SELF CARE ON DIABETES MELLITUS MEDICAL PATIENT AT HEALTH CENTER TUBAN AREA

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Abstract. Self care is a form of self-care for DM sufferers to maintain health and life, overcome complications caused and prevent complications from occurring, but until now complications are still found in DM sufferers. The aim of the study was to find out self-care for DM sufferers in the Tuban Health Center area. This research uses a descriptive research design with a cross-sectional approach. The study population of active prolanis participants with diabetes mellitus at the Tuban Health Center totaled 126 people with a sample of 96 people. using techniques simple random sampling. The research variable is DM self-care which includes nutritional therapy, physical exercise, foot care, taking medication and monitoring blood sugar. The research instrument used the SDSCA questionnaire. The results showed that almost all (96%) people with diabetes mellitus had self care nutritional therapy is in good category, most (56%) DM sufferers do less physical exercise, almost half (46%) DM sufferers do foot care in good category, almost all (88%) DM sufferers do pharmacological therapy in good category and almost all (91%) DM sufferers lack monitoring of blood sugar. DM sufferers do self care DM kindly, but still there self care What is lacking is the physical exercise component and blood sugar monitoring. To increase self care DM sufferers both in all categories are required to provide intervention, motivation, and further health education related to diabetes mellitus self care DM sufferers during prolanis activities so as to improve quality of life and prevent and overcome complications due to diabetes.

Keywords: diabetes mellitus, self-care, complications

1 INTRODUCTION

Self care is a form of self-care that is a program of responsibility for DM sufferers to maintain health, life, and heal, manage complications that arise and prevent complications from occurring in diabetics (Basir et al., 2019; Sasombo et al., 2021). However, until now complications still occur in people with diabetes, even diabetes mellitus is the main cause of death caused by complications (Priyanto & Juwariyah, 2021; Haskas et al., 2022). A 2021 report from the International Diabetes Federation (IDF) states that 537 million adults have diabetes and it causes 6.7 million deaths. Indonesia is in 5th place with diabetes mellitus with a total of up to 19.47 million people and ranks 6th in the list of deaths due to diabetes in Indonesia up to 236,000 people (IDF, 2021).Based on BPS data for Tuban Regency, diabetes mellitus is included in the percentage of the 15 most common diseases in Tuban Regency in 2021, which is 9.50% and will increase in 2022 to 10.80% (BPS, 2022). Based on Riskesdas data for 2018, diabetes mellitus causes 3.7 million deaths in Indonesia. One of the reasons for this high mortality rate is chronic effects that arise as complications in other organs (Haskas et al., 2022; Kemenkes, 2018; Dewi et al., 2022).

The complication rate in diabetics is around 15% for type 1 diabetes and 85% for type 2 diabetes (Riamah, 2022; Zarzycka & Zietek, 2019). As many as 1785 people in

Indonesia who suffer from diabetes experience complications. diabetes include neuropathy (63.5%), retinopathy (42%), nephropathy (7.3%), microvascular disease (6%) and diabetic foot (15%) (Hartono, 2019; Majeed & Thabit, 2018). In Corina's study (2018), there are still complications in diabetic patients, where the most common complications are diabetic neuropathy (45.6%), microvascular complications (57%), diabetic retinopathy (20.7%), and diabetic nephropathy (33.7%). %). While macrovascular complications (43%), the most common complications were diabetic foot (29.9%), coronary artery disease (27.8%), and cerebravascular (19.4%) (Saputri, 2020; . From the data above, it can be concluded that complications are still found in people with diabetes mellitus.

Diabetes complications start from metabolic disorders that lead to hyperglycemia. High blood sugar has the effect of increasing the amount of fat in the blood and damaging small blood vessels (microvascular), which in the long term will result in diabetic neuropathy and damage to vital organs of the body such as the heart, kidneys, brain, digestive system, five senses, etc (Diani et al., 2018; Heinemann et al., 2018; Barnard et al., 2017). One of the causes of DM complications is because DM patients are unable to change their lifestyle properly, namely not being optimal in carrying out self-care independently (self care) (Diani et al., 2018; Maguire, 2018). These complications can result in disability and death if handled slowly [2], [11]. Factors that can affect self-care include age, gender, education level, length of illness, and family support (Ningrum et al., 2019). The result of a lack of knowledge can also lead to a decrease in self-care which can have an effect on self care patients (Nusantara & Kusyairi, 2022).

The government has carried out controls related to DM problems, but until now the number of people with diabetes mellitus is still quite high and is increasingly compounded by the emergence of various diseases due to complications of diabetes mellitus (Basir et al., 2019). One of the efforts to manage and overcome DM problems is to increase capacity and knowledge to control the disease, including self-care (self care) for diabetes.Self care Treatment for diabetes mellitus includes nutritional therapy (diet management), foot care, physical exercise (exercise), monitoring blood sugar, and taking diabetes medication (Basir et al., 2019).Self care DM sufferers can be improved by carrying out various ways, one of which is by providing knowledge about health which aims to change the behavior of DM sufferers (Nusantara & Kusyairi, 2022).

2 RESEARCH METODS

The design of this study was descriptive. The study population was all active prolanis participants suffering from diabetes mellitus at the Tuban Health Center with a total of 126 people. The sample size is 96 patients using the simple random sampling technique. The variable in this study is self-care for DM sufferers. Retrieval of data with the SDSCA questionnaire and descriptive analysis with a frequency table.

RESULT

Table 1. Characteristics of Diabetes Mellitus Patients in the Tuban Health Center Area in June 2023 (n=96)

Characteristics	Frequency (n)	Percentage (%)
Age		
Early Adult (26-35 years)	0	0%
Late Adult (36-45 years)	15	16%
Early Seniors (46-55 years)	23	24%
Late Seniors (56-65 years)	52	54%
Manula (>65 years)	6	6%
Total	96	100%
Gender		
Woman	42	44%
Man	54	56%
Total	96	100%
Education		
Finished SD/Equivalent	3	3%
High School/Equivalent	15	16%
High School/Equivalent	63	66%
College	15	15%
Total	96	100%
Long Suffering DM		
3-12 Months	9	9%
1-5 Years	69	72%
>5 Years	18	19%
Total	96	100%

Table 1 shows that of the 96 patients, most of them were late elderly (56-65) years, namely 52 patients (54%). Most of the patients were female, namely 54 patients (56%). Most of the sufferers had high school/equivalent education level, namely 63 sufferers (66%). Table 1 also shows that the majority of patients who suffer from DM are in the range of 1-5 years, namely 69 patients (72%).

Table 2. Frequency Distribution of Nutrition Therapy (Diet Management) in Patients with Diabetes Mellitus in the Tuban Health Center Area in June 2023 (n=96)

Behavior Category	Frequency (n)	Percentage (%)
Good	92	96%
Enough	2	2%
Less	2	2%
Total	**96**	**100%**

Table 2 shows almost all of the DM sufferers who did self care the nutritional therapy component (diet management) was included in the good category, namely 92 patients (96%).

Table 3. Frequency Distribution of Physical Exercise (Sport) in Patients with Diabetes Mellitus in the Tuban Health Center Area in June 2023 (n=96)

Behavior Category	Frequency (n)	Percentage (%)
Good	34	35%
Enough	8	8%
Less	54	56%
Total	**96**	**100%**

Table 3 shows that the majority of DM sufferers do self care component of physical exercise (exercise) in the less category as many as 54 sufferers (56%).

Table 4 Frequency Distribution of Foot Care for Patients with Diabetes Mellitus in the Tuban Health Center in June 2023 (n=96)

Behavior Category	Frequency (n)	Percentage (%)
Good	44	46%
Enough	32	33%
Less	20	21%
Total	**96**	**100%**

Table 4 can be seen that almost half of DM sufferers have self care component of foot care in the good category, namely as many as 44 patients (46%).

Table 4. Distribution of Frequency of Taking Medication in Patients with Diabetes Mellitus in the Tuban Health Center Area in June 2023 (n=96)

Behavior Category	Frequency (n)	Percentage (%)
Good	84	88%
Enough	7	7%
Less	5	5%
Total	**96**	**100%**

Table 5 can be seen that almost all DM sufferers have self care components of taking medication in the good category, namely 84 patients (88%).

Table 5. Frequency Distribution of Blood Sugar Monitoring in Patients with Diabetes Mellitus in the Tuban Health Center Area in June 2023 (n=96)

Behavior Category	Frequency (n)	Percentage (%)
Good	0	0%
Enough	9	9%
Less	87	91%
Total	**96**	**100%**

Table 6 can be seen that almost all DM sufferers have self care the component of monitoring blood sugar is lacking, namely as many as 87 respondents (91%).

3 DISCUSSION

Characteristics of Diabetes Mellitus Patients in the Tuban Health Center

The results showed that of the 96 patients, most of them were late elderly (56-65 years), namely 52 patients (54%). Most of the patients were female, namely 54 patients (56%). Most DM sufferers have high school/equivalent education level, namely 63 respondents (66%) and the majority of DM sufferers in the range of 1-5 years, namely 69 sufferers (72%).

According to Orem (2010) increasing age is often associated with impaired sensory function and various limitations. Satisfaction with personal care needs increases effectively with age and ability. DM risk factors appear after the age of 45 years because people at this age do not move much, gain weight, decrease muscle mass, the aging process will cause β-cell atrophy gradually. In addition, at the age of >40 there is also an increase in glucose intolerance (Komariah & Rahayu, 2020; Park & Le, 2018).

Ningrum (2019) states that gender can contribute to diabetes self-control. Female DM patients show better self-care management than male patients. Both men and women can take care of themselves for diabetes, but in fact, women seem to be more concerned about their health so they try to take optimal care of themselves when they have the disease. According to educational theory, positive behavior will produce better behavior, which allows us to be open and objective when receiving information, especially in DM self-care actions. Patients with a higher level of education are generally more knowledgeable about implementing diabetes self-care and are more likely to seek information about their disease through the media than patients with low education (Ningrum et al., 2019; Borot et al., 2018; Klonoff, 2016).

Ningrum (2019) states that the length of time a person has diabetes affects diabetes self-care because people with a previous diagnosis understand more the importance of diabetes self-care behavior, making it easier to find information related to diabetes care. Sufferers who have been diagnosed with this disease for many years are better able to cope with their disease and its treatment and will better adapt to their illness by incorporating the new lifestyle into their daily lives. Age can affect the occurrence of DM, this is because as you get older it will cause an imbalance in blood sugar in the body (Lawton et al., 2018). Age can affect DM self-care, as people get older, DM sufferers will experience a decrease in their ability to carry out activities, one of which is to do DM self-care (Lawton et al., 2018). Self care for DM can not only be done for female DM sufferers, but also for male sufferers. The level of higher education has an effect on DM self care. Education is an important factor for DM sufferers to be able to understand monitoring blood sugar and understand DM self-care. The length of time a person has diabetes has an effect on self-care because patients with diabetes experience better disease management and self-care longer.

Nutrition Therapy (Diet Management) in Patients with Diabetes Mellitus in the Tuban Health Center Area

The results showed that almost all diabetes mellitus sufferers in the Tuban health center area had a nutritional therapy component (diet management) in the good category of 92 respondents (96%). The diet of diabetics must be considered, including eating foods that contain cholesterol must be limited because hypercholesterolemia will cause atherosclerosis. The standard nutritional composition recommended for diabetics is carbohydrates 45-65%, protein 10-20%, fat 20-25%, cholesterol 20-25%, fiber 25 g/day, salt and sweeteners can be used in moderation. his. Several aspects of the nutritional therapy component (diet management), namely planning a diet, eating fruits and vegetables, consuming high-fat foods and dairy products, managing carbohydrate intake and eating sweet snacks, were calculated in the last week (Windani et al., 2019; Abrar et al., 2019; Vallejo et al., 2017).

In general, DM sufferers have maintained nutritional therapy/dietary management, which includes regulating carbohydrate intake, consuming fruits and vegetables, not consuming meat and sugar-containing snacks during the past week. This condition is a concern for a DM sufferer in maintaining nutritional therapy (diet management). Compliance with DM patients regarding nutritional therapy (dietary management) is influenced by knowledge about the importance of dietary management and the impact that can occur if people do not comply with the DM dietary management.

Knowledge about diet management of DM sufferers is obtained when sufferers participate in prolanis activities which are held routinely once a month. One of the prolanis activities that can influence nutritional therapy (diet management) for DM sufferers is the provision of health education regarding their health, especially regarding diabetes mellitus for DM sufferers. However, there are still DM sufferers with self-care components of nutritional therapy (diet management) in the less category. This is caused because DM sufferers lack commitment to adherence to nutritional therapy (diet management).

Physical Exercise (Sport) in Patients with Diabetes Mellitus in the Tuban Health Center Area

The results showed that most DM sufferers in the Tuban health center area had a physical exercise (exercise) component in the less category as many as 54 respondents (56%). According to Sudoyo (2014) physical exercise/exercise increases glucose absorption by using insulin to lower glucose levels. Physical exercise (exercise) should be done in the morning before 06:00 for about half an hour. Morning air is always fresh and pollution-free, so it's more comfortable to exercise and not stress. The principles of exercise for diabetics are as follows: a) regular exercise frequency 3-5 times each week; b) light to moderate intensity (maximum heart rate 60-70%); c) duration from 30 to 60 minutes; and d) types of exercise such as aerobics.

DM self care in the component of physical exercise (exercise) is in this less category because some DM sufferers in the Tuban health center area are late elderly. Affected elderly people are often weak and at risk for complications, so they are less likely to

exercise (exercise) regularly within a week. Diabetics who are classified as elderly will experience difficulties in carrying out physical movements (exercise). In prolanis activities, joint gymnastics is also held, but gymnastic sports activities are only carried out once a month. DM sufferers tend to only do gymnastics when participating in prolanis activities held by the health center.

Foot Care for Patients with Diabetes Mellitus in the Tuban Health Center

The results showed that almost half of the diabetes mellitus sufferers in the Tuban health center area had a foot care component in the good category, namely 44 respondents (46%). Since foot complications are the most common complications leading to medication, amputation or lifelong disability in patients, foot care is very important for people with diabetes (Windani et al., 2019). Some things that must be considered when caring for the feet are that people with diabetes must check their feet every day, wash their feet thoroughly and dry them with a towel, check and cut their nails regularly, wear comfortable shoes, and check the components of the shoes used, and use lotion or moisturizer (Abrar et al., 2019).

Nearly half of sufferers have good foot care. Because during the prolanis activity, education had been given about foot care for people with DM. Gender also affects DM foot care, because female sufferers tend to pay more attention and are diligent in carrying out daily foot care. Diabetics have the possibility of experiencing diabetic feet, but this condition can be prevented by doing regular and good foot care.

Pharmacological Therapy (Drinking Medication) in Patients with Diabetes Mellitus in the Tuban Health Center Area

The results of the research on the components of pharmacological therapy (taking medication) showed that almost all patients had components of pharmacological therapy (taking medication) in the good category, namely 84 respondents (88%). Pharmacological therapy (taking medication) greatly affects blood sugar control, because this diabetes drug has characteristics that increase insulin secretion, reduce insulin resistance, reduce sugar absorption in the small intestine, and inhibit glucose. If the patient does not comply with taking medication, it will result in an increased risk of complications and aggravation of the disease (Srywahyuni et al., 2021).

DM sufferers always get health education in pharmacological therapy (taking medication) during prolanis (Igla et al., 2018). By participating in this prolanis activity, DM sufferers can find out the benefits of taking diabetes medication regularly and the impact if you don't regularly take diabetes medication. Taking diabetes medication every day in the past week and using insulin regularly can control blood sugar in the body. If blood sugar in the body is controlled, it can prevent complications caused by diabetes.

Blood Sugar Monitoring in Patients with Diabetes Mellitus in the Tuban Health Center Area

This study shows that almost all sufferers have self care the component of blood sugar monitoring that is lacking is as many as 87 respondents (91%). According to Abrar (2019) self-monitoring blood glucose (SMBG) or what is known as self-monitoring of blood sugar is used to detect and prevent hyperglycemia and hypoglycemia. In addition, it will reduce the risk of long-term diabetes complications.

SMBG is the basis for the use of insulin therapy (Ajjan et al., 2018). This monitoring is recommended for patients with unstable diabetes who are prone to severe ketosis, hyperglycemia, and hypoglycemia without mild symptoms. Health workers advise DM sufferers to check their blood sugar only once a month. During prolanis activities, DM sufferers also check blood sugar, but the examination can be done only once per month because prolanis activities are also only held once per month. And the majority of DM sufferers do not have their own blood sugar check tool, so if DM sufferers want to check their blood sugar, they can only check it once a month at the health center.

4 CONCLUSION

From the results of the research that has been done, the following conclusions can be drawn: (1) DM sufferers at the Tuban Health Center are mostly elderly aged between 56-65 years. Most of the sufferers are female. Most of DM sufferers have high school education level / equivalent. Most of the sufferers who suffer from DM are in the range of 1-5 years, (2) Almost all DM sufferers in the Tuban health center area have a self care component of nutritional therapy (diet management) in a good category, (3) Most of the DM sufferers in the Tuban health center area have self care components of physical exercise (exercise) in the less category, (4) Nearly half of DM sufferers in the Tuban health center area have a self care component of foot care in a good category, (5) Almost all DM sufferers in the Tuban health center area have the self care component of taking medication in a good category, (6) Almost all DM sufferers in the Tuban health center area have self care blood sugar monitoring components in the less category. For the future researchers, it can consider instruments that are more flexible for use by people of all ages in order to get more valid results. DM sufferers can improve DM self care behavior which is lacking, namely the components of physical exercise and blood sugar monitoring, so as to improve quality of life and prevent complications and overcome complications due to diabetes mellitus

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