Nurse and Holistic Care,
Vol. 5, No 3, December 2025
www.journal2.unusa.ac.id/index.php/nhc

Original Articles: Quantitative Research

THE RELATIONSHIP BETWEEN DIABETES SELF-MANAGEMENT AND DIABETES DISTRESS IN TYPE 2 DIABETES MELLITUS PATIENTS AT JEMURSARI ISLAMIC HOSPITAL, SURABAYA

Nabilla Annisa Pradita [1], Difran Nobel Bistara [1*], Faridah Umamah [1], Erika Martining Wardani [1], Susanti [2]

[1] Department of Nursing, Faculty of Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, Surabaya, Indonesia
[2] Department of Nursing, Sekolah Tinggi Ilmu Kesehatan Adi Husada, Surabaya, Indonesia

Article history:
Received: August 11, 2025
Accepted: January 28, 2026

Correspondence:
Difran Nobel Bistara
Department of Nursing, Faculty of Nursing and Midwifery, Universitas Nahdlatul Ulama Surabaya, Surabaya, Indonesia
Email: nobel@unusa.ac.id

Keywords:
Diabetes Self-Management Education, Diabetes Distress, Diabetes Mellitus Type 2.

Page Number: 299-307.

Abstract

Background: Diabetes mellitus remains a prevalent global disease and can lead to both physical and psychological complications. One of the most common psychological impacts is diabetes distress, which refers to emotional stress caused by the continuous demands of managing diabetes.

Objective: This study aimed to analyze the relationship between diabetes self-management and diabetes distress among patients with type 2 diabetes mellitus at Jemursari Islamic Hospital, Surabaya.

Methods: This study used a correlational analytic design with a cross-sectional approach. A total of 174 patients were selected using a purposive sampling technique. The independent variable was diabetes self-management education, and the dependent variable was diabetes distress. Data collection instruments included the Diabetes Self-Management Questionnaire (DSMQ) and the Diabetes Distress Scale (DDS). Data were analyzed using the Spearman Rank correlation test, with a significance level of $p < 0.05$.

Result: The results showed a significant relationship between diabetes self-management and diabetes distress ($p = 0.001$), indicating that higher levels of self-management education are associated with lower levels of diabetes distress.

Conclusion: This study concludes that better diabetes self-management is significantly associated with lower levels of diabetes distress among patients with type 2 diabetes mellitus. Improving patients' ability to manage their condition through consistent and comprehensive self-management education may help reduce psychological distress and enhance overall quality of life.

INTRODUCTION

Diabetes mellitus is one of the most prevalent chronic diseases worldwide and continues to pose a major public health challenge (Nor et al., 2020). This condition results from insulin resistance or inadequate insulin production, leading to impaired glucose regulation (Cendradevi et al., 2024). Limited awareness of risk factors and the importance of routine health examinations often leads to delayed

diagnosis and suboptimal disease management (Ismail et al., 2023). As a result, diabetes mellitus is associated with significant physical and psychological complications. Physically, patients with diabetes mellitus may experience weight changes, altered appetite, sleep disturbances, pain, and persistent fatigue. Psychologically, many patients experience emotional problems such as frustration, anger, anxiety, and hopelessness, which can develop into diabetes distress (Alfalsah et al., 2021). Diabetes distress refers to emotional stress arising from the continuous demands of managing diabetes, including dietary regulation, regular blood glucose monitoring, medication adherence, and concerns about long-term complications.

The prevalence of diabetes distress has increased alongside the growing number of diabetes cases. Insufficient social support, limited understanding of disease management, and inadequate access to health information further increase the psychological burden experienced by patients, negatively affecting their quality of life and disease control (Alfian et al., 2021). Globally, diabetes accounted for approximately 6.7 million deaths in 2020, with 463 million people affected worldwide. This number increased to 537 million adults in 2021 according to the International Diabetes Federation. In Indonesia, diabetes prevalence has risen significantly, with 19.47 million cases reported in 2021, representing 10.6% of the population (Karno et al., 2023). In East Java, 130,683 diabetes cases were recorded, while Surabaya reported 104,262 cases, highlighting the urgency of effective diabetes management strategies (Dinas Kesehatan, 2023).

Previous studies have shown that many patients with diabetes mellitus experience mild to moderate levels of diabetes distress, which, if left unmanaged, may worsen glycemic control and increase the risk of complications (Nuraini et al., 2022; Siburian et al., 2024). Preliminary data from the Endocrine Clinic of Jemursari Islamic Hospital, Surabaya, also indicate that a considerable proportion of patients have limited knowledge and skills related to diabetes self-management and experience stress in managing their condition.

Diabetes distress is closely related to chronic stress responses during the self-management process. Continuous demands such as dietary restrictions, physical activity regulation, and routine blood glucose monitoring can trigger prolonged stress. Chronic stress activates the sympathetic nervous system and the hypothalamic–pituitary–adrenal axis, leading to increased cortisol levels. Elevated cortisol disrupts glucose metabolism, exacerbates insulin resistance, and contributes to poor glycemic control, thereby increasing the risk of diabetes-related complications and psychological distress (Huynh et al., 2021).

Diabetes self-management plays a crucial role in helping individuals with diabetes manage their condition effectively. Diabetes self-management encompasses daily behaviors such as healthy eating, regular physical activity, blood glucose monitoring, medication adherence, and problem-solving skills. Effective self-management has been shown to improve glycemic control, reduce the risk of complications, and enhance patients' confidence in managing their disease (Azizah et al., 2022).

Moreover, adequate self-management skills are associated with lower levels of stress and anxiety, as patients feel more capable of coping with the demands of their condition (Anisa et al., 2024).

Based on this background, this study aims to analyze the relationship between diabetes self-management and diabetes distress among patients with type 2 diabetes mellitus at Jemursari Islamic Hospital, Surabaya.

METHODS

Study Design

This research used a correlational analytic design with a quantitative, cross-sectional approach to examine the relationship between diabetes self-management and diabetes distress among patients with type 2 diabetes mellitus.

Settings

The study was conducted at Jemursari Islamic Hospital, Surabaya, from January to May 2025.

Research subject

The population in this study consisted of 307 patients diagnosed with type 2 diabetes mellitus. The sample size was 174 respondents, selected using a non-probability purposive sampling technique, with the purpose of including only patients who met specific criteria. The inclusion criteria were: (1) patients diagnosed with type 2 diabetes mellitus, (2) willing to participate in the study. The exclusion criteria included: (1) patients with cognitive impairment or communication difficulties, and (2) patients currently undergoing psychiatric treatment. Participants were recruited directly from the hospital's diabetes clinic after obtaining informed consent.

Instruments

Data were collected using two validated instruments: the Diabetes Self-Management Questionnaire (DSMQ) to assess self-management behaviors, and the Diabetes Distress Scale (DDS) to evaluate the level of emotional distress related to diabetes.

Data Collection

Respondents completed the questionnaires under the supervision of trained research assistants to ensure accurate responses.

Data Analysis

The data were analyzed using Spearman's rank correlation test to determine the relationship between diabetes self-management education and diabetes distress. The analysis was conducted using SPSS software version 25, with a significance level set at $p < 0.05$. The results were presented in frequency tables and percentages, and interpreted according to the research objectives.

Ethical Consideration

This study involved human participants and therefore required ethical review. Ethical approval was obtained from the ethics committee of a hospital prior to data collection. Specifically, approval was granted by the Ethics Committee of Jemursari Islamic Hospital, in accordance with applicable research

governance standards. All participants were informed about the purpose and procedures of the study, and provided written informed consent voluntarily. All data were anonymized to maintain confidentiality and were managed in accordance with ethical guidelines for research involving human subjects. The complete name of the institution and the approval number (051/KEPK-RSISJS/V/2025) are stated on the title page.

RESULTS

The study included a total of 174 respondents diagnosed with type 2 diabetes mellitus at RSI Jemursari Surabaya.

Table 1. Frequency distribution of respondents at RSI Jemursari Surabaya.

Characteristics	Frequency (n)	Percentage (%)
Gender		
Man	78	44,8
Woman	96	55,2
Age		
Early Adulthood (26-35)	5	2,9
Late Adulthood (36-45)	27	15,5
Early Elderly (46-55)	46	26,4
Late Elderly (56-65)	62	35,6
Manula (>65)	34	19,5
Work		
Government	12	6,9
Businessman	21	12,1
Self-employed	56	32,2
Doesn't work	35	20,1
Others	50	28,7
Education		
Elementary (elementary, middle school)	55	31,6
Secondary (high school, vocational school)	73	42,0
Higher (Diploma, Masters)	46	26,4
Long Suffering		
1-3 Years	50	28,7
4-6 Years	32	18,4
>6 Years	92	52,9
Total	**174**	**100.0**

The participants ranged in age from 26 to over 65 years, with the majority falling within the late elderly group (56–65 years) (35.0%). The gender distribution consisted of 96 women (55.2%) and 78 men (44.8%). In terms of employment, the most common category was "others" (30.0%), followed by those who did not work (28.7%), and self-employed individuals (26.4%). Regarding educational background, 46.0% of participants had higher education (diploma/master's), 31.6% had elementary education, and 22.4% had secondary education. Concerning the duration of illness, more than half of the respondents (52.9%) had been living with diabetes for over 6 years, while 18.4% had been diagnosed for 4–6 years, and 28.7% for 1–3 years.

Table 2. Relationship between Diabetes Self-Management and Diabetes Distress among Patients with Type 2 Diabetes Mellitus (n = 174).

Self-management	Diabetes stress			*p*-value
	Mild, n (%)	Moderate, n (%)	Heavy, n (%)	
Good	0	13 (7.47)	0	0.001
Sufficient	0	110 (63.22)	15 (8.62)	
Poor	0	25 (14.37)	26 (14.94)	

Table 2 presents the relationship between diabetes self-management and diabetes distress among patients with type 2 diabetes mellitus. The results show that patients with good self-management predominantly experienced moderate levels of diabetes distress (7.47%). Patients with sufficient self-management mostly reported moderate distress (63.22%), with a smaller proportion experiencing severe distress (8.62%). In contrast, patients with poor self-management showed higher proportions of moderate (14.37%) and severe diabetes distress (14.94%). Statistical analysis using the Spearman rank correlation test revealed a significant relationship between diabetes self-management and diabetes distress ($p = 0.001$), indicating that better self-management is associated with lower levels of diabetes distress.

DISCUSSION

This study aimed to analyze the relationship between diabetes self-management and diabetes distress among patients with type 2 diabetes mellitus at Jemursari Islamic Hospital, Surabaya. The findings provide important insights into how patients manage their condition and how these behaviors relate to psychological well-being.

The results showed that most respondents demonstrated a sufficient level of diabetes self-management. This indicates that many patients were able to perform essential self-care behaviors, including dietary regulation, physical activity, medication adherence, and blood glucose monitoring. Experience in living with diabetes and repeated engagement in self-management practices may

contribute to the development of these skills, as patients gradually adapt to the long-term demands of their condition. This finding is consistent with previous studies showing that adequate self-management supports better glycemic control and overall disease management (Januar et al., 2020; Azizah et al., 2022).

Despite adequate self-management, the majority of respondents experienced moderate levels of diabetes distress. This suggests that diabetes distress remains a common psychological burden among patients with type 2 diabetes mellitus. The continuous demands of daily self-care, combined with concerns about disease progression and long-term complications, may contribute to sustained emotional strain. Previous studies have similarly reported that prolonged disease duration and ongoing treatment responsibilities are associated with higher levels of distress (Nuraini et al., 2022; Siburian et al., 2024).

The analysis demonstrated a statistically significant relationship between diabetes self-management and diabetes distress ($p = 0.001$). Patients with better diabetes self-management tended to experience lower levels of distress, while those with poor self-management showed higher levels of moderate to severe distress. This finding supports the notion that effective self-management can reduce psychological burden by increasing patients' sense of control, autonomy, and confidence in managing daily diabetes-related tasks (Firdausita, 2022; Fisher et al., 2019).

However, the persistence of moderate diabetes distress among patients with sufficient self-management indicates that self-management alone may not fully eliminate emotional challenges. Diabetes distress is influenced not only by self-care behaviors but also by psychosocial factors such as treatment fatigue, fear of complications, family expectations, and uncertainty about future health outcomes. These factors may continue to affect patients' emotional well-being even when self-management behaviors are adequately performed (Fisher et al., 2019; Alfian et al., 2021).

Overall, these findings emphasize that while good diabetes self-management is associated with lower levels of diabetes distress, it does not entirely prevent psychological distress. Therefore, diabetes care should adopt a comprehensive approach that integrates effective self-management with psychosocial support. Addressing emotional needs, strengthening coping strategies, and involving family or social support systems alongside self-management practices may further reduce diabetes distress and improve the quality of life of patients with type 2 diabetes mellitus.

LIMITATION

This study has several limitations that should be considered when interpreting the findings. The scope of the research was limited by time and resources, which restricted the exploration of other potential variables that may influence diabetes distress, such as social support, coping strategies, and psychological resilience. In addition, participants' emotional conditions at the time of data collection, such as stress, anxiety, fatigue, or fear of complications, may have influenced their responses, leading them to answer based on temporary emotional states rather than stable conditions.

Furthermore, the use of self-reported questionnaires may not fully reflect respondents' true experiences or perceptions. Differences in individual interpretation, assumptions, levels of understanding, and honesty in completing the questionnaires may have affected the objectivity and accuracy of the data collected.

CONCLUSION

Based on the study findings, it can be concluded that most patients with type 2 diabetes mellitus at Jemursari Islamic Hospital, Surabaya, demonstrated a sufficient level of diabetes self-management, while the majority experienced moderate levels of diabetes distress. Statistical analysis showed a significant relationship between diabetes self-management and diabetes distress, indicating that better self-management is associated with lower levels of distress.

However, the presence of moderate diabetes distress among patients with adequate self-management suggests that self-management alone may not eliminate psychological distress. Therefore, strengthening diabetes self-management practices should be accompanied by attention to psychosocial factors. Integrating emotional support, coping strategies, and family or social involvement into diabetes care may help further reduce diabetes distress and improve the overall quality of life of patients with type 2 diabetes mellitus.

AUTHOR CONTRIBUTION

Nabila Annisa Pradita : Conceptualization, Methodology, Formal Analysis, Writing – Original Draft.

Difran Nobel Bistara : Conceptualization, Data Curation, Formal Analysis, Writing – Original Draft.

Farida Umamah : Methodology, Writing – Review & Editing, Supervision.

Erika Martining Wardani : Methodology, Writing – Review & Editing, Supervision.

Susanti : Data Curation, Formal Analysis, Supervision.

ORCHID

Nabila Annisa Pradita : None.

Difran Nobel Bistara : https://orcid.org/0000-0002-7995-5509

Farida Umamah : https://orcid.org/0000-0001-6144-5271

Erika Martining Wardani : https://orcid.org/0000-0002-0178-0024

Susanti : https://orcid.org/0000-0003-1053-2361

CONFLICT OF INTEREST

No conflict of interest.

ACKNOWLEDGEMENT

The authors would like to express sincere gratitude to Universitas Nahdlatul Ulama Surabaya (UNUSA) and the Institute for Research and Community Service (LPPM UNUSA) for their valuable support and funding provided through the student thesis grant program.

REFERENCE

Alfalsah, D., Hafan Sutawardana, J., Studi Ilmu Keperawatan Fakultas Keperawatan Universitas Jember, P., & Keperawatan Medikal Bedah Fakultas Keperawatan Universitas Jember, D. (2021). Hubungan Diabetes Distress dengan Overactive Bladder (OAB) Pada Pasien Diabetes Melitus Tipe 2 (The Relationship Between Diabetes Distress with Overactive Bladder (OAB) among Patients with Type 2 Diabetes Melitus in RSD dr. Soebandi Jember). In Journal of Nursing Care & Biomolecular (Vol. 6, Issue 2).

Alfian, S. D., A. Wicaksono, I., A. Putri, N., & Abdulah, R. (2021). Prevalence of diabetes distress and associated factors among patients with diabetes using antihypertensive medications in community health centres in Bandung City, Indonesia. Pharmaciana, 11(2), 195. https://doi.org/10.12928/pharmaciana.v11i2.20094

Anisa, S., Harmia, E., Ilmu Kesehatan, F., & Pahlawan Tuanku Tambusai, U. (2024). Hubungan Persepsi Penyakit Dengan Diabetes Distress Pada Penderita Diabetes Mellitus Tipe Ii Di Desa Kualu Wilayah Kerja Upt Blud Puskesmas Tambang Tahun 2023. Jurnal Imliah Ilmu Kesehatan, 2(4).

Azizah, M., Khotimah, H., Program Studi Keperawatan, K., Kesehatan, F., Nurul Jadid, U., Nurul Jadid, J. P., Tj Lor, D., Probolinggo, K., & Timur, J. (2022). Efektifitas Diabetes Self Management Education (Dsme) Terhadap Kepatuhan Penderita Diabetes Mellitus Tipe 2 Pada Masa Pandemi Covid-19. http://jurnal.globalhealthsciencegroup.com/index.php/JPPP

Cendradevi, F., 1□, N., Banase, E. F. T., Hamu, A. H., Making, M. A., Vanchapo, A. R., Nubi, L. B., Destianus Banggut, E., Kesehatan, P., Kupang, K., Tangerang, F. H., & Oesapa, P. (2024). Hubungan Antara Diabetes Distress Dengan Self Care Pasien Diabetes Mellitus Tipe Ii Puskesmas Oesapa Kota Kupang. http://journal.universitaspahlawan.ac.id/index.php/ners

Christine Handayani Siburian, Cahyan Tessalonika Gulo, & Eka Nugraha V. Naibaho. (2024). Hubungan Kadar Gula Darah dengan Diabetes Distress pada Pasien Diabetes Melitus. Sehat Rakyat: Jurnal Kesehatan Masyarakat, 3(4), 265–273. https://doi.org/10.54259/sehatrakyat.v3i4.3723

dinkes. (2023). Profil Kesehatan Provinsi Jawa Timur Tahun 2023 .

Firdausita Sabila. (2022). Naskah Publikasi Program Studi Keperawatan Stikes Ngudia Husada Madura Bangkalan 2022.

Fisher, L., Glasgow, R. E., & Strycker, L. A. (2019). The relationship between diabetes distress and clinical depression with glycemic control among patients with type 2 diabetes. Diabetes Care, 33(5), 1034–1036. https://doi.org/10.2337/dc09-2175

Hema, P., Agung, M., Devia, W., Boby, P. L., Febri, K., & Roberto, M. (2019). Manajemen Diabetes Distress. https://fkep.unand.ac.id/

Huynh, G., Tran, T. T., Do, T. H. T., Truong, T. T. D., Ong, P. T., Nguyen, T. N. H., & Pham, L. A. (2021). Diabetes-related distress among people with type 2 diabetes in Ho Chi Minh City, Vietnam: Prevalence and associated factors. Diabetes, Metabolic Syndrome and Obesity, 14, 683–690. https://doi.org/10.2147/DMSO.S297315

Ismail, M., Khasanah, L., Dewi Rahmawati, F., Haryanto, Y., Hazimah, I., Nur Rachmawati, S., Studi Rekam Medis dan Informasi Kesehatan Kampus Cirebon, P., & Kemenkes Tasikmalaya, P. (2023). Sosialisasi Aplikasi Deteksi Dini Diabetes Melitus Dengan Metode Forward Chaining Berbasis Website Di Puskesmas Kesunean.

Januar, A., Putra, P., Widayati, N., & Hafan, J. (2020). Hubungan Diabetes Distress dengan Perilaku Perawatan Diri pada Penyandang Diabetes Melitus Tipe 2 di Wilayah Kerja Puskesmas Rambipuji Kabupaten Jember (Correlation between Diabetes Distress and Self-care Behaviour in People with Type 2 Diabetes Mellitus in the area of Public Health Center of Rambipuji Jember) (Vol. 5, Issue 1).

Karno, N., Yohani Mahtuti, E., Faisal, & Basyaruddin, M. (2023). Hubungan Kadar Kreatinin Dan Lama Mengkonsumsi Obat Diabetes Pada Penderita Dm Tipe 2.

Nor, A., 1□, F., Dyah, Y., Santik, P., & Artikel, I. (2020). 33 HIGEIA 4 (1) (2020) Higeia Journal Of Public Health Research And Development Kejadian Diabetes Melitus Tipe I pada Usia 10-30 Tahun. https://doi.org/10.15294/higeia/v4i1/31763

Nuraini, I., Febrianti, N., & Kalla, H. (2022). Hubungan Diabetes Distresssdengan Selffcare pada Diabetes Mellitusi Relationship Between Diabetes Distress and Self-care in Diabetes Mellitus.

Nuraini, I., Febrianti, N., Kalla, H., Akademi Keperawatan Justitia, M., Keperawatan Justitia, A., & Kesehatan Provinsi Sulawesi Tengah, D. (2022). Hubungan Diabetes Distresssdengan Selffcare pada Diabetes Mellitusi Relationship Between Diabetes Distress and Self-care in Diabetes Mellitus.