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THE RELATIONSHIP BETWEEN THE LEVEL OF KNOWLEDGE AND COMPLIANCE WITH THE USE OF TYPE 2 DIABETES MELLITUS DRUGS AT THE PUTRI AYU HEALTH CENTER, JAMBI CITY IN THE PERIOD JANUARY – MARCH 2024

Defany Savitri[1], Hisran[1*,2], Rahmah[1,2]
[1]Department of Pharmacy, Politeknik Kesehatan Kementerian Kesehatan, Indonesia
[2]PUI-PK, Politeknik Kesehatan Kementerian Kesehatan, Indonesia
**Corresponding author:hisranapt1962@gmail.com*

ABSTRACT

Background: Diabetes mellitus is a non-communicable disease that is still the most widely suffered disease. Adherence to medication in people with diabetes mellitus is important for the success of therapy and the patient's quality of life. One of the factors that affect compliance is the patient's knowledge of diabetes mellitus. This study aims to determine the relationship between patient knowledge and the level of compliance with the use of type 2 diabetes mellitus drugs at the Putri Ayu Health Center.
Method: The method of this research is cross sectional. The population in this study is all type 2 diabetes mellitus patients who are treated at the Putri Ayu Health Center. The sample in this study was 83 people and the sampling method using the puposive sampling. The data analysis used was univariate analysis and bivariate analysis using the chi-square statistical test.
Results: The results of this study showed that there was a relationship between the level of knowledge and the level of compliance with the use of type 2 diabetes mellitus drugs at the Putri Ayu Health Center with a p value of 0.037 (<0.05). Knowledge with a good category was 39 respondents (47.0%) and high compliance was 36 respondents (43.4%).
Conclusion: There is a relationship between the level of knowledge and the level of drug adherence in patients with type 2 diabetes mellitus at the Putri Ayu Health Center, Jambi City. The researcher suggested that the Health Center should be able to provide more motivation to patients to be able to be obedient in taking medication and know the importance of taking medication by conducting counseling to people with diabetes mellitus.

Keywords: Knowledge, Compliance, Type 2 Diabetes Mellitus.

INTRODUCTION

One of the chronic diseases that is still suffered by many is diabetes mellitus. According to data from the World Health Organization (WHO) in 2014, the prevalence of diabetes mellitus is 8.5%, which affects 422 million people worldwide (WHO, 2016). Diabetes mellitus (DM) is a group of metabolic diseases characterized by hyperglycemia, which can result from disturbances in insulin action, insulin secretion, or even both (PERKENI, 2021). According to the International Diabetes Federation about 90% of diabetes mellitus cases worldwide are type 2 diabetes. Type 2 diabetes mellitus is a type of diabetes that is widely suffered. Ranked fifth after China, India, Pakistan, and the United States, Indonesia is one of the countries with the largest percentage of diabetics (IDF, 2021). According to the doctor's diagnosis, the prevalence of diabetes mellitus in Indonesia is 2.0% among those who are ≥15 years old. According to the doctor's diagnosis, in Jambi province the prevalence of diabetes mellitus in the population aged ≥15 years is 1.4% (Riskesdas, 2018).

Adherence to a treatment regimen is defined as the extent to which the patient is taking medications that have been recommended by the healthcare provider by

following the instructions provided by the medical professional. Patient compliance is often expressed as a percentage of the overall total medication taken each day and the duration of the medication taken over a given period of time (Osterberg & Blashke, 2005). Knowledge is one aspect that can affect compliance. Having an understanding of diabetes is very important for sufferers to know behaviors that can reduce the risk of complications. Proper and accurate information will help patients understand their condition. People with diabetes mellitus need to know health information related to therapy and the impact of not following the recommended treatment. The better the patient knows about his disease, the better his compliance with treatment will be (Munandar, 2019). To encourage patient adherence to therapy, patients and families need to get information and education about disease history as well as prevention and treatment of diabetes mellitus.

Non-compliance with treatment can result in uncontrolled blood sugar levels that can lead to complications and other diseases. Optimal diabetes management is essential to prevent complications in patients with diabetes mellitus. This can include controlling blood sugar levels, taking medication as prescribed, and adhering to therapy. Based on research that has been conducted (Mokolomban et al., 2018) Of the 45 patients, 18 patients (37.78%) were compliant with treatment, while 27 patients (62.22%) were not compliant with treatment. Based on research conducted by (Marito & Lestari, 2021), it can be concluded that the higher the level of knowledge, the higher the patient's compliance, and vice versa.

METHOD

This research method is cross sectional which is carried out using a questionnaire about knowledge and a compliance questionnaire using MMAS-8 (Morisky Medication Adherence Scale-8). This research was conducted at the Putri Ayu Health Center, Jambi City. The sample in this study was 83 respondents with type 2 diabetes mellitus patients with a sampling technique, namely purposive sampling. The data analysis used was univariate analysis and bivariate analysis using the chi-square statistical test.

RESULTS AND DISCUSSION

Frequency Distribution of Respondent Characteristics

The results of respondent characteristics describe the characteristics of respondents by gender, age, education and occupation. The results of univariate analysis of the respondents' demographic data are as follows:

Table 1. Characteristics of Respondents

Characteristic	Frequency	Percentage (%)
Gender		
Man	27	32,5
Woman	56	67,5
Total	**83**	**100,0**
Age		
46 – 56 years old	3	3,6
56 – 65 years old	45	54,2
≥ 65 years old	35	42,2
Total	**83**	**100,0**
Education		
Elementary School	29	34,9
Junior High School	14	16,9
Senior High School	28	33,7
College	12	14,5
Total	**83**	**100,0**
Work		
Housewife	32	38,6
Self employed	14	16,9
Civil servants	7	8,4
Private Employees	3	3,6
Not Working	27	32,5
Total	**83**	**100,0**

Based on Table 1, it can be seen that most of the respondents are women, namely 56 respondents (67.5%) while for male respondents there are 27 people (32.3%). Based on this data, the majority of type 2 diabetes mellitus patients are women. According to (Komariah & Rahayu, 2020), Compared to the male gender, women are more at risk of developing type 2 diabetes mellitus. In addition, the aging process associated with premenstrual syndrome or postmenopausal affects the body's ability to work, which ultimately affects insulin

function, so glucose cannot enter the body and be burned into energy. The results of this study are also in line with the research (Meidikayanti & Wahyuni, 2017) that of the 50 respondents, 42 respondents (84%) of them were women, the decrease in the hormone estrogen, especially during menopause, is one of the causes of many women suffering from type 2 diabetes mellitus. The hormones estrogen and progestrone have the ability to increase the insulin response in the blood. Low levels of the hormones progesterone and estrogen cause a reduced insulin response during menopause.

Based on Table 1, the majority of respondents were in the age range of 56 to 65 years, namely 45 respondents (54.2%). These results are in accordance with research conducted by (Nasution et al., 2021) that of the 23 respondents with diabetes mellitus, 21 respondents (91.3%) were in the age group ≥ 45 years. According to (Wicaksono, 2011) states that people ≥ 45 years old have a 9 times higher risk of developing type 2 diabetes mellitus compared to people ≤ 45 years old. Individuals ≥ 45 years of age have a higher risk of developing diabetes mellitus and glucose intolerance, which is caused by degenerative factors, which is a decrease in the body's function to metabolize glucose.

Based on table 1, the results of research based on education show that respondents with the last education of elementary school are 29 respondents (34.9%), the last education of junior high school is 14 respondents (16.9%), the last education of high school is 28 respondents (33.7%) and the last education of college is 12 respondents (14.5%). From the results of this study, the majority of respondents took their last elementary education. The results of this study are also in line with the research (Nugroho & Sari, 2020) with the results of 111 respondents, the majority of respondents took their last elementary school education which amounted to 40 respondents (36.0%). According to (Nugroho & Sari, 2020) Patients who are more educated understand more about diabetes and its effects on health, thus, sufferers will have a positive attitude and try to keep blood sugar levels stable. According to (Notoatmodjo, 2007) A person with a higher education will have better knowledge than a person with a lower education.

Based on Table 1, the majority of respondents' jobs were housewives (IRT), which amounted to 32 respondents (38.6%). These results are in accordance with research from (Naba et al., 2021) namely with diabetic melitus respondents who are the majority of housewives (IRT) with a total of 205 people (42.04%). A person's activities inside and outside the home are related to their work. Housewives spend more time doing activities at home and receive more rest time than those who do activities outside the home, so the food consumed cannot be converted into energy properly and leads to the accumulation of carbohydrates, both of which can lead to obesity and the appearance of diabetic (Naba et al., 2021).

Frequency Distribution of Respondents' Knowledge Levels

Table 2. Frequency Distribution of Respondents' Knowledge Levels

Knowledge	Frequency	Percentage
Good	39	47,0
Enough	19	22,9
Less	25	30,1
Total	83	100,0

Based on the table, respondents with good knowledge amounted to 39 people (47.0%), 19 people (22.9%) had enough knowledge, and 25 people (30.1%) had less knowledge. Respondents who had good knowledge had a better understanding of diabetes mellitus, such as the symptoms of diabetes mellitus, risk factors, and causes of diabetes mellitus. The results of this study are in line with the research (Fania & Kumala, 2019) of the 47 respondents, 22 respondents (46.8%) had good knowledge, that the higher the level of knowledge, the higher the influence on a person's compliance with treatment standards. A proper understanding of the disease will

encourage patients to perform better treatment management. Patients will be more compliant with therapy and follow the instructions of healthcare workers if they have the knowledge. Lack of knowledge will affect a person's lifestyle, thereby increasing blood sugar levels (Arfania et al., 2023).

Frequency Distribution of Respoden Compliance Levels

Table 3. Frequency Distribution of Respoden Compliance Levels

Compliance	Frequency	Percentage
High	36	43,4
Moderate	17	20,5
Low	30	36,1
Total	83	100,0

Based on the table, it shows that of the 83 respondents, 36 people (43.4%) have high compliance, 17 people (20.5%) have moderate compliance, and 30 people (36.1%) have low compliance. Respondents with high compliance always take medication regularly and comply with the doctor's recommendation to always take medication or when on a long trip, the patient will always carry medication. The results of this study are in line with the results of the research (Fania & Kumala, 2019) the results of high compliance were obtained by 31 people (66%), and low compliance by 16 people (34%).

To avoid complications and achieve the goals of therapy effectively, adherence to medication is essential for people with diabetes mellitus. Proper and effective therapy is very beneficial, especially for those who need to take medication for a long period of time, non-adherence to medication can increase the risk and worsen the condition (Fania & Kumala, 2019). Patient compliance actions are actions taken by people with type II diabetes mellitus to carry out their obligation to take medication according to the prescribed schedule and dosage (Bulu et al., 2019).

The Relationship Between the Level of Knowledge and Compliance with the Use of Type 2 Diabetes Melitus Drugs

Tabel 4 The Realtionship Between the Level of Knowledge and Compliance with the Use of Type 2 Diabetes Melitus Drugs

Knowledge	Compliance								p-value
	High		Moderate		Low		Total		
	N	%	N	%	N	%	N	%	
Good	22	56.4	6	15.4	11	28.2	39	100.0	
Enough	7	36.8	7	36.8	5	26.3	19	100.0	
Less	7	28.0	4	16.0	14	56.0	25	100.0	0.037
Total	36	43.4	17	20.5	30	36.1	83	100.0	

Based on Table 4, the results show that of 83 respondents who have good knowledge as many as 39 respondents, 36 respondents have high compliance and respondents who have good knowledge with a high level of compliance are 22 people (26.5%) and in the results of the chi-square statistical test, a p-value = 0.037 is obtained. This shows that there is a relationship between knowledge and compliance with the use of type 2 diabetes mellitus drugs because the p value is no more than α (0.05).

These results are in accordance with research by (Marito & Lestari, 2021) that there was a meaningful relationship between the level of knowledge and adherence to the treatment of type 2 diabetes mellitus. People with diabetes mellitus who have good knowledge about the disease can better control their blood sugar levels and avoid potential complications by increasing their adherence to taking medication on time and regularly (Sevani et al., 2024). Knowing that knowledge is one of the factors that affect treatment adherence, it is very important to provide comprehensive information about diabetes mellitus to improve treatment adherence, reduce the risk of complications and disease severity, and help control blood sugar (Nazriati et al., 2018).

Patients with diabetes mellitus can control their blood sugar by adhering to a predetermined treatment regimen, as non-adherence to medication can have an impact on blood sugar levels (Nanda et al., 2018). Patients with type II diabetes mellitus who carry out the obligation to take medication

according to the prescribed schedule and dosage are referred to as patients who comply with treatment. Good and appropriate medication compliance will be very beneficial for patients, both in terms of health and recovery from the disease suffered. It is very important for type II diabetes mellitus patients to achieve treatment goals and be effective in preventing various complications of diabetes mellitus (Bulu et al., 2019).

Knowledge can also be obtained through information and counseling media, which is expected to increase awareness of medication adherence, in addition to formal education. It is expected that increased knowledge about treatment through socialization will result in a higher level of compliance. Low levels of knowledge and compliance can increase the risk of complications and increase the cost of diabetes care (Ningrum, 2017).

CONCLUSION

Based on the results of the research that has been carried out, it can be concluded that there is a relationship between the level of knowledge and the level of compliance with the use of type 2 diabetes mellitus drugs at the Putri Ayu Health Center with a p value of 0.037.

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