The Relationship Between Perceptions Of Disease And Long Suffering Self-Care Management Of Diabetes Mellitus Patients In Lamadukelleng Regional General Hospital Sengkang, Wajo District, South Sulawesi

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ARTICLE INFO	ABSTRACT
Keywords: Type 2 Diabetes Mellitus, Perception of Disease, Duration of Suffering, Self-Care	Self-care is self-care management to prevent complications in people with diabetes mellitus. Several factors influence a person's self-care, namely the Perception of the disease and the duration of suffering from diabetes mellitus. This study aimed to examine the relationship, direction, and closeness of the relationship between the Perception of the disease and the length of suffering in patients with type 2 diabetes mellitus. This type of research is a quantitative study with a correlational design and a cross-sectional approach. The sample of this study was 74 respondents who were taken using the purposive sampling technique. Data collection using the B-IPQ and SDSCA-Revised questionnaires. Data analysis using Spearman Rank test. The results showed that the average Perception of the disease was 48.59, the average length of suffering was 5.00 years, and the average self-care for diabetes mellitus patients was 48.58. There is a significant correlation between the Perception of the disease and the self-care of Diabetes mellitus patients, with a p-value = 0.00. There is no significant relationship between the length of suffering and self-care of people with diabetes mellitus, with a p-value = 0.132 (p > 0.05). It is recommended for people with diabetes mellitus to carry out self-care following what is recommended by PERKENI, especially in physical activities and foot care according to procedures. As well as health workers can provide information about diabetes mellitus to improve the patient's Perception of the disease.
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1. INTRODUCTION

The International Diabetes Federation states that 463 million people were living with Diabetes Mellitus in 2019; it is estimated that there will be an increase in cases of as many as 700 million people in 2045 [1]. Based on the number of people with Diabetes Mellitus, Indonesia is in 7th place out of 10 countries with the highest number of sufferers after China, India, America, Pakistan, Brazil and Mexico, with 10.7 million people[2]. Basic Health Research shows that Diabetes Mellitus is the fourth chronic disease in Indonesia. The prevalence of Diabetes Mellitus increased significantly from 2013 to 2018. Based on doctors' diagnoses, it increased from 1.5% in 2013 to 2% in 2018, based on an examination of blood glucose levels, and increased from 6.9% in 2013 to 8.5 % in 2018. Wajo Regency is the 3rd highest district (3.4%), while Makassar City is in 8th place from the South Sulawesi Provision with a total prevalence of 1.6%.

According to the South Sulawesi Provincial Health Office, Diabetes Mellitus in Indonesia from 2013 to 2018 experienced a significant increase, with a prevalence of 1.5% in 2013 and 2% in 2018. Wajo District ranks 3rd in South Sulawesi Province with a total prevalence, namely 1.6% [3]. Sengkang City, Wajo Regency, is the area with the second highest Diabetes case in South Sulawesi, with 5,252 cases in 2018 and experienced an increase in 2019, where 17,017 cases were found [4].

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Complications can occur in Diabetes Mellitus in the form of disorders of the nervous system/neuropathy and disorders of the blood vessels (macrovascular and microvascular). Macrovascular complications, in general, can affect the brain, heart and blood vessels, while microvascular complications can occur in the eyes and kidneys [5][6]. Based on research (2022) at the Lamadukalleng Sengkang Regional General Hospital, Wajo Regency, from 72 respondents, it was found that 43 patients (59.7%) had diabetes complications where the frequency distribution was acute complications of diabetic ketoacidosis patients (8.3%), hypoglycemia 8. patients (11.1%). Microvascular complications were neuropathy in 5 patients (6.9%), retinopathy in 8 patients (11.1%) and nephropathy in 11 patients (15.3%). Macrovascular complications were cerebrovascular in 3 patients (4.2%), coronary heart disease in 8 patients (11.1%), and ulcers in 20 patients (27.8%). The fourth cause of death worldwide is complications caused by Diabetes Mellitus[7] [8].

In Indonesia, self-care for people with Diabetes Mellitus is not optimal. In research conducted by [9] at the Taragong Health Center, Garut Regency, in 138 types 2 DM patients, self-care behavior in Diabetes Mellitus patients was on average at a moderate level, namely; based on diet as much as 14.5% (good), 48.6% (moderate) and 37.0% (bad). Self-care behavior based on medication is 44.2% (good), 16.7% (moderate), and 39.1% (poor). Self-care management behavior based on physical exercise is 1.4% (good), 98 6% (moderate) and nothing bad. Self-care management behavior based on blood sugar monitoring was 16.7% (good), 50.0% (moderate) and 33.3% (poor). Self-care management behavior based on foot care is 4.3% (good), 94.9% (moderate) and 7% (poor). Based on research conducted by[10] states that some people with Diabetes Mellitus at the Srondol Health Center in Semarang have realized the importance of self-care management of Diabetes. Still, some patients in practice have not optimally carried out several aspects of self-care management[11][12].

2.   METHOD
2.1. Types Of Research
This study uses non-experimental quantitative research with a correlational design[13]. The approach method used is a cross-sectional method to determine the relationship between Perception of disease[14], length of suffering and self-care management in patients with type 2 Diabetes Mellitus at Lamadukelleng Sengkang Hospital, Wajo Regency, South Sulawesi, where measurements on variables of Perception of disease, duration of suffering, and self-care are done at the same time.
2.2. Population And Sample
The population in this study were patients diagnosed with Type 2 Diabetes Mellitus at Lamadukelleng Sengkang Hospital, Wajo District, South Sulawesi, who had been screened. The population in this study were 202 people. In this study, researchers took a sample of 74 samples
2.3. Research Instruments
A research instrument is a tool used to obtain, manage and interpret information in research[15]. The research instrument used in this study consisted of 3 questionnaires: the respondent's demographic characteristics questionnaire, the disease perception questionnaire and the self-care questionnaire for Diabetes Mellitus patients.
2.4. Data Analysis
2.4.1. Univariate Analysis
Univariate analysis in this study, namely the distribution of the mean duration of illness, Perception of illness, and self-care management.
a. Long suffering from illness
This is the measurement result of the respondent Demographic Characteristics questionnaire instrument.
b. Perception of disease
This is the result of the B-IPQ questionnaire measurement instrument. The measurement results are expressed in a total score of 0-

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2.4.2. Bivariate Analysis

Bivariate analysis determines the interaction of the dependent and independent variables in correlation [16]. The statistical correlation test is based on the Kolmogorov-Smirnov data normality test, which uses a 95% confidence and $\alpha = 0.05$.

3.   RESULTS AND DISCUSSION

3.1. Univariate Analysis

3.1.1. Characteristics of Research Respondents

The researchers collected samples by visiting the Lamadukelleng Regional General Hospital in Sengkang City, Wajo Regency, according to the PROLANIS patient control schedule. Every Tuesday and Thursday morning.

Table 1. Distribution of Respondent Characteristics at the Lamadukelleng Sengkang Regional General Hospital, Wajo Padang Regency in 2021 (n=74)

Characteristics of Respondents	Frequency	%
Age		
a. Late Adult (36 – 45 years)	8	10,8
b. Early Elderly (46 – 55 years)	23	31,1
c. Late Elderly (56 – 65 years)	30	40,5
d. Seniors (>65 years)	13	17,6
Gender		
a. Man	19	25,7
b. Woman	55	74,3
Education		
a. Not completed in primary school	0	0
b. Graduated from elementary chool/equivalent	11	14,9
c. SLTP/Equivalent	28	37,8
d. High School/Equivalent	27	36,5
e. Academy/Higher College	8	10,8
Work		
a. Doesn't work	1	1,4
b. Labourer	8	10,8
c. Farmer	7	9,5
d. Self-employed	10	13,5
e. Private employees	4	5,4
f. civil servant	3	4,1
g. Housewife	35	47,3
h. Etc	6	8,1
Drug consumption		
a. Doctor's prescription	44	59,5
b. Doctor's prescription & herbal medicine	30	40,5
Treatment Place		
a. Lubuk Buaya Health Center	26	35,13
b. Paul Health Center	12	16,21
c. Gambir Health Center	16	21,62
d. Lubuk Kilangan Health Center	20	27, 02

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Table 1 shows 30 respondents in the late elderly range (47-65 years) (40.5%). The majority of respondents were female; namely 55 people (74.3%), had junior high school/equivalent education; namely 28 people (37.8%), worked as housewives as many as 35 people (47.3%), took drugs according to doctor's prescriptions. as many as 44 people (59.5%). Respondents obtained at the Lubuk Buaya Health Center were as many as 26 patients (35.13%), 12 patients (16.21%) at Pauh Health Center, 16 patients (21.62%) at Pegambiran Health Center and 20 patients (27.02%) at Lubuk Kilangan Health Center.

Table 2. Distribution of Average Length of Suffering in Type 2 Diabetes Mellitus Patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency (n=74)

Variable	Mean	SD	Min-Max
Long Suffered	5,72	0,46	1 – 24

Table 2 shows that the average patient suffering from type 2 diabetes mellitus is 5.72, with a standard deviation of 0.467. Respondents had the lowest diabetes mellitus for one year and the highest for 24 years.

3.1.2. Perception of Disease and Self-Care of Type 2 Diabetes Mellitus Patients

Table 3. Distribution of Mean Perceptions of Disease and Self-Care of Type 2 Diabetes Mellitus Patients at Lamadukelleng Sengkang General Hospital, Wajo Regency (n=74)

Variable	Mean	SD	Min-Max
Perception of disease	48,59	8,13	32-65
Self-Care	49,58	8,87	24-70

Table 3 shows that the average Perception of disease in patients with type 2 diabetes mellitus is 48.59 in the score range of 0-80 with a standard deviation of 8.13. The lowest score was 31, and the highest score was 65. The average Self-Care in type 2 diabetes mellitus patients was 49.58 in the score range of 0-112 with a standard deviation of 8.87. The lowest score is 24, and the highest score is 70.

3.1.3. Components of Disease Perception and Self-Care in Type 2 Diabetes Mellitus Patients

Table 4. Distribution of Mean Dimensions of Perception of Type 2 Diabetes Mellitus Patients at the Lamadukelleng Regional General Hospital, Sengkang, Wajo Regency

	Dimensions	Mean	SD	Min-Max
	Perception of Disease			
1.	Consequences	4,07	2,06	1 – 9
2.	Timeline	3,95	1,94	0 – 8
3.	Personal Control	7,85	1,68	2 – 10
4.	Treatment Control	9,16	1,22	5 – 10
5.	Identity	5,36	1,88	1 – 10

6. Concern	5,36	2,18	1 – 9
7. Illness Comprehensibility	7,55	1,56	4 – 10
8. Emotion	5,28	2,31	1 – 9

Table 4 displays disease perceptions and self-care data among respondents with diabetes mellitus. Perception of the disease consists of 9 subs, with the highest dimension in the treatment control dimension with an average value of 9.16 (SD = 1.22) with a minimum score range of 0 and a maximum score of 10. The lowest dimension is in the timeline dimension, with an average value of 3.95 (SD=1.94), with a minimum score range of 0 and a maximum score of 10.

Table 5. Average Distribution of Self-Care Indicators for Type 2 Diabetes Mellitus Patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency

Indicator	Mean	SD	Min-Max
Self-Care			
1. Diet Management	23,96	6,60	5 – 33
2. Physical Activity	3,00	2,32	0 – 9
3. Blood Sugar Management	1,35	1,25	1 – 8
4. Medication/Medication	13,45	1,82	3 – 14
5. Foot Care	1,00	2,66	0 – 17

Table 5 shows Self-care; there are five sub-indicators with the highest sub-indicator in the diet management indicator with an average value of 23.96 (SD=6.60), a minimum score of 0 and a maximum score of 35. The lowest score is in the foot care indicator, with an average value of 1.00 (SD=2.66), with a minimum score of 0 and a maximum score of 35.

3.2. Bivariate Analysis
Bivariate analysis determines the interaction of the dependent and independent variables in a correlation (Sujarweni, 2015). The statistical correlation test is based on the Kolmogorov-Smirnov data normality test, which uses a 95% confidence and α = 0.05.

3.2.1. The Relationship between Perception of Disease and Self-Care in Type 2 Diabetes Mellitus Patients at the Lamadukelleng Regional General Hospital, Sengkang, Wajo Regency

Table 6. Correlation between Perception of Disease and Self-Care of Type 2 Diabetes Mellitus Patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency

Variable	R	r^2	*P(value)*
Long Suffered			
Self-Care	0,53	0,28	0,00

Based on Table 6, it can be seen that the results of the Spearman Rank test have a value of p = 0.00, meaning that there is a significant relationship between the perception of disease and self-care for people with type 2 diabetes mellitus. The Spearman Rank correlation value of 0.53 has a moderate correlation with a positive correlation (+) which means that the greater the perceived value of disease, the greater the self-care value of type 2 diabetes mellitus patients at the Padang City Health Center. The magnitude of the coefficient of determination is 0.28, meaning that it explains that the disease

perception variable contributes an effective correlation of 28.19% to self-care in type 2 diabetes mellitus patients.

3.2.2. Relationship of Old Sufferers with Diabetes Mellitus Self-Care Type 2 at the Lamadukelleng Regional General Hospital, Sengkang, Wajo Regency

Table 7. Long Suffering Relationship with Self-Care of Type 2 Diabetes Mellitus Patients at the Lamadukelleng Regional General Hospital, Sengkang, Wajo Regency

Variable	R	r^2	*P(value)*
Long Suffered			
Self-Care	0,177	0,0313	0,132

Based on Table 7, it can be seen from the results of the Spearman Rank test the value of p = 0.132 means that there is no significant relationship between the length of time suffering from diabetes mellitus and self-care for type 2 diabetes mellitus patients at the Lamadukelleng Regional General Hospital, Sengkang, Wajo Regency.

3.3. Discussion
3.3.1. Description of Perception of Disease in Type 2 Diabetes Mellitus Patients

This study found that the average perception of disease was 48.59, with a minimum score of 32 and a maximum score of 65. If the respondent's answer score is closer to 80, then the perception of disease in type 2 diabetes mellitus patients is increasingly positive. The perception of type 2 diabetes mellitus patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency. Shows a fairly good level of perception. This study is not much different from the study of [17], which showed that the majority of diabetes mellitus patients had a positive perception of the disease, namely 24 patients (51.1%) of 47 respondents. Based on the results of the study, it was found that six of the nine dimensions of disease perception in diabetes mellitus patients described positive perceptions, namely the dimensions of treatment control (9.16), personal control (7.85), illness comprehensibility (7.55), timeline (3.95), consequences (4.07) and concern (5.36). Meanwhile, the dimensions of identity (3.36) and emotion (528) show result towards negative perceptions. This is in line with the results of a study by [18], showing that positive disease perceptions in patients with type 2 diabetes mellitus are in the dimensions of personal control, illness comprehensibility, treatment control, and consequences.

3.3.2. Description of Old Suffering Disease in Type 2 Diabetes Mellitus Patients

The research results obtained the median length of suffering from type 2 diabetes mellitus at the Lamadukelleng Sengkang General Hospital, Wajo Regency, namely 5.00 years with a minimum duration of suffering of one year and a maximum of 24 years. The majority of people with type 2 diabetes mellitus are for five years. This length of illness is one of the components of demographic characteristics. The duration of suffering from diabetes mellitus was different for each respondent; this was because, at the time of the interview, the majority of respondents answered that the duration of diabetes mellitus type 2 was based on the first time it was diagnosed by a doctor, even though patients were only diagnosed after treatment or after experiencing signs and symptoms/worsening of the condition.

3.3.3. Description of Self-Care in Type 2 Diabetes Mellitus Patients

Based on the characteristics of the respondents, the results showed that the highest number of respondents was in the late elderly group (56-65 years), namely 30 people (40.5%). The results of this study are in line with the research of [9], which states that most people with diabetes mellitus are in the late elderly age group (56-65 years), namely 62 people (44.9%). [8] states that one of the factors that have a high risk of suffering from diabetes mellitus is the age factor, namely the age group of 45 years

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and over, where at that age, the ageing process occurs, which reduces the ability of pancreatic cells to produce insulin thereby affecting blood glucose levels [19]. The study results showed that most respondents had junior secondary education, namely 28 people (37.8%).

3.3.4. Relationship between Perceptions of Illness and Self-Care Management Type 2 Diabetes Mellitus Patients

Based on the results of bivariate analysis using the Spearman Rank test, it is known that p = 0.000 (p <0.05), which means that there is a significant relationship between disease perception and self-care in type 2 diabetes mellitus patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency. The strength of the correlation (r) is moderate (0.531), and the direction of the correlation is positive, which means that the better the perception, the better the self-care for type 2 diabetes mellitus patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency. The results of this study follow research conducted by [20] that there is a relationship between self-care and several dimensions of disease perception with generally weak correlation strength (p <0.01).

3.3.5. Relationship between Long Suffering and Self-Care

Based on the results of bivariate analysis using the Spearman Rank correlation test, it was found that p = 0.132, meaning that there was no significant relationship between the length of suffering and self-care management in type 2 diabetes mellitus patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency. This is not in accordance with [21] that there is a significant relationship between the length of suffering and self-care in people with type 2 diabetes mellitus with p <0.05. The study by [2] also showed that the duration of suffering from type 2 diabetes mellitus is a variable that has a significant relationship with self-care.

Length of suffering is often associated with complications in type 2 diabetes mellitus. Research conducted by [22] shows that there is a relationship between the duration of suffering and the risk of developing neuropathy in patients with type 2 diabetes mellitus with a value of r = -0.438, which means the more how long a person has had type 2 diabetes mellitus

4. CONCLUSION

The conclusion from the research that has been done regarding the relationship between perception of disease and duration of suffering towards self-care management of type 2 diabetes mellitus at the Lamadukelleng Sengkang Regional General Hospital, Wajo Regency, it can be concluded that the average respondent's perception of disease is positive with a value of 48.59. Positive disease perceptions are in treatment control, personal control, illness comprehensibility, timeline, consequences and concern. Negative perceptions of disease are in the identity and emotion domains. So that it can be said that the perception of disease in patients with type 2 diabetes mellitus is in the adequate range, the median length of suffering for respondents in this study was five years, and the average self-care management of respondents in this study was 48.58. The best self-care is on the medication/medication indicator. Poor self-care was found in indicators of physical activity and foot care. There was a relationship between perception of disease and self-care in type 2 diabetes mellitus patients at the Lamadukelleng Sengkang General Hospital, Wajo Regency, with a positive direction and moderate correlation strength. This means that positive disease perceptions can increase self-care in diabetes mellitus patients.

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