

The Relationship Between Diabetes Mellitus Patients' Knowledge About The Four Pillars Of Diabetes Mellitus With *Self Care* At RSU Imelda Medan

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ABSTRACT

Diabetes militus (DM) is a non-communicable disease with a set of symptoms that arise in individuals as a result of the individual's glucose levels are above normal. Until now diabetes mellitus has not been cured, requires high treatment costs when it gets worse, and can cause various forms of complications and even death. To improve the quality of life of diabetes mellitus patients, it is necessary to increase self-care. Self care is an action taken by individuals to manage DM, in the form of treatment and prevention of complications. The purpose of the study was to determine the relationship between knowledge of diabetes mellitus patients about the four pillars of diabetes mellitus with self care at RSU Imelda Medan. This research is a quantitative research using a correlational analytical design using a cross sectional approach. This research place was at RSU Imelda Medan in August 2022 with a sample of 37 respondents. The results of the study had a positive and significant relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of DM with Self Care in Diabetes Mellitus patients at RSU Imelda Medan with the results $p = 0.000$, so it can be concluded that Ha accepted that there is a meaningful relationship between there is a meaningful relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of DM with Self Care in Diabetes Mellitus patients.

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INTRODUCTION

Diabetes militus (DM) is a non-communicable disease with a set of symptoms that arise in individuals as a result of the individual's glucose levels are above normal (RIKESDAS, 2013). Until now diabetes mellitus has not been cured, requires high treatment costs when it gets worse, and can cause various forms of complications and even death (PERKENI, 2015). Mentioned in the IDF Diabetes Atlas 9th Edition the global prevalence of people with Diabetes (aged 20 -79 years) in 2019 is around 9.3% of people in the world or around 463 million people, 4.2 million of whom died of diabetes. Southeast Asia ranks 6th most of the 7 regions made by the International Diabetes Federation (IDF), which is 13.6% or around 13.6 million people (IDF, 2019).

The increasing number of people with diabetes mellitus can cause serious problems in the community (Tandra, 2008). Problems in people with diabetes mellitus are caused by various factors, namely lifestyle changes (Soegondo, Soewondo, & Subekti, 2009). Lifestyles such as physical activity and poor eating arrangements will cause uncontrolled blood sugar (Bataha, 2017). Blood sugar that cannot be controlled routinely can have a bad influence on the body and can cause complications in people with diabetes mellitus (Buckman & Chris, 2010). Low awareness to control blood sugar in people with diabetes mellitus can be influenced by several factors, namely psychosocial, emotional, lifestyle, medication, and lack of knowledge (Tong, Vethakkan, & Ng, 2015).

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Diabetes that is not managed properly can cause various complications, which are generally divided into two, namely microvascular complications and macrovascular complications (*American Diabetes Association (ADA), 2014; Smeltzer, Bare, Hinkle, & Cheever, 2010*), can even result in death. Therefore, patients diagnosed with DM must carry out good self-management so that the risk of complications can be reduced.

Complications can occur in Diabetes Mellitus in the form of nervous system disorders / neuropathy, and disorders of blood vessels (macrovascular and microvascular). Macrovascular complications in general can attack the brain, heart and blood vessels, while microvascular can occur in the eyes and kidneys (PERKENI, 2019). Based on Saputri's research (2020) at Pertamina Bintang Amin Hospital, Bandar Lampung, from 72 respondents, 43 patients (59.7%) had complications of diabetes where the frequency distribution was acute complications of diabetic ketoacidosis where the frequency distribution was acute complications of diabetic ketoacidosis 6 patients (8.3%), hypoglycemia 8 patients (11.1%). Microvascular complications were neuropathy 5 patients (6.9%), retinopathy 8 patients (11.1%) and nephropathy 11 patients (15.3%). The fourth cause of death in the world is complications caused by Diabetes Mellitus (Indonesian Society of Endocrinology, 2019).

Knowledge about diabetes mellitus in patients can be used as a means in handling diabetes (Alfiani, Yulifah, & Sutriningsih, 2017). Diabetes mellitus requires *changes in behavior*. Changes in behavior such as self-confidence (Al-Khawaldeh, Al-Hassan, & Froelicher, 2012).

Self-care management behavior is *an effort to maintain health by doing self-care both physically and psychologically* (Hartono, 2019). *Self-care* that can be done by people with diabetes mellitus includes four pillars of diabetes management plus foot care (Endra et al., 2019). This study aims to determine the level of compliance of diabetes mellitus patients with management that must be done at home.

Based on the results of a preliminary survey conducted at RSU Imelda Medan from 10 diabetes mellitus patients, from interview data about self-care of diabetes mellitus patients, the results were: 3 patients stated that they had never received health information and only understood the disease they suffered was high blood sugar, 7 patients stated that they had received information on diabetes mellitus health and its management. The results of interviews about *self-care* obtained results: 6 patients were less confident in taking good care of themselves and 4 patients expressed confidence in taking care of themselves.

METHOD

This research is a quantitative research using correlational analytical design, which is research that aims to reveal the correlative relationship between independent variables and dependent variables and test based on existing theories. This study uses a *cross sectional* approach that emphasizes the time of measurement or observation of data on independent variables and dependent variables carried out once at a time. A *cross-sectional approach* was conducted to develop and explain the relationship between the relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of Diabetes Mellitus with *Self Care* at RSU Imelda Medan. The research began to be carried out from the beginning of the preparation of the proposal to the preparation of research results from March to July 2022 at RSU Imelda Medan. Sampling is a process in selecting portions of the population to be representative of the population. Sampling technique is a technique used to take samples from the population. The sampling method used in this study is total sampling *According to Sugiyono (2014: 124) said that total sampling is a sampling technique when all members of the population are used as samples. The research sample is a portion of the overall object studied and is considered representative of the entire population. In*

other words, the sample is the elements of the population that are selected based on their ability to represent them. The number of samples in this study was 37 people.

RESULTS AND DISCUSSION

Result

Univariate Results

After conducting a study entitled "The Relationship of Diabetes Mellitus Patient Knowledge About the Four Pillars of Diabetes Mellitus with *Self Care* at RSU Imelda Medan Medan, the following results were obtained:

General Data

Table 1. Distribution of Respondents' Characteristics Based on Age in Diabetes Mellitus Patients at RSU Imelda Medan in 2022

No	Characteristic	Frequency	Percentage %
1	26 - 35 Years	18	48,6
2	36-45 Years	15	40,5
3	46-55 Years	4	10,8
Total		37	100

Based on table 1 above, it can be seen that the majority of respondents whose age interval is 26-35 years is 18 people (48.6%), while the minority of respondents whose age interval is 46-55 years is 4 people (10.8%).

Table 2. Distribution of Respondent Characteristics by Sex in Diabetes Mellitus Patients at RSU Imelda Medan in 2022

No	Characteristic	Frequency	Percentage %
1	Man	29	78,4
2	Woman	8	21,6
Total		37	100

Based on table 2 above, it can be seen that the majority of respondents are men as many as 29 people (78.4%)

Table 3. Distribution of Respondents' Characteristics Based on Occupation in Diabetes Mellitus Patients at RSU Imelda Medan in 2022

No	Characteristic	Frequency	Percentage %
1	Civil Servants	8	21,6
2	Self-Employed Work	15	40,5
3	Farmer	14	37,8
Total		44	100

Based on the 3 above, it can be seen that the majority of respondents based on self-employed work are 15 people (40.5%), while the minority are civil servants as many as 8 people (21.6%).

Custom Data

Table 4. Distribution of Knowledge Respondent Characteristics in Diabetes Mellitus Patients at RSU Imelda Medan in 2022

No	Diabetes Mellitus Patient Knowledge	Frequency	Percentage %
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1	Good	20	54.1
2	Bad	17	45.9
Total		37	100

Based on table 4 above, it can be seen that good knowledge is 20 people (54.1%) and bad knowledge is 17 people (45.9%)

Table 5. Distribution of Characteristics of *Self Care Respondents* in Diabetes Mellitus Patients at RSU Imelda Medan in 2022

No	Self Care	Frequency	Percentage %
1	Good	21	56,8
2	Bad	16	43,2
Total		37	100

Based on table 5 above, it can be seen that respondents who are good *self-care* as many as 21 people (56.8%) and respondents who are not good as many as 16 people (43.2%).

Bivariate Results

Table 6. The Relationship of Knowledge of Diabetes Mellitus Patients with *Self Care* in Diabetes Mellitus Patients at RSU Imelda Medan

Diabetes Mellitus Patient Knowledge	Self Care		Total	Chi-Square
	Obedient	Disobedient		
Good	17	3	20	0.000
Bad	3	14	17	
Total	20	17	37	

From the results of the analysis using the SPSS system Chi-Square test shows that there is a positive and significant relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of DM with *Self Care* in Diabetes Mellitus patients at RSU Imelda Medan with the result $p = 0.000$, so it can be concluded that H_a is accepted that there is a meaningful relationship between there is a meaningful relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of DM with *Self Care* in Diabetes Mellitus patients.

Discussion

Self Care at RSU Imelda Medan. Then the author will After the author conducts research by collecting data through correlation test tests and Diabetes Mellitus Patients About the Four Pillars of Diabetes Mellitus By conducting data analysis techniques carried out to respondents about Knowledge Relationships discuss the results of research that have been found as follows:

The Relationship of Diabetes Mellitus Patients' Knowledge About the Four Pillars of DM with Self Care in Diabetes Mellitus Patients in the Room of RSU Imelda Medan.

From the results of the analysis using the SPSS system *Chi-Square test* shows that there is a positive and significant relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of Diabetes Mellitus with *Self Care* at RSU Imelda Medan with the result $p = 0.000$, so it can be concluded that H_a accepted that there is a meaningful relationship between the relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of Diabetes Mellitus with *Self Care* at RSU Imelda Medan.

In line with research conducted by (Ariska Yuyun, 2019) It can be concluded that there is a significant relationship between knowledge ($p = 0.000$), dietary habits (consumption of sugary, fatty and fibrous foods) ($p = 0.000$) and physical activity ($p = 0.000$). In contrast to Knowledge about DM management does not have a significant effect on the success of type 2 DM management ($P = 0.26$) (Utomo, 2011)

The application of the theory of knowledge of the four pillars of diabetes mellitus according to (Ningsih, 2018) Education is a way that can be done to increase patient knowledge about the condition of the disease. Providing education on the management of the four pillars of diabetes mellitus to patients can provide additional knowledge of these patients so that they can improve *self-care*. *Self-care* is needed for success in the management of the four pillars of diabetes mellitus. According to Sutanegoro and Suastika (1993) in Gultom (2012) said that education is the main basis for the success of treatment, so that with good education will make the ability to understand and know something increase or vice versa.

In line with research conducted by Pramesti et al (2018) which states that there is an influence of diabetes self management education on the level of knowledge and *self care* in type 2 diabetes mellitus (Pramesti, Adiputra, & Novitasari, 2018). Likewise with the results of research conducted by Hati (2014) showed an integrated educational effect to increase self-efficacy in type 2 DM patients, with independent t test results namely $p < 0.05$ and $t = 7.539$

CONCLUSION

Based on the results of research and discussion, this study concluded that there is a relationship between Diabetes Mellitus Patients' Knowledge About the Four Pillars of Diabetes Mellitus with *Self Care* at RSU Imelda Medan. The hospital increases the knowledge of Diabetes Mellitus patients about the Four Pillars of Diabetes Mellitus so as to improve the quality of life in these patients. Improving health services, especially in handling patients It is hoped that the institution will be more of a reference that education on the four pillars of diabetes mellitus can improve *self-care*. It is hoped that this study can be used as basic data, comparison material with information to conduct further research on the effect of education on the four pillars of diabetes mellitus can improve *self care*

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