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Sociodemographic Relationships with *Self-Care Management* Adherence in Type 2 Diabetes Mellitus Patients

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Abstract

Type 2 diabetes mellitus (T2DM) is a chronic disease with a high complication rate that is strongly influenced by patient compliance with self-care management. This study aims to analyze the forms of compliance that affect self-care management in T2DM, sociodemographic characteristics that play a role in self-care management, and aspects of self-care management that contribute to improving compliance of T2DM patients. The method used was literature from the EBSCO, SAGE, and PubMed databases for the period 2021-2025, with the inclusion criteria of English articles, full text, and the use of Medical Subject Headings (MeSH Terms). The literature review showed that adherence in the aspects of blood sugar monitoring, diet management, physical activity, medication consumption, and foot care determine the success of self-care management. Sociodemographic factors such as advanced age, low education and economic level, and lack of social support were shown to reduce patient adherence to self-care management. In contrast, patients with good health education, access to adequate medical equipment, and family and community support showed a more optimal level of compliance and self-care management. Effective self-care management, especially in terms of diet management, physical activity, and blood sugar monitoring, significantly increases patient compliance, reduces the risk of complications, and improves quality of life. Thus, sociodemographic-based interventions, health education, and family/community involvement are essential to improve adherence and effectiveness of self-care management in T2DM patients.

Background

The phenomenon of increasing cases of type 2 diabetes mellitus (T2DM) has become a global issue of concern in recent decades (Sun et al., 2022). Type 2 diabetes is a chronic metabolic disease characterized by hyperglycemia due to impaired insulin secretion, insulin resistance, or both (Reed et al., 2021). Based on data from the International Diabetes Federation, in 2024 there were approximately 589 million adults aged 20-79 years living with diabetes, and this number is projected to increase to 853 million by 2050, with T2DM accounting for 90-95% of all diabetes cases (IDF, 2025). This suggests that the phenomenon of T2DM not only impacts individuals, but also poses a huge burden to families and health systems globally.

The burden of the high prevalence of T2DM is exacerbated by the low level of patient compliance with *self-care management*. Recent studies show that only about 42.4% of T2DM patients have good adherence to *self-care management* practices, while the rest show poor adherence, especially in blood sugar monitoring and foot care (Simegn et al., 2023). This low adherence contributes to high rates of complications and relapses, such as cardiovascular disease, renal failure, retinopathy, and neuropathy, thus worsening patients' quality of life and increasing healthcare costs (IDF, 2025; Reed et al., 2021).

Adherence to *self-care management* in T2DM patients is very important to implement, and self-care management is influenced by several factors such as sociodemographics, knowledge, social support, and perceived benefits and barriers (Chindankutty & Devineni, 2023; Simegn et al., 2023). However, in reality, many T2DM patients have not received adequate education, limited access to information, and lack of social support, leading to an increase in complications (Bhatti et al., 2018; Fereidooni et al., 2024).

Despite the rising prevalence of T2DM complications in the community, there remains a lack of comprehensive understanding regarding how sociodemographic factors specifically affect patient adherence to self-care management, highlighting the need for targeted evidence-based interventions. Sociodemographic factors have a very important role in monitoring and improving *self-care management* compliance in patients with T2DM. This is because each sociodemographic aspect such as age, gender, education level, economic status, social support and culture has a different influence on the patient's behavior and ability to carry out self-care. Social support from family and community has also been shown to increase patients' motivation and consistency in carrying out *self-care management*. In addition, various studies have shown that sociodemographic factors do significantly influence the level of *self-care management* adherence in T2DM patients. Therefore, this study aims to evaluate strategies that enhance patient compliance, reduce the incidence of complications, and support the optimal maintenance of quality of life among individuals with T2DM. (IDF, 2025; Sherifali et al., 2018; Simegn et al., 2023).

Methods

This article was written using the literature review method. The search for scientific articles was carried out through three main databases, namely *EBSCO*, *SAGE*, and *PubMed* published in the 2021-2025 range. Keyword searches in the literature using guidelines based on PICO analysis include: ("Sociodemographic Factors"[MeSH] AND "Social Support"[MeSH] AND "Culture"[MeSH]) AND ("Self-Care"[MeSH] OR "self-management"[MeSH] AND ("Diabetes"[MeSH]" OR "Type 2 Diabetes"[MeSH])". This article was then readjusted based on the results of the inclusion criteria that had been set previously. As for the results of these inclusion criteria can be used as an English research article, with *full text* and pdf format, the city on the theme of the article is a socio-demographic relationship with *self-care management* compliance in T2DM patients.

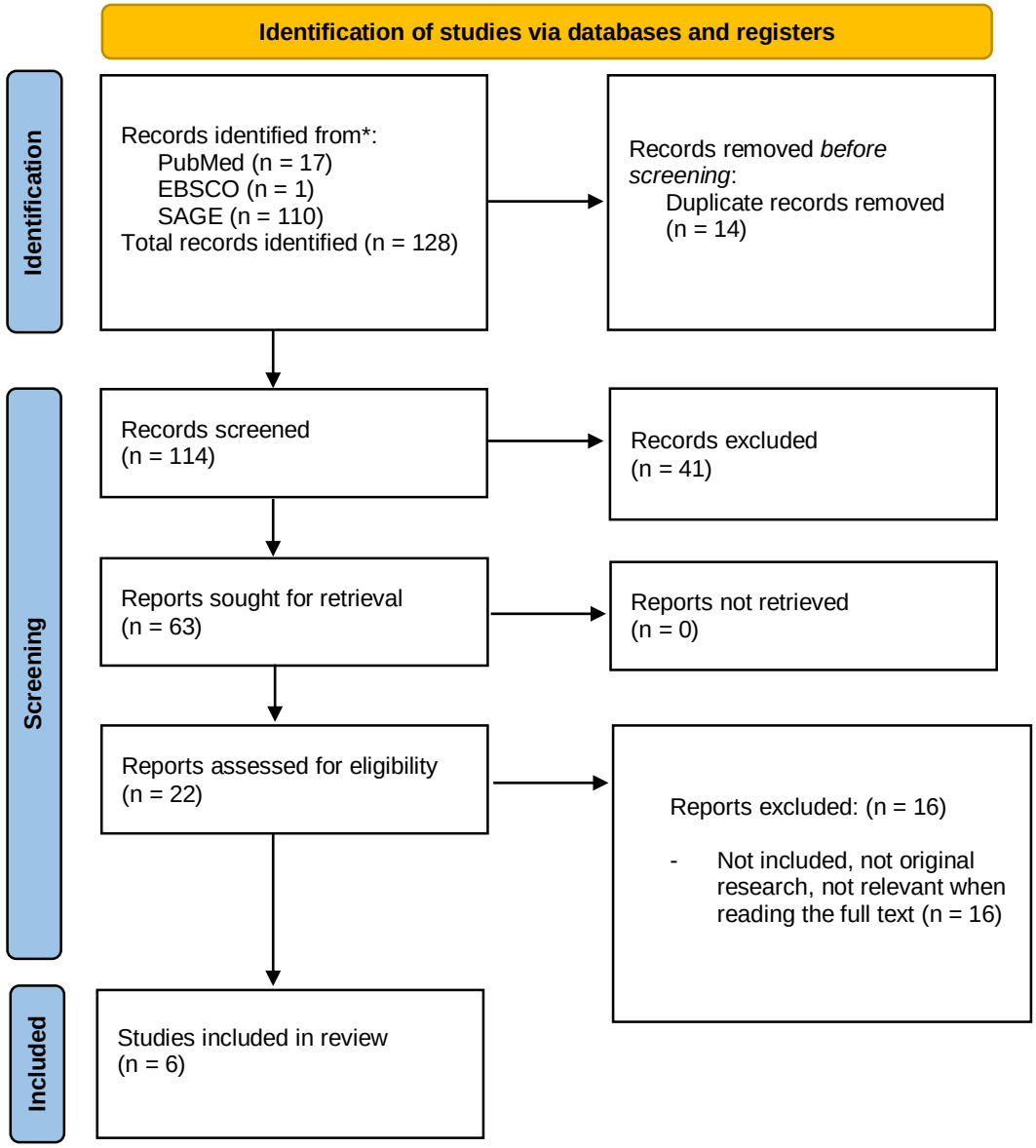

Figure 1. PRISMA Flowchart

Result and Discussion

Tabel 1. Relationship between sociodemographics and *self-care management* compliance in T2DM patients

Author	Title	Objective	Method	Results
(Xie et al., 2020)	*An examination of the socio-demographic correlates of patient adherence to self management behaviors and the mediating roles of health attitudes and*	This study aims to identify socio-demographic correlates of patient adherence to self-management behaviors relevant for patients with type 2 diabetes and hypertension, including medication therapy, diet therapy,	Methods A 24-week RCT study. The sample consisted of 148 adult patients (aged ≥18 years) with a diagnosis of type 2 diabetes and hypertension. Inclusion criteria: -patients had been diagnosed by a physician at least one	Adherence to self-management behaviors in patients with type 2 diabetes and hypertension was related to socio-demographic characteristics. Gender: Female patients were less likely to exercise regularly (OR = 0.49; p = 0.03) and more likely to avoid tobacco and alcohol (OR = 9.87; p < 0.001) than males. Age: Older patients were more adherent to diet therapy (OR =

	self-efficacy among patients with coexisting type 2 diabetes and hypertension	exercise, tobacco and alcohol avoidance, stress reduction, and self-monitoring/self-care. To assess whether health attitudes and self-efficacy in self-management mediate the relationship between socio-demographic characteristics and patient adherence to these self-management behaviors.	month earlier, -currently undergoing treatment -able to perform self-management/monitoring. Data were collected using a questionnaire completed with the help of a research assistant.	2.21; p = 0.01) and self-monitoring/self-care (OR = 2.17; p = 0.02). Living Status: Patients living with family/others were more likely to exercise regularly (OR = 3.44; p = 0.02) but less likely to avoid tobacco and alcohol (OR = 0.10; p = 0.04) than those living alone. Health Perception: Patients with better health perception were more adherent to medication therapy (OR = 2.02; p = 0.03). Duration of Diabetes: Patients with longer duration of diabetes were more adherent to self-monitoring/self-care (OR = 2.33; p = 0.01).
(Regufe et al., 2024)	*Clinical and Sociodemographic Profile, Self-Care, Adherence and Motivation for Treatment, and Satisfaction with Social Support in Portuguese Patients with Type 2 Diabetes*	This study aimed to describe the sociodemographic and clinical profiles of patients with type 2 diabetes mellitus (T2DM) in Portugal and evaluate self-care practices, adherence to treatment, motivation for treatment, and satisfaction with social support in these patients.	The study used a cross-sectional design. The sample consisted of 303 adult patients with T2DM. Inclusion criteria: age above 18 years, diagnosis of T2DM, participating in endocrinology consultation, able to understand and provide informed consent. Exclusion criteria: patients with oncologic diseases and certain degenerative diseases. The instrument used a structured questionnaire consisting of: Part I: Sociodemographic data Part II: DKQ-24, MAT, TMS, and ESSS.	Of the 303 patients (median age 67 years, 51.2% female, 68.2% retired), median systolic blood pressure was 135 mmHg, mean abdominal circumference was 104.6 cm, and mean BMI was 29.3 kg/m². Most patients were taking oral antidiabetics (78.9%) and insulin (56.4%). Only 25.1% of patients consistently followed a healthy diet, and 31% engaged in weekly physical activity. Adherence to medication was generally high, but problems such as forgetting to take medication were still found. Satisfaction with social support varied, with 30% of patients feeling isolated.
(de Leon et al., 2024)	*Patient activation levels and socioeconomic factors among the Amazonas population with diabetes: a cross-sectional study*	This study aimed to explore the level of patient activation in individuals with type 2 diabetes mellitus (T2DM) treated in primary care facilities, as well as identify the association between demographic,	This study used a cross-sectional design. The sample consisted of 789 adult patients (aged ≥18 years) with a diagnosis of T2DM. There were no specific exclusion criteria, as long as patients were able to	The results showed that the activation level of patients in this population tended to be low. Logistic regression analysis showed that men were 43% more likely to be at a lower activation level than women. Older age and lower education levels were also significantly associated with lower activation levels. In addition, poor self-

		clinical, and psychosocial factors with patient activation levels in the population of the Brazilian state of Amazonas.	complete the questionnaire and were mentally stable. The main instrument used was the PAM-13.	perception of health and low levels of life satisfaction were also significantly associated with lower PAM-13 scores.
(Ibrahim et al., 2021)	*Glycemic control and its association with sociodemographics, comorbid conditions, and medication adherence among patients with type 2 diabetes in southwestern Nigeria*	This study aimed to determine the prevalence of poor glycemic control and its association with sociodemographic factors, comorbid conditions, and medication adherence among patients with type 2 diabetes mellitus (T2DM) in a referral hospital in rural southwestern Nigeria. This study also sought to identify factors that could help clinicians recognize patients at high risk of poor glycemic control.	This study used an observational retrospective design. The study sample was 300 patients with T2DM. Inclusion criteria were patients aged 40 years and above, who had undergone T2DM treatment for at least 6 months. Patients who were critically ill or had severe psychiatric disorders were excluded. The research instrument was MMAS-8 semi-structured questionnaire.	The mean age of the respondents was 61.9 years. The prevalence of poor glycemic control in T2DM patients at the study site was 40%. Multivariate analysis showed that several factors were significantly associated with poor glycemic control, namely: - Older age (OR = 2.522; 95% CI: 1.402-4.647) - Low income (OR = 1.882; 95% CI: 1.021-3.467) - Obesity (OR = 1.734; 95% CI: 1.013-3.401) - Not initiating insulin therapy (OR = 2.014; 95% CI: 1.269-5.336) - Poor medication adherence (OR = 1.830; 95% CI: 1.045-3.206). Advanced age, low income, obesity, not yet started insulin therapy, and poor medication adherence were the main predictors of poor glycemic control in T2DM patients in rural Nigeria.
(Marvin & Powe, 2023)	*Financial, Occupational and Physical Challenges and Blood Glucose Monitoring in Type 2 Diabetes*	This study aims to analyze the relationship between financial, physical, and occupational challenges with adherence to blood glucose monitoring in patients with type 2 diabetes mellitus in the United States. Specifically, this study wanted to determine how factors such as insurance coverage, employment status, health status, and demographics affect blood glucose self-monitoring practices in adults with type 2 diabetes.	This study used a cross-sectional design. The study sample was adults aged 18 years and older who had been diagnosed with diabetes and recorded in NHANES data. The number of respondents analyzed was 991 people, consisting of 473 men (47.7%) and 518 women (52.3%), with an average age of 38 years. The research instrument was the NHANES questionnaire.	The study found several factors that were significantly associated with adherence to blood glucose monitoring: - Prescription coverage: Individuals with insurance that covered some or all of the cost of prescription drugs had significantly more frequent blood glucose monitoring than those without prescription coverage ($p = 0.04$). - Employment status: Respondents who were employed were significantly less likely to perform blood glucose monitoring than those who were not employed (IRR = 0.49; $p < 0.0001$). - Gender and age: Females and older individuals had more frequent blood glucose monitoring ($p < 0.0001$). - Race/ethnicity: Non-Hispanic White, Black, and Other-Multiracial were significantly

				more frequently monitored than other racial/ethnic groups. - Health status: Respondents who rated their health as "good" or "fair" monitored more frequently than those who rated their health as "very good" or "poor", although this relationship was not always significant across all categories.
(Tavares et al., 2023)	*AmazonAmandaba SociodemographicFactors, Health Literacy, Biochemical Parameters and Self-Care as Predictors in Patients with Type 2Diabetes Mellitus: A Cross-Sectional Study*	This study aims to verify whether sociodemographic variables are predictors of HL, whether HL and sociodemographic factors affect biochemical parameters jointly, and whether HL domain is a predictor of self-care in DM2.	Cross-sectional observational study with descriptive and inferential statistics. The study population consisted of individuals with DM2 who were 30 years of age or older. Standardized questionnaire, SAH, MSNI, 5-point Likert scale, and Brazilian version of QAD were used to assess self-care.	Results showed that gender, age, education, economic class, family income, self-perception of health, diabetes health literacy, and glycated hemoglobin (HbA1c) were associated with self-care activities. In the adjusted regression model, female gender (β = -0.201; p = 0.013), age (β = 0.191; p = 0.023), education (β = 0.219; p = 0.009), self-perception of health (β = 0.200; p = 0.012), and diabetes health literacy (β = 0.244; p = 0.003) remained significant.

Effect of Age and Gender on Self-Care Management Adherence

Age is one of the significant sociodemographic factors in influencing patient adherence to self-care management in T2DM. Elderly patients tend to have lower levels of adherence, particularly in physical activity and dietary management. This is generally due to physical limitations, decreased motivation, and the presence of comorbidities that are often experienced by this age group. Decreased compliance in the elderly has an impact on the effectiveness of self-management and an increased risk of complications (Xie et al., 2020).

Gender also plays a role in determining the level of patient compliance. Studies show that women are generally more compliant in carrying out self-care management, especially in terms of diet and routine blood sugar checks. Women tend to be more conscientious and consistent in following self-care instructions, while men often pay less attention to aspects of diet and blood sugar control (Xie et al., 2020).

There is a negative relationship between advanced age and self-care management adherence. The older the patient, the more likely they are to experience decreased compliance, especially in aspects that require physical activity and lifestyle changes. This is due to physical limitations, memory decline, and lack of social support in the elderly. Women tend to have a higher level of compliance than men in carrying out self-care management. This can be attributed to the characteristics of women who are more concerned about health and more open to health education. Meanwhile, men tend to pay less attention to the details of care, resulting in lower levels of compliance. Adherence is the main key to successful self-care management. Patients who adhere to diet management, physical activity, blood sugar monitoring, and regular medication consumption will have better glycemic control, lower risk of complications, and improve quality of life. Conversely, low adherence results in poor disease management and high rates of T2DM complications.

The role of education level and health literacy on self-care management

Education level plays an important role in shaping self-care management behavior in T2DM patients. Patients with higher education tend to have a better understanding of the disease and how to manage it, so they are more active in seeking health information and implementing appropriate self-care measures, such as controlling blood glucose levels, regulating diet, doing physical activity, and taking medication regularly. In contrast, patients with low education level often lack understanding of the importance of self-care management, which results in low compliance and increased risk of complications. Good education also facilitates patients in optimally utilizing health facilities for promotive and preventive purposes (Memenuhi et al., 2025; Regufe et al., 2024; Suardi, 2022).

Health literacy is an individual's ability to obtain, understand, and use health information in making decisions related to self-care. Patients with good health literacy are able to understand medical instructions and implement appropriate health behaviors, including dietary management, exercise, blood sugar monitoring, pharmacological therapy, and foot care. In contrast, low health literacy leads to low utilization of health services and suboptimal self-care management behaviors (Aguatina et al., 2025; Regufe et al., 2024; Satri et al., n.d.). Thus, improving education and health literacy is an effective strategic intervention to improve adherence and successful self-care management in T2DM patients. Educational programs tailored to the patient's level of education and health literacy are highly recommended to support optimal disease management.

Socioeconomic Status and Access to Health Services on self-care management

Socioeconomic status (SES) includes aspects of income, education, employment, and facilities owned. SES greatly influences the ability of T2DM patients to carry out self-care management. Patients with low socioeconomic status tend to experience difficulties in accessing health services, obtaining medications, and getting adequate health education. Economic pressure makes patients prefer alternative treatments or reduce medication purchases to save costs, which worsens their health condition. Therefore, low socioeconomic status contributes to inappropriate care management, delayed diagnosis, and less effective treatment (Hawara et al., 2024).

Good healthcare access is essential to support self-care management. Patients who have easy access to health facilities, get regular consultations, and proper education tend to be more compliant in carrying out treatment and self-care. Conversely, limited access either due to cost, distance, or lack of information makes it difficult for patients to perform routine controls, monitor blood sugar, and obtain medication regularly, hindering the effectiveness of self-management (de Leon et al., 2024). Socioeconomic status and access to health services are crucial factors that influence successful self-care management in T2DM patients. Efforts to improve access and socio-economic support need to be part of an effective diabetes management strategy.

Effect of social support on self-care management adherence

Social support is emotional, informational, and practical assistance received by patients from family, friends, and the surrounding community that plays a major role in improving patient compliance with self-care management in T2DM. This support helps patients feel valued, loved, and supported, thus motivating them to carry out self-care consistently and effectively (Syaipuddin et al., 2025).

Recent studies have shown that social support has a significant effect on increasing patient compliance in carrying out self-care management, such as dietary regulation, blood sugar monitoring, physical activity, and drug consumption. Patients who receive adequate social support tend to be better able to cope with stress and emotional difficulties due to chronic diseases, so they are more compliant in carrying out self-care (Nursing et al., 2025).

Social support makes important contributions in the physical, psychological, social, and environmental aspects of patients. For example, emotional support from family and social environment can increase patients' motivation to regularly check blood sugar, maintain diet, and exercise. Practical assistance such as medication reminders and activity assistance also strengthen patients' adherence to disease management (Bíró et al., 2025).

Cultural factors and patient perceptions of self-care management

Cultural factors greatly influence health behavior, especially in the practice of self-care management in T2DM patients. Culture shapes values, norms, and habits that determine how individuals view illness, choose treatment, and carry out daily activities related to health. In some communities, for example, there are traditional beliefs or certain dietary restrictions that can affect the diet of T2DM patients. In addition, culture also affects how a person seeks social support, both from family and community, which is very important in successful self-care management (Ibrahim et al., 2021).

Patients' perceptions of T2DM disease and the benefits of self-care management are key factors in determining the level of adherence. Patients who have positive perceptions, for example, believing that self-management can prevent complications and improve quality of life, tend to be more compliant in carrying out activities such as blood sugar monitoring, diet management, physical activity, and drug consumption. In contrast, patients who have negative perceptions or perceive the disease as an irreversible burden often show low adherence to medical and self-care management recommendations (Ibrahim et al., 2021). Recent studies have shown that self-care management interventions that take into account cultural factors and patient perceptions are more effective in improving adherence and health outcomes of T2DM patients. Therefore, culture-based approaches and education that adapts to patient perceptions are highly recommended to support successful self-care management.

Conclusion

Based on the literature review, sociodemographic factors such as age, gender, education level, socioeconomic status, social support, and culture are proven to influence self-care management adherence in T2DM patients. Therefore, sociodemographic-based interventions, health education, and family/community involvement are essential to improve adherence and effectiveness of self-care management. These efforts are expected to improve the quality of life of patients and reduce the burden of complications due to T2DM.

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