



Systematic Review

Systematic Review of Family Members in Improving the Quality of Life of People with T2DM**Gabriel Wanda Sinawang, Kusananto Kusananto, Ika Nur Pratiwi**

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ABSTRACT

Introduction: Many patients with type 2 diabetes (T2DM) experience psychological issues affecting their ability to cope and manage their disease. Unfortunately, healthcare providers, including nurses, often report a lack of resources to provide sufficient support. During short and busy consultations, nurses and physicians often focus on etiology, diagnosis, pathophysiology, and treatment of the disease, while patients are more concerned with the consequences and impact on their daily life and family relations. The study aimed to find out forms of family support to improve the quality of live T2DM.

Methods: Articles were framework using POCOT searching Science Direct, Scopus, Google Scholar databases, limited to the last 5 years and framework using POCOT. The articles were from 2015 to 2020 and the language used was English. The study focused on family support and Diabetic Mellitus type 2 (T2DM).

Results: From 359 articles, 15 articles were included, most of the findings of the studies showed that family plays an important role in increasing self-efficacy so it contributes to blood sugar control which supports T2DM patients' quality of life. The support that has been carried out by the family includes communication in the patient's treatment program, diet and blood sugar check, motivation in physical activity, support for medical expenses, accompanying them for controls. Patients with higher perceived diabetes-specific family and friend support had healthier behaviors.

Conclusion: Family support helps improve the quality of life and reduce physical and psychological complications in people with T2DM.

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INTRODUCTION

Diabetes is a chronic medical condition that requires people suffering from it to engage in a lifelong therapeutic self-management regimen in order to maintain glycemic control (Uchendu & Blake, 2016). Social support has to be understood within its particular cultural context which should be part of the framework of any intervention that aims at using existing social support to improve diabetes management (Pesantes et al., 2018). Many patients with type 2 diabetes experience psychological issues affecting their ability to cope and manage their disease. Unfortunately, healthcare providers, including nurses, often report lack of resources to

provide sufficient support (Bennich et al., 2017). Family social support is a process that occurs over a lifetime, with the nature and type of social support varying in each stage of the family life cycle. Family social support allows the family to function fully and can improve adaptation in family health (R, A, R, Felicia, & Preveena, 2018). Full involvement of family members in health education helped patients with T2DM improve their quality of life compared to patients without family involvement (Shi et al., 2016a).

Peer-support intervention, based on the social support theory, may result in improved diabetes care outcomes and subsequently improved quality of life in patients with T2DM (Peimani, Monjazebi, &

Ghodssi-ghassemabadi, 2018). High-quality relationships with and diabetes management support from intimate partners improve diabetes-specific and general quality of life, self-management behaviors, and metabolic outcomes (Young-hyman, Groot, Hill-briggs, & Gonzalez, 2016).

Dunbar et al. (2005) explained that family support correlates with promoting self-care behaviors, following medical diets, decreasing emotional stress, coping with changes in life, enhancing self-efficacy, reducing the frequency of hospitalization, achieving weight loss, better-controlled blood sugar levels, and ultimately, improving QOL, particularly if the focus of family support is on treating and controlling the disease (Ebrahimi, Ashrafi, & Rudsari, 2017). This study aims to describe the forms of family support for family members suffering from T2DM.

MATERIALS AND METHODS

Strategy for Searching

This study used a systematic review with the search “what the forms of family support improve the quality of life in T2DM?”. Trials to be included in the review were identified through electronic database searching from the earliest available time to 2019 in the following databases: Science Direct, Scopus, and Google Scholar by using keywords “family support”, “diabetes mellitus type 2 and “quality of life (QoL)”. The inclusion criteria in this review were experimental study and non-experimental study, studies published from 2015 to 2019, English as the language used, focused on family support in type 2 diabetes mellitus and quality of life. The exclusion criteria were studies that did not involve adolescent patients.

Based on the literature research from three databases, Science Direct, Scopus and Google Scholar, there were a total of 359 papers. The detailed identification process of the paper selection can be seen in Figure 1. This study reviewed 15 chosen articles.

Study Selection

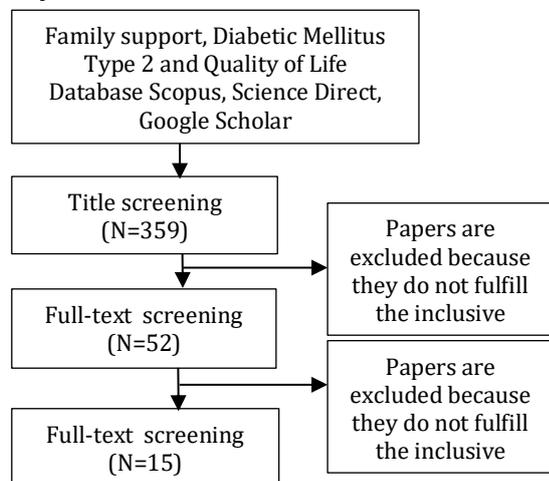


Figure 1 Article selection process. Adapted from Harris et al. (Harris, Harris, Quatman, & Manring, 2013)

Table 1. General characteristics of the selected studies (n=15)

Category	n	%
Publication year		
2015	1	6,67
2016	5	33,33
2017	3	20
2018	5	33,33
2019	1	6,67
Type of DM		
T1DM		
T2DM	15	100
Type of Study		
Cross-Sectional	8	53,33
RCT	3	20
Descriptive	1	6,67
Qualitative	1	6,67
Mix method	2	13,33

RESULTS

General Type of Studies

15 articles were analyzed (Table 1). All of the studies (100%) focused on studies type 2 diabetes mellitus (T2DM). The type of research design There were 8 (53,33%) cross-sectional articles.

The measuring instrument used was the interview (experiences living with type 2 diabetes, changes and adherence to self-management behaviors, attitude and knowledge of obesity ant T2DM, attitudes toward intervention using monetary incentives) (Pesantes et al., 2018), a family-support assessment Questionnaire (R et al., 2018), persuasive social control strategies (Yang, Pang, & Cheng, 2016), Chronic Illness Resource Survey (CIRS)(Soto, Louie, Cherrington, Parada, & Horton, 2015), KAP Questionnaire (Shi et al., 2016b), Diabetes Care Profile (DCP, self -perception of glycemic control) (Shawon, Hossain, Adhikary, & Gupta, 2016), Diabetes Knowledge Questionnaire (DKQ), Diabetes Health Literacy , Diabetes Self-Care Activities Questionnaire, Diabetes Distress Scale, International Physical Activity Questionnaire (IPAQ) (Mcewen, Pasvogel, Murdaugh, & Hepworth, 2017), Perceptions of Collaboration Questionnaire (PCQ), other important climate questionnaires (IOCQ), Perceived Diabetes Self-Management Scale (PDSMS-4) (Lindsay S Mayberry, Berg, Greevy, & Wallston, 2019), partner care, summary of diabetes self-care activity (SDSCA) (Lindsay S Mayberry & Lee, 2018), Diabetes Family Behavior Checklist-II (DFBC-II, DAWN II (Lindsay Satterwhite Mayberry, Harper, & Osborn, 2016), Family APGAR Questionnaire, FRA, Life-Orientation Test (LOT), Diabetes Knowledge Test (DKT) (Fain, 2016), Depression Scale, Diabetes Care Profile (Chiu & Du, 2018), Quality of life Questionnaire (QOL) (Ebrahimi et al., 2017), DSME Standard care (Yeary et al., 2017), Summary of Diabetes Self-Care Activities Scale (SDSCA) (Ravi, Kumar, & Gopichandran, 2018).

Author	Types of DM	Design	Sample	Variable	Result
(Pesantes et al., 2018)	DMT2	Qualitative	20	The role of family members in providing support to their relatives with T2DM	Support from family members mostly from their spouses and children.
(R et al., 2018)	DMT2	Cross-sectional	100	Family support assessment, quality of life of patients with type 2 Diabetes Mellitus	The family is the main source of support. The support provided is viewed from 4 dimensions, namely the emotional dimension, the dimensions of appreciation, the instrumental dimension, and the information dimension
(Yang et al., 2016)	DMT2	Cross-sectional	199	The differential associations between persuasion/pressure, psychological outcomes, and behavioral adherence at different levels of self-efficacy and to inform current family-oriented intervention programs.	Patients with lower self-efficacy benefited from persuasion, but were adversely affected by pressure. In contrast, patients with higher self-efficacy were adversely affected by persuasion, but were less negatively affected by pressure
(Soto et al., 2015)	DMT2	Cross-sectional	317	Self Interpersonal and organization support in performing diabetes related self management behaviors and A1C levels	Higher levels of self-support were significantly associated with eating, Self-support was also related to A1C. Family/friend support was significantly associated with eating fruits and vegetables and engaging in physical activity most days/week
(Shi et al., 2016b)	DMT2	Cross-sectional	120	Family involvement on health education for controlling the diabetes	Family involvement is beneficial to the control of T2DM
(Shawon et al., 2016)	DMT2	Cross-sectional	144	The attitude towards diabetes and social and family support	Positive attitude towards diabetes management and support from friends and family were associated with adequate diabetes management
(Ravi et al., 2018)	DMT2	Cross-sectional	200	Diabetes family support improves diabetes self-management and glycemic control	Family support was significantly associated with better self-management activities, but better self-management did not reflect as better glycaemic control.
(Mcewen et al., 2017)	DMT2	Randomized Controlled trial	157	Effects of a family-based self-management support intervention for adults with type 2 diabetes (T2DM).	Family-based interventions to improve diabetes self-management and substantiate the need for intensive, longer, tailored interventions to achieve glycemic control.

We will explain and answer the research question in the results section: what the study found about family support and quality of life. In this study, researchers found that family support is closely

related to T2DM care management and its relationship and quality of life. DMT2 sufferers support providers include children, spouses, close family. The types of support include emotional

(Lindsay Mayberry et al., 2019)	S	DMT2	mixed-methods	904	Develop and evaluate a measure assessing helpful and harmful family/friends' involvement in adults' type 2 diabetes (T2D) self-management.	The Family and Friend Involvement in Adults' Diabetes (FIAD) is a reliable and valid measure assessing family/friend involvement in adults' T2DM.
(Lindsay Mayberry & Lee, 2018)	S	DMT2	Cross-sectional	313	Self-management, diabetes distress, and HbA1c	Emotional closeness with a CarePartner may be important for supporting T2DM self-management and reducing diabetes distress. CarePartners may appropriately engage more frequently when patients with no in-home supporter have poorly controlled diabetes.
(Lindsay Satterwhite Mayberry et al., 2016)		DMT2	Mixed-methods study	68	family members in interventions to support diabetes self-care.	Findings can inform the design and content of interventions targeting family involvement in adults' type 2 diabetes, with implications for assessing family behaviors, intervention modalities, and who to engage.
(Fain, 2016)		DMT2	nonexperimental	77	Family functioning, family resilience, life orientation (measure of optimism), and diabetes knowledge	Previous evidence suggesting that a family member's perspective of living and functioning with diabetes affects the entire family and its ability to deal with stress.
(Chiu & Du, 2018)		DMT2	Cross-sectional	398	Depressive symptom scores. Family and friend support	The level of family or friend support for diabetes management and depressive symptoms might be an important part of individualized diabetic care.
(Ebrahimi et al., 2017)		DMT2	A Randomized Clinical Trial	120	Quality of life	Educating the families of patients was shown in this study to improve the QOL of the patient.
(Yeary et al., 2017)		DMT2	a randomized, controlled	240	Family Model of Diabetes Self-Management Education (DSME)	The utilization of a CBPR approach that involves the local stakeholders and the engagement of the family-based social infrastructure of Marshallese communities increase potential for the intervention's success and sustainability

support, appreciation, instruments, information, diet, activity, stress reduction. Some research also shows that family control helps improve T2DM management so it affects the quality of life.

DISCUSSION

The family is the main source of support. Individuals with chronic conditions receive help to manage such conditions from family members, mainly spouses and children (Pesantes et al., 2018), interpersonal

support (e.g., family and friends), health care professionals, the neighborhood, community organizations, the workplace, health insurance (Soto et al., 2015).

People with chronic diseases such as T2D stand to benefit from a family setting that provides care in terms of physical, emotional, and financial support for the management of their disease (Ebrahimi et al., 2017). The support provided is viewed from 4 dimensions, namely the emotional dimension, the

dimension of appreciation, the instrumental dimension, and the information dimension. It was also conveyed that the support of the family is closely related to the patients' compliance with treatment so it will affect their quality of life (R et al., 2018).

Emotional well-being is an important part of diabetes care and self-management. Psychological and social problems can impair the individual's or family's ability to carry out diabetes care tasks and therefore potentially compromise health status (Care & Suppl, 2018). Family members should consider the patient's levels of self-efficacy in diabetes management (Yang et al., 2016). Supportive behaviors included the provision of emotional support, such as empathy and alleviation of diabetes-related distress, and the provision of instrumental support such as paying for medications and helping participants inject their insulin. Emotional support enabled patients to improve their diet, follow their treatment and increased their physical activity (Pesantes et al., 2018). Diabetes distress, the emotional burden experienced by adults with T2DM, has been shown to influence glycemic control (Mcewen et al., 2017). Families provide physical support to the patient and also emotional support in times of need (Ravi et al., 2018).

Educational courses included psychological intervention, nutritional therapy, exercise intervention, medical care, blood glucose monitoring and oral care (Shi et al., 2016b). Family support correlates with promoting self-care behaviors, following medical diets (Ebrahimi et al., 2017). Individual/family factors are those characteristics of the individual and direct family (Polly & Kathleen, 2010). Dietary changes have consistently been reported to be the most difficult, especially in low income persons with diabetes, as factors like culture, lifelong habits, family and socioeconomic resources influence dietary intake (Mcewen et al., 2017). Education about good glycemic management is crucial in order to achieve and maintain a better control over their diabetes status to stall further complications (Shawon et al., 2016). Helpful family and friend involvement were independently associated with greater diabetes self-efficacy, better dietary behaviors, more physical activity, more frequent blood glucose testing and better medication adherence (Lindsay S Mayberry et al., 2019). Family support should be the focus of diabetes education for families living with diabetes (Fain, 2016)

The Face-it intervention not only focuses on physical health but also addresses a broader perspective, including mental and social wellbeing. Gilbert et al. argue in favor of the integration of psychosocial wellbeing (e.g., social support) (Nielsen et al., 2020). Close family members are associated with patient adherence (Chiu & Du, 2018). Family-based, culturally-adapted diabetes interventions have positive effects on diabetes outcome (Yeary et al., 2017).

CONCLUSION

Family support plays a large role in T2DM care. Emotional, knowledge and financial support are forms of family support that help improve the quality of life in T2DM patients. Nurses and the medical staff can collaborate with families to emphasize that there needs to be a balance between the emotional, physical and financial support for T2DM sufferers. The weak point of this literature review is that it has not explained in detail how to form a balance of support between emotional, physical and financial support.

CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

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REFERENCES

- Bennich, B. B., Røder, M. E., Overgaard, D., Egerod, I., Munch, L., Knop, F. K., ... Konradsen, H. (2017). Supportive and non - supportive interactions in families with a type 2 diabetes patient: an integrative review. *Diabetology & Metabolic Syndrome*, 1–9. <https://doi.org/10.1186/s13098-017-0256-7>
- Care, D., & Suppl, S. S. (2018). Lifestyle Management : Standards of Medical Care in Diabetes d 2018. *Diabetes Care*, 41(January), 38–50. <https://doi.org/10.2337/dc18-S004>
- Chiu, C., & Du, Y. (2018). *Longitudinal investigation of the reciprocal relationship between depressive symptoms and glycemic control: The moderation effects of sex and perceived support*. <https://doi.org/10.1111/jdi.12969>
- Ebrahimi, H., Ashrafi, Z., & Rudsari, D. M. (2017). *Effect of Family-Based Education on the Quality of Life of Persons With Type 2 Diabetes: A Randomized Clinical Trial*. 00(0), 1–7.
- Fain, J. A. (2016). Factors Affecting Resilience in Families of Adults With Diabetes. *The Diabetes Educator*. <https://doi.org/10.1177/0145721716637124>
- Harris, J. D., Harris, J. D., Quatman, C. E., & Manring, M. M. (2013). *How to Write a Systematic Review How to Write a Systematic Review*. (May 2014). <https://doi.org/10.1177/0363546513497567>
- Mayberry, Lindsay S, Berg, C. A., Greevy, R. A., & Wallston, K. A. (2019). Patient Education and Counseling Assessing helpful and harmful family and friend involvement in adults' type 2 diabetes self-management. *Patient Education and Counseling*, 102(7), 1380–1388. <https://doi.org/10.1016/j.pec.2019.02.027>
- Mayberry, Lindsay S, & Lee, A. A. (2018). Out-of-home informal support important for medication adherence , diabetes distress , hemoglobin A1c among adults with type 2 diabetes. *Journal of*

- Behavioral Medicine*.
<https://doi.org/10.1007/s10865-018-0002-0>
- Mayberry, Lindsay Satterwhite, Harper, K. J., & Osborn, C. Y. (2016). *Family behaviors and type 2 diabetes: What to target and how to address in interventions for adults with low socioeconomic status*.
<https://doi.org/10.1177/1742395316644303>
- Mcewen, M. M., Pasvogel, A., Murdaugh, C., & Hepworth, J. (2017). Effects of a Family-based Diabetes Intervention on Behavioral and Biological Outcomes for Mexican American Adults Purpose. *Effects of a Family Based Intervention*, 1–14.
<https://doi.org/10.1177/0145721717706031>
- Nielsen, K. K., Dahl-petersen, I. K., Jensen, D. M., Ovesen, P., Damm, P., Jensen, N. H., ... Vinter, C. A. (2020). *Protocol for a randomised controlled trial of a co-produced, complex, health promotion intervention for women with prior gestational diabetes and their families: the Face-it study*. 1–12.
- Peimani, M., Monjazebi, F., & Ghodssi-ghassemabadi, R. (2018). Patient Education and Counseling A peer support intervention in improving glycemic control in patients with type 2 diabetes. *Patient Education and Counseling*, 101(3), 460–466.
<https://doi.org/10.1016/j.pec.2017.10.007>
- Pesantes, M. A., Valle, A. Del, Diez-canseco, F., Bernabé-ortiz, A., Portocarrero, J., Trujillo, A., ... Miranda, J. J. (2018). *Family Support and Diabetes: Patient's Experiences From a Public Hospital in Peru*.
<https://doi.org/10.1177/1049732318784906>
- Polly, R., & Kathleen, S. J. (2010). The Individual and Family Self-management Theory: Background and Perspectives on Context, Process, and Outcomes. *NIH Public Access*, 57(4), 217–225.
<https://doi.org/10.1016/j.outlook.2008.10.004>
- The R, A., A, S. W., R, a aRIGA, Felicia, & Preveena. (2018). Relationship between family support with quality of life among type 2 diabetes mellitus patients at Amplas primary health care in Medan, Indonesia Relationship between family support with quality of life among type 2 diabetes mellitus patients at Amplas. *Journal of Physics: Conference Series*, 1–6.
<https://doi.org/10.1088/1742-6596/1116/5/052004>
- Ravi, S., Kumar, S., & Gopichandran, V. (2018). *Do supportive family behaviors promote diabetes self-management in resource limited urban settings? A cross sectional study*. 1–9.
- Shawon, S. R., Hossain, F. B., Adhikary, G., & Gupta, R. Das. (2016). Attitude towards diabetes and social and family support among type 2 diabetes patients attending a tertiary - care hospital in Bangladesh: a cross - sectional study. *BMC Research Notes*, 1–8.
<https://doi.org/10.1186/s13104-016-2081-8>
- Shi, M., Xu, M., Liu, Z., Duan, X., Zhu, Y., & Shi, H. (2016a). Patient Education and Counseling Effectiveness of family involvement in newly diagnosed type 2 diabetes patients: a follow-up study. *Patient Education and Counseling*, 99(5), 776–782.
<https://doi.org/10.1016/j.pec.2015.12.018>
- Shi, M., Xu, M., Liu, Z., Duan, X., Zhu, Y., & Shi, H. (2016b). Patient Education and Counseling Effectiveness of family involvement in newly diagnosed type 2 diabetes patients: a follow-up study. *Patient Education and Counseling*, (2015).
<https://doi.org/10.1016/j.pec.2015.12.018>
- Soto, S. C., Louie, S. Y., Cherrington, A. L., Parada, H., & Horton, L. A. (2015). An Ecological Perspective on Diabetes Self-care Support, Self-management Behaviors, and Hemoglobin A1C Among Latinos. *The Diabetes Educator*, 41(2), 214–223.
<https://doi.org/10.1177/0145721715569078>
- Uchendu, C., & Blake, H. (2016). Systematic Review or Meta-analysis Effectiveness of cognitive – behavioural therapy on glycaemic control and psychological outcomes in adults with diabetes mellitus: a systematic review and meta-analysis of randomized controlled trials. *Diabaaetic Medicine*, 328–339.
<https://doi.org/10.1111/dme.13195>
- Yang, F., Pang, J. S., & Cheng, W. J. Y. (2016). Self-Care Adherence and Psychological Functioning of Older Patients with Type 2 Diabetes: Effects of Persuasion, Social Pressure, and Self-Efficacy. *Journal of Clinical Psychology in Medical Settings*.
<https://doi.org/10.1007/s10880-016-9470-y>
- Yeary, K. H. K., Associate, P. D., Long, C. R., Assistant, P. D., Bursac, Z., Ph, D., ... Assistant, P. D. (2017). *Design of a randomized, controlled, comparative-effectiveness trial testing a Family Model of Diabetes Self-Management Education (DSME) vs. Standard DSME for Marshallese in the United States*. 6.
<https://doi.org/10.1016/j.conctc.2017.03.007>
- Young-hyman, D., Groot, M. De, Hill-briggs, F., & Gonzalez, J. S. (2016). *Psychosocial Care for People With Diabetes: A Position Statement of the American Diabetes Association*. 39(December), 2126–2140. <https://doi.org/10.2337/dc16-2053>