
CONCEPT ANALYSIS OF SELF-MANAGEMENT IN PATIENT WITH DIABETES NEPHROPATHY

Dayan Hisni^{1,3}, Pradana Sowondo^{2*}, Debie Dahlia³, Dian Ayubi⁴

¹Faculty of Health Science, Universitas Nasional

Email: dayanhisni@gmail.com

²Faculty of Medicine, Universitas Indonesia

*Email correspondence: soewondops@yahoo.com

³Faculty of Nursing, Universitas Indonesia

Email: debie@ui.ac.id

⁴Faculty of Public Health, Universitas Indonesia

Email: dian.ayubi@gmail.com

Submitted :21-05-2023, Reviewed: 31-05-2023, Accepted:01-06-2023

DOI: <http://doi.org/10.22216/jen.v8i2.2247>

ABSTRACT

Diabetes mellitus (DM) is a metabolic disease with characterized by hyperglycemia and it has some complications both macrovascular and microvascular. There have been reported that 40% of DM patient has developed diabetic nephropathy (DN) in the early of diagnosed. Therefore, some nursing intervention should be done to prevent DM including DN. One of them is self-management. This article aims to explain the concept of self-management to prevent DN in patient with DM. The method used is the Walker and Avant concept approach. The Walker and Avant framework clarifies current self-management understanding and use in practice and research across multiple disciplines. This concept's critical attributes include personal skills, self-management, lifetime task, problem solving in health area, and decision making properly. The conclusion of this analysis concept is to increase nurses' knowledge regarding self-management in patient with DN.

Keywords: *Diabetes mellitus; concept analysis; self-management; diabetic nephropathy.*

INTRODUCTION

DM is a chronic and metabolism disease which characterized by increasing fasting blood glucose (FBG) > 126 mg/dl (American Diabetes Association, 2020). There are four types of DM, one of them is type 2 DM which the highest prevalence among others. A study reported that the prevalence of DM is increased rapidly worldwide followed by its complications. In 2019, Indonesia has the 7th highest prevalence of

type 2 DM in the world with 10.7 million people and is predicted to increase become 13.7 million by 2030 and 16.6 million by 2045 (International Diabetes Federation (IDF), 2021).

A study conducted by Hisni et al (2019) showed that the higher prevalence of DM, the higher of its complications including DN. DN defined as decreasing estimated glomerular filtration rate (eGFR) < 60 ml/min/1.73 m², albuminuria > 30 mg/g, and uncontrolled blood glucose (de Boer et al., 2020). Another study

LLDIKTI Wilayah X

Lembaga Layanan Pendidikan Tinggi Wilayah X

This is an open access article under the CC Attribution 4.0 license (<https://creativecommons.org/licenses/by/4.0/>).

Jurnal Endurance is Sinta 3 Journal (<https://sinta.kemdikbud.go.id/journals/profile/1162>)

Accredited by Ministry of Research & Technology, Republic Indonesia

reported that the first clinical sign of DN is microalbuminuria which will arise when a DM patient has experienced uncontrolled glycemic (Anders et al., 2018). DN occurs by five stages, they are (1) normal eGFR, renal size is 20% greater, renal plasma flow is improved by 10-15% without hypertension and albuminuria, (2) manifestation of stage 1 followed by thinning of glomerulus wall, (3) presence of stage 2 followed by glomerulus damage and microalbuminuria (30-300 mg/day), (4) company of stage 3 with decreasing GFR less than 60 ml/min/1.73 m², proteinuria (> 300 mg/day), and incidence of hypertension, (5) the signs of stage 4 with characterized by GFR of less than 15 ml/min/1.73 m² (Gheith et al., 2016). In addition, DN needs to pay attention due to it has a high cost for hospitalization. Majority of its cost come from state budget through social security agency. If these conditions happen continuously, the state budget will decrease and deficit (Rahman, 2016). Hence, nursing intervention to prevent DN is needed.

Some nursing interventions have been proven to prevent DN. Yet, self-management is the most familiar in preventing DM including its complications (Hisni, 2019). Self-management has a benefit to prevent chronic illness including DM and decrease some clinical outcomes such as blood glucose, HbA1c, cholesterol and blood pressure (Hisni, 2019; Lopez-Vargas et al., 2016). However, the use of the concept of self-management is still very broad, especially in patients with chronic diseases, including use in non-health fields. Therefore, the concept of self-management analysis needs to be done to find out the use of the concept, especially in the health sector including nursing area.

METHOD

Using the Walker and Avant concept approach, which has eight steps, the steps are: 1) selecting the concept to be analyzed; 2) figuring out the analysis's goal; 3) figuring out all the ways the concepts has been used; 4) figuring out its attributes; 5) discovering the case model's

definition; 6) locating border cases that are connected, incongruous, artificial, and invalid; 7) selecting antecedents and consequences, 8) defining empirical references (Walker & Avant, 2019). The term "self-management" and "diabetic nephropathy" were frequently utilized in the literature findings. Articles published within the last ten years, written in English and Indonesian, meet specific requirements.

RESULTS AND DISCUSSION

Results

Select a concept

The concept chosen in the phenomenon above is self-management. The reason for choosing it because self-management allows people to control and regulate the behavior, self-management will impact on health behavior. But even though self-management is important to change behavior, health team has not prioritized conducting studies related to self-management needs and self-management education in patient with DN.

Defining the purpose of analysis

The aim of the analysis is to explain the concept of self-management and clarify some notions of self-management in patient with DN, using the attributed used as model cases, borderline related cases, and vice versa, explaining antecedents and consequences, considering the empirical references obtained.

Identify concept used

According to Walker & Avant (2019), the definition of and attribute is to seek as many uses of the concept as possible using dictionaries, thesaurus, colleagues, and available literature. A literature search was conducted using EBSCO host, ProQuest, Google Scholar, Science Direct, and PubMed databases to identify different definitions of self-management. Identifying the characteristics of the definition used in each field of knowledge is the first step to determine the definition of an attribute.



Self-management

A behavioral or habit change strategy with self-regulation and monitoring by the client in the form of self-monitoring exercises, stimulus control and self-reward. Psychological, social, cultural, religious, health, and biological factors interact to create the phenomenon of self-management (Kanfer and Gaelick-Buys, 1991).

Self-management refers to education provided by health workers that includes monitoring and managing the condition of the disease by the client themselves (American Diabetes Association, 2020). Also, self-management is ability to set and manage ourself. Self-management aimed at changing behavior for specific purposes, especially in patients with chronic illness (Glasgow et al., 2022).

Defining attribute definitions

According to Walker and Avant (2019), attributes define as characteristics of a concept that are recorded frequently in the literature. Reviewing and analyzing various definitions show that several attributes are concepts of self-management.

- a. Personal skills or individual ability: Self-management related to individual ability to determine problem solving, decision making, how patient using the sources properly, partnership, goal or achievement and evaluation during self-management performing.
- b. Self-management covers medication, role, and emotional management.
- c. Lifetime task: implementation of self-management can be done a long life to achieve the expected goal
- d. Individual should active and obedient in performance of nursing process as well as responsible of nursing process
- e. Problem solving in health area
- f. Decision making appropriately in the disease treatment process

Based on the attribute definitions above, hence the operational definition of self-management is a process of self-management which related to personal skills to achieve expected goals during

undergoing treatment especially in patient with chronic illness.

Cases model

The case model, in this case, uses concept of self-management in patient with DM cases by showing all the attributes determined by the concept Walker and Avant (2019). The case below is a case model using all the attributed obtained from the concept of self-management in patient with DM.

Mr. A, 45 years old, diagnosed DM with DN during 5 years ago. He needs to early retire due to its condition. Mr. A is undergoing hemodialysis twice a week. He always feels anxiety and bored with his disease because he cannot performance daily activity normally and all the activities should be limited. Mr. A feels anxiety and fear when he performs daily activity normally because it will make his condition worst.

Nurse B who working in medical ward gives information regarding current condition of Mr. A in order to he can manage all activities by himself after hospital discharge. Nurse B delivers education to Mr. A about DM with DN in detail until how to manage a healthy lifestyle, Nurse B also plans some goals and expectations for next month. Mr. Mr. A was very cooperative and there was a trusting relationship between the nurse and the client. While in the hospital Mr. A was compliant with his medication and when Mr. A was discharged, Mr. A was given discharge planning education by Nurse B regarding Do's and Don'ts when Mr. A was at home. The discharge planning included what activities were allowed, what kind of healthy diet was allowed, smoking cessation, and stress and emotion management. Mr. A and Nurse B also worked together to set monthly goals related to laboratory values leading to a worsening DN. To get the expected goal, Mr. A's support system is his wife. Mr. A's wife is also very supportive of Mr. A's goal planning.



Border case (borderline)

The borderline case is an example of using most attributes that define a concept as checked but not all (Walker & Avant, 2019).

Mr. T is 47 years old and has been diagnosed with DM since 5 years ago. Once the diagnosis was made, he decided to lead a healthier lifestyle. He quit smoking and became interested in consuming healthy cuisine. He traded in his old phone for a smartphone then he installed many health apps and health status monitors. His friends and family who are very supportive know Mr. T as a person who is eager to learn, and has an independent personality. He is very alert to symptoms that may indicate complications in his chronic illness. However, although he is confident, he also has some weaknesses. Mr. T was not cooperative in taking his medication with his nurse. His brother reported that Mr. T has had this negative attitude since the death of his father, and has been reclusive.

Contrary case

Mrs. N is 50 years old and has been referred for treatment for rheumatism in both hands. The client did not believe in the benefits of medical treatment, so the treatment process was carried out with some resistance and coercion. He has limited understanding of his condition and lacks intrinsic motivation to recover. The doctor referred Mrs. N to physiotherapy for therapy to reduce the pain in her joints. The treating therapist shows her which movements to avoid and which alternatives can be offered. In the presence of the therapist, the patient seemed reluctant to do therapy. When Mrs. N returned home after therapy, without the supervision of the therapist, the physiotherapy techniques taught were not performed at home, the medication was not taken, and the pain increased. Mrs. N told the physiotherapist that the pain in her joints came on its own and would go the same way.

Antecedents and consequences

Antecedents

Antecedent to the phenomenon that occurred so that the concept of self-management emerged (factors of self-management).

- 1) Knowledge: it is a major factor in self-management. Patients with chronic diseases such as DM have certainly received enough education from health care providers including how diet and physical exercise in DN patients. However, due to lack of knowledge of patients in implementing DN management, patients are not maximized in carrying out DN management. It is necessary to assess patient knowledge before being given a self-management intervention to determine patient knowledge.
- 2) Self-efficacy: it means one's own perception of how well one can function in a given situation. DM patients' perception of their condition is quite unique. They think that DN patients do not need to consume a lot of sugar and should eat with rice yesterday, so this perception must be straightened out through education.
- 3) Social support: it is very important in self-management. The successful of self-management of DN patients is also determined by how well social support is provided. Social support can be provided by a partner, either husband or wife.
- 4) Health literacy or insight into health: the lower the individual's health insight, the lower the self-management behavior. Therefore, insight into health, especially the disease suffered, is important in the antecedent of self-management.
- 5) Health belief
- 6) Motivation

Consequences

Consequences of self-management can be interpreted as something that happens after self-management is given. Individuals who have carried out self-management behavior well are expected to improve health status, reduce mortality, improve quality of life, reduce patient health care costs, improve health behavior.



Defining empirical referral

Empirical referents are methods to measure or define attributes of the concept and relate to attributes that define and connect to the theoretical foundation of the concept. Empirical concepts for self-management include.

- 1) Self-management is measured by using the Diabetes self-management questionnaire (DSMQ) (Schmitt et al., 2013)
- 2) Goal-setting evaluation tools to evaluate goals from patient who performs self-management (Teal et al., 2012)
- 3) Health care communication questionnaire (HCCQ) to measure communication of health workers when delivering self-management to the patient (Gremigni, Sommaruga, & Peltenburg, 2008).

Discussion

Self-management is very important to manage patient with DM including prevent its complications. However, using self-management is still huge and limited in term of explaining about its concept analysis. Designing strategies to improve self-management needs understanding the problems during conducting self-management with DN. the results of the concept analysis reveal that many instruments can be used to assess self-management such as Diabetes Self-management Questionnaire (DSMQ), goal setting evaluation, and health care communication questionnaire (HCCQ). Patients with DM should be performed self-management appropriately including how much calorie that should be intake, what kind of exercise for them, taking medication regularly, quitting smoking, and monitoring blood glucose. Performing self-management in patient with DM can improve their behavior change and impact on metabolic marker such as HbA1c, blood glucose, lipid profiles, renal function, and blood pressure. Therefore, Nurse should educate DM patient regarding how they conduct self-management properly in order to prevent its complications.

CONCLUSION

The process of concept analysis is a basic knowledge and understanding of nurses in universal especially for nurses who working in **LLDIKTI Wilayah X**

non-communicable disease particularly DM by identifying the attributes, antecedents, and consequences of the concept of self-management. Nurses should develop evidence-based practice or research for nursing interventions regarding self-management in patient with chronic illness.

ACKNOWLEDGMENT

This work was supported by the *Lembaga Pengelola Dana Pendidikan* (LPDP) (grant No. 20201221645634)

REFERENCES

- American Diabetes Association. (2020). Standard medical care in diabetes 2020. *Journal of Applied Research and Education*, 43(January).
- Anders, H. J., Huber, T. B., Isermann, B., & Schiffer, M. (2018). CKD in diabetes: Diabetic kidney disease versus nondiabetic kidney disease. *Nature Reviews Nephrology*, 14(6), 361–377. <https://doi.org/10.1038/s41581-018-0001-y>
- de Boer, I. H., Caramori, M. L., Chan, J. C. N., Heerspink, H. J. L., Hurst, C., Khunti, K., Liew, A., Michos, E. D., Navaneethan, S. D., Olowu, W. A., Sadosky, T., Tandon, N., Tuttle, K. R., Wanner, C., Wilkens, K. G., Zoungas, S., Lytvyn, L., Craig, J. C., Tunnicliffe, D. J., ... Rossing, P. (2020). Executive summary of the 2020 KDIGO Diabetes Management in CKD Guideline: evidence-based advances in monitoring and treatment. *Kidney International*, 98(4), 839–848. <https://doi.org/10.1016/j.kint.2020.06.024>
- Gheith, O., Farouk, N., Nampoory, N., Halim, M. A., & Al-Otaibi, T. (2016). Diabetic kidney disease: world wide difference of prevalence and risk



- factors. *Journal of Nephroparmacology*, 5(1), 49–56. <http://www.ncbi.nlm.nih.gov/pubmed/28197499><http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=PMC5297507>
- Hisni. (2019). The effect of a cardiovascular self-management support program on preventing cardiovascular complication behaviors and clinical outcomes in the elderly with poorly controlled type 2 diabetes mellitus in Indonesia. *Walailak Journal of Science and Technology*, 16(1).
- Hisni, D., Rukmaini, R., Saryono, S., Chinnawong, T., & Thaniwattananon, P. (2019). Cardiovascular self-management support program for preventing cardiovascular complication behaviors and clinical outcomes in the elderly with poorly controlled type 2 diabetes mellitus in Indonesia: A pilot study. *Japan Journal of Nursing Science*, 16(1), 25–36. <https://doi.org/10.1111/jjns.12208>
- International Diabetes Federation (IDF). (2021). *IDF Diabetes Atlas 10th Edition* (10th Editi). International Diabetes Federation.
- Lopez-Vargas, P. A., Tong, A., Howell, M., & Craig, J. C. (2016). Educational Interventions for Patients With CKD: A Systematic Review. *American Journal of Kidney Diseases*, 68(3), 353–370. <https://doi.org/https://doi.org/10.1053/j.ajkd.2016.01.022>
- Rahman, F. (2016). Analisis Biaya Layanan Diabetes Melitus dengan Komplikasi dan Faktor Penentu Inefisiensi Penanganan Diabetes Melitus di Rawat Inap RSUD Banyuasin Tahun 2015. *Jurnal ARSI*, 3(1), 29–41.
- Schmitt, A., Gahr, A., Hermanns, N., Kulzer, B., Huber, J., & Haak, T. (2013). The Diabetes Self-Management Questionnaire (DSMQ): development and evaluation of an instrument to assess diabetes self-care activities associated with glycaemic control. *Health and Quality of Life Outcomes*, 11(1), 138. <https://doi.org/10.1186/1477-7525-11-138>
- Teal, C. R., Haidet, P., Balasubramanyam, A. S., Rodriguez, E., & Naik, A. D. (2012). Measuring the quality of Patients' goals and action plans: development and validation of a novel tool. *BMC Medical Informatics and Decision Making*, 12(1), 152. <https://doi.org/10.1186/1472-6947-12-152>
- Walker, L. O., & Avant, K. C. (2019). *Strategies for Theory Construction in Nursing* (6th ed.). Pearson Education Limited.

