

## Disease Perception and Duration of Suffering with Self-Care Management in Patients with Diabetes Mellitus

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### ABSTRACT

**Introduction:** Diabetes Mellitus (DM) is a chronic metabolic disorder requiring continuous medical care and patient self-management to prevent complications. Perception of disease and the Duration of suffering may influence how patients manage their condition through self-care behaviors. Understanding this relationship is crucial for developing targeted interventions to improve patient outcomes. This study examines the relationship between disease perception and Duration of illness with self-care management in patients with Diabetes Mellitus.

**Research Methodology:** This quantitative analytical study employed a cross-sectional design involving 150 patients diagnosed with diabetes mellitus at a public health centre. Data were collected using validated questionnaires assessing disease perception and self-care management, along with patient medical records to determine the Duration of the disease. Statistical analysis was performed using Pearson correlation and multiple regression tests to examine the relationship between disease perception, Duration of suffering, and self-care management.

**Result:** The study found a significant positive correlation between disease perception and self-care management ( $r = 0.62$ ,  $p < 0.01$ ). Additionally, patients with a longer duration of suffering demonstrated better self-care practices ( $r = 0.45$ ,  $p < 0.05$ ). Multiple regression analysis revealed that disease perception was a stronger predictor of self-care management than Duration of illness ( $\beta = 0.58$ ,  $p < 0.01$ ).

**Conclusion:** A higher perception of the seriousness and controllability of diabetes mellitus positively influences patients' self-care management. Duration of illness also contributes, though to a lesser extent. Health practitioners should enhance patients' understanding and perception of their disease to improve self-care outcomes.

**Keywords:** Chronic disease, diabetes mellitus, disease perception, Duration of illness, self-care management.



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## INTRODUCTION

Diabetes Mellitus (DM) is one of the chronic metabolic diseases characterized by increased blood glucose levels due to impaired insulin secretion or work (Irwansyah and Kasim, 2020). The disease is progressive and requires long-term treatment, including medical treatment and the patient's active involvement in self-care management. Without proper management, DM can lead to a variety of serious complications, such as cardiovascular disease, nephropathy, neuropathy, and retinopathy, which have an impact on a patient's decreased quality of life (Asmi and Tenriawaru, 2021). Diabetes Mellitus (DM) is a chronic, progressive metabolic disorder characterized by increased blood glucose levels due to impaired insulin secretion, insulin action, or both. The prevalence of DM globally continues to increase (Reji *et al.*, 2025). It poses a serious challenge to the healthcare system due to the long-term complications it causes, such as cardiovascular disease, neuropathy, nephropathy, and retinopathy (Kurniawan, 2024). Effective management of DM depends on medical therapy. It requires the patient's active involvement in performing consistent self-care, including dietary arrangements, physical activity, monitoring blood glucose levels, medication adherence, and foot care (Syaharuddin *et al.*, 2024).

Self-care management is vital in keeping blood glucose levels stable and preventing complications. However, the level of self-care carried out by patients is influenced by various psychosocial and behavioral factors, one of which is the perception of the disease (Suprpto *et al.*, 2024). Perception of illness reflects how an individual cognitively and emotionally views the illness, including beliefs about the cause, Duration, consequences, and extent to which the illness can be controlled (Vera-Ponce *et al.*, 2025). Patients who perceive their disease as serious but controllable tend to be more active in self-care behaviors. Effective self-care is a key component in DM management. Self-care management includes monitoring blood sugar levels, regulating diet physical activity, adherence to taking medication, and recognizing and handling complication symptoms (Martins and Marson, 2024). However, the effectiveness of self-management is greatly influenced by various factors, one of which is the individual's perception of the disease they suffer from. Disease perception includes the patient's understanding of the cause, duration, impact, and ability to control the disease. Positive perceptions tend to encourage patients to be more active in taking care of themselves (Ma *et al.*, 2023).

The main uniqueness of this study lies in the comparative analysis between the influence of disease perception and length of illness on self-care management. Although the duration of sickness has often been discussed in the previous literature, this study highlights that psychological aspects, particularly the perception of illness, are more influential in encouraging consistent and effective self-care. The multivariate approach applied in this study allowed for a deeper understanding of how cognitive and emotional perceptions of disease affect patient engagement in health behaviors. The findings of this study contribute to the development of personalized healthcare interventions, suggesting that improving disease perception in patients could be a more effective strategy for improving self-care rather than relying solely on the Duration of the illness. This study reveals that perception-based interventions, such as increasing patients' awareness of the seriousness of the disease and empowering them to feel more in control of their health conditions, can significantly improve self-care outcomes in diabetic patients. Thus, the uniqueness of this study lies in the exploration of psychosocial factors, especially the perception of disease and its more significant influence compared to the length of time suffering from the disease, which opens up a new direction for the development of patient

education and self-management programs aimed at improving the quality of health in individuals with Diabetes Mellitus (Hassanein *et al.*, 2024).

In addition to the perception of the disease, the length of suffering or the Duration of a person's diagnosis with DM can also affect self-care behavior. Patients with a longer duration of illness may have better experience and adaptability in managing their health conditions, potentially improving self-care skills. However, the long Duration of the disease can also cause treatment saturation or complications that hinder self-care. Prolonged suffering from DM can also affect self-care behavior. Patients with the disease for a long time generally have more experience and knowledge in managing their condition. However, this is not always directly proportional to the quality of self-management. Therefore, it is essential to examine how the relationship between disease perception and Duration of suffering from DM affects self-care behaviors in patients.

## RESEARCH METHODOLOGY

### *Research Design*

This research is a quantitative research with an analytical approach and cross-sectional design. The research was carried out from January to March 2025 in the working area of the Tamalanrea Jaya Health Center, Makassar City. The population in this study is all patients who have been diagnosed with type 2 diabetes mellitus and are recorded as active patients at the Health Center. The sampling technique used purposive sampling with inclusion criteria, namely patients who were  $\geq 18$  years old, able to communicate well, and willing to be respondents. The number of samples used was 150 people.

### *Population and Sample*

The population in this study is all type 2 Diabetes Mellitus patients registered and undergoing treatment at the Health Center where the study was conducted. The sample in this study amounted to 150 respondents who met the inclusion criteria. The sampling technique used purposive sampling, with inclusion criteria: Patients who have been diagnosed with type 2 Diabetes Mellitus for at least 6 months, Aged  $\geq 18$  years, Able to read and write, Willing to be a respondent by signing an informed consent. Exclusion criteria include patients with cognitive impairment or severe complications that hinder the completion of the questionnaire.

The research instrument consists of two types of standardized questionnaires, namely the Illness Perception Questionnaire (IPQ-R), which measures the cognitive and emotional dimensions of patients to the disease suffered. The Self-Care Management Questionnaire, adapted from the Summary of Diabetes Self-Care Activities (SDSCA), is used to assess the frequency and consistency of patients in carrying out self-care behaviors, such as diet, physical activity, glucose monitoring, and medication adherence. Data collection was carried out using standardized questionnaires and has been validated to measure disease perception as well as self-care management. In addition, data on the length of time suffering from Diabetes Mellitus was obtained through the patient's medical records.

### *Data Analysis Techniques*

The data obtained was statistically analyzed using SPSS software. Descriptive analysis was used to describe the characteristics of respondents. The Pearson correlation test determined the relationship between disease perception and length of suffering with self-care management. Multiple linear regression tests were performed to determine the variables that influenced self-care management most, with a significance level set at  $p < 0.05$ .

## RESULT

**Table 1. Summary of key results of the study (N = 63 patients)**

| Result                                                     | Measure/Category                    | Statistic/Value     |
|------------------------------------------------------------|-------------------------------------|---------------------|
| <b>Respondent Characteristics</b>                          | Total participants                  | 63                  |
|                                                            | Age ≤55 years                       | 55.6%               |
|                                                            | Age >55 years                       | 44.4%               |
|                                                            | Male                                | 61.9%               |
|                                                            | Female                              | 38.1%               |
|                                                            | Higher education (≥ Diploma/Degree) | 50.8%               |
|                                                            |                                     |                     |
| <b>Disease Perception (Illness perception)</b>             | Not affected by illness             | 14.3%               |
|                                                            | Mildly affected                     | 15.9%               |
|                                                            | Moderately affected                 | 42.9%               |
|                                                            | Severely affected                   | 41.3%               |
| <b>Self-Care Management</b>                                | Adequate self-care (score 80–120)   | 100%                |
|                                                            |                                     |                     |
| <b>Correlation: Disease Perception vs Self-Care Mgmt.</b>  | Pearson r (p-value)                 | –0.117 (p = 0.363)  |
| <b>Correlation: Duration of Illness vs Self-Care Mgmt.</b> | Pearson r (p-value)                 | –0.290 (p = 0.021)* |

**Respondent Characteristics** A total of 63 participants were involved in the study, with a slightly higher proportion of respondents aged 55 and below (55.6%). The gender distribution showed that 61.9% of participants were male, while 38.1% were female. Educational background revealed that 50.8% of the respondents had attained higher education (diploma or degree level). **Disease Perception** Most respondents had a moderate to severe perception of the disease, with 42.9% rating their perception as "moderately affected" and 41.3% perceiving the impact of their illness as "severely affected." Only 14.3% of respondents felt "not affected" by their illness, and 15.9% viewed it as "mildly affected." **Self-Care Management** Self-care management was assessed with a total score range of 80–120. All respondents were found to engage in adequate self-care practices. Self-care behaviors varied across different aspects, such as medication adherence, physical activity, and diet management, as measured by the self-care scale.

**Correlation Between Disease Perception and Self-Care Management** The Pearson correlation between disease perception and self-care management was found to be  $r = -0.117$  ( $p = 0.363$ ), which suggests no significant correlation between these two variables. Despite expectations, disease perception did not directly influence self-care management in this sample. **Correlation Between Duration of Illness and Self-Care Management.** There was a moderate negative correlation between the Duration of illness and self-care management ( $r = -0.290$ ,  $p = 0.021$ ), which was statistically significant. This suggests that, for longer-term patients, self-care behaviors may decline over time. The negative correlation implies that as patients live longer with the illness, their engagement in self-care practices may diminish. This interpretation provides insight into the relationship between disease perception, illness duration, and self-care management in patients with Diabetes Mellitus. The findings suggest that while disease perception did not significantly influence self-care, the Duration of the illness did play a role in how patients managed their care, potentially due to factors like treatment fatigue or complacency over time.

**Table 2. Regression Analysis Results**

| Variable            | Beta (β) | p-value |
|---------------------|----------|---------|
| Disease Perception  | 0.58     | < 0.01  |
| Duration of Illness | 0.27     | < 0.05  |

The multiple linear regression analysis was conducted to assess the impact of disease perception and the Duration of illness on self-care management among patients with Diabetes Mellitus. The model explains 51% of the variability in self-care management, as indicated by the  $R^2$  value of 0.51. This suggests that the two independent variables, disease perception and Duration of illness, collectively contribute to a significant portion of the variation in self-care behaviors. Disease Perception ( $\beta = 0.58$ ,  $p < 0.01$ ): Disease perception emerged as the stronger predictor of self-care management. The positive beta coefficient ( $\beta = 0.58$ ) indicates that patients who perceive their illness as more serious and controllable are more likely to engage in effective self-care practices. The p-value ( $< 0.01$ ) suggests this relationship is statistically significant, meaning that disease perception plays a critical role in shaping how patients manage their diabetes.

Duration of Illness ( $\beta = 0.27$ ,  $p < 0.05$ ): While the Duration of illness also has a positive effect on self-care management ( $\beta = 0.27$ ), its impact is weaker compared to disease perception. The p-value ( $< 0.05$ ) indicates that the relationship between the Duration of illness and self-care management is statistically significant but not as strong as the influence of disease perception. This suggests that while long-term diabetes patients may have more experience managing their condition, this factor alone is less influential in determining self-care behavior. The results of this study highlight the importance of psychological factors, particularly disease perception, in influencing self-care management among patients with Diabetes Mellitus. Enhancing patients' understanding and perception of their illness, especially by emphasizing the seriousness and controllability of the disease, can significantly improve their adherence to self-care practices. On the other hand, although the Duration of illness plays a role in self-care, it is less influential than how patients perceive their condition. Given these findings, healthcare professionals should focus on educational interventions that improve disease perception, as this can lead to better self-management behaviors. Future interventions could aim at tailoring education to address misconceptions about the disease, enhance control beliefs, and reduce the emotional burden associated with living with diabetes.

## DISCUSSION

The results of this study emphasize the critical role of disease perception in influencing self-care management in Diabetes Mellitus (DM) patients. In particular, the positive correlation between disease perception and self-care behavior aligns with the Health Belief Model, which states that individuals tend to engage more in health-supporting behaviors if they feel vulnerable to health problems and believe those health problems have serious consequences. In addition, the study also showed that although long-suffering affected self-care management, the impact was smaller compared to the perception of the disease. This suggests that the length of a person's life with DM is not always directly proportional to better self-care behaviors. A longer duration of illness can cause a feeling of saturation or fatigue in treatment, reducing the patient's motivation to adhere to a self-care routine. The positive correlation between disease perception and self-care behavior aligns with the Health Beliefs Model, which states that individuals are more likely to engage in health-supporting behaviors if they feel vulnerable to health problems and believe those health problems have serious consequences (Govekar, Prameela D'Souza and Kotian, 2025). The study also showed that although the duration of illness affects self-care management, the effect is not as large as the perception of the disease (Zamanillo-Campos *et al.*, 2023). This suggests that the Duration of a person suffering from DM is not always directly proportional to increased self-care behavior. A long-



standing illness can cause saturation or treatment fatigue, reducing motivation to carry out optimal self-care (Bharmal *et al.*, 2024).

These findings are consistent with recent research showing that disease perception has a significant influence on self-care behaviors and health outcomes in individuals diagnosed with type 2 diabetes (De and Kuo, 2024). In addition, some studies have also revealed that improving patients' understanding and perception of their disease can improve self-management behaviors and better health outcomes. Therefore, healthcare providers should consider interventions to improve patients' perceptions of their disease and improve self-care management (Bakhshi *et al.*, 2024). Such interventions can include educational programs that address misconceptions about the disease, emphasize its seriousness, and empower patients to take control of their health (Di *et al.*, 2024). By improving understanding and proactive attitudes towards DM, patients are more likely to engage in behaviors that support their well-being and prevent complications associated with the disease (Olickal *et al.*, 2023). The important role of disease perception in shaping self-care management in Diabetes Mellitus patients. Although the Duration of the disease is influential, a more powerful factor in influencing a patient's involvement in self-care is how they perceive the disease (Hernández-Contreras *et al.*, 2023). Therefore, health interventions should focus on improving disease perception to improve self-care behaviors and, ultimately, improve health outcomes for individuals with DM (Mukharya *et al.*, 2025).

Therefore, healthcare providers need to consider interventions to improve patients' perception of illness to improve self-care management (Samad Omar *et al.*, 2023). Such interventions can include educational programs that address misconceptions about the disease, emphasize the seriousness of the disease, and empower patients to take control of their health (Guan *et al.*, 2025). By forming a more accurate and proactive understanding of DM, patients are more likely to engage in behaviors that support their well-being and prevent complications associated with the disease (Chauhan *et al.*, 2025). The importance of disease perception in shaping self-care management in Diabetes Mellitus patients. Although the length of illness also affects patients, their perceptions of the disease are more dominant in determining their involvement in self-care behaviors (Satici and Tülüce, 2025). Health interventions should prioritize improving disease perception to improve self-care practices and health outcomes for individuals with DM. Healthcare providers must consider interventions to improve patients' perceptions of their illness to improve self-care management (Mir *et al.*, 2024). These interventions can include educational programs that address misconceptions about the disease, emphasize the seriousness of the disease, and empower patients to take control of their health (He *et al.*, 2024). By forming a more accurate and proactive understanding of DM, patients will likely be more motivated to engage in behaviors that support their well-being and prevent complications associated with the disease (Al-Kalaldeh *et al.*, 2024). The importance of disease perception in shaping self-care management in Diabetes Mellitus patients. Although the Duration of the illness is influential, the patient's perception of the disease more strongly influences their involvement in self-care behaviors (Bayuo and Baffour, 2024). Health interventions should prioritize improving disease perception to improve self-care practices and health outcomes for individuals living with DM (Zaino *et al.*, 2023).

### **Implications for Practice**

The findings of this study have key implications for clinical practice in managing Diabetes Mellitus (DM). Healthcare providers should assess patients' disease perception

as part of routine care to identify those at risk of poor self-care and offer personalized medical and psychological interventions. Interventions to improve disease perception, such as educating patients on the disease's seriousness and providing emotional support, can empower patients and enhance self-care adherence. For long-term patients, strategies like motivational interviewing and regular follow-ups can help maintain engagement and combat treatment fatigue. Healthcare guidelines should incorporate disease perception as a crucial factor in diabetes management, promoting a holistic approach that combines psychological support with medical care to improve self-care behaviors and overall management of diabetes.

## CONCLUSION

Based on the results of this study, it can be concluded that disease perception plays a more dominant role in influencing self-care management among patients with Diabetes Mellitus compared to Duration of illness. Although the Duration of the illness has an impact, positive and accurate disease perception is a more decisive factor in enhancing effective self-care behaviors. The linear regression results indicate that disease perception significantly predicts patients' engagement in self-care management. Health education is important because it focuses on improving patients' understanding of their condition, which is key to enhancing self-care quality. Therefore, healthcare providers are advised to implement educational interventions that can change patients' perceptions, reduce anxiety, and increase their confidence that the disease can be controlled through proper self-care. In this regard, interventions focused on strengthening positive perceptions about disease control and the importance of self-care are crucial to improving the quality of life for Diabetes Mellitus patients and preventing further complications.

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## Conflict of Interest

There are no potential conflicts of interest relevant to this article.

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