ANALYSIS OF COMPLIANCE WITH DM MANAGEMENTDURING THE COVID-19 PERIOD AT THE SOLOK CITY HEALTH CENTER

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ABSTRACT

Based on the 2018 Basic Health Research (RISKESDAS), one of the PTM whose prevalence has increased significantly is diabetes mellitus reaching 8.5%. prevalence in West Sumatra was 13,834, while the City of Solok was 1,796 in 2018. Diabetes mellitus can increase the risk of death in Covid-19 patients. The purpose of this study was to determine the complianceof Type-II DM patients in the management of the five pillars of DM (diet, taking medication, physical activity, education, and blood sugar control. This study used a descriptive-analytic cross sectional approach. The population was type 2 DM patients who visited the posbindu). The last 3 months amounted to 65 people.The results showed that adherence to medication, diet, education, and blood sugar control had a significant relationship with blood sugar levels with p value = <0.05. it turns out that the most dominant relationship with blood sugar levelsis the regularity of taking medication with (p value 0.002) OR = 72.500. It is hoped that people who suffer from diabetes mellitus can understand the importance of implementing DM management. There is a policy from the Health Office involving family members to care so that the five pillars of DM management can be implemented properly so that DM patients can lead a life without complications.
Keywords: Adherence, DM Clients, Management, Five Pillars of DM

INTRODUCTION

Non-communicable diseases (NCD) are one of the health problems that cause high mortality rates in Indonesia. The main non-communicable diseases that occur in Indonesia include hypertension, diabetes mellitus (DM), cancer, and chronic obstructive pulmonary disease.Based on Basic Health Research[1]. One of the PTM whose prevalence has increased significantly is diabetes mellitus, namely, in 2013 it was 6.9% and in 2018 it increased to 8.5%.[1] The international organization Diabetes Federation (IFD) estimates that there are at least 283 million people aged 20-79 years in the world suffering from diabetes in 2019 or equivalent to a prevalence rate of 9.3% of the total population at the same age. The prevalence of diabetics is 9% female and 9.65% male. It is predicted that this number will continue to increase to reach 587 million in 2030.[2]

The results of Riskesdas 2018 show that the prevalence of diabetes mellitus in Indonesia based on a doctor's diagnosis at the age of 15 years is 2%. This figure shows an increase compared to the prevalence of diabetes mellitus in a population of 15 years in the 2013 Riskesdas results of 1.5%. However, the prevalence of diabetes mellitus according to the results of blood sugar examination increasedfrom 6.9% in 2013 to 8.5% in 2018. This figure shows that only about 25% of diabetics know that they have diabetes.[2] The number of Covid-19 cases in Indonesia as of July 13, 2020, was 76,981, recovered cases were 36,689, and cases died were 3,656. Of all the confirmed cases, some patients already had comorbidities or comorbidities. Diabetes mellitus is one of the non-communicable diseases that has been reported to be suffered by some Covid-19 patients.[2] Based on the results of a preliminary study on Non-Communicable Diseases (NCD) in Indonesia, it is still relatively high, one of which is Diabetes, the prevalence in West Sumatra is 1,396, while the City of Solok is 1,796 in 2018.[6]

Diabetes is an important public health problem and is one of the four priority non-communicable diseases targeted for follow-up by world leaders. The number of cases and prevalence of diabetes has continued to increase over the last few decades.[3] Diabetes mellitus (DM) is a common chronic disease in adults that requires continuous medical supervision and patient self-care education.

However, depending on the type of DM and the patient's age, the patient's nursing needs and care can be very different.[16] Based on the description above, it is necessary to optimize an approach or modification of the educational model during the pandemic to maintain adherence to diet, take medication, exercise, and control blood sugar and can optimize the implementation of the PTM Posbindu Program which focuses on the interaction system of DM patients to improve DM patient compliance in health management. Therapeutic management of diabetes mellitus management consists of 5 main pillars including education, nutritional therapy, physical activity, blood sugar monitoring, and pharmacological interventions:[7] The purpose of the study was to determine the compliance of Type II DM patients in the management of DM by complying with diet, taking medication, and carrying out physical activities, education, and blood sugar control during the COVID-19 pandemic in the Work Area of the Public Health Center in Solok City.

Methods

This study uses a descriptive analytic cross sectional approach that is measuring the dependent and independent variables at the same time. The population is type 2 DM sufferers who visit the PTM Posbindu for the period April to June 2021 in the working area of Puskesmas throughout Solok City. Samples were adult patients aged 20–65 years, patients were taking DM medication, had controlled blood sugar in the last three months as many as65 people. Data were collected by questionnaire. Data analysis in this study used univariate data analysis, bivariate with Chi-Square test, and multivariate with logistic regression.

Results and Discussion

The results showed that type 2 DM patients were in compliance with DM management suchas diet, taking medication, physical activity, education, and blood sugar control.

Table 1 Compliance with Type 2 DM patients in the management of DM (n=65)

Management of Diabetes Mellitus	f	%
Take medicine		
- Obey	26	40
- Not obey	39	60
Diet		
- Obey	30	45
- Not obey	35	55
Sport		
- Regular	8	12
- Irregular	57	88
Education		
- There is	14	35
- There is not any	51	65
Blood Sugar Control		
- Regular	34	58
- Irregular	31	52

Blood Sugar Level			
-	< 200 mg/dL	35	53,8
-	> 200 mg/dL	30	46,2

From the table above, it can be seen that more than half (60%) of respondents do not comply with taking medication, more than some (55%) of respondents do not comply with diet management, most (88%) of respondents do not do regular exercise, more than half (65%) respondents did not receive education according to the needs of the five pillars, and more than half (52%) did not regularly control blood sugar. Partial deficiency (46.2%) of the patient's blood sugar level > 200 mh/dl.

Bivariate Analysis

Table 2 The relationship between DM management and blood sugar levels

Variable	Blood Sugar Level						P-Value	OR	95% CI
	< 200mg/dL		>200mg/dL		Total				
	n	%	n	%	n	%			
Take medicine									
- Obey	25	96,2	1	3,8	26	100	0,000	72,50	8,6-
- Not obey	10	25,6	29	74,4	39	100			606,4
Diet									
- Obey	21	70	9	30	30	100	0,024	3,500	1,2-9,8
- Not obey	14	40	21	60	35	100			
Sport									
- Regular	4	50	4	50	8	100	1,000	0,839	0,1-3,6
- Irregular	31	54,4	26	45,6	57	100			
Education									
- There is	12	85,7	2	14,3	14	100	0.013	7,304	1,4-36,0
- There is not any	23	45,1	28	54,9	51	100			
Blood Sugar Level									
- Regular	27	79,4	7	20,6	34	100	0,000	11,08	3,4-35,2
- Irregular	8	25,8	23	74,2	31	100			

From the table above, it can be seen that of the 39 respondents who did not comply with taking medication, 74.4% experienced blood sugar levels > 200 mg/dL, the Chi-Square test results had a significant relationship with a p value of 0.000. Of the 35 people who did not adhere to the diet, 60% experienced an increase in blood sugar levels. Chi-Square test results had a significant relationship with a p value of 0.024. As many as 51 people who did not receive education on the five pillars of DM, 54.9% had high blood sugar levels. Chi- Square test results have a significant relationship with a p value of 0.013. A total of 31 people who did not regularly control blood sugar 74.2% had high blood sugar levels. Chi-Square test results have a significant relationship with a p value of 0.000.

Table 3. Multivariate Analysis Results

NO	Variable	Koef-B	P-Value	OR	95% CI
1.	Take medicine	4,406	0,002	72,500	5,2-1,2
2.	Diet	1,367	0,061	3,500	0,9-16,4
3.	Education	-0,214	0,880	7,304	0,0-13,0
4.	Blood Sugar Level	0,028	0,978	11,089	0,1-7,6

The table above shows that the results of logistic regression analysis using the backward method show that the variable that most influences blood sugar levels is medicationadherence with OR = 72,500 (5,2 – 1,2).

DISCUSSION

Disobedience to taking medicine because of a lack of understanding, according to them, when the body is comfortable, there is no need to take medicine, and they also forget, during this pandemic it is rare to control so you cannot get medicine. Some respondents chose the answer because the reason for not taking medication was also because they felt the side effects of the drug or were afraid of the side effects of the drugs taken every day. Oral diabetes medications such as glimepiride, metformin, and acarbose have some side effects such as stomach discomfort and can cause bloating or diarrhea.[9] This study is in line with[11]that 57% of DM patients have a low level of adherence, where the main reason for non-adherence is 42% of patients forgetting to take their medication. Patient adherence to medication plays an important role in the success of diabetes mellitus treatment.[3] Accordingto research,[12] the factors that cause non-adherence to diabetes mellitus patients in treatment are forgetfulness (38.36%) and several other reasons such as busy activities, not routine control, boredom/ lazy, and tired.[17] Adherence to taking medication is an attitude or obedience to fulfill health recommendations without being forced to take action. A person is said to be obedient to taking medication during treatment if he takes medication according to the rules of the drug package and on time to take medication until completion of treatment.Regular.

Disobedience to the diet because of the lack of understanding about the importance of regulating eating, the explanation of the size / dosage of the diet that they should not get optimally. Respondents want a family to remind, or provide food according to the size, Dietary regulation adjusts to the calorie needs needed by people with diabetes mellitus, combined with their daily physical activity so that they are fulfilled properly. The settings include the content, quantity and timing of food intake (3 J-Type, Amount, Schedule) so that people with diabetes mellitus have an ideal weight and blood sugar can be well controlled.[12] The recommended diet for clients with type 2 diabetes mellitus is to eat a balanced composition of carbohydrates, protein and fat.[12]Healthy diet management is needed to regulate diet, so that people with diabetes get balanced nutrition, where the energy intake consumed is proportional to the physical activity carried out. Most of the physical activity/sports performed by DM patients (88%) were irregular, most of the patients assumed that their daily routine included exercise, they considered walking at home, gardening as exercise, even though it did not meet the requirements in the management of DM.Research[13].

The ADA recommendation (American Diabetic Association) that physical exercise that can be done by type 2 diabetes mellitus clients is light exercise (regular walking) for 30 minutes, moderate exercise (brisk walking/jogging for 20 minutes and vigorous exercise (aerobic) for 20 minutes. 10 minutes.[7] Physical exercise should be done regularly at least three to five times a week at 30-minute intervals.[4] As many as 51 people who did not receive education on the five pillars of DM, 54.9% had high bloodsugar levels. Chi-Square test results have a significant relationship with a p value of 0.013. Research[14] shows the need to continue to educate patients with diabetes mellitus who do nothave a good diet in terms of the amount and frequency of eating. The provision of educationand counseling is very important because diabetes is a disease that is related to the patient's lifestyle. By providing education and counseling, patients are expected to have sufficient knowledge about diabetes, which in turn can change their attitudes and behavior so that theyare expected to control disease conditions and blood sugar levels and can improve their quality of life.[14]

Diabetes mellitus patients who do not regularly control blood sugar show an increase in blood sugar, the results of interviews with participants that many still do not control their

blood sugar regularly, because every posyandu does not always have blood sugar checks, and the patient's perception is still wrong, namely when the body feels healthy it is not Need for blood sugar control, regular blood sugar control Most sufferers already have a tool for self-examination. Family involvement to encourage people with diabetes to adhere to medication, behave in a healthy life, or modify their lifestyle to be healthier is alsothe key to the success of people with diabetes mellitus to control their disease.[2] Collaboration with family members is very important.[2]Collaborate with family members when setting goals related to family health to be achieved. Positive cooperative relationships are based onmutual respect and trust. Let the family take control as far as possible.[8]

Conclusion and Suggestion

Adherence to taking medication, undergoing diet, education and blood sugar control were significantly related to blood sugar levels with p value <0.05 from the results of the multivariate test, it turned out that the most dominantly related to blood sugar levels was the regularity of taking medication with (p value 0.002) OR= 72,500. It is hoped that people who suffer from diabetes mellitus can understand the importance of implementing DM management. There is a policy from the Health Office involving family members to care, so that the five pillars of DM management can be implemented properly, so that DM patients can lead a life without complications.

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