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CORRELATION BETWEEN SELF-CARE AND QUALITY OF LIFE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS AT ROYAL PRIMA GENERAL HOSPITAL MEDAN

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Abstract. Self-care plays a crucial role in managing Type 2 Diabetes Mellitus (T2DM) and directly impacts patients' quality of life. This study aims to analyze the correlation between self-care and the quality of life of T2DM patients at Royal Prima General Hospital, Medan. This research employs a cross-sectional design with a sample size of [insert number] patients, selected through [sampling method]. Data were collected using standardized self-care and quality of life questionnaires. The results indicate a significant positive correlation between self-care and quality of life, with a p-value < 0.05. Patients who demonstrated better self-care practices reported higher quality of life scores. These findings suggest that enhancing self-care behaviors through education and support programs can improve the overall well-being of T2DM patients.

Keywords: quality of life; type 2 diabetes mellitus; Royal Prima general hospital Medan

I. INTRODUCTION

Currently, there are many diseases that can attack humans, one of which is non-communicable diseases (NCDs). Non-communicable diseases (NCDs) have become a major problem in Indonesian society. Non-communicable diseases tend to continue to increase globally and nationally, they have been ranked in the top ten causes of death [1]. This is marked by a shift in the epidemiological pattern of disease from infectious diseases which tend to decrease to non-infectious diseases which are increasing globally in the world [2].

Changes in human lifestyles such as lifestyle, socio-economic, urbanization and industrialization will ultimately increase the prevalence of non-communicable diseases, especially degenerative diseases. The tendency to switch from traditional foods to fast and fatty foods, especially in urban areas, results in changes in disease, namely a decrease in infectious diseases and an increase in non-infectious (degenerative) diseases. This shows that an epidemiological transition has occurred. One type of non-communicable disease that turns out to cause high morbidity and mortality is diabetes mellitus [3].

The endocrine system plays a role in maintaining and regulating very important functions, for example: response to injury, stress, reproduction, growth and development, ionic hemostasis and metabolism [4]. Endocrine glands are glands that release certain substances into the bloodstream. The pancreas functions to produce the hormones insulin and glucagon. The function of the pancreas is very important in the body's metabolic system, in addition to producing hormones, the pancreas also functions as the main organ for producing enzymes and digesting food [5]. The endocrine system regulates and maintains body functions, if endocrine disorders occur it will cause complex problems especially disturbed body function metabolism. Some endocrine disorders are Diabetes Mellitus, Hyperthyroidism, Hypothyroidism, Cushing's syndrome, Addison's disease, Acromegaly, and Gigantism [6].

Diabetes Mellitus is a metabolic disorder characterized by hyperglycemia with the characteristic of fasting blood glucose levels of more than 126 mg/dl or abnormalities in insulin secretion, insulin function, or both [7]. Diabetes is a metabolic disorder with multiple etiologies known to be caused by disorders in carbohydrate, lipid and protein metabolism as a result of insufficiency of insulin function from beta Langerhans cells of the pancreas gland, or as a result of the lack of responsiveness of body cells to insulin [8].

Type 2 diabetes mellitus is a disorder of insulin secretion or insulin function (insulin resistance) in target organs, especially the liver and muscles. Initially, insulin resistance does not yet cause clinical diabetes. At that time, pancreatic beta cells can still compensate for this condition and hyperinsulinemia occurs and blood glucose is still normal or slightly increased. 90% of diabetes cases are type 2 diabetes mellitus with characteristics of impaired insulin sensitivity and/or impaired insulin secretion [9]. Type 2 diabetes mellitus clinically appears when the body is no longer able to produce enough insulin to compensate for the increase in insulin resistance [10].

Endocrine disorders with an estimated prevalence in the United States of at least 5% in adults include diabetes mellitus, impaired fasting glucose, and impaired glucose tolerance. The

Volume 08, Number 03, Page 1008-1012
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least prevalent conditions, affecting less than 1% of the American population, are juvenile diabetes mellitus and pituitary adenoma. The conditions with the lowest incidence are adrenocortical carcinoma, pheochromocytoma, and pituitary adenoma. Certain disorders, such as hyperparathyroidism and thyroid disorders, are more common in women. As expected, the prevalence of diabetes mellitus is highest among ethnic minorities [11]. The prevalence of endocrine system disorders in Italy is 25%, where endocrine cases that occur are hypogonadism at 15%. The prevalence of endocrine system disorders in Indonesia is not fully explained because it is rare. The most common endocrine system emergency is diabetes, although other endocrine emergencies are relatively rare, but it is important to be aware of this, because of the high mortality rate and its impact on patient survival, diabetes becomes an endocrine system emergency because it has a high prevalence [12].

The high prevalence of type 2 diabetes mellitus in the world is the most common type of diabetes, accounting for more than 90% of all diabetes worldwide. IDF states that the countries with the highest number of sufferers in the world are: China 116.4 million people, India 77 million people, the United States 31 million people, these three countries are in the top 3 in 2019. Indonesia is ranked 5th in the world with 18 million sufferers in 2020(IDF, 2021). The only country in Southeast Asia that is included in the list, so it can be estimated how big Indonesia's contribution is to the prevalence of diabetes in Southeast Asia. (Ministry of Health of the Republic of Indonesia, 2020).

The results of the 2018 Riskesdas showed that the highest prevalence of diabetes mellitus in Indonesia was 4, namely DKI Jakarta (3.4%), East Kalimantan (3.1%), in Yogyakarta (3.1%), and North Sulawesi (3%). North Sumatra was ranked 12th with 2% prevalence of diabetes in Indonesia (Ministry of Health of the Republic of Indonesia, 2020).

The number of diabetes mellitus sufferers in North Sumatra increases every year. Based on data obtained from the North Sumatra Health Office, it was stated that from 2017 to 2018 the number of type 1 diabetes mellitus sufferers was 18,458 people and type 2 was 54,843 people [13]. In 2019, the Medan City Health Office recorded the number of DM patients at 27,075 patients, in total, patients aged > 55 years amounted to 85%, also of that total, 70% were women from all patients spread across 39 health centers in Medan City. From this data, it can be seen that DM in North Sumatra is quite high [14]. The increase in the number of cases of diabetes mellitus has an impact on the increase in complications experienced by patients with type 2 diabetes mellitus. Complications that occur due to diabetes include disorders of the blood vessels and disorders of the nervous system or neuropathy [13].

DM complications can affect all aspects of the sufferer's life and have an increased risk of complications such as heart disease, stroke, neuropathy in the feet which can increase the incidence of infected foot ulcers and even the need for amputation, retinopathy, kidney failure and can be life-threatening or even fatal if not treated immediately and properly controlled. Diabetes mellitus sufferers who experience complications will have an impact on decreasing life expectancy (UHH), decreasing quality of life, and increasing morbidity rates [2].

Quality of life is a good or bad condition of diabetes mellitus patients in viewing their disease. Quality of life is a person's perception of their position in life in the context of the culture and values in which they live and in relation to life goals, expectations, standards, and concerns which are comprehensive concepts that can affect a person's physical health, mental condition, level of dependency, social relationships, personal beliefs, and their relationship to future environmental expectations [15].

Aspects that can affect quality of life, namely the existence of special needs that are continuously ongoing in the care of diabetes mellitus, what symptoms appear when blood sugar levels are unstable, complications that can arise due to diabetes and sexual dysfunction. These aspects can be overcome if patients can carry out good and regular control through regular, appropriate and permanent lifestyle changes. So that there are no complications that can reduce the quality of life of diabetes mellitus patients and can carry out daily life properly [16].

One of the factors that can improve the quality of life of type 2 DM patients is by implementing good self-care. Good self-care is seen from compliance with diet, blood sugar measurement, exercise, availability of blood sugar level testing tools and education [17]. Self-care is a treatment carried out independently by patients to observe their own needs without depending on the surrounding environment. Self-care management of type 2 DM patients consists of following a diet program, physical exercise, controlling blood sugar levels, medication, and the availability of blood sugar level testing tools to prevent further complications and control blood glucose. Self-care in the context of patients with chronic diseases is complex and is very much needed for the successful management and control of the chronic disease. Self-care can be used as a problem-solving technique in relation to coping abilities and stressful conditions due to chronic diseases [18]. This is in accordance with the research conductedThe Witch (2021) where diabetes sufferers who carry out self-care have a positive influence on lifestyle changes in attitudes and behavior to prevent complications, so that there is an increase in the quality of life as a whole, namely bio, psycho, socio and spiritual.

II. RESEARCH METHODS

This type of research is mix methods research (combination method) using a cross sectional approach. According toThe Last Supper (2019) "Combination research method is a research method that combines or combines quantitative methods and qualitative methods to be used together in a research activity, so that more comprehensive, valid, reliable and objective data is obtained." According toThe Last Supper (2021) quantitative research is a type of research that uses numbers in responding to data to produce structured information. Qualitative is research that is descriptive and tends to use analysis with an inductive approach. Qualitative research is also called interpretative research, nature research, or

Volume 08, Number 03, Page 1008-1012
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phenomenological research. The qualitative approach emphasizes the meaning, reasoning, definition of a particular situation (in a particular contest), and examines more things related to everyday life [19].

Qualitative research according [20] is a naturalistic inquiry process that seeks a deep understanding of social phenomena in nature. A case study is a comprehensive description and explanation of various aspects of an individual, a group, an organization, or a program, or a social situation. Case studies are used to provide an understanding of something of interest, a concrete event, and a social process [21]. Cross-sectionalis research that is carried out once without any continuation [22]. This research design uses Cross Sectional. According to [23] Cross Sectional is a study that studies risk factors and effects, by means of an approach, observation or data collection at the same time.

Population is the totality of every element to be studied that has the same characteristics, it can be individuals from a group, an event, or something to be studied [24]. Population is a generalization area consisting of: objects/subjects that have a certain quantity and characteristics determined by the researcher to be studied and then conclusions drawn [22]. The population in this study were patients with type-2 diabetes mellitus at RSU Royal Prima Medan in the last 3 months, totaling 1,760 patients.

According toThe Man Who Loved Me (2021) sample is a part of the population. Sample according to The Last Supper (2019) sample is part of the number and characteristics owned by the population. While sample size is a step to determine the size of the sample taken in conducting a study. From several opinions of the experts above, it can be concluded that the sample is part of the population.

Determination of the sample using interpretation estimation with Structural Equation Modeling (SEM), purposive sampling approach. According to [25], the sample size in a study if it is too large will make it difficult for researchers to get a suitable research model and it is recommended that the appropriate sample size ranges from 100-200 respondents so that interpretation estimation with Structural Equation Modeling (SEM) can be used so that the sample used in this study was 200 samples.

The sampling method used in this study is accidental sampling. Incidental Sampling/Accidental Sampling is a sampling technique based on coincidence, namely any type-2 diabetes mellitus patient who accidentally meets the researcher can be used as a sample, if it is considered that the person who was accidentally met is suitable as a data source [22].

The informants in this study for qualitative analysis were 8 patients. Various variables according toThe Greatest Showman (2019) There are five, namely independent variables, dependent variables, intervening variables, moderating variables, and control variables. However, in this study, the researcher only used two variables, namely the independent variable or free variable and the dependent variable or bound variable.

III. RESULTS AND DISCUSSION

A. *Quantitative Research Results*

TABLE 1.
THE QUALITY OF LIFE OF TYPE 2 DM PATIENTS

Quality of Life of Type 2 DM Patients	n	%
Good	**129**	**64.5**
Not good	**71**	**35.5**
Total	**200**	**100**
Age	**n**	**%**
20-30 Years	7	7.1
31-40 Years	44	44.4
>40 Years	48	48.5
Total	**99**	**100**
Gender	**n**	**%**
Man	65	65.7
Woman	34	34.3
Total	**99**	**100**
Education	**n**	**%**
SENIOR HIGH SCHOOL	54	54.5
Diploma	11	11.1
S1	30	30.3
S2	4	4
Total	**99**	**100**

Source: Primary Data Processed 2024

TABLE 2.
SELF-CARE DIET

***Self Care*Diet**	**n**	**%**
Good	127	63.5
Not good	73	36.5
Total	**200**	**100**

Table 2. explains the results of the frequency of self-care diet of Type 2 DM patients in this study. The results of the study showed that there were 127 (63.5%) patients with good self-care diet, and 73 (36.5%) patients with poor self-care diet.

B. *Self-Care Physical Activity*

The following are the results of univariate analysis of self-care physical activity in Type 2 DM patients.

TABLE 3.
SELF-CARE PHYSICAL ACTIVITY

***Self Care*Physical Activity**	**n**	**%**
Good	126	63
Not good	74	37
Total	**200**	**100**

Table 3 explains the results of the frequency of self-care physical activity of Type 2 DM patients in this study. The results of the study show that patients with good self-care

Volume 08, Number 03, Page 1008-1012
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physical activity were 126 (63%), and patients with poor self-care physical activity were 74 (37%).

C. Self-Care Drug Therapy

The following are the results of univariate analysis of self-care drug therapy for Type 2 DM patients.

TABLE 3.
DISTRIBUTION OF RESPONDENTS' ANSWERS ON THE DRUG THERAPY SELF-CARE VARIABLE

No	Question	Answer								Total %
	Self-Care Drug Therapy	0	1	2	3	4	5	6	7	
1	How many days in the last week did you take your recommended diabetes medication?	-	3 (1.5 %)	24 (12 %)	32 (16 %)	13 (6.5 %)	42 (21%)	53 (26.5 %)	33 (16.5 %)	200 (100 %)
2	Do you use insulin? If yes, how many days in the last seven days did you use the recommended insulin for you?	-	4 (2%)	42 (21 %)	11 (5.5 %)	18 (9%)	41 (20.5 %)	63 (31.5 %)	21 (10.5 %)	200 (100 %)

TABLE 4.
SELF-CARE DRUG THERAPY

Self Care Drug Therapy	n	%
Good	123	62.5
Not good	77	37.5
Total	**200**	**100**

Table 4 explains the results of the frequency of self-care drug therapy for Type 2 DM patients in this study. The results of the study show that patients with good self-care drug therapy were 123 (62.5%), and patients with poor self-care drug therapy were 77 (37.5%).

IV. CONCLUSIONS

The conclusions in this study are as follows: The majority of respondents in this study were aged >40 years (112 (56%), male (126 (63%), had a high school education (95 (47.5%) and had a duration of suffering >2 years (112 (56%). Majority of quality of lifeType 2 DM patients in this study were in good condition, as many as 129 (64.5%). There isCorrelation of self-care diet with quality of life of Type 2 Diabetes Mellitus Patients at Royal Prima Hospital Medan. There is a correlation between self-care physical activity and the quality of life of Type 2 Diabetes Mellitus Patients at Royal Prima Hospital, Medan. There is a correlation between self-care drug therapy and the quality of life of Type 2 Diabetes Mellitus Patients at Royal Prima Medan Hospital. There is a correlation between self-care monitoring of blood sugar and the quality of life of Type 2 Diabetes Mellitus Patients at Royal Prima Hospital, Medan. There is a correlation between self-care availability of blood sugar level testing tools and the quality of life of Type 2 Diabetes Mellitus Patients at Royal Prima Medan Hospital. There is a correlation between self-care knowledge and the quality of life of Type 2 Diabetes Mellitus Patients at Royal Prima Medan Hospital.

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