

EFFECTIVENESS OF PEER GROUP SUPPORT IN IMPROVING SELF-MANAGEMENT AMONG PATIENTS WITH DIABETES MELLITUS

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ABSTRACT

Diabetes mellitus is a chronic disease that requires continuous Self-Management to maintain blood glucose control. Psychosocial barriers, low self-efficacy, and inadequate social support often result in suboptimal Self-Management, highlighting the need for Peer Group Support interventions to enhance patients' ability to manage their condition. This study aimed to determine the effect of Peer Group Support on the Self-Management of patients with diabetes mellitus. This study employed a pre-experimental design using a one-group pretest-posttest approach. The population consisted of all Prolanis participants diagnosed with diabetes mellitus at Bangsal Community Health Center, Mojokerto Regency, totaling 73 individuals. Purposive sampling was applied, resulting in a sample of 62 respondents. The research instrument used was the Diabetes Self-Management Questionnaire (DSMQ). Data were analyzed using the Wilcoxon Signed-Rank Test. The results showed that before the Peer Group Support intervention, most respondents had a moderate level of Self-Management 69.4%, while after the intervention, almost all respondents demonstrated moderate Self-Management 77.4%. The statistics test yielded a p-value of 0.000 (<0.05), indicating a significant effect of Peer Group Support on the Self-Management of patients with diabetes mellitus at Bangsal Community Health Center, Mojokerto Regency. Peer Group Support provided emotional, informational, appraisal, and instrumental support that improved patients' self-management abilities. Respondents who did not show an improvement in Self-Management may have been influenced by factors such as educational level, occupation, duration of diabetes, and behavioral changes that require a longer period to achieve measurable improvement, although their Self-Management scores increased.

Kata kunci: *Peer Group Support, Self-Management, Diabetes Melitus*

INTRODUCTION

Diabetes mellitus is a chronic metabolic disease characterized by elevated blood glucose levels resulting from impaired insulin secretion, insulin action, or a combination of both. This disease has become one of the major global health problems because its prevalence continues to increase and contributes to high morbidity, mortality, and healthcare costs (International Diabetes Federation, 2025). In addition to pharmacological therapy, successful diabetes management is also highly dependent on patients' ability to perform self-management, which includes dietary regulation, physical activity, blood glucose monitoring, medication adherence, and continuous self-care (Chen et al., 2024).

In Indonesia, diabetes mellitus is also one of the non-communicable diseases with an increasing prevalence. Data indicate that the number of diabetes cases remains a major challenge for primary healthcare services; therefore, comprehensive management through promotive, preventive, curative, and rehabilitative approaches is required (Ministry of Health of the Republic of Indonesia, 2023).

Poor Self-Management is influenced not only by limited knowledge but also by psychosocial factors, self-efficacy, and social support. Patients who do not receive adequate support from their environment tend to have difficulty maintaining long-term health behavior changes (Sukraeny & Setiawan, 2022). Therefore, interventions that can strengthen social

support while improving patients' motivation to manage their disease independently are needed, such as Peer Group Support (Tarfa et al., 2024).

This intervention facilitates individuals with similar health conditions to share experiences and provide emotional, informational, appraisal, and instrumental support in coping with their illness. Through these interactions, patients are expected to gain motivation, improve Self-Efficacy, and develop better Self-Management behaviors (Falah & Pratama, 2023).

Several studies have demonstrated the effectiveness of Peer Group Support in improving clinical outcomes and Self-Care behaviors among patients with diabetes mellitus. A study conducted by Höld et al. (2025) reported that a 24-month Peer Support intervention significantly improved glycemic control and reduced HbA1c levels. Likewise, Khairani and Purwanti (2023) found that Peer Support delivered through peer leaders significantly improved diabetes Self-Management. In addition, Pienaar and Reid (2023) reported that all respondents showed improvement in their Self-Care Management after participating in a Peer Support Group program. These findings indicate that Peer Support is an effective approach to improving patients' ability to manage diabetes independently.

Although numerous studies have demonstrated its benefits, the implementation of Peer Group Support in primary healthcare settings, particularly within the Chronic Disease Management Program (Prolanis) at Bangsal Primary Health Center, Mojokerto Regency, has received limited attention. This condition provides an important basis for evaluating the effectiveness of Peer Group Support in improving self-management among patients with diabetes mellitus. Therefore, this study aimed to analyze the effect of Peer Group Support on Self-Management among patients with diabetes mellitus at Bangsal Primary Health Center, Mojokerto Regency.

METHODS

This study received ethical approval from the Health Research Ethics Committee of Universitas Bina Sehat PPNI Mojokerto with ethical approval number 219/KEP/UBS-PPNI/VI/2026. Permission to conduct the study was also obtained from Universitas Bina Sehat PPNI and Bangsal Primary Health Center, Mojokerto Regency. Each respondent was provided with an explanation of the study objectives and procedures before signing an informed consent form as an indication of their willingness to participate. The Peer Group Support intervention was implemented in a structured group setting emphasizing emotional, informational, appraisal, and instrumental support to enhance patients' ability to manage diabetes mellitus. Data were collected using the Diabetes Self-Management Questionnaire (DSMQ) to measure the self-management level of patients with diabetes mellitus. All data obtained during the study were kept confidential and used solely for research purposes.

This study employed a pre-experimental design using a one-group pretest–posttest approach. This design was used to determine the effect of the Peer Group Support intervention on Self-Management among patients with diabetes mellitus by comparing self-management scores before and after the intervention. The study was conducted among participants enrolled in the Chronic Disease Management Program (Prolanis) at Bangsal Primary Health Center, Mojokerto Regency. The study population consisted of 73 patients with diabetes mellitus, and a sample of 62 respondents was selected using a purposive sampling technique based on the predetermined inclusion and exclusion criteria.

Data were analyzed using IBM SPSS Statistics. Univariate analysis was performed to describe respondents' characteristics and Self-Management levels, while bivariate analysis was conducted using the Wilcoxon Signed-Rank Test with a significance level of 95% ($\alpha = 0.05$) to evaluate differences in Self-Management scores before and after the intervention.

FINDING AND DISCUSSION

RESEARCH RESULT

Table 1 Descriptive Statistics of Respondents' Characteristics

Variabel	N	Minimum	Maximum	Mean	Median	Modus	SD
Age	62	46	70	58,82	60,00	60	6,502
Duration DM	62	2	10	6,03	7,00	7	2,586

Based on Table 1, the median age of the respondents was 60 years, with an age range of 46–70 years. Meanwhile, the median duration of diabetes mellitus was 7 years, ranging from 2 to 10 years.

Tabel 2 Frequency Distribution of Respondents' Characteristics

Characteristics	Categori	Frequency	Percentage(%)
Gender	Male	31	50,0
	Female	31	50,0
Education	No School	0	0
	Elementary School	0	0
	Junior High School	19	30,6
	Senior High School	41	66,1
	College	2	3,2
Work	Doesn't work	17	27,4
	Civil Servant	0	0
	Entrepreneur	41	66,1
	Farmer	4	6,5
Amount		62	100,0

Based on Table 2, the numbers of male and female respondents were equal, with 31 respondents (50.0%) in each group. Most respondents had completed senior high school education (66.1%) and were Self-Employed (66.1%).

Tabel 3 Self-Management Before Peer Group Support

Self-Management Before Peer Group Support	Frequency	Percentage (%)
Good	0	0
Adequate	43	69,4
Poor	19	30,6
Amount	62	100,0

Table 3 shows that before receiving the Peer Group Support intervention, the majority of respondents demonstrated a moderate level of Self-Management, accounting for 43 respondents (69.4%)

Tabel 4 Self-Management After Peer Group Support

<i>Self-Management After Peer Group Support</i>	Frequency	Percentage (%)
Good	14	22,6
Adequate	48	77,4
Poor	0	0
Amount	62	100,0

Table 4 shows that after receiving the Peer Group Support intervention, almost all respondents demonstrated a moderate level of self-management, accounting for 48 respondents (77.4%).

Tabel 5 Statistical Analysis of the Effectiveness of Peer Group Support on Self-Management Among Patients with Diabetes Mellitus

		N	Mean Rank	Sum of Ranks	<i>pvalue</i>
Posttest - Pretest	Negative Ranks	0 ^a	0,00	0,00	0,000
	Positive Ranks	33 ^b	17,00	561,00	
	Ties	29 ^c			
	Total	62			
a. Posttest < Pretest					
b. Posttest > Pretest					
c. Posttest = Pretest					

The results of the Wilcoxon Signed-Rank Test showed a p-value of 0.000 ($p < 0.05$), indicating that Peer Group Support had a significant effect on the Self-Management of patients with diabetes mellitus. A total of 33 respondents demonstrated improved Self-Management, 29 respondents showed no change, and no respondents experienced a decline following the intervention.

DISCUSSION

The findings of this study demonstrated that Peer Group Support had a significant effect on the Self-Management of patients with diabetes mellitus at Bangsal Primary Health Center, Mojokerto Regency, based on the Wilcoxon Signed-Rank Test ($p = 0.000$). A total of 33 respondents showed improvements in Self-Management, while 29 respondents showed no change, and none experienced a decline after the intervention. These findings indicate that Peer Group Support is capable of improving patients' ability to manage diabetes mellitus through positive changes in Self-Care behaviors.

The improvement in Self-Management following the Peer Group Support intervention can be explained by House's Social Support Theory, which states that emotional, informational, appraisal, and instrumental support play important roles in helping individuals cope with health-related problems (Pradytia, 2025). In this study, respondents had the

opportunity to share experiences, provide mutual encouragement, receive information regarding diabetes management, and obtain reinforcement from fellow patients with similar health conditions. Such support contributed to increased Self-Confidence and enhanced respondents' ability to implement sustainable Self-Management behaviors (Powers et al., 2024).

The findings of this study are consistent with the meta-analysis conducted by (Collins et al., 2021), which reported that Peer Support significantly improves Self-Efficacy and Self-Management among patients with type 2 diabetes mellitus. Likewise, (Azmiardi et al., 2025) reported that integrating peer support into diabetes Self-Management education effectively improves glycemic control.

The present findings are also supported by (Khairani and Purwanti., 2023), who found a significant improvement in Self-Management scores after implementing a Peer Leader-Based Social Support intervention ($p < 0.05$). Similarly, (Shiferaw et al., 2021) reported that Peer Support enhances diabetes Self-Management by improving Self-Efficacy and Social Support. Furthermore, (Fakhriatul et al., 2022) demonstrated that Peer Group Support positively influences Self-Care Management through experience sharing and mutual motivation among participants. These findings suggest that interaction among individuals with similar health conditions can improve Medication Adherence, Dietary Management, Physical Activity, and Blood Glucose Monitoring (Susila et al., 2025).

Nevertheless, 29 respondents did not experience any improvement in Self-Management following the intervention. This condition may be associated with respondents' characteristics, particularly the fact that most had been living with diabetes mellitus for a relatively long period, making behavioral change more difficult and requiring a longer period to occur. In addition, individual motivation, established lifestyle habits, and consistency in applying the education received during Peer Group Support activities may also influence the effectiveness of the intervention.

Self-Management among patients with diabetes mellitus is influenced not only by support from family and the workplace but also by education, psychological factors, knowledge, lifestyle habits, perceptions of disease symptoms, and access to reliable health information (Liu et al., 2022).

Overall, the findings of this study indicate that Peer Group Support is an effective intervention for improving Self-Management among patients with diabetes mellitus. Therefore, this intervention may be considered as part of educational and supportive activities within the Chronic Disease Management Program (Prolanis) at primary healthcare facilities to improve diabetes Self-Management and prevent disease-related complications.

CONCLUSION

This study demonstrated that Peer Group Support had a significant effect on the Self-Management of patients with diabetes mellitus at Bangsal Primary Health Center, Mojokerto Regency ($p < 0.05$). The Peer Group Support intervention improved patients' ability to manage diabetes through the provision of Emotional, Informational, Appraisal, and Instrumental support among group members. Therefore, Peer Group Support may serve as a supportive strategy within the Chronic Disease Management Program (Prolanis) in primary healthcare facilities to enhance Self-Management among patients with diabetes mellitus and contribute to the prevention of diabetes-related complications.

REFERENCES

- Azmiardi, A., Puspita Febrinasari, R., Suryanata, J. P., Ulu, S., Timur, K., Medika, S., & Kedokteran dan Kesehatan, J. (2025). Evaluating the effectiveness of the Indonesian diabetes self-management questionnaire in managing type 2 diabetes in primary care. *Jurnal Kedokteran Dan Kesehatan*, 16(1), 28–34. Retrieved from <https://creativecommons.org/licenses/by/4.0/>
- Collins, S. P., Storrow, A., Liu, D., Jenkins, C. A., Miller, K. F., Kampe, C., & Butler, J. (2021). Penyakit Kronis, 9, 167–186.
- Fakhriatul, F. F., Syamsidar, S., & Mira, M. A. K. (2022). Upaya Peningkatan Self Care Management Melalui Pendekatan Peer Group Support Pada Pasien Diabetes Mellitus. *Bina Generasi : Jurnal Kesehatan*, 14(1), 71–78. <https://doi.org/10.35907/bgjk.v14i1.249>
- Falah, F., & Pratama, E. F. (2023). Pemberdayaan Peer Group Support Untuk Meningkatkan Kemandirian Pasien Diabetes Mellitus Dalam Melakukan Self Care Management Di Wilayah Kerja Puskesmas Duingi. *Ekalaya: Jurnal Pengabdian Kepada Masyarakat Indonesia*, 2(3), 617–623. <https://doi.org/10.57254/eka.v2i3.103>
- Höld, E., Hemetek, U., Tremmel, K., Aubram, T., Grüblbauer, J., Wiesholzer, M., ... Stieger, S. (2025). A Randomized Controlled Trial in a 14-Month Longitudinal Design to Analyze the Effects of a Peer Support Instant Messaging Service Intervention to Improve Diabetes Self-Management and Support. *Diabetology*, 6(5), 1–23. <https://doi.org/10.3390/diabetology6050044>
- International Diabetes Federation. (2025). *IDF Diabetes Atlas*. In *IDF Diabetes Atlas*. International Diabetes Federation (Vol. 11th editi). Retrieved from <https://www.idf.org/aboutdiabetes/type-2-diabetes.html>
- Kemenkes. (2023). Survei Kesehatan Indonesia (SKI) 2023. *Kemenkes*, 235.
- Khairani, W., & Purwanti, N. S. (2023). Pengaruh social support dengan peer leader untuk meningkatkan self management diabetic pada sesama penderita DM tipe II di Posyandu Lansia. *Jurnal Kesehatan Masyarakat*, 11(5), 451–457. <https://doi.org/10.14710/jkm.v11i5.40579>
- Liu, Y., Jiang, J., You, W., Gong, D., Ma, X., Wu, M., & Li, F. (2022). Exploring facilitators and barriers to self - management engagement of Chinese people with type 2 diabetes mellitus and poor blood glucose control : a descriptive qualitative study. *BMC Endocrine Disorders*, 1–13. <https://doi.org/10.1186/s12902-022-01214-0>
- Pienaar, M., & Reid, M. (2020). Self-management in face-to-face peer support for adults with type 2 diabetes living in low- or middle-income countries: a systematic review. *BMC Public Health*, 20(1), 1–10. <https://doi.org/10.1186/s12889-020-09954-1>

- Powers, M. A., Bardsley, J. K., Cypress, M., Funnell, M. M., Harms, D., Hess-Fischl, A., ... Uelman, S. (2020). Diabetes Self-management Education and Support in Adults with Type 2 Diabetes: A Consensus Report of the American Diabetes Association, the Association of Diabetes Care & Education Specialists, the Academy of Nutrition and Dietetics, the American Academy . *Diabetes Care*, 43(7), 1636–1649. <https://doi.org/10.2337/dci20-0023>
- Pradytia, W. (2025). FAMILY SOCIAL SUPPORT FOR THE ELDERLY IN SUGIHWARAS VILLAGE , PRAMBON DISTRICT , NGANJUK, 9(1), 38–53.
- Shiferaw, W. S., Akalu, T. Y., Desta, M., Kassie, A. M., Petrucka, P. M., & Aynalem, Y. A. (2021). Effect of educational interventions on knowledge of the disease and glycaemic control in patients with type 2 diabetes mellitus: A systematic review and meta-Analysis of randomised controlled trials. *BMJ Open*, 11(12). <https://doi.org/10.1136/bmjopen-2021-049806>
- Sukraeny, N., & Setiawan, M. D. (2022). Optimalisasi Selfcare Management Melalui Peer Group Support Pada Penderita Diabetes Mellitus. *SALUTA: Jurnal Pengabdian Kepada Masyarakat*, 2(1), 1. <https://doi.org/10.26714/sjpkm.v2i1.10362>
- Susila, Faniwati, Intaniah, Nisstyo, & Nurwahidah. (2025). Pengaruh Peer Support Group Terhadap Diabetes Distres Klien Diabetes Melitus Tipe II. *Alauddin Scientific Journal of Nursing*, 2025(1), 19–26.
- Tarfa, A., Salihu, E. Y., Xiong, P., Brewer, C., Maurer, M., Liu, Y., & Shiyanbola, O. (2024). Participant and group facilitator perspectives on a novel culturally tailored diabetes self-management program for African Americans. *BMC Public Health*, 24(1). <https://doi.org/10.1186/s12889-024-20595-6>
- Chen, C., Zhou, Y., Xu, J. Y., Song, H. Y., Yin, X. W., & Gu, Z. J. (2024). Effect of peer support interventions in patients with type 2 diabetes: A systematic review. *Patient Education and Counseling*, 122(January), 108172. <https://doi.org/10.1016/j.pec.2024.108172>