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THE RELATIONSHIP BETWEEN SELF-EFFICACY AND SELF-CARE ACTIVITIES AT HOME ON THE QUALITY OF LIFE OF TYPE II DIABETES MELLITUS PATIENTS: A CROSS SECTIONAL STUDY

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ABSTRACT

The prevalence of Diabetes Mellitus as a Global Burden Disease increases every year and will occur in half the world's population. The problem is low awareness of disease, decreased welfare, less productivity and a burden on families, society and the state. The research Objective was to identify the relationship between Self – Efficacy and Self-care Activity at home on the quality of life of T2DM suffers in the work area of Public Health Centre. This research study correlate Self Efficacy and Self-care Activity with Quality of Life. Sampling used a purposive sampling technique with the Slovin formula to obtain 120 respondent. Data Collection used the Mc Dowell Self Efficacy Questionnaire and DSCA dan DQoL Questionnaire. The results of the study showed that composite Self Care and Self Care Activity at home were in the poor category at 58,3% and the quality of life of T2DM patients was in the poor category at 50,8%. The results of the Chi – Square Test showed P Value 0,00, there was a significant relationship between Self-efficacy and self-care activities and quality of life. Conclusion: low self-care efficacy and activities have a negative impact on quality of life. Suggestion: Continuous education and collaboration with community Group so that fellow T2DM sufferers motivate them. Education increases physical activity, addresses complaints such as peripheral neuropathy and is willing to check blood sugar and visit health services regularly.

Keywords: *Diabetes Mellitus Type 2; Quality of Life; Self-Care Activities; Self-Efficacy*

PENDAHULUAN

Diabetes mellitus is a chronic disease characterized by increased levels of glucose in the blood which causes the body to need insulin regulation as a controller, absorb and process glucose into energy. The prevalence of DM in the world reached 463 million people in 2019 and is predicted to increase by 51% in 2045 (Williams, 2019). The average age of suffering from DM is 57 years (Mayberry et al., 2023). Indonesia is ranked 7th out of 10 countries with the highest number of diabetics in 2019 with 10.7 million cases (Litbangkes Kemenkes, 2020). 90-95% of DM is Type II (Dinas Kesehatan Provinsi Riau, 2019). 90-95% of DM is Type II (Kementerian Kesehatan RI, 2018).

DM sufferers in Riau Province in 2020 were 90,796 people, only 70.2% received services according to standards (Dinas Kesehatan Provinsi Riau, 2020). In Pekanbaru City, DM is the 3rd order of the 10 largest diseases but only 39.18% get health services due to low public awareness (Dinas Kesehatan Kota Pekanbaru, 2019). In Pekanbaru City, DM is the 3rd order of the 10 largest diseases but only 39.18% get health services due to low public awareness (14%) while the lowest are KaryaWanita Health Center and Muara Fajar Health Center. DM sufferers in Puskemas Karyawanita are 699 people and only 13% use health services. The low utilization of health services at the Karyawanita Health Center needs serious attention from the government, both regional and ministerial levels in overcoming the problem of DM as a *global burden disease* (GBD) today (Lin, 2020). This is related to self-efficacy or a person's belief that he is able to do self-care independently but in a long time complications will arise that can endanger the patient himself.

Long insulin deficiency leads to organ damage, complications and life-threatening, it can be prevented if good management (International Diabetes Federation, 2019). Long insulin deficiency leads to organ damage, complications and life-threatening, it can be prevented if good management (Chaidir et al., 2017). A decrease in quality of life is followed by the patient's inability to do *self-care* independently. Self-care is a picture of a person's behavior consciously and limited to oneself. The results of the study found that there was a relationship between the self-efficacy of DM patients and self-care ability in DM patients. In self-care, self-efficacy is needed so that patients are able to prevent diabetic complications (Aria Wahyuni & Dian Ramayani, 2020).

Self-care of DM patients at home includes dietary regulation, monitoring blood sugar levels, medication therapy, foot care and exercise. *Self-care* was developed by Dorothea Orem in 1959 which emphasizes the body's ability to improve body functions. If *self-care* is done well, it has a good impact on the quality of the body and vice versa will have a negative impact if done less well. So it needs education for diabetics so that they can do self-care aimed at improving their quality of life.

Another effort that can be done is the use of health services which are efforts to improve the quality of life that is often ignored by DM sufferers in the work area of the Karyawanita Health Center. The urgency of this research is to assist the government in screening health problems in DM sufferers and become the basis for the implementation of nursing actions in the form of health education in the community later. This is in accordance with the objectives of diabetes mellitus case management by the Ministry of Health, namely eliminating complaints, improving quality of life and reducing the risk of acute complications, preventing and inhibiting the progression of micro complicators and macroangiopathy and the ultimate goal is to reduce morbidity and mortality. Although this research has often been carried out in different locations, for Puskesmas Karyawanita, it has never been so this study is useful to determine the self-care activities of Type II DM patients that can improve the quality of life of Type II DM patients in the work area of Puskesmas Karyawanita

Based on the results of initial meetings with several elderly Type II DM, the first experience when knowing that he had diabetes, at first felt inferior and did not want to meet with relatives because it was considered an embarrassing disease, then reluctant to do control to the health center. In general, those who come and routinely control are patients who have experienced complications such as long-healed wounds, visual disturbances, peripheral neuropathy and other complaints.

The officer said that there are many DM patients in our work area, but rarely visit so we regularly go to the posyandu, even when the posyandu is a toddler to do a blood sugar check. The achievement of Type II DM treatment requires the desire and motivation of the patient himself to carry out routine examinations so that complaints are reduced and quality of life increases. Improving the quality of life can be pursued by increasing self-confidence (self-efficacy) and being able to carry out daily activities. This is the importance of this research being carried out and can be continued with community service activities later to improve the ability of Type II DM elderly in carrying out daily activities.

RESEARCH METHODS

This is the importance of this research being carried out and can be continued with community service activities later to improve the ability of Type II DM elderly in carrying out daily activities. The sampling technique uses *purposive sampling* with the number of samples using the Slovin formula and considers inclusion criteria, namely patients can communicate well and do not experience decreased consciousness and diabetic complications. As for the Slovin formula, $n = N / (1 + N*e^2)$, by population N= 172 by population 5% (e=0,05) So that the number of samples is 120 respondents.

The preparation stage is identifying problems, preparing proposals and obtaining permits, making questionnaires and selecting samples according to criteria. The low visits of DM patients at the Puskesmas require researchers to visit patients one by one at the patient's home in the work area of the KaryaWanita Health Center.

In this preparation stage, the multiplication of instruments in the form of questionnaires consisting of 3 is a self-efficacy questionnaire using the DMSES Questionnaire (*Diabetes Management Self-Efficacy Scale*) In this preparation stage, the multiplication of instruments in the form of questionnaires consisting of 3 is a self-efficacy questionnaire using the DMSES Questionnaire Mc. Dowell yang telah diuji validitas *Pearson Product Moment* r=0,647 (valid) and Reliability Test with *Croanbach Coefficient Alpha* with results 0,959 (reliable) by Nooroozi & Tahmasebi (2014). Measurement of self-care activities at home using the SDSCA questionnaire (*summery of Diabetes Self Care Activities*) and quality of life using the DQoL Questionnaire *(Diabetes Quality of Life Measure*). The implementation stage begins with giving an explanation to respondents and informed consent, data confidentiality is maintained with anonymity. Furthermore, respondents filled out 3 questionnaires.

Data processing using univariate analysis and bivariate analysis with *Chi-Square Test* with ordinal (categorical) measuring scale. *Self-efficacy* (SE) and *Self-Care* (SC) assessments are composite with good SE and SC criteria, good category, if one or both are not good, then the composite results are "not good". The results of the composite category were associated with the quality of life of DM patients which was also categorized as good quality and poor quality.

This study has passed ethical tests by providing benefits greater than the risks received by Type II DM patients. This Ethics Review was conducted by the Health Research Ethics Commission Poltekkes Kemenkes Riau with a certificate number: LB.02.03/6/13/2023.

RESULT AND DISCUSSION

The study was conducted on 120 people with Type II DM in the Working Area of the KaryaWanita Pekanbaru Health Center in March – July 2023. The results of the study were presented into a frequency distribution table for characteristic variables consisting of

sex and employment status, self-efficacy variables, self-care activity variables and quality of life of Type II DM patients. The results of univariate analysis of the characteristics of research respondents are presented in Table 1.

Table 1. Characteristics Responden

No	Characteristics	N	F
1	Characteristics		
	- Man	17	14,3%
	- Woman	103	85,8%
	Total	120	100%
2	Working Status		
	- Work	22	18,3%
	- Not Working	98	81,7%
	Total	**120**	**100%**

Based on Table 1, it is known that most Type II DM patients in the working area of the KaryaWanita Pekanbaru Health Center are female, namely 103 respondents (85,8%). Most respondents are not working i.e. 98 respondents (81,7%). To see a picture of self-efficacy, self-care activity and composite variables can both be seen in Table 2.

Table 2. Frequency Distribution of Respondents based on Self-Efficacy, Self Care Activity and Composite in Type II DM patients in the Working Area of Puskesmas Karya Wanita Pekanbaru

No	Dependent Variables	N	F
1	Self-efficacy of Type 2 DM patients		
	- High	67	55,8%
	- Low	53	44,2%
	Total	120	100%
2	*Self Care Activity* of Type 2DM Patients		
	- Good	52	43,3%
	- Poor	68	56,7%
	Total	120	100%
3	Composite High Self-Efficacy and Good Self Care Activity		
	- Good	50	41,7%
	- Poor	70	58,3%
	Total	**120**	**100%**

Based on Table 2, it is known that the self-efficacy of Type II DM patients is in the high category of 55.8%, the self-care activities of Type II DM patients are in the poor category of 56,7%. The composite results were a combination of the two dependent sub-variables, it was found that only 41.7% of Type II DM patients were in the category of High Self-Efficacy and good home self-care activities. To see the frequency distribution of quality of life of Type II DM patients can be seen in Table 3

Table 3. Distribution of Respondent Frequency based on Quality of Life in Type II DM patients in the Working Area of Puskesmas Karya Wanita Pekanbaru

No	Variabel Independen	N	F
1	Kualitas Hidup Pasien DM Type 2 berdasarkan kepuasan		
	- Baik	59	49,2%
	- Kurang Baik	61	50,8%
	Total	**120**	**100%**

Based on Table 3, it is known that the quality of life of Type II DM patients in the good category is 49.2%. This shows that half of the patients have a good quality of life during the treatment period of Type II DM.

Relationship between Self-Efficacy and Self-Care Activities at Home on the Quality of Life of Type II DM Patients

Results of bivariate analysis of the study using the Chi-square Test by linking independent variables (composite self-efficacy and self-care activities at home) with dependent variables (quality of life) in Type II DM patients.

Table 4. The relationship between Self-Efficacy and Self-Care Activities at Home on the Quality of Life of Type II DM Patients in the Working Area of Puskesmas Karya Wanita Pekanbaru

Self-Efficacy and Home Self-Care Activities (compositely)	Quality of Life of Type II DM Patients				Total	P Value	OR
	Good		Poor				
	N	%	N	%			
Good	47	94,0	3	0,06	50	0,000	75,722
Poor	12	17,1	58	82,9	70		
Total	**59**	**49,2**	**61**	**50,8**	**120**		

Based on Table 4, it can be seen that there is a tendency for Self-Efficacy and Activities Good self-care at home can lead to improved quality of life of Type II DM patients. The results of statistical tests using Pearson Chi-Square with a degree of meaning of 95%, so that the p value is 0.000. This suggests that there is a significant relationship between self-efficacy and home self-care activities and quality of life for Type II DM patients. Based on the OR score, it was found that Type II DM patients who had poor self-education and self-care compositely had a 75.72 times risk of having a poor quality of life.

Efficacy is the perception of a person who considers himself capable of doing something to achieve a goal. Based on the results obtained that most DM patients have high self-efficacy but are not in line with the physical activity carried out, most are in the poor category. This research is in line with Manurung's research which explains most respondents are in the high category which is influenced by age, gender, education, occupation, income and length of illness Someone with high efficacy has the potential to prevent failure and get up immediately if experiencing problems (Chivese et al., 2022).

Research results (Bakir & Sezer, 2023) It was found that efficacy can improve glucose control so that DM patients who have good self-efficacy can help themselves to control their blood sugar levels. According to

the researchers' analysis, there are several factors in this study that can cause high efficacy and low implementation of physical care activities including age. Most of the Type II DM sufferers in the working area of Puskesmas Karyaperempuan are in the elderly age group. The age factor determines a person's ability to perform an action. In general, the elderly have the desire to take care of themselves, but because of their limitations, the implementation of self-care becomes difficult to do.

Self-care activities at home aim to optimize metabolic control in the body, prevent acute and chronic complications, optimize quality of life and reduce costs incurred for the treatment of diabetes. Most self-care activities of people with Type II DM are in the poor category. While other studies found self-care activities are in the moderate category because DM sufferers with a younger age tend to be able to do regular physical activity than the elderly. However, DM sufferers are recommended to do physical activity according to age and regular physical freshness level 3-4 times a week and 20-30 minutes per day such as walking, light running, cycling and swimming (International Diabetes Federation, 2019). One of the life style management in Type II DM patients with obesity is expected to target weight loss by increasing physical activity. However, in Type II DM patients with a history of clinical cardiovascular disease, have specific physical activity interventions (Davies, 2018).

Quality of life in Type II DM patients illustrates patient satisfaction in diabetes care. The results of this study are in line with several other studies that explain that quality of life can be affected by physical activity and how patients are able to improve their health (Vinsalia & Handajani, 2021). The quality of life of Type II DM patients varies based on the typology of DM. In Type II DM patients quality of life is associated with patient self-efficacy, diabetes medication adherence, diabetic distress and depressive symptoms (Mayberry et al., 2023).

People with DM have a poor quality of life and need a home care strategy by considering psychosocial factors (Huayanay-Espinoza et al., 2021). Other factors are life satisfaction, the impact of illness and concern for illness (Namira, 2021). If life satisfaction is low then the quality of life becomes poor (Vinsalia & Handajani, 2021). Likewise with the impact of disease and concern about diabetes suffered but this increase in blood glucose levels can be prevented with self-care consisting of regulating diet, exercise, drug therapy, foot care, and monitoring blood sugar (Chaidir et al., 2017). In line with the results of research on the form of behavior in controlling blood sugar levels consists of the body's response to change, forms of motivation, physical activity, dietary adherence, therapy management, blood sugar control compliance, healthy lifestyles and the impact of lifestyle changes (Juwita & Febrina, 2018).

Some studies suggest that living with diabetes has a negative influence on the quality of life of sufferers even with or without complications. However, patients need to be educated to be able to increase productivity so as to produce a quality life. This education can help Type II DM patients change behavior and improve *health outcomes* according to diabetes care standards (American Diabetes Association, 2020). Nurses can facilitate the implementation of education both to patients at home and to the patient's family.

Type II DM patients with foot injuries will require ongoing home care to maintain quality of life. However, there are several factors that influence patient

behavior in self-monitoring blood sugar levels, one of which is high self-efficacy after discharge planning before the patient goes home and higher post-discharge self-efficacy(Chin et al., 2021).

CONCLUSION

Most of the patients' self-efficacy and self-care activities are in the poor category. Most patients have a poor quality of life. There is a relationship between self-efficacy and self-care activity on the quality of life of DM Type II patients in the work area of Puskesmas KaryaWanita Pekanbaru. The low self-care activities and self-efficacy of these patients need attention from various parties both from families, surrounding communities and local governments. The need to provide Health Education to patients and families to care about the self-care of Type II DM patients to prevent complications and assist the government in overcoming the current NCD problem which has become a Global Burden Disease (GBD) problem. In addition, the KaryaWanita Health Center needs to create a DM community group so that Type II DM sufferers can motivate each other and educate other people.

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