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RESEARCH

The Quality of Life of Type 2 Diabetes Mellitus Patients in Timor Ethnicity at Pasir Panjang Health Center, Kupang City

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ABSTRACT

Diabetes mellitus (DM) is one of the most common chronic diseases found in the 21st century. Data of the Pasir Panjang Public Health Center in 2017 showed that the incidence of Diabetes Mellitus that did not depend on insulin in the inpatient room was 91 people, with 10 dead patients. The amount is based on age, from 25 to 44 years, 1 man and 8 women; age 45-64 years, 22 men and 40 women; age over 65 years, 8 male and 11 female. The prevalence of DM-dependent non-insulin events with gangrene in Pasir Panjang Health Center in 2013 was 1 woman with age 54 years. In 2015 there were an increase of 8 people with the age of 45 - 64 years, with the number of men as many as 3 people. The purpose of this study was to determine the relationship between family support and the quality of life of people with Type 2 diabetes mellitus in ethnic Timor, at the Pasir Panjang Public Health Center, Kupang City. This research utilized cross sectional approach. The sample was Type 2 DM sufferers and their families, with a sample size of 52, which was selected by accidental sampling technique. Categorical data that have been collected are analyzed descriptively in the form of frequencies and percentages and are presented in tabular form. Then the hypothesis test was performed using the Chi-Square test. Chi-square test results showed a p-value of 0.045 so it was concluded that there was a relationship between family support and the quality of life of people with Type 2 DM in Pasir Panjang Public Health Center, Kupang City.
Keywords: type 2 diabetes mellitus, family support, quality of life

INTRODUCTION

Background

DM is one of the most common chronic diseases found in the 21st century. Based on data from the International Diabetes Federation (IDF)[(1)], there are 422 million people in the world who suffer from diabetes. While the prevalence of DM in 2015 in Indonesia is around 10 million people, so from the results of the survey, Indonesia is ranked 7th out of 10 countries with the most DM patients in the world. DM is a disease in which the body does not produce or cannot properly use insulin, which causes hyperglycemia. Clinically, there are 2 types of DM namely, type 1 DM which is caused by an absolute lack of insulin due to an autoimmune process, and type 2 DM that occurs due to resistance.[(2)] Type 2 diabetes is the type that is more commonly found and is usually caused by genetic factors.[(3)]

Type 2 DM is slow and progressive, so it is not detected early because the clinical picture experienced by patients is often mild such as trias diabetes mellitus, namely polyuria (often urinating), polydipsy (lots to drink) and polyphagia (lots of food).[(4)] Therefore, efforts to control DM are aimed at preventing microvascular and macrovascular complications.[(2)] Macrovascular complications include coronary artery disease, stroke and peripheral vascular disease, while microvascular complications include retinopathy, nepropathy, and neuropathy.[(5)] According to Perkeni (2011)[(6)], DM complications can be minimized. To support the improvement of the quality of life of people with DM, control is needed through 4 DM pillars, namely education, food planning, exercise (physical activity) and drug planning.

Self-care is an act that supports the management of diabetes mellitus proposed by Dorothea Orem, because diabetes mellitus is a chronic disease that is common in adults who need ongoing medical supervision and education about self-care for patients.[(7)] Forms of self-care include regulation of nutrition, physical activity, drug use and monitoring of blood glucose levels independently. Adhering to a series of routine medical activities is basically not an easy thing to do without support from others. According to Hadjam et al.[(8)], compliance can be influenced by several factors, one of which is social support. Gangrene is a process or condition characterized by the presence of dead tissue or necrosis. Diabetic gangrene is a wound on the feet that are blackish red and foul-smelling due to a blockage in the blood vessels in the legs.[(9)]

Diabetes mellitus sufferers generally experience problems with insulin. The hormone insulin cannot function properly, resulting in the deposition and accumulation of glucose in the body and cannot be distributed to cells

that need it, so that body cells that do not get food in the form of glucose become hungry and send signals to the brain so that people with DM eat or drink again. Diabetes can be caused by metabolic disorders related to the hormone insulin, environmental factors and unhealthy lifestyles, such as overeating, fatty foods, lack of physical activity, and stress. Diabetes can also occur due to hereditary factors.[10]

The International Diabetes Federation (IDF)[1] estimates that as many as 183 million people are unaware that they have DM. 80% of people with DM live in low-income countries. Most DM sufferers are aged between 40-59 years. In 2013, the proportion of Indonesia's population aged ≥15 years suffering from DM was 6.9%. In Indonesia, the highest prevalence of diabetes mellitus diagnosed by doctors was in Yogyakarta (2.6%), DKI Jakarta (2.5%), North Sulawesi (2.4%), and East Kalimantan (2.3%). While the highest prevalence of diabetes mellitus diagnosed by a doctor or determined based on signs and symptoms is in Central Sulawesi (3.7%), North Sulawesi (3.6%), South Sulawesi (3.4%) and East Nusa Tenggara (3.3 %).[11]

According to the International of Diabetic Ferderation[1], the global prevalence rate of DM sufferers in 2014 was 8.3% of the total population in the world and increased in 2014 to 387 million cases. Indonesia is the 7th country with DM patients of 8.5 million, after China (98.4 million), India (65.1 million), America (24.4 million), Brazil (11.9 million), Russia (10.9 million), Mexico (8.7 million), Indonesia (8.5 million), Germany (7.6 million), Egypt (7.5 million) and Japan (7.2 million).

According to WHO[12], 80% of DM sufferers in the world come from developing countries, one of which is Indonesia. The increasing number of people with DM that occurs consistently shows that DM is a health problem that needs special attention in public health services. The number of people with DM in the world from year to year continues to increase. Based on data from the International Diabetes Federation[1], the number of DM sufferers was 366 million in 2011, increasing to 387 million in 2014 and is expected to increase to 592 million by 2035. The number of deaths that occurred in 2014 was 4.9 million people, where every seven seconds there is one death from DM sufferers in the world.

Based on data from the World Health Organization[12], the number of DM sufferers worldwide was 347 million. Meanwhile, in 2012, it was reported that DM was the direct cause of 1.5 million deaths. More than 80% of deaths caused by diabetes occur in low and middle income countries.

Data of the Pasir Panjang Public Health Center in 2017 showed that the incidence of Diabetes Mellitus that did not depend on insulin in the inpatient room was 91 people, with 10 dead patients. The amount is based on age, from 25 to 44 years, 1 man and 8 women; age 45-64 years, 22 men and 40 women; age over 65 years, 8 male and 11 female. The prevalence of DM-dependent non-insulin events with gangrene in Pasir Panjang Health Center in 2013 was 1 woman with age 54 years. In 2015 there were an increase of 8 people with the age of 45 - 64 years, with the number of men as many as 3 people.

One complication of DM is damage to blood vessels throughout the body, called diabetic angiopathy, which takes place in a chronic manner, both in large blood vessels (macroangiopathy) and in small blood vessels (microangiopathy). Large blood vessels in people with DM will experience changes due to atherosclerosis which causes abnormalities of platelets, red blood cells, and blood clotting factors; and changes in blood vessel walls. Other factors that contribute to microvascular disorders are hypertension, hyperlipidemia, smoking, and obesity. Changes in blood vessels increase the risk of long-term complications that include coronary heart disease and hypertension, cerebral artery disease (stroke) and peripheral vascular disease. Peripheral vascular disease can occur in type 2 and type 2 DM, but the incidence is higher in type 2 DM. Atherosclerosis of leg arteries in DM patients starts at a younger age, development is faster, and can occur in both men and women. Peripheral vascular damage will develop into peripheral vascular insufficiency with intermittent pain in the legs and also the formation of ulcers in the legs. Grafting and thrombosis of large blood vessels and some small arteries and arterioles, which are accompanied by changes in neurological function and infection will result in tissue death / necrosis / gangrene.[5]

The role of nurses in handling gangrene wounds, one of which is preventive measures to avoid the emergence of diabetic gangrene. In addition to diabetes mellitus treatment must be done well, it is also necessary to avoid the occurrence of injuries to the lower leg ankle. If diabetic gangrene has occurred, the patient must be hospitalized because he must get insulin injections, high doses of antibiotics, and intensive care. The efforts made are wound care, foot care & maintenance, as well as the inclusion of strong nutrients to help the healing process.[9]

Purpose

The purpose of this study was to determine the relationship between family support and the quality of life of people with Type 2 diabetes mellitus in ethnic Timor, at the Pasir Panjang Public Health Center, Kupang City.

METHODS

This research was a quantitative study with cross sectional approach, which connects two variables, namely family support and the quality of life of people with Type 2 diabetes mellitus in Pasir Panjang Health Center, Kupang City. The population in this study were diabetics who were hospitalized and outpatient at Pasir Panjang Health Center, Kupang City in one month. Based on medical record data, the number of DM patients in the last month inpatients was 11 people and outpatients amounted to 90 people, so that the total number of inpatients and outpatients in the last month there were 90 DM patients. The sample was Type 2 DM sufferers and their families, with a sample size of 52, which was selected by accidental sampling technique.

At this stage the researcher began to make a research proposal. The proposal was arranged from chapter 1 to chapter 3. The researcher made a research permit after the research proposal has been made and has passed the proposal hearing stage. The permit included a research permit from the Pasir Panjang Public Health Center, Kupang City and a permit from the Director of the Health Polytechnic of Kupang. Researchers also proposed an ethical test at FK-Undana, Kupang. Before conducting research data collection, researchers first conducted a validity test and reliability of data collection instruments at the Pasir Panjang Public Health Center, Kupang City in 2018, after receiving a letter of research ethics. Validity and reliability tests were carried out on 40 DM patients and 40 DM patient families at the Pasir Panjang Public Health Center, Kupang City in 2018.

After completing the validity and reliability test, the researcher asked for help from two research assistants. One student was tasked with helping data retrieval and one research assistant in charge of reading and writing answers according to respondents' answers. Equalization of perception was done with an assistant in charge of data retrieval so as to minimize bias. At this stage the researchers began to process data from the results of filling out the questionnaire that was filled out by respondents. Categorical data that have been collected are analyzed descriptively in the form of frequencies and percentages and are presented in tabular form[13]. Then the hypothesis test was performed using the Chi-Square test.

RESULTS

Table 1 shows data on family support in people with diabetes mellitus that were dominated by good categories (80.8%).

Table 6. Family support for DM patients at Pasir Panjang Health Center, Kupang City

Family support	Frequency	Percentage
Good	142	80.8
Bad	8	19.2
Total	150	100

Table 2 shows data about the quality of life of patients with DM which were dominated by poor categories (71.2%).

Table 2. Quality of life of DM patients

Quality of life	Frequency	Percentage
Good	80	53.3
Bad	70	46.7
Total	150	100

Chi-square test results showed a p-value of 0.045 so it was concluded that there was a relationship between family support and the quality of life of people with Type 2 DM in Pasir Panjang Public Health Center, Kupang City.

DISCUSSION

Family Support for DM Patients

The results showed that family support in people with DM was dominated by good categories. Family support is a form of assistance given to one of the family members to provide physical and psychological comfort when someone is sick. Family support that can be provided by families to DM sufferers in the form of emotional support, appreciation support, internal support and information support. Emotional support in the form of caring or empathy, appreciation support that is positive appreciation for family members so that family members feel valued, instrumental support is support given in the form of equipment or tangible objects such as giving money for the treatment of sick family members, and information support that is support given in the form of advice or suggestions for family members, for example giving advice to family members for routine medical treatment.[14]

According to Retnowati[15], family support can be influenced by family form factors. Smaller family forms provide less family support because fewer family members and the busyness of each family member so that the family support provided will be low, conversely the large family form consists of many family members so that it can provide higher family support. Family practice also influences family support, because families that provide positive support will have high family support, but if the family provides negative support then family support will be low.[16]

According to Amelia et al.[16], spiritual well-being can increase the ability of a family or individual to deal with stress in dealing with illness so that the family support provided will be high.

High family support will provide comfort and tranquility to sufferers of DM.[17] This statement is in line with Friedman's[14] statement that adequate family support has been shown to be associated with decreased mortality so that it is easier to recover from illness.

Quality of life of DM Patients

The results showed that the majority of respondents had poor quality of life. Quality of life is an individual's perception of values and concepts in relation to achieving life expectancy.[12] Quality of life in this study was influenced by income factors and length of suffering. Based on the income of DM sufferers, the highest income of DM sufferers is below the minimum wage and the highest quality of life is poor.

The results of this study are in line with[18], that a person's income will greatly affect the quality of life, because low income will hinder DM treatment, so that quality of life will be low. Whereas higher income will make it easier for DM sufferers to access information and get their health care, so that quality of life will improve.[19]

The duration of suffering from diabetes is> 3 years. Quality of life can also be affected by the duration of DM. The duration of suffering from DM> 1 year can cause physical disorders such as decreased vision, hypertension and heart problems.[20] Ningtyas[21] also reported that the duration of suffering from DM was related to the quality of life of people with DM. Patients with DM> 10 years have a 4 times greater risk of having a lower quality of life than those suffering from DM <10 years.

Other factors that can affect quality of life include religion and marital status. Religion is believed by DM sufferers as the key in living life because God is stronger and governs everything.[22] DM sufferers in addition to carrying out routine self-care, must be balanced with diligent worship and get closer to God, so that the quality of life will improve.[23] Marital status can also affect the quality of life of people with DM. According to Ningtyas[21], DM sufferers who are widowed / widower have a risk of 12.4 times greater to have a lower quality of life than DM sufferers who have partner status. Widows or widowers who have left their partners will experience deep sadness and stress so that it can affect the motivation of sufferers to undergo treatment.

Relationship between Family Support and Quality of Life of DM Patients

The results showed that there was a relationship between family support and the quality of life of patients with Type 2 diabetes. The results of this study were in line with research conducted by Retnowati & Setyabakti[24] at the Tanah Kali Kedinding Health Center, that family support was significantly related to the quality of life of people with DM, with a p-value of 0,000. Family support can improve the quality of life by regulating one's psychological processes and facilitating one's behavior.

In the Tamara study[20] conducted at Arifin Achmad Hospital, it was concluded that there was a relationship between family support and the quality of life of patients, with a p-value of 0.030. Family support that is usually

received from families is encouragement to check their health in the hospital and motivate to support the efforts of DM sufferers in the treatment of their illnesses, so that this family support can improve the quality of life of DM sufferers.

Yusra[25], also reported a significant relationship between family support and the quality of life of people with DM with a p-value of 0.001. High family support will improve the quality of life of patients, because an increase in one family support domain will improve quality of life by 35%.

CONCLUSION

Referring to the results of data analysis, it can be concluded that the quality of life of sufferers of Type 2 diabetes in Pasir Panjang Health Center, Kupang City is related to the family support given to them.

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