistical test produced a p-value of 0.002, which is below the conventional significance threshold of 0.05, thus supporting the acceptance of the alternative hypothesis. This indicates a significant association between diabetes burnout syndrome and quality of life among diabetes patients at the Kutorejo Health Center. The correlation coefficient of -0.496 reflects a moderate inverse relationship, signifying that an increase in diabetes burnout corresponds with a decline in quality of life.

Diabetes mellitus is a chronic, incurable disease, but its symptoms and signs can be managed with proper diabetes management according to healthcare professionals' guidelines (Safira et al., 2023). This disease can affect patients' quality of life, both because of the physical symptoms experienced and the diabetes mellitus treatment undergone (Ginting & Saragih, 2021). The prolonged treatment process often triggers diabetes burnout syndrome, a condition of physical and emotional exhaustion that negatively impacts quality of life (Zhafarina et al., 2022; Jafari et al., 2024). According to (Mauidhah, 2024), diabetes patients with moderate diabetes burnout syndrome exhibit significant emotional and mental fatigue, although it has not yet reached a severe or life-threatening category. Patients at this stage feel overwhelmed by maintaining blood sugar levels and healthy lifestyles, which can ultimately lead to irregular blood sugar levels, decreased physical energy, and ultimately a decline in quality of life (Mauidhah, 2024; Safira et al., 2023).

According to researchers, 31 respondents experiencing moderate diabetes burnout syndrome and having moderate quality of life were attributed to moderate diabetes burnout, where respondents began to feel emotionally and mentally exhausted in managing their condition. However, at this stage, the respondents had not yet completely given up or withdrawn from disease management. Nevertheless, some respondents began to show a tendency to neglect their diabetes management, leading to emotional instability and reduced adherence to treatment. This condition impacted physical aspects such as the emergence of pain complaints, cold sweats, and frequent urination. Additionally, psychologically, respondents also feel burdened by dietary restrictions and eating patterns. Despite facing these challenges, respondents still feel capable of performing daily activities independently, so their quality of life remains in the moderate category.

Diabetes has a big impact on quality of life because it is a lifelong condition for those affected (Puspitasari, 2020). Many factors influence the quality of life for people with diabetes, and one important factor is diabetes burnout syndrome (Jafari et al., 2024). This burnout can harm quality of life by causing patients to stop following their treatment plans, increasing the risk of complications, and leading to physical, emotional, social, and environmental difficulties. When experienced over a long time, diabetes burnout can seriously lower quality of life and negatively affect a person's overall well-being (Safira et al., 2023).

Implications

The findings of this study carry significant implications in nursing, health psychology, and chronic disease management, particularly in diabetes mellitus. The demonstrated link between diabetes burnout syndrome and quality of life emphasizes that patient care should extend beyond medical treatment and also address psychosocial well-being.

1. Practical Implications
    a. Healthcare providers should incorporate psychological interventions such as counseling, stress management, and motivational education into routine diabetes care programs.
    b. Strong family and community support are crucial in helping patients alleviate burnout in managing diabetes, which in turn can enhance their quality of life.
2. Theoretical Implications
    a. This study contributes to the existing body of knowledge by highlighting the connection between psychological factors and the quality of life in individuals with chronic illnesses.
    b. It also lays the groundwork for developing holistic intervention models that integrate both medical and psychosocial approaches.

Research contribution

This study offers both theoretical and practical contributions:

1. Reinforcing Previous Evidence
   It strengthens existing findings by confirming that psychological factors—particularly diabetes burnout syndrome—play a crucial role in reducing quality of life. This underscores that diabetes care should not focus solely on medical aspects.
2. Practical Basis for Interventions
   The results provide a foundation for nurses and other healthcare professionals to design educational and support programs that are better aligned with patients' emotional and psychosocial needs.
3. Broadened Perspective
   Unlike earlier studies that primarily emphasized depression or general stress, this research highlights burnout syndrome as a distinct psychological condition arising from exhaustion in diabetes management.
4. New Empirical Evidence
   It contributes fresh empirical insights relevant to the local context of the study, which may not have been sufficiently addressed in prior research.
5. Comprehensive Understanding
   The study presents a more holistic view of how diabetes burnout syndrome directly impacts the quality of life of individuals living with diabetes mellitus.

Limitations

The instruments used to measure diabetes burnout syndrome and quality of life are standard instruments, in which some respondents did not fully understand certain parts of the questionnaire, which they found difficult to comprehend. Therefore, the researcher needs to explain the questions in the questionnaire clearly and simply.

Suggestion

1. For People with Diabetes Mellitus

Respondents need to regularly address the physical, emotional, and mental fatigue they experience while managing their diabetes. One way to do this is through psychological counseling, which aims to help individuals cope with stress, manage mental burdens, and develop a more positive mindset toward their condition. Respondents should also interact frequently with groups or individuals who also have diabetes, as they can serve as a source of emotional strength, provide a sense of understanding, and reinforce motivation to manage their condition. Additionally, respondents should focus on developing routines that go beyond medical treatment, incorporating activities that enhance quality of life, such as light exercise, hobbies, or other positive pursuits.

2. For Healthcare Services

Healthcare services are advised to conduct routine screenings for signs of diabetes burnout syndrome that can affect the quality of life of individuals with diabetes, especially in patients who show a decline in treatment compliance or poor blood sugar control, and to increase education related to diabetes burnout syndrome, such as how to recognize its symptoms, its impact on self-care, and strategies for overcoming it. Additionally, there is a need for outreach programs discussing how to manage stress, emotional exhaustion, and mental fatigue resulting from the chronic burden of diabetes management. Furthermore, community health centers should provide more frequent psychological services or counseling for diabetes mellitus patients.

3. For Educational Institutions

Students are encouraged to use the findings of this study to deepen their understanding of diabetes burnout syndrome and how it affects the quality of life for people with diabetes. Educational institutions can also use these results as a basis for conducting more detailed research in this area.

4. For Future Researchers

It is suggested that future researchers carry out studies with a larger number of participants. They might also explore other factors that could affect the relationship between diabetes burnout syndrome and quality of life in people with diabetes.

CONCLUSION

Investigation conducted at the Kutorejo Community Health Center revealed that the predominant proportion of diabetes mellitus patients endured moderate intensity of diabetes burnout concomitant with a moderate quality of life. The Spearman Rho statistical analysis produced a p-value of 0.002, surpassing the conventional significance level of 0.05, alongside a correlation coefficient of -0.496, indicative of a negative association. These findings substantiate the existence of a definitive linkage between diabetes burnout syndrome and the quality of life among patients attending this health facility.

AUTHOR CONTRIBUTION STATEMENT

Conceptualization: AN, SS, BD; Methodology: AN, SS, BD; Data Collection: AN; Data Analysis: AN, SS, BD; Drafting of the manuscript: AN, all authors reviewed the results and approved the final manuscript.

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