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The Relationship Of Self-Efficacy With Medication Adherence In Diabetes Mellitus Patients

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ABSTRACT

One of the successes in managing diabetes care is compliance in taking medication. Apart from that, you must have high ability and self-confidence or what is usually called self-efficacy in carrying out good diabetes management. This study aims to determine the relationship between self-efficacy and medication adherence in diabetes sufferers. This research uses a cross sectional approach. The sampling technique used in this research used purposive sampling with a sample size of 52 people with diabetes who received outpatient treatment at RSI Mabarrot MWC NU Bungah in January-February 2024. The instrument used in this research was the Diabetes Management Self Efficacy Scale questionnaire (DMSES-UK) and Morisky Medication Adherences (MMAS-8). Data analysis used the Spearman rank correlation statistical test. The results showed that of the 52 people, 44 people had high self-efficacy, with 38 people (73.1%) having high medication adherence, and 2 (3.8%) people having moderate medication adherence. The results of data analysis show a significance value of 0.000 <0.05 with a correlation coefficient value of 0.552, meaning that there is a strong relationship between self-efficacy and adherence to taking medication in diabetes mellitus sufferers. High self-efficacy will increase adherence to taking medication in diabetes sufferers, because they have a high sense of confidence in managing diabetes care.

Keywords: Diabetes, Medication Adherence, Self-Efficacy

INTRODUCTION

Diabetes is a degenerative disease that continues to increase every year and is the highest cause of death in Indonesia and the world. Diabetes is a chronic disease characterized by high blood sugar levels (hyperglycemia) which is caused by a disturbance in the pancreas organ which cannot produce or produces little insulin, which disrupts the body's metabolic processes. Globally, the prevalence of diabetes in 2021 among those aged 20-79 years is estimated to be 10.5% (536.6 million people) increasing to 12.2% (783.2 million people) in 2045. The prevalence is similar in men and women and is highest in them. aged 75-79 years (Sun et al., 2022). According to Riskesdas, in 2018 the prevalence of diabetes was still high at 11.3%, which ranked 7th out of 10 countries with the highest number of sufferers at 10.7 million people. Where Indonesia is the only country in Southeast Asia that has the highest prevalence of diabetes sufferers in the world (Rumaolat et al., 2022). In East Java, the prevalence of diabetes sufferers in 2021 reached 867,257 people (93.3%) with the highest sufferers in Mojokerto City at 124% of the estimated DM sufferers and the lowest in Probolinggo Regency at 51.7% of the estimated DM sufferers (Dinkes Jatim, 2021).

Diabetes mellitus sufferers require long-term medication management and control to manage their condition. Based on research results (Septiaji & Year, 2023)The results showed that of the 17 respondents who had less self-efficacy, the majority of them were non-compliant in taking medication, namely 64.7%, while only 35.3% were compliant in taking medication. Meanwhile, of the 20 respondents who had good self-efficacy, only 25% did not comply with taking diabetes medication, the majority actually took medication, namely 75%. Study (Fahamsya et al., 2022)The results showed that the majority of respondents had low self-efficacy with low adherence to taking medication, 35 people (44.9%), while respondents with high self-efficacy and high adherence to taking medication were 14 people (17.9%).

Success in managing diabetes mellitus depends on several factors, such as the availability of information or education about type 2 diabetes, motivation, and the patient's level of confidence in controlling the symptoms and psychological complications of diabetes (Djaelan et al., 2022). Controlling medication in diabetes sufferers is often faced with various obstacles, because they have to face many changes in their lifestyle, including adjusting their diet, exercising, monitoring blood sugar levels, regularly taking medication, and carrying out other necessary activities throughout their lives. These lifestyle changes are interrelated with changes in individual behavior, which take quite a long time to occur. Therefore, behavioral changes aimed at improving compliance with diabetes mellitus management are essential. One of the key factors in achieving this behavior change is through increasing self-efficacy.

The concept of self-efficacy is based on Bandura's social cognitive theory, which describes the interaction between behavioral, personal, and environmental factors. Thus, self-efficacy is an individual's belief about their ability to produce a specified level of performance in terms of a patient's feelings, thoughts, and motivation toward physical therapy and related activities. In relation to glycemic control, self-efficacy relates to an individual's confidence in his or her ability to plan and implement behavioral changes, demonstrated belief that I can do it, and perceived ability to adhere to a diabetes care regimen (Oluma et al., 2020).

One important aspect in managing diabetes is compliance with taking medication, because medications prescribed by doctors have a vital role in controlling blood sugar levels. Self-efficacy, or self-confidence, is an important psychological factor in determining health behavior, including adherence to taking medication in diabetes mellitus sufferers. Self-efficacy reflects the extent to which a person believes that he is able to take certain actions to achieve his health goals, in this case taking medication according to the doctor's recommendations. Where someone who has high self-efficacy will have a higher level of compliance with taking medication, and conversely a low self-efficacy value will affect compliance with taking medication (D Çallı, 2021; Fahamsya et al., 2022; Liu et al., 2023).

Based on several previous studies (Fahamsya et al., 2022; Pramesti et al., 2021; Sukmaningsih et al., 2020) There is a strong relationship between self-efficacy and family support on medication adherence in people with type 2 diabetes mellitus. Based on the description above, this study aims to determine the relationship between self-efficacy and medication adherence in diabetes mellitus sufferers.

METHODS

This research uses quantitative research with a cross-sectional approach. The sampling technique used in this study used purposive sampling with a sample size of 52 people with diabetes who received outpatient treatment at RSI Mabarrot MWC NU Bungah in January-February 2024. The variables in this study were self-efficacy as an independent variable, and compliance. taking medication as the dependent variable. The instruments used in this research were the Diabetes Management Self Efficacy Scale (DMSES-UK) questionnaire to measure self-efficacy, and the Morisky Medication Adherences (MMAS-8) questionnaire to measure the level of adherence to taking medication. Data analysis used the Spearman rank correlation statistical test.

RESULTS

The research results are as follows:

Table 1. Characteristics of respondents based on gender, age, education and occupation

General data	Frequency (f)	Percentage (%)
Gender		
Man	21	40.4
Woman	31	59.6
Total	**52**	**100**
Age		
< 45 Years	5	9.6
45-60 years	35	67.3
>60 Years	12	23.1
Total	**52**	**100**
Education		
Junior High School	2	3.8
Senior High School	47	90.5
College	3	5.8
Total	**52**	**100**
Work		
Work	22	42.3
Doesn't work	30	57.7
Total	**52**	**100**
Long suffering		
<2 years	15	28.8
>2 years	37	71.2
Total	**52**	**100**

Based on the results of table 1, it shows that the majority of respondents were female, 31 people (59.6%), the majority of respondents were aged 40-59 years, 42 people (80.8%), the majority of respondents had a high school education, 47 people (90 .5%), most respondents did not work as many as 30 people (57.7%), and most respondents had suffered from diabetes for > 2 years as many as 37 people (71.2%).

Table 2. Self-Efficacy Data in Diabetes Mellitus Patients

Self-Efficacy	Frequency (f)	Percentage (%)
High	40	77
Moderate	10	19.2
Low	2	3.8
Total	**52**	**100**

Based on the results of table 2, it shows that the majority of respondents had high self-efficacy, 40 people (77%).

Table 3. Data on Medication Adherence in Diabetes Mellitus Patients

Medication Adherence	Frequency (f)	Percentage (%)
High	44	84.6
Moderate	8	15.4
Total	**52**	**100**

Based on the results of table 3, it shows that the majority of respondents had high medication adherence, 44 people (84.6%).

Table 4. Analysis of the relationship between self-efficacy and medication adherence in diabetes mellitus sufferers

	Medication Adherence				Total	
	Tall		Currently			
	f	%	f	%	f	%
Self-efficacy						
High	38	73.1	2	3.8	40	77
Moderate	6	11.5	4	7.7	10	19.2
Low	0	0	2	3.8	2	3.8
Total	44	84.6	8	15.4	52	100

Based on the results of table 4, it shows that out of 52 people, 44 people had high self-efficacy with 38 people (73.1%) having high medication adherence, and 2 (3.8%) people having moderate medication adherence. The results of data analysis using the Spearman rank statistical test showed that the significance value was 0.000 <0.05 with a correlation coefficient value of 0.552, which means there is a strong relationship between self-efficacy and adherence to taking medication in diabetes mellitus sufferers.

DISCUSSION

Identification of Self-Efficacy in Diabetes Mellitus Patients, Based on the research results, the level of self-efficacy in diabetes sufferers showed that 40 people (77%) had a high level of self-efficacy. This is in line with research (Pramesti et al., 2021) regarding the relationship between self-efficacy and compliance with taking oral hypoglycemic medication in people with type 2 diabetes mellitus, results were obtained from 60 respondents, 31 of whom had high self-efficacy. Study (Junaiddin, 2020), the results showed that out of 76 people, 50 people had high self-efficacy.

Self-efficacy is a concept used to evaluate a person's confidence in carrying out activities they choose as desirable endeavors. Viewed from a theoretical perspective, self-efficacy is considered to be closely related to the level of compliance, indicating that it is important to measure the context of this individual condition. Self-efficacy abilities can help someone make decisions, determine the type of effort they will undertake, and demonstrate the level of perseverance and determination in completing their tasks in everyday life. The process of forming self-efficacy includes several aspects, the first is the cognitive function which involves the feelings and assessments that the subject has towards themselves. Second, the motivational function which includes how individuals respond to failure and their behavior towards existing processes and rules. Third, affective function is related to how a person deals with stress and depression. Fourth, selective functions that influence individual decisions in choosing activities or goals, including personal interests, social networks, and personal development (Anti & Sulistyanto, 2022).

Self-efficacy refers to a person's confidence or belief in his or her ability to perform a certain behavior. As part of beliefs about one's abilities, self-efficacy operates together with goals, outcome expectations, perceived environmental barriers, as well as facilitating factors in the regulation of human motivation, behavior, and well-being. The concept of self-efficacy has been widely used in drug use practice and is considered an important component of diabetes care (Wu et al., 2023).

There are several factors that can influence self-efficacy, namely age, education, gender, and length of suffering (Djaelan et al., 2022; Megawatie et al., 2021). Based on gender, 31 respondents were female (59.6%). Researchers assume that gender influences the level of self-efficacy, assuming that in general, female patients adapt more quickly to illness conditions and have greater confidence in recovery and the ability to care for themselves compared to male patients. Individuals with a high level of self-efficacy have the potential to prevent failure and recover quickly when faced with problems.

Based on the age characteristics of respondents, the majority of respondents were 40-59 years old, 42 people (80.8%). The older they get, the more focused they are on the self-confidence they have to overcome problems. The aging process increases a person's level of self-confidence, allowing

them to be better able to maintain their health and manage symptoms as they arise, keeping their health functioning optimally (Alamsyah et al., 2020).

Based on the educational characteristics of respondents, the majority of respondents had a high school education, 47 people (90.5%). Education is closely related to a person's social status and health. The important role of education is seen in shaping individual knowledge and behavior. Adequate knowledge can help individuals understand and prepare for the changes that occur in life (Kusumastuti et al., 2022).

Based on job characteristics, the majority of respondents did not work as many as 30 people (57.7%). This is in accordance with research (Nellisa et al., 2021)the majority of respondents who do not work have high self-efficacy, employment status influences the self-efficacy of a diabetes mellitus sufferer, because working sufferers are vulnerable to experiencing stress and are busy with time at work so they do not have time to manage their disease which can affect self-efficacy. efficacy.

Based on the characteristics of the duration of suffering from diabetes mellitus, the majority of respondents had suffered from diabetes for > 2 years as many as 37 people (71.2%). Researchers assume that the longer someone has had diabetes, the more likely they have experienced various situations related to managing this disease. The experience can increase a person's confidence in managing their diabetes condition, including their ability to monitor blood sugar, follow a treatment plan, and overcome the daily challenges associated with the disease.

Identification of Medication Adherence in Diabetes Mellitus Patients, Based on the results of the research, 44 people (84.6%) showed medication compliance among diabetes sufferers. This is in line with research (Pramesti et al., 2021) as many as 31 people (51.7%) had high medication adherence. There are several factors that can influence adherence to taking medication, namely gender, age, education, employment(Anti & Sulistyanto, 2022). Based on the age characteristics of respondents, the majority of respondents were 40-59 years old, 42 people (80.8%). Based on gender, 31 respondents were female (59.6%). Age can influence a person's mindset so that it will influence behavior in improving their health status (Tambuwun et al., 2021). Women undergoing treatment will have higher compliance compared to men. Based on the age characteristics of the respondents (Sailan et al., 2021). Age is a determining factor in a person's ability to perform certain actions. In general, older people have a desire to care for themselves, however, the limitations that come with age often make implementing self-care difficult (Agritubella & Fatmi, 2023).

Based on the educational characteristics of respondents, the majority of respondents had a high school education, 47 people (90.5%). Education is related to a person's level of knowledge. Knowledge plays an important role in determining a person's behavior and attitudes, because knowledge will lead a person to think and try to take the right actions so that they can make the right decisions (Senudin & Lembu, 2016). According to Notoatmodjo, individuals with high knowledge will tend to adhere to treatment compared to individuals with low knowledge (Syamsudin et al., 2022). Based on job characteristics, the majority of respondents did not work as many as 30 people (57.7%). Employment status on medication adherence is related to the time an individual has to provide health care (Tambuwun et al., 2021).

Based on the characteristics of the duration of suffering from diabetes mellitus, the majority of respondents had suffered from diabetes for > 2 years as many as 37 people (71.2%). The length of time suffering from diabetes affects a person's compliance behavior in managing the disease so that sufferers will feel more bored in undergoing treatment or management of diabetes mellitus(Ridayanti et al., 2019). Compliance with diabetes management is very important because it can help maintain optimal health conditions, prevent dangerous complications, and improve the quality of life of diabetes sufferers.

Analysis of the Relationship between Self-Efficacy and Compliance with Medication in Diabetes Sufferers, The results showed that of the 52 people, 44 people had high self-efficacy, with 38 people (73.1%) having high medication adherence, and 2 (3.8%) people having moderate medication adherence. The results of data analysis using the Spearman rank statistical test showed that the significance value was 0.000 <0.05 with a correlation coefficient value of 0.552, which means there is a strong relationship between self-efficacy and adherence to taking medication in diabetes mellitus sufferers. This is in line with research (Ridayanti et al., 2019)There is a relationship between self-efficacy and the length of time suffering from diabetes and adherence to control in diabetes mellitus sufferers. Apart from that, research (Djaelan et al., 2022)showed the results that of the 40 respondents, the majority of respondents had low self-efficacy as many as 29 people (72.5%), 23 people (79%) were

not compliant with taking medication, and 6 people (21%) were compliant with taking medication. Self-efficacy is an important factor in influencing diabetes care, especially in terms of medication adherence (Dwitanta & Dahlia, 2020).

According to Bandura's theory, a person's behavior is influenced by their level of self-confidence, which is referred to as self-efficacy. Self-efficacy influences the type of action a person chooses, how hard they try, and their resilience and toughness in facing obstacles and failure (Zulkarnaini et al., 2022). Self-efficacy in diabetes sufferers is the belief that patients can carry out good health management and improve self-care management such as diet, physical exercise, medication adherence, control of sugar levels, and general diabetes care.

Obedience refers to the attitude of following previously given instructions without judgment. Non-adherence to medication therapy involves delays in taking prescribed medications, refusal to take prescribed medications, non-compliance with prescribed dosages, and reducing the frequency of medication consumption (Triastuti et al., 2020).

The results of the research above are consistent with research (Fahamsya et al., 2022)There is a relationship between self-efficacy and adherence to taking medication with a p value of 0.001 <0.05 with a coefficient value of 0.831. Additionally, research(Anti & Sulistyanto, 2022)shows the results of having high self-efficacy with high medication adherence. Adherence to treatment is a beneficial action. Individuals who experience benefits from changes in their behavior tend to have a strong motivation to follow all steps of treatment. Factors such as age, gender, duration of illness, and level of discipline are significant in changing patient behavior, which in turn influences their level of adherence to treatment. Researchers assume that increasing self-efficacy in diabetes sufferers will encourage them to maintain the behaviors needed for self-care, such as adhering to taking medication, following the recommended diet, and undergoing other diabetes treatments. Diabetes sufferers who have good self-efficacy tend to be more motivated to maintain their health well, including compliance with taking medication.

Thus, the level of compliance in controlling health conditions is also closely related to a person's level of self-efficacy. Uncontrolled diabetes can cause various serious complications such as heart disease, nerve damage, eye damage, kidney problems, and wounds that are difficult to heal. Adherence to a diabetes management plan can help reduce the risk of complications. From the discussion above, it can be concluded that the level of adherence to taking medication is closely related to the level of self-efficacy one has. Respondents with low self-efficacy tend to have a low level of compliance, while respondents with high self-efficacy tend to have a high level of compliance in taking medication as recommended. A low level of self-efficacy in patients can hinder their compliance with treatment, which can harm their health or even cause a decline in health due to non-compliance. This can be caused by a lack of motivation, self-awareness, and knowledge regarding the importance of medication adherence in managing diabetes.

CONCLUSION

Based on the results of the above study, the significance value of the spearman rank test was 0.00 < 0.05 with a correlation coefficient value of 0.552, which can be concluded that this study has a strong relationship between self-efficacy and adherence to taking medication in diabetes mellitus sufferers. Therefore, it is important to improve the self-efficacy of diabetics so as to increase medication adherence and manage their condition more effectively and reduce the risk of complications.

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