



ISSN: 0976-3376

Available Online at <http://www.journalajst.com>

ASIAN JOURNAL OF  
SCIENCE AND TECHNOLOGY

Asian Journal of Science and Technology  
Vol. 12, Issue, 09, pp. 11824-11826, September, 2021

## RESEARCH ARTICLE

### SELF-CARE MANAGEMENT OF DIABETES MELLITUS (DM) PATIENTS: A TRADITIONAL LITERATURE REVIEW

\*Parliani, Tri Wahyuni, Ramadhaniyati, Usman, Jaka Pradika and Lilis Lestari

STIK Muhammadiyah Pontianak

#### ARTICLE INFO

##### Article History:

Received 24<sup>th</sup> June, 2021  
Received in revised form  
24<sup>th</sup> July, 2021  
Accepted 21<sup>st</sup> August, 2021  
Published online 30<sup>th</sup> September, 2021

##### Key words:

Systematic Review, Management,  
Self-Care, Diabetes Mellitus.

#### ABSTRACT

In DM patients, self-management is a way for DM patients to regulate their diet, exercise, routine check-ups, and take medication. This really needs to be done to prevent complications by controlling blood glucose levels to stay within normal ranges. The methodology in this study is a traditional literature review where journals that have entered the criteria list are assessed using the PICO (Patient or Problems, Intervention, Comparison, Outcome) framework (Davies, 2011; Arbaktum, 2019) and the latest journals from 2019-2021. The keywords in the journal search were diabetes, self-care, management. The results of this study describe self-care management of DM patients which consist of: 1) patient knowledge about DM, 2) Diet, 3) DM medication, 4) physical activity, 5) controlling blood sugar levels, and 6) treatment feet.

**Citation:** Parliani, Tri Wahyuni, Ramadhaniyati, Usman, Jaka Pradika and Lilis Lestari, 2021. "Self-Care Management Of Diabetes Mellitus (Dm) Patients: A Traditional Literature Review", *Asian Journal of Science and Technology*, 12, (09), 11824-11826.

**Copyright** © 2021, Parliani et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## INTRODUCTION

Diabetes Mellitus (DM) is defined as a chronic disease in which insulin production is less than the body's needs. DM has 2 types; Type 1 diabetes is a decrease in insulin production which is commonly known as juvenile onset which means that it requires regular insulin administration and type 2 diabetes which is also known as non-insulin dependent caused by ineffective use of insulin (World Health Organization [WHO], 2015). The prevalence of DM continues to increase every year in the world, it is predicted that there will be a three-fold increase from 2000 to 2030 (WHO, 2013). Data from Daniel et al. (2011) showed that 347 million people were diagnosed with DM and around 5.1 million people died. The risk impact of DM patients is micro-vascular and macro-vascular disease (Li et al., 2015). The incidence of chronic macrovascular complications of type 2 DM for 2 years was 131 (66.5%) people, in 2011 it was 71.4% consisting of: coronary heart disease 6.1% (12 people), cerebral vascular disease 5.1% (10 people), peripheral vascular disease 11.2% (22 people). The year 2012 consisted of coronary heart disease 26.9% (53 people), cerebral vascular disease 13.7% (27 people), peripheral vascular disease 18.8% (37 people). Chronic microvascular complications: 161 people (81.7%), in 2011 77.6% consisted of: diabetic retinopathy 8.1% (16 people), diabetic nephropathy 12.2% (24 people), and diabetic neuropathy 6, 6% (13 people). In 2012, 83.1% consisted of: diabetic retinopathy 29.4% (58 people), diabetic nephropathy 30.5% (60 people), and diabetic neuropathy 16.8% (33 people) (Edwina et al., 2015).

For those who suffer from diabetes mellitus, several effective interventions can improve the quality of their health which is called self-care management. Self-care management is a way for someone to do self-care (Handriana & Hijriani, 2020). With self-care management, the program in treatment can run effectively because patients will realize the importance of treatment and care. Self-care management in people with diabetes mellitus is an action that includes eating/diet regulation, increasing physical activity, controlling blood sugar, regular medication and foot care carried out by individuals in controlling diabetes mellitus (Handriana & Hijriani, 2020). The importance of self-management in patients with diabetes mellitus to minimize the risk of complications and control the patient's blood glucose levels so as to improve the patient's quality of life.

## RESEARCH METHODOLOGY

Journals that have entered the criteria list are assessed using the PICO (Patient or Problems, Intervention, Comparison, Outcome) framework (Davies, 2011; Arbaktum, 2019) as well as the latest journals from 2019 – 2021. The journal search keywords are diabetes, care self, management.

**The implementation of a traditional literature review in this study consists of several stages, namely:**

- Determining the purpose of the journal which is about self-care management of diabetic patients
- This study took the journals registered at SINTA as a whole and then selected journals registered at SINTA 1

(S1), SINTA 2 (S2) and SINTA 3 (S3), where there were 1 undergraduate journal, 3 master's journals, and 3 doctoral journals.

- Journals that have entered the criteria list are assessed using the PICO (Patient or Problems, Intervention, Comparison, Outcome) framework (Davies, 2011; Arbaktum, 2019) as well as the latest journals from 2019-2021.
- Determining the inclusion criteria, namely the journal is included in the SINTA list and has full text and the exclusion criteria is the journal with a sample of less than 90 respondents.

## RESULTS AND DISCUSSION

The results of this study describe self-care management of diabetes mellitus (DM) patients which consist of: 1) Patient knowledge about DM, 2) Diet, 3) DM medication, 4) Physical activity, 5) Controlling blood sugar levels, and 6) Treatment.

**Knowledge of DM:** Research with respondents who 90.4% received information related to DM disease would have better self-care management than those who did not get information related to DM, so this study revealed that knowledge has an effect on DM itself has an effect on patient self-management (Putri et al., 2013). Statistically in other studies, it was shown that there was a P Value < 0.001 in DM patients who had been given DM knowledge towards improving the patient's self-care management, which showed that knowledge during pre and post tests showed a significant change in the good self-management. DM patient (Nur Wahyuni Munir, 2020).

The results of previous studies related to the qualitative determinants of DM patients about the patient's lack of knowledge about diet, wrong perceptions about wet DM and dry DM, the risk of complications, not consuming the right food for DM patients and feeling a lack of encouragement or motivation from family and health workers (Yamin& Sari, 2018). From the results of a systematic literature review carried out, knowledge is very influential on self-management of DM patients so that an important point in self-management of DM patients is knowledge as the main basis that must be conveyed to patients and evaluates all activities from the results of exposure to DM knowledge in DM patients.

**Diet:** The dietary aspect in self-care management of DM patients is very important, which is illustrated if DM patients adhere to diet (54.8%) then it goes hand in hand with good self-management (Ramadhaniyati & Parliani, 2020). DM patients who have a good diet or good knowledge in regulating eating patterns will be in line with good self-management, where DM patients who have difficulty maintaining food will be easily tempted by all kinds of foods that can worsen the patient's health condition and will interfere with the process. diet (Inda, 2013). In another study, it was stated that DM patients who were less than 6.5 years of age had a high level of dietary non-compliance where they felt frustrated, excessively angry and felt discouraged by their current illness, resulting in poor self-management (Yamin& Sari, 2018). This is also reinforced by previous studies where non-compliance with diet settings was 78.1% where patients did not avoid fatty foods, fried foods and did not avoid sugary and fizzy

drinks (Rasdianah et al., 2016). The results of a systematic review also found that 100% diet is the main element in self-care management in DM patients. In the study it was shown that part of the self-care management of DM patients is diet (Yamin& Sari, 2018)

**Medication:** The results of the study on the medical aspect showed that 94.7% of respondents did self-management well (Putri et al., 2013). Medication in self-care of DM patients is influenced by several things such as the length of treatment itself, side effects of drugs and information provided by health services (Rasdianah et al., 2016). DM patients with comorbidities will have more complex treatment so that this will affect patient compliance in treatment which will also be in line with the self-care management of DM patients (Ramadhaniyati & Parliani, 2020). There are as many as 62.9% have medication adherence to reducing the patient's glucose level, this compliance is followed by good motivation in the patient as an effort to reduce symptoms and even want to recover from their DM (Ramadhaniyati&Parliani, 2020). The aspect of medication compliance is an inhibiting factor for the regulation of uncontrolled glucose levels and is one of the determinant aspects of uncontrolled blood sugar (Hidayah, 2019). The results of a systematic literature review also state that medication is one of the main items in patient self-care management, where DM patients must know how to treat themselves, control their blood sugar and be obedient in undergoing treatment for their disease and complications from DM itself.

**Physical Activity:** Aspects of physical activity are part of self-care management of DM patients, where DM patients (58.1%) who do routine physical activity have good self-care management compared to those who do not do physical activity (Ramadhaniyati&Parliani, 2020). Physical activity that DM patients can do is walk and do gymnastics or foot exercises for DM patients, where this activity can reduce calories produced from high blood sugar levels in the body while this activity. Other research shows that the behavior of doing physical activity is influenced by age where patients over 60 years tend to feel weak and have other complications so they are less able to do physical activity (Putri et al., 2013). Laziness is also one of the factors that causes DM patients not to do physical activity (Inda, 2013). The results of a systematic review found that physical activity is an inseparable part of self-care management of DM patients where this can help in lowering blood glucose levels in patients and controlling cholesterol levels and other complications. Physical activity or exercise helps control weight, so that glucose in the blood is burned into energy in the body which causes body cells to become more sensitive to insulin (Hidayah, 2019).

**Controlling blood sugar levels:** Controlling blood sugar levels is the main thing in patient self-care management. Blood sugar control can be done by going on a diet where the food you eat will be digested in the gastrointestinal tract and then converted into a form of sugar called glucose (Insana Maria, 2017). Blood sugar control includes checking blood sugar, adherence to doctor's recommendations, eating patterns, physical activity and medication adherence as well as patient perceptions of DM (Ramadhaniyati&Parliani, 2020)

**Foot care:** In this study of foot care aspects, it is said that few patients who do foot care, namely 96.2% of DM patients do not do foot care, where part of foot care consists of checking the feet, checking the inside of the shoes before use, drying between the fingers, and using footwear. when leaving the house, where self/foot care can help maintain foot health and minimize the risk of foot injuries in DM patients which can develop into diabetic ulcers (Hidayah, 2019)

## Conclusions and Suggestions

### Conclusion

The results of this study describe self-care management of diabetes mellitus (DM) patients which consist of: 1) Patient knowledge about DM, 2) Diet, 3) DM medication, 4) Physical activity, 5) Blood sugar level control, and 6) Foot care.

### Suggestion

#### The suggestions for further research are

- Develop more national and international journals on self-care management of DM patients
- Conducting multivariate research on the dimensions of self-care management of DM patients, especially those based on local culture
- Develop instruments and manuals for self-care management of DM patients

## REFERENCES

- Damayanti, S. and Kurniawan, T. 2014. Dukungan Keluarga pada Pasien Diabetes Melitus Tipe 2 dalam Menjalankan Self-Management Diabetes Family Support of Patients Type 2 Diabetes Mellitus in Performing Diabetes Self-management. *Jurnal Keperawatan Padjajaran*, 2 1, 43–50. <http://jpk.fkep.unpad.ac.id/index.php/jkp/article/viewFile/81/77>
- Daniel C, Benno, Roderick and Harald. 2011. Prevention of Type 1 Diabetes in Mice by Tolerogenic Vaccination with a Strong Agonist Insulin Mimotope. *Journal of Experimental Medicine* Vol. 208 no. 7. 1501-1510. doi: 10.1084/jem.20110574
- Edwina, D. A., Manaf, A. and Efrida, E. 2015. 102 Jurnal Kesehatan Andalas. 2015; 4 1 Pola Komplikasi Kronis Penderita Diabetes Melitus Tipe 2 Rawat Inap di Bagian Penyakit Dalam RS. Dr. M. Djamil Padang Januari 2011 - Desember 2012. *Jurnal Kesehatan Andalas*, 4 1, 102–106. <https://doi.org/10.25077/jka.v4i1.207>
- Fowler, M.J. 2008. Microvascular and macrovascular complications of diabetes. *Clinical Diabetes*, 26 2
- Handriana, I. and Hijriani, H. 2020. Idris Handriana, 2 *Hera Hijriani*. 1 1, 1189–1194.
- Hidayah, M. 2019. Hubungan Perilaku Self-Management Dengan Kadar Gula Darah Pada Pasien Diabetes Mellitus Tipe 2 Di Wilayah Kerja Puskesmas Pucang Sewu, Surabaya. *Amerta Nutrition*, 3 3, 176. <https://doi.org/10.20473/amnt.v3i3.2019.176-182>
- Inda, N. S. 2013. Kepatuhan penderita diabetes mellitus tipe II ditinjau dari locus of control. *International Migration Review*, 47 2, 330-373. <http://onlinelibrary.wiley.com/doi/10.1111/imre.12028/abstract>
- Insana Maria. 2017. Diabetes Self Management Education Dsme Dengan Ketidakstabilan Kadar Glukosa Darah Pada Penderita Diabetes Melitus. *Journal of Chemical Information and Modeling*, 53 9, 21–25. <http://www.elsevier.com/locate/scp>
- Kurniawan, T., Sari, C. W. M. and Aisyah, I. 2020. Self Management Pasien Diabetes Melitus dengan Komplikasi Kardiovaskular dan Implikasinya terhadap Indikator Klinik. *Jurnal Pendidikan Keperawatan Indonesia*, 6 1. <https://doi.org/10.17509/jpki.v6i1.18256>
- Kusnanto, K., Sundari, P. M., Asmoro, C. P. and Arifin, H. 2019. Hubungan Tingkat Pengetahuan Dan Diabetes Self-Management Dengan Tingkat Stres Pasien Diabetes Melitus Yang Menjalani Diet. *Jurnal Keperawatan Indonesia*, 22 1, 31–42. <https://doi.org/10.7454/jki.v22i1.780>
- Li, L., Linong, J., Xiao, G., Qiuhe, J., Weijun, G., Xinyue, Z., Xing, L., Hongyu., Benli, S., Jinhua, Y., & Xilin, Y. 2015. Prevalence of microvascular disease among tertiary care Chinese with early versus late onset of type 2 diabetes. *Journal of Diabetes and Its Complication*, 29; 32-37
- Nur Wahyuni Munir, W. O. S. A. 2020. *Pengetahuan tentang Diabetes Self-Management Education dalam Mengontrol Glukosa Darah Pasien Diabetes Melitus Tipe 2*. 11 6, 186–190.
- Putri, D. S. R., Yudianto, K. and Kurniawan, T. 2013. Perilaku Self-Management Pasien Diabetes Melitus DM Self-Management Behaviour of Patient with Diabetes Mellitus DM. *Fakultas Keperawatan Universitas Padjadjaran*, 1 April 2013, 30.
- Rahmadanti, M., Diani, N. and Agianto, A. 2020. Motivasi dan Self Management Pasien Diabetes Mellitus Tipe 2. *Dunia Keperawatan: Jurnal Keperawatan Dan Kesehatan*, 8 1, 87. <https://doi.org/10.20527/dk.v8i1.7359>
- Ramadhaniyati, & Parlani. 2020. Self-Care Management Description in Mellitus Diabetes Patients in Urban Area. *IOSR Journal of Nursing and Health Science*, 9 1, 11–18. <https://doi.org/10.9790/1959-0901061118>
- Rasdianah, N., Martodiharjo, S., Andayani, T. M. and Hakim, L. 2016. The Description of Medication Adherence for Patients of Diabetes Mellitus Type 2 in Public Health Center Yogyakarta. *Indonesian Journal of Clinical Pharmacy*, 5 4, 249–257. <https://doi.org/10.15416/ijcp.2016.5.4.249>
- World Health Organization WHO. 2013. *Prevalence of Diabetic*. Retrieved February 10, 2020, Available from [http://www.who.int/diabetes/facts/world\\_figures/en/](http://www.who.int/diabetes/facts/world_figures/en/)
- World Health Organization WHO. 2015. *Diabetes*. Retrieved January 22, 2020, from <http://www.who.int/mediacentre/factsheets/fs312/en/>
- Yamin, A. and Sari, C. W. M. 2018. Relationship of Family Support Towards Self-Management and Quality of Life of Patients with Type 2 Diabetes Mellitus. *Jurnal Keperawatan Padjadjaran*, 6 2, 175–182. <https://doi.org/10.24198/jkp.v6i2.673>