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Original Research Article

The effects of complications, frequency of control and education level on quality of life of type 2 diabetes mellitus patients

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ABSTRACT

Background: Diabetes mellitus (DM) is a chronic disease with multiple aetiologies characterized by an increase in blood glucose levels exceeding normal limits. The world health organization predicts an increase in people with DM2 in Indonesia from 8.4 million to 21.3 million in 2030. Diabetes mellitus is one of the ninth main causes of decreased life expectancy, so it will greatly affect the quality of life of a person suffering from DM. Several factors that affect the quality of life of DM patients include age, gender, length of suffering, complications, education, marital status, level of compliance and occupation.
Methods: This type of research is descriptive research with total sampling and obtained a sample of 26 respondents. Measurement of quality of life using the SF-36 instrument then the results were analysed using the chi square test to see the relationship between the factors that affect the quality of life**.**
Results: The results obtained statistically that the complication factor (p=0.189) and the control frequency factor (p=0.596) did not significantly affect the quality of life. While the level of education statistically (p=0.006) affects the quality of life of DM patients.
Conclusions: The results of the statistical study between complication factors and the frequency of control on the quality of life of DM patients showed no significant relationship. Meanwhile, the education level factor, both statistically and clinically, showed that there was a significant relationship with the quality of life of DM patients.

Keywords: Quality of life, DM, Complication factors, Frequency of control, Education level

INTRODUCTION

Diabetes mellitus (DM) is a disease with a medical condition in the form of an increase in blood glucose levels exceeding normal limits. The world health organization (WHO) predicts an increase population of DM 2 in Indonesia from 8.4 million to 21.3 million in 2030. The increase is in line with the prevalence of obesity which is one of the strongest risk factors for diabetes.[1] In addition to obesity, other risk factors for DM 2 rise as the age increase and decrease in physical activity.[2] Diabetes is a major cause of kidney failure, heart attack, stroke, blindness or being able to make limbs amputated. The global burden of disease study identifies that diabetes is the ninth leading cause of decreased life expectancy, this of course will greatly affect the quality of life of a person suffering from DM.[3] The quality of life is a person's perception on their position in life and the cultural context and value system in which they live, and in relation to one's goals, expectations, standards, and concerns.[4] Quality of life is measured by the individual's perception of various aspects such as physical aspects, emotional aspects and social aspects. Furthermore, the quality of life is also influenced by the presence of chronic disease, some studies say that patients with chronic diseases have a lower quality of life value compared to healthy people.[5] The poor quality of life will lead to a decrease in self-care and increase the risk of complications. type 2 diabetes mellitus is a chronic disease that affects physical, psychological and social so

that it significantly affects the quality of life. [6] The factors that affect the quality of life of DM patients in a study conducted by Sari included gender, age, length of suffering, education, marital status, and occupation affect the quality of life.[7] One of the measuring tools used to see or assess the quality of life in patients with diabetes mellitus is the Short Form Health Survey 36 or SF-36, which includes 36 questions divided into 8 scales related to health function and scores of well-being (physical function, physical limitations, emotional control, energy-fatigue, mental health, social functioning, body pain, and general health).[8]

Aim

This study aims to examine the factors that affect the quality of life of DM patients in terms of complications, frequency of control and level of education at Griya Rasika Yogyakarta.

METHODS

This research method is a descriptive study, which was carried out at Griya Rasika Yogyakarta in the period July 2021. The research sample was taken by total sampling, namely the number of research samples was the same as the total population in the research location of 26 respondents. The inclusion criteria in this study were all type 2 DM patients undergoing outpatient treatment at Griya Rasika Yogyakarta, while the exclusion criteria were respondents who were not willing to fill out an informed consent form for the course of the study. The purpose of this study was to examine the effect of complications, frequency of routine control and level of education on the quality of life of diabetic patients. The study was conducted by providing an instrument in the form of a quality-of-life questionnaire SF-36 to respondents who had previously been willing to participate in the research and filled out an informed consent form. The results were analyzed by SPSS using Chi Square test.

RESULTS

The following are the characteristics of type 2 diabetes mellitus patients who participated in the study at Griya Rasika Yogyakarta. The sample obtained in this study were 26 respondents. For an overview of the quality of life of patients with diabetes mellitus in this study can be seen in (Table 2). To see the relationship of complication factors, frequency of control and level of education with the quality of life of the patients with diabetes mellitus can be seen in (Table 3).

DISCUSSION

The characteristics of the respondents in this study, the number of men and women showed the same numbers and percentages, namely 13 respondents each as seen in (Table 1). Meanwhile, the age range is dominated by 40 to 59 years with a total of 14 respondents (53.8%). The majority of respondents had suffered from diabetes for more than 5 years, namely 19 respondents (73.1%) while those who had diabetes for less than 5 years were 7 (26.9%) respondents. For the incidence of complications in the results of the study it turned out to show the same number of respondents who did not have complications, namely 13 respondents each. The longer the patient has diabetes, the greater the risk of complications.[9] The results of other studies say that the longer a person has diabetes, the higher the incidence of complications experienced by the patient.[10] This is also supported by previous research that complications arise after a long period of time. Suffering from diabetes runs between 10-15 years, because the longer a person has diabetes, the glucose in the blood will accumulate continuously and become complications. In this study, the number of respondents who experienced complications and did not experience complications turned out to be the same, it could be due to the fact that the patient's length of suffering had not been more than 10 years and the sample used in this study still tended to be small. The frequency of patients to do routine control for less than once every 6 months was obtained by 14 (53.8%) respondents, while as many as 12 respondents (46.2%) carried out routine control over 6 months. When a patient has been diagnosed with diabetes mellitus, it would be better if the patient had regular check-ups with the doctor at least once a month. This is to monitor related physical conditions, procedures for taking drugs, diet or to monitor blood sugar levels so as to minimize the occurrence of complications. Routinely every 1 month but they have the awareness to keep control. This can also be influenced because the current conditions during the pandemic to carry out control in health services are very limited and there is also a policy from the government regarding the implementation of PPKM, so many patients delay doing routine checks-up. The education level of the majority of them graduated from elementary school to junior high school as many as 19 (73.1%) respondents, while a total of 7 respondents (26.9%) graduated from tertiary institutions.

The description of the quality of life of patients with type 2 diabetes mellitus in Griya Rasika has a low score, namely 19 respondents (73.1%); while a number of 7 respondents (26.9%) had a high score. The relationship between complication factors, frequency of control and level of education on the quality of life of patients with diabetes mellitus is shown in (Table 3). The results of the significance of the Chi-Square test on the complication factor showed a value of 0.189; it means that statistically there is no relationship between complication factors and the patient's quality of life. Meanwhile, the proportion value shows more than 20%, meaning that clinically there is a relationship between complication factors and quality of life. This is in line with research conducted by Utami (2014), which shows that significantly most respondents who suffer from DM who do not experience complications have a high quality of life.

Table 1: Characteristics of research respondents (n=26).

Characteristics	N (%)	Mean±SD
Gender		
Male	13 (50)	1.5±0.5
Female	13 (50)	
Age (years)		
<40	1 (3.8)	2.5±0.8
40-59	14 (53.8)	
60-75	7 (26.9)	
>75	4 (15.4)	
DM duration (years)		
<5	7 (26.9)	1.7±0.5
>5	19 (73.1)	
Complications		
Yes	13 (50)	1.5±0.5
No	13 (50)	
Check-up Frequency (months)		
<6	14 (53.8)	1.5±0.5
>6	12 (46.2)	
Education		
Elementary–Senior high school	19 (73,1)	1.3±0.4
College	7 (26,9)	

Table 2: The description of diabetes mellitus patients quality of life (n=26).

Quality of life	N	(%)
High	7	26.9
Low	19	73.1

These results indicate that the presence of complications and uncomplicated factors affect a person's quality of life.[13] The control frequency factor for diabetes mellitus patients in (Table 3) shows significance value of 0.596, which means that there is no statistically significant relationship between control frequency and quality of life. While the proportion value of more than 20% means that clinically the frequency of control has a relationship with the quality of life of patients with diabetes mellitus. Of all patients diagnosed with DM, approximately half do not control their blood sugar levels, so that many DM sufferers experience or increase their risk of complications.

The risk of these complications will lead to high morbidity and mortality rates for people with diabetes and greatly reduce their quality of life. In line with research by Teli, it shows that there is a significant relationship between complications and the quality of life of DM patients.[14] Education level is one of the factors that can affect a person's level of quality of life. In table III the results of the study of the education level factor on the quality of life of DM patients, statistically shows a value of 0.006, which means that there is a significant relationship between the level of education and the quality of life. From the value of the proportion also shows the results of more than 20%; this means that clinically also shows there is a relationship between the level of education and the quality of life.

A person's level of knowledge will certainly affect the incidence of DM. Someone who has extensive knowledge, especially in the health sector, will be comparable to having a high level of education as well. By having this broad knowledge, they will also have a high level of awareness, pay attention to a healthy lifestyle and diet so that it will prevent the occurrence of a disease. If the occurrence of a disease can be avoided, it will indirectly increase efforts in maintaining a person's quality of life.[15] The results of research by Gunawan, states that there is a relationship between the level of knowledge and the level of quality of life of diabetic ulcer patients.[16]

Table 3: The relationship between complications, frequency of control and education level with quality of life (n=26).

Factors	Quality of Life				P value	Proportion (%)
	High		Low			
	N	%	N	%		
Complications						
Yes	5	38.5	8	61.5	0.189	50
No	2	15.4	11	84.6		
Check-up frequency (months)						
<6	4	28.6	10	71.4	0.596	50
>6	3	25	9	75		
Education						
Elementary-senior high school	2	10.5	17	89.5	0.006	25
College	5	71.4	2	28.6		

CONCLUSION

The results of the statistical study between complication factors and the frequency of control on the quality of life of DM patients showed no significant relationship. Meanwhile, the education level factor, both statistically and clinically, showed that there was a significant relationship with the quality of life of DM patients.

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