

The Role of Family Support on Self-Care Behavior in Patients Diabetes Mellitus (DM) Type 2

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ABSTRACT

Diabetes Mellitus (DM) is a chronic disease as a metabolic disorder described by an increase in glucose levels above the average. 80% of the prevalence of DM, most of them are type 2 DM. Self-care is one of the important things that people with DM must do to prevent complications. The purpose of this study is to determine the role of family support on self-care behavior in patients with Type 2 DM. The method used is a full text critical review in English on the PubMed, Scopus, Web of science and Google Scholar databases with research subjects with type 2 DM. There are 7 articles that meet the inclusion criteria related to the topic. Analysis of 7 articles showed that family support could improve self-care behavior of patients with type 2 diabetes. Having family support will make type 2 DM sufferers have a higher level of adherence in controlling blood sugar.

Keywords: Family support, self-care, type 2 diabetes

INTRODUCTION

One of the health problems in Indonesia that is of particular concern is Diabetes Mellitus (DM). Diabetes mellitus is a chronic disease that occurs when the pancreas does not provide enough insulin or when the body cannot use the insulin it produces.¹ There are 2 types of DM, namely type 1 DM and type 2 DM. Type 1 DM is caused by hereditary factors while for type 2 DM the main trigger is unhealthy behavior and lifestyle so that almost 80% of the prevalence of DM is type 2 DM.²

According to the International Diabetes Federation (IDF), there are 463 million DM sufferers in the world in 2019 aged 20-79 years with a prevalence of 9.3%.³ Judging from the increasing number of cases, DM in Indonesia ranks 4th in the non-communicable disease group.⁴ Based on the 2018 Riskesdas report, the prevalence of DM in Indonesia in the adult group in 2013 was 6.9% and in 2018 it increased to 8.5%.⁵ The incidence of DM in Indonesia is predicted by the World Health Organization (WHO) every year to continue to increase to reach 21.3 million people.⁶

DM is a chronic disease because patients suffering from DM must take long-term care.⁷ To prevent complications, it is necessary to do self-care for DM patients.⁸ Not only controlling blood sugar but to prevent complications and disability, self-care for DM patients is a necessity. It is necessary to control DM to prevent chronic complications. Family

support is currently a special concern that needs to be developed to support prevention, control and self-care for people with DM.⁸ DM sufferers will have an optimal quality of life if they carry out comprehensive care so that the productivity level of DM sufferers will remain optimal.⁹

Several factors that can affect self-care in DM patients include age, length of suffering from DM, knowledge, spirituality, self-efficacy, social support, family support, and social problem solving. According to other studies, self-care management is influenced by several factors. One of the most influential factors is family support. The family is the closest social environment to DM sufferers, so it is hoped that it can help control and shape the behavior of DM sufferers to carry out self-care.¹⁰

A study conducted by Rosyidah (2018) states that DM is a chronic metabolic disease that requires attention from both sufferers and their families. Complications due to DM can be minimized and prevented by controlling blood sugar and implementing self-care management behaviors.¹¹

One of the impacts that will arise when DM sufferers are not sufficiently supported by the family is that there will be a decrease in activity and a higher emotional level due to the pressure of the situation. Negative feelings that arise about oneself are caused by the psychological level of the sufferer which causes stress, and the emergence of feelings of

helplessness and high anxiety and bad stigma about the disease can affect the condition of DM sufferers. Intellectually can affect the perception and ability of individuals to solve problems.¹².

Based on some of the results of these studies, there is a gap in evidence about self-care behavior that varies due to family support, so a literature review is necessary. This literature review was conducted to determine the role of family support on self-care behavior in patients with Type 2 DM.

METHOD

This research is a literature review with a critical review full text approach in English. The databases used are PubMed, Scopus, Google Scholar and Web of Science. Articles were selected using PRISMA.¹³ Search results for articles using the keywords “Family support” or “social support” and “self care” and “diabetes mellitus type 2” found 504 articles from PubMed, 164 articles from Scopus, 119 articles from web of science and 107 articles from Google scholar. Further filtering by duplication

and found 37 similar articles. Furthermore, screening was carried out based on the title and abstract and the results obtained were 654 articles with the exception criteria of only abstract articles, full text articles not being accessible, other articles in the form of systematic reviews, and the type of publication in the form of reports only, and not in accordance with family support and support self-care for type 2 diabetes. After screening, 18 articles were obtained, then read in detail and summarize. Found 11 non-specific articles that discuss the role of family support in self care behavior of patients with type 2 diabetes. Final results found 7 articles that match the topics and inclusion criteria that have been set.

In the process of searching for articles, the authors determined the inclusion criteria, namely: Articles in English, Research subjects with type 2 DM, Research articles that can be accessed in full. Articles were searched for and selected based on the clarity of sources and the correlation of family support and self-care behavior of type 2 DM sufferers.

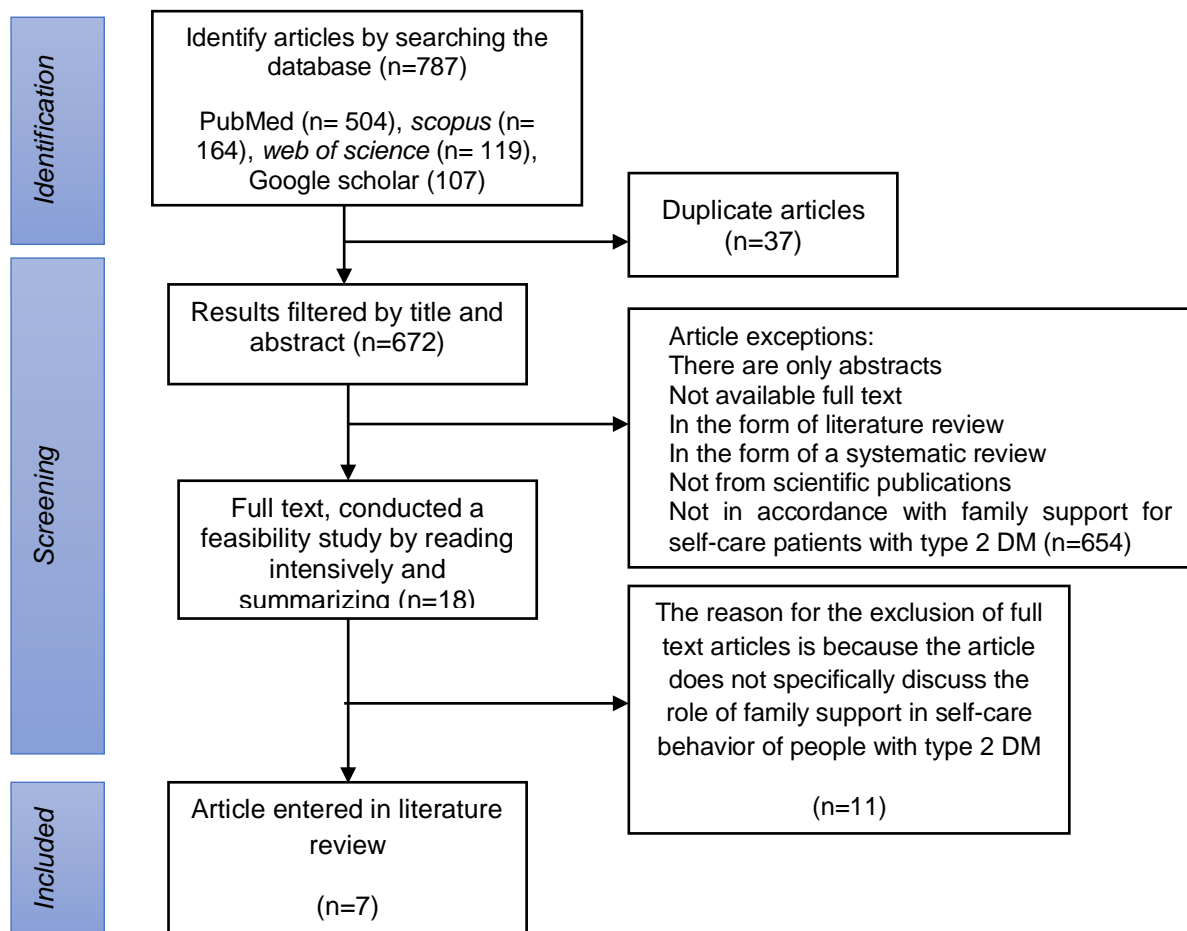


Figure 1. Flowchart Prisma

RESULT AND DISCUSSION

The results of the study obtained from previous articles, namely this research examine how big the role of family support is in the self-care behavior of type 2 DM sufferers. In an

effort to increase patient awareness in taking care measures, DM sufferers need attention, help, and giving ideas, and advice. All of these aspects can be obtained when people with type 2 DM get support from their families.¹⁴

Table 1. The role of family support on self-care behavior of patients with type 2 DM

No	Writer	Research title	Design	Location and Sample	Destination	Results
1.	Kandel S, Wichaidit W(15)	Self-care and family support among people with type 2 Diabetes	Cross-sectional study	Hospital in Kathmandu, Nepal. The study sample was 411 outpatients with type-2 DM	The aim is to assess the extent of the relationship between the behavior of family members of type 2 DM patients and the patient's self-care activities.	The results show that family member support behavior has a 7.44 times chance (95% confidence interval [CI] = 2.41, 23.01) to make type 2 DM sufferers have a higher level of adherence to monitoring blood glucose.
2.	Dewi Erika Chandra, Soleha Umdatus sari(16)	The role of family support and self-efficacy on self care behavior in the elderly with type 2 diabetes	Cross-sectional study	The population of this study was 132 elderly people with type 2 diabetes at the posyandu for the elderly in Wadungasri Village. The number of samples in this study were 100 respondents.	This study aims to determine the relationship between family support and self-efficacy with self-care behavior in the elderly with type 2 diabetes.	The results showed that there was a relationship between family support and self-care with $p=0.006$ ($p \leq 0.05$) and in the elderly with type 2 DM. Family support and self-efficacy played an important role in carrying out self-care behavior in the elderly with type 2 DM.
3.	Getie A, Geda B, Alemayhu T, Bante A, Aschalew Z, Wassihun B(17)	Self-care practices and associated factors among adult diabetic patients in public hospitals of Dire Dawa administration, Eastern Ethiopia	Cross-sectional study	This study was conducted at the General Administration Hospital of Dire Dawa, Eastern Ethiopia. The study sample was 513 type 2 DM patients.	This study aims to assess self-care practices and associated factors among type 2 DM sufferers in the Dire Dawa community, Timur hospital, Ethiopia.	The results showed that 55.9%, (95% CI: 51.4, 60.3) of the participants had good self-care practices. Self-care practices were significantly related to good diabetes knowledge (AOR = 2.14, 95% CI: 1.37, 3.35), family support system (AOR = 2.69, 95% CI: 1.56, 4.62), treatment satisfaction (AOR = 2.07, 95% CI: 1.18,

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						3.62), diabetes education (AOR = 2.21, 95% CI: 1.35, 3.63), high economic status (AOR = 1.89, 95% CI: 1.01, 3.48), have a glucometer, (AOR = 2.69, 95% CI: 1.57, 4.63), higher education status (AOR = 2.68, 95% CI: 1.31, 5.49), and duration of illness more than 10 years AOR = 2.70, 95% CI: 1.17, 6 ,26).
4.	Takele GM, Weharei MA, Kidanu HT, Gebrekidan KG, Gebregiorgis BG(18)	Diabetes self-care practice and associated factors among type 2 diabetic patients in public hospitals of Tigray regional state, Ethiopia: A multicenter study	Cross-sectional study	The study sample was 570 patients with type 2 diabetes who underwent general care at a Tigray district hospital.	This study aims to determine the level of diabetes self-care practices and related factors among patients with type 2 DM who attend public hospitals in the Tigray region.	The mean age (SD) of the participants was 46 (\pm 14.6) years. Less than half (46.7%) of the participants had a good assessment of diabetes self-care practices. Urban residence (AOR = 1.9, 95% CI = 1.20–2.94), age group 48–63 years (AOR 2.1.95% CI = 1.19–3.98), not having formal education (AOR = 2.6, 95% CI = 1.32–5.25) had family support (AOR = 1.9, 95% CI = 1.24–2.85), and had a personal glucometer at home (AOR = 6.1, 95% CI = 2.83–13.0) was a factor associated with good diabetes self-care practice.
5.	Ishak NH, Mohd Yusoff SS, Rahman RA, Kadir AA(19)	Diabetes self-care and its associated factors among elderly diabetes in primary	Cross-sectional study	The research sample was 143 elderly type 2 DM patients at the outpatient department	The purpose of this study is to describe self-care for type 2 diabetes in the elderly and to determine the	The mean (\pm SD) age of the subjects was 67.9 (\pm 5.4) years. The mean diabetes self-care score was 26.5 (\pm 8.0). Factors with a positive impact on diabetes self-

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		care		of the Hospital Universiti Sains Malaysia (HUSM).	associated factors.	care included non-Malay ($\beta = 5.275$, $p = 0.002$), having a family as a caregiver ($\beta = 8.995$, $p = 0.004$), having a higher level of family support ($\beta = 0.159$, $p = 0.042$), and had acceptable ($\beta = 4.375$, $p = 0.001$) or good knowledge of diabetes ($\beta = 5.893$, $p = 0.004$). The presence of neuropathy had a negative impact on self-care, whereas diabetic nephropathy had a positive impact on self-care ($\beta = -4.053$, $p = 0.003$).
6.	Gulentie TM, Yesuf EM, Yazie TS, Kefale B.(20)	Predictors of Diabetes Self-Care Practice Among Patients with Type 2 Diabetes in Public Hospitals in Northeastern Ethiopia: A Facility-Based Cross-Sectional Study	Cross-sectional study	The study sample was 403 patients with Type 2 DM followed up at Dubti and Assaita hospitals in northeastern Ethiopia.	The aim of this study was to assess the predictors of DM self-care among patients with type 2 DM patients at Dubti and Assaita hospitals in the northeast.	In this study, 62% consisted of men. Overall, 63.8% of study participants had adequate self-care practices, while 36.2% had inadequate self-care. Younger age (AOR 2.27, 95% CI .27–4.07, $P=0.005$), low status monthly income (AOR 3.08, 95% CI 1.08–8.78, $P=0.04$), mean (AOR 2.43, 95% CI 1.15–5.09, $P=0.02$) and high (AOR 2.68, 95% CI 1.03–6.99, $P=0.04$), treated with oral hypoglycemic agents (OHA) (AOR 0.22, 95% CI 0.05–0.95, $P=0.04$) and insulin (AOR 0.18, 95% CI 0.04–0.75, $P=0.01$), had social support (AOR 3.09, 95% CI 1.76–5.4, $P=0.01$) and diabetes education from health

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						professionals (AOR 5.53, 95% CI 1.92-15.93, P= 0.001) and medium (AOR 2.63, 95% CI 1.47-4.7, P= 0.001) were independent predictors of self-care practice.
7.	Mayberry, Osborn(21)	Family Support, Medication Adherence, and Glycemic Control Among Adults With Type 2 Diabetes	Mix method	106 respondents DM type 2	This study aims to explore the relationship between participants' perceptions of family members' DM self-care knowledge, supportive and unsupportive behavior specifically for DM family members, and participants' medication adherence and glycemic control.	Perceptions of family members who are more knowledgeable about DM are associated with perceptions of family members engaging in more supportive behaviors, but not associated with perceptions that family members engage in fewer unsupportive behaviors. The perception of family members engaging in more unsupportive behaviors was associated with less adherence to one's DM treatment, and being less compliant was associated with poorer glycemic control. In focus groups, participants discussed family member support and gave examples of family members who were told about DM but engaged in unsupportive behavior.

Of all the articles that have been selected as the material for this literature review, using a cross-sectional design in conducting research related to the role of family support for type 2 DM patients on self-care behavior. Research conducted Kandel¹⁵ shows that supportive behavior of family members has a 7.44 times

higher chance of making type 2 DM sufferers to be more obedient in monitoring their blood sugar. In addition, the results of research by Dewi.¹⁶ The results showed that there was a relationship between family support and self-care with $p=0.006$ ($p\leq 0.05$) and in the elderly with type 2 DM. Likewise the results of research

conducted by Getie.¹⁷ The results showed that 55.9% (95% CI: 51.4, 60.3) of participants had good self-care practices. Self-care practices were significantly associated with good diabetes knowledge (AOR = 2.14, 95% CI: 1.37, 3.35), family support system (AOR = 2.69, 95% CI: 1.56, 4.62). Another study showed that higher self-efficacy is also associated with increased self-care behavior so that people with diabetes can control their blood sugar better. This study also suggests the importance of family support in the management of DM in this case is self-care behavior.²²

The results of the analysis show a correlation between family support in type 2 DM patients and self-care behavior. This is in line with research Dewi¹⁶ Family support and self-efficacy play an important role in carrying out self-care behavior in type 2 DM patients. Changes in health behavior of DM sufferers in self-care are strongly influenced by social support and family support. In accordance with various studies which state that one way to manage diabetes is to take care of yourself, in other words, is self-care. Positive assistance from the family is also needed in order to influence good results. Family emotional support, which is manifested in expressions of care and affection, will make DM sufferers feel better and feel comfortable in dealing with unpleasant situations.²³

Other studies have also shown that self-care is a way to control DM. People with type 2 DM to influence good self-care outcomes need positive family support. Family support in type 2 DM sufferers is significantly related to self-care behavior in improving blood sugar control.⁹

Overall family support affects DM treatment achievement, disease progression, quality of life, and medication adherence. Family support is influenced by several factors, one of which is the economy, where the higher a person's income, the faster they react to illness. In this case it is type 2 DM heard by family members.²⁴ DM patients who are financially able will visit health services regularly. Economic capacity, directly facilitates the use of health services by type 2 DM patients. Through health services, DM sufferers will understand the importance of regular health control.²⁵

Type 2 DM sufferers who understand and have a desire to attend health counseling, carry out routine control, and are obedient in taking medication will have a major impact on controlling their disease. With family support, people with type 2 DM can recognize and understand the importance of medication to maintain blood sugar levels within normal limits.⁹

To reduce the negative effects of DM, DM sufferers can perform self-management in daily life. This is proven by decreasing hemoglobin levels which can improve the health status of DM patients which will directly affect the reduction of the risk of disease and death due to DM. One way that can be done is the existence of family support given to people with DM.²⁵

CONCLUSION

Based on the results of a systematic review of 7 articles that have been selected according to the topic, it can be concluded that family support can improve the self-care behavior of type 2 DM sufferers. With family support, type 2 DM sufferers have a higher level of adherence in controlling sugar blood. These findings are important for health facilities to form a program that can increase family support for self-care behavior in type 2 DM patients by gathering with family or fellow type 2 DM patients. Accompanied by family will make patients more enthusiastic about taking care.

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REFERENCES

1. WHO. Global Report On Diabetes. Fr World Heal Organ. 2016;
2. Kemenkes RI. Situasi dan Analisis Diabetes. Kementrian Kesehatan RI. Jakarta; 2014.
3. IDF. International Diabetes Federation. In The Lancet. 2019;266(6881).
4. Setyawati, A, D., Ngo, T., Padila, P., & Andri J. Obesity and Heredity for Diabetes Mellitus Among Elderly. J Nurs Heal. 2020;1(1):26–31.
5. Kemenkes RI. Profil Kesehatan Indonesia. 2018;
6. WHO. Diabetes Melitus. World Heal Organ. 2021;
7. Lambert. Assessing patients' acceptance of their medication to reveal unmet needs: results from a large multi-diseases study using a patient online community. Health Qual Life Outcomes. 2018;16(134).
8. IDF. Diabetes Atlas In International Diabetes Federation (8th Editio). UK Int Diabetes Fed. 2017;
9. Rahmadani W, Rasni H, Nur KRM. Hubungan Dukungan Sosial Keluarga dengan Perilaku Perawatan Diri pada Klien

- Diabetes Melitus Tipe 2 di Wilayah Kerja Puskesmas Kaliwates, Jember. *Pustaka Kesehat.* 2019;7(2):120.
10. Islami DD, Tamtomo DG, Prasetya H. Correlation between Family Support and Self Care in Type 2 Diabetes Mellitus: Meta-Analysis. *Indones J Med.* 2021;6(1):62–70.
 11. Azhari R. Dukungan keluarga dan perilaku self-management pada pasien diabetes melitus tipe II di Puskesmas Simpang IV Sipin Kota Jambi. *Ris Inf Kesehat.* 2018;7(1):76.
 12. Angraini, Apriyeni & J 2015. Hubungan Dukungan Keluarga Dengan Kualitas Hidup Pasien Diabetes Melitus Tipe II Siska. *Indones J Pharm.* 2020;4(2):93–101.
 13. Prisma. Welcome to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). 2021.
 14. Sabil FA, Kadar KS, Sjattar EL. Faktor – Faktor Pendukung Self Care Management Diabetes Mellitus Tipe 2: a Literature Review. *J Keperawatan.* 2019;10(1):48.
 15. Kandel S, Wichaidit W. Self-care and family support among people with type 2 diabetes. *J Heal Sci Med Res.* 2021;39(1):23–33.
 16. dewi Erika Chandra, soleha Umdatun sari RY. The Role Of Family Support And Self-Efficacy On Self-Care Behavior In The Elderly With Type 2 Diabetes. 2021;02:82–9.
 17. Getie A, Geda B, Alemayhu T, Bante A, Aschalew Z, Wassihun B. Self-care practices and associated factors among adult diabetic patients in public hospitals of Dire Dawa administration, Eastern Ethiopia. *BMC Public Health.* 2020;20(1):1–8.
 18. Takele GM, Weharei MA, Kidanu HT, Gebrekidan KG, Gebregiorgis BG. Diabetes self-care practice and associated factors among type 2 diabetic patients in public hospitals of Tigray regional state, Ethiopia: A multicenter study. *PLoS One [Internet].* 2021;16(4 April):1–11. Available from: <http://dx.doi.org/10.1371/journal.pone.0250462>
 19. Ishak NH, Mohd Yusoff SS, Rahman RA, Kadir AA. Diabetes self-care and its associated factors among elderly diabetes in primary care. *J Taibah Univ Med Sci.* 2017;12(6):504–11.
 20. Gulentie TM, Yesuf EM, Yazie TS, Kefale B. Predictors of diabetes self-care practice among patients with type 2 diabetes in public hospitals in northeastern Ethiopia: A facility-based cross-sectional study. *Diabetes, Metab Syndr Obes Targets Ther.* 2020;13:3137–47.
 21. Mayberry LS, Osborn CY. Family support, medication adherence, and glycemic control among adults with type 2 diabetes. *Diabetes Care.* 2012;35(6):1239–45.
 22. Tharek Z, Ramli AS, Whitford DL, Ismail Z, Mohd Zulkifli M, Ahmad Sharoni SK, et al. Relationship between self-efficacy, self-care behaviour and glycaemic control among patients with type 2 diabetes mellitus in the Malaysian primary care setting. *BMC Fam Pract.* 2018;19(1).
 23. Arini HN, Anggorowati A, Pujiastuti RSE. Dukungan keluarga pada lansia dengan Diabetes Melitus Tipe II: Literature review. *NURSCOPE J Penelit dan Pemikir Ilm Keperawatan.* 2022;7(2):172.
 24. Irawan E. Dukungan Keluarga Pada Pasien Diabetes Mellitus Tipe II di Wilayah Binaan Puskesmas Babakan Sari. *J Keperawatan.* 2019;7(2):42–9.
 25. Dewi Prasetyani, Evy Apriani YSER. Hubungan Karakteristik, Pengetahuan Dan Dukungan Keluarga Dengan Kemampuan Self Care Pada Pasien Diabetes Melitus Tipe II. *J Kesehat AI-Irsyad.* 2018;XI(1):40–9.