

Analysis of Factors Affecting Self-care of Type 2 Diabetes Mellitus Patients

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ABSTRACT

Diabetes mellitus is a chronic disease characterized by increased blood sugar levels due to interference with insulin production or decreased sensitivity of insulin receptors in the body. Diabetes itself cannot be cured so it requires intensive treatment, especially proper self-care to support the patient's life. The aim of this study was to determine the factors that influence the self-caring of type 2 diabetes mellitus patients undergoing outpatient care at Dr. RSUD. Moewardi Surakarta. This research was carried out observationally with a cross-sectional design. Self-care measurement uses the Diabetes Self-care Management Questionnaire (DSMQ) instrument. The results of this study show that of the 167 responses involved, 131 respondents (78.4%) had good self-care and 36 respondents (21.6%) had poor self-care. Data analysis using chi-square showed that age, gender, education, marital status, employment and duration of DM had no effect on the patient's self-care ($p > 0.05$).

KEYWORDS

Diabetes mellitus, self-care, DSMQ



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INTRODUCTION

Type 2 diabetes mellitus is a disorder characterized by increased blood sugar levels (Davies et al., 2022). Diabetes mellitus requires treatment throughout the patient's life. Chronic diabetes where blood sugar levels are not controlled can result in various kinds of complications, both macrovascular and microvascular (Eva et al., 2018). Complications experienced by patients can result in a decrease in the patient's quality of life and the complexity of therapy so that good self-care management is needed (Indriyawati, Dwiningsih, Sudirman, & Najihah, 2022).

The prevalence of this disease tends to increase every year and it is predicted that by 2030 the number of diabetes mellitus patients will grow to 643 million people and 738 million people in 2045 (Webber, 2021). In 2021, Indonesia ranks 5th out of 10 countries with the highest number of diabetes sufferers with 19.5 million people (Webber, 2021). Based on data from the 2018 Basic Health Research Results (RISKESDAS) conducted by

the Ministry of Health, it is known that the prevalence of diabetes mellitus increased by 10.9% with the prevalence of diabetes mellitus at all ages in Central Java amounting to 1.6% (Kementrian Kesehatan Republik Indonesia, 2018).

The high increase in the prevalence of diabetes mellitus and its complications is very dangerous because it will disrupt the productivity of diabetes patients. Apart from that, complications are also one of the main components that result in 65% mortality. The risk of stroke in diabetes mellitus patients increases 2-4 times higher (Mulya & Kosassy, 2020).

Diabetes mellitus can cause other impacts on patients such as psychological, social and economic impacts. The psychological effects experienced by patients can include stress for the patient and his family. This negative response can be in the form of rejection, anxiety, anger, feelings of guilt and depression. Social problems that patients often experience include reduced ability to social interaction due to decreased mobility of the patient. The economic impact occurs due to a decrease in patient productivity.

Management of diabetes mellitus itself requires good cooperation between patients and health workers to prevent complications. One way to improve patient health and prevent complications is through self-care. Self care is an action that can be carried out independently by the patient which consists of controlling blood sugar, blood pressure, diet, exercise, smoking and foot care (Mohanty & Saini, 2023). Based on previous research, it has been widely reported that increasing self-care in diabetes mellitus positively improves the patient's condition, however, there are still many patients who are not aware of the importance of self-care in diabetes mellitus management. Therefore, it is important to conduct research on factors that influence self-care in diabetes mellitus patients.

RESEARCH METHOD

Research at RSUD Dr. Moewardi Surakarta. This research uses an observational method using a cross-sectional design using the Self-care Management Questionnaire (DSMQ). Sampling was carried out using the accidental sampling method. The samples involved in this study were those that met the inclusion criteria, including (1) Patients diagnosed with Type 2 DM, aged over 18 years; (2) routinely go to Dr. Hospital. Moewardi Surakarta more than 8 weeks; (3) Complete medical record data; (4) Patients are willing to become research respondents by filling out informed consent. Apart from that, the research sample also meets the exclusion criteria, including patients not being able to communicate well and not being willing to be respondents. Univariate analysis was carried out on patient demographic characteristic variables. Bivariate analysis was carried out to see the relationship between patient demographics and the patient's self-care.

RESULT AND DISCUSSION

A. Characteristics of Diabetes Mellitus Patients

The characteristics of diabetes mellitus patients describe each variable, namely age, gender, duration of suffering from DM, marital status, education, and employment. Based on the results of research that has been conducted, the sample in this study was 167 respondents. The results of the univariate analysis are presented in the table below:

Table 1. Characteristics of Diabetes Mellitus Patients

Characteristics Patient	Number	Percentage (%)
Gender		
Man	86	51,5
Woman	81	48,5
Age		

Characteristics Patient	Number	Percentage (%)
26 – 35	17	10,2
36 – 45	19	11,4
46 – 55	58	34,7
56 – 65	52	31,1
≥ 65	21	12,6
Education		
SD	33	19,8
SMP	15	9,0
SMA	44	26,3
S1	46	27,5
S2	29	17,4
Job		
Laborer	27	16,2
Farmer	17	10,2
Seller	6	3,6
Housewife	45	26,9
Swasta	47	28,1
ASN	25	15,0
Marital status		
Married	139	83,2
Not Married yet	6	3,6
Widow	22	13,2
Duration DM		
< 5years	72	43,1
>5years	95	56,9

Based on the table above, it is known that the gender of patients diagnosed with diabetes mellitus is mostly male, 85 (50.9%). Gender is not the main risk factor for diabetes mellitus, so both men and women have the same chance of being diagnosed with diabetes mellitus. Diabetes mellitus is more influenced by the patient's lifestyle and diet (Ramadhani, Fidiawan, Andayani, & Endarti, 2019).

Regarding the age of the patient, it is known that the most patients suffering from diabetes mellitus are patients aged 45 - 55 years, namely 58 respondents (34.7%). With increasing age, there will be a decrease in organ function, so that the insulin production process is disrupted or there is a decrease in insulin receptor function. This results in uncontrolled blood sugar levels in the patient. Apart from that, the unhealthy lifestyle that respondents live at this age can also increase the prevalence of diabetes mellitus. (Mohanty & Saini, 2023).

Based on the research results that have been obtained, the private sector suffers the most diabetes mellitus patients, namely 47 respondents (28.1%). This research is in line with previous research which stated that civil servants were the patients most often diagnosed with DM (Kurniawan, T. and Yudianto, 2018). Type of work is one of the factors that influences the patient's lifestyle. Work demands that result in patients losing time for exercise and eating unhealthy foods will increase the risk of obesity in patients. Obese patients are more at risk of developing diabetes mellitus (Song et al., 2023).

Based on the table above, it is known that the respondents most often diagnosed with diabetes were married patients, namely 139 respondents (83.2%). Marital status is not a risk factor for diabetes mellitus, but the lifestyle a family lives will influence the health of a family. This is in line with previous research which states that the most common marital status is married (Sari *et al.*, 2021)

From research data it is known that most patients suffer from diabetes mellitus with a duration of more than 5 years. The length of time a patient is diagnosed with diabetes will increase the risk of complications experienced by the patient and decrease the quality of life experienced by the patient. The results of this study are in line with previous research which stated that most diabetes mellitus patients had been diagnosed with this disease for more than 5 years. Diabetes mellitus is an incurable disease and requires treatment throughout the patient's life. Therefore, patient awareness is needed in maintaining their health condition (Zuzetta, Pudiarifanti, & Sayuti, 2022).

B. Hubungan Karakteristik Pasien dengan *Self-care* diabetes

The research results show that the self-care category for diabetes mellitus patients is in the good category. Self-care plays a very important role in the health of diabetes mellitus patients, where patients who are able to carry out maximum self-care will have a good quality of life. Controlling blood sugar levels is the goal of self-care so that the incidence of complications and death due to diabetes mellitus can be minimized. There are 5 indicators of self-care activities, namely regulating diet and eating patterns which will help in metabolic intake which will be related to controlling blood sugar levels so that when the diet is good, blood sugar levels will be good. (Song et al., 2023).

The second indicator is physical activity. The physical activity carried out by the patient aims to increase the ability of the insulin receptor so that the patient can carry out good physical activity and reduce the risk of obesity or uncontrolled blood sugar levels. The third indicator concerns foot care which aims to prevent ulcers on the feet so that foot cleanliness is always maintained. The fourth self-care is appropriate medication management, both timely and appropriate medication, whether using insulin or not using insulin. With regular use of medication, the patient's blood sugar levels will be controlled. The fifth indicator is monitoring blood sugar levels regularly every month (Song et al., 2023). In this study, self-care behavior carried out by patients was grouped into 2 groups, namely good and bad self-care behavior. Patient self-care behavior can be seen in the table below:

Table 2. Self-Care Behavior of Type 2 Diabetes Mellitus Patients

<i>Self-care</i> behavior	N	Percentage
Good	131	78,4%
Bad	36	21,6%

From the table above, it can be seen that 131 respondents (78.4%) had good self-care behavior and 36 respondents had bad self-care behavior. Orem (2010) said that self-care is an activity to form individual independence in order to maintain their health. Self-care is self-care that is carried out to maintain health, both physically and psychologically. Fulfillment of self-care is influenced by various factors, including culture, social values for individuals or families, knowledge of self-care and perceptions of self-care (Hidayat, 2009). This research is in line with previous research which stated that respondents had good self-care behavior (Maria Bahagia Idu, Suyen Ningsih, Acai Ndong, Ruteng JI Jend Ahmad Yani, & Flores, 2022). Good behavior shows that the patient has received good information about the disease and how to carry out self-care so that the disease does not become more severe.

Table 3. Relationship between patient characteristics and self-care behavior

characteristics	Self-care behavior		P
	Good	Bad	
Gender			0,859
Age			0,793
Education	131 (78,4%)	36 (21,6%)	0,095
Job			0,277
Marital status			0,191
Duration DM			0,499

The results of data processing to analyze the relationship between patient characteristics and self-care show that the test results show that there is no significant relationship between patient characteristics (gender, age, education, employment, marital status and duration of DM) with a p value > 0.05. This is in line with previous research which stated that patient characteristics did not have a significant relationship with the patient's self-care (Arindari & Suswitha, 2021). Self-care can be carried out independently by diabetes mellitus patients with the aim of preventing complications. This action is really needed by diabetes mellitus patients, both teenagers and adults. This action should be carried out continuously to maintain the patient's quality of life.

CONCLUSION

The conclusion of this study was that 131 respondents had good self-care behavior and 37 respondents had poor self-care behavior, and there was no significant relationship between patient characteristics and the patient's self-care behavior.

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