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FACTORS ASSOCIATED WITH PATIENT MEDICATION ADHERENCE DIABETES MELLITUS IN THE VILLAGE OF TANJUNG NAIRA IN CLINIC PITU MIDDLE DISTRICT OF NORTH HALMAHERA TOBELO

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ABSTRACT

Diabetes mellitus (DM) is a collection of symptoms in a person As a result of the body's metabolic disorder resulting in increased levels of sugar in the blood disorders can be caused by insulin secretion inadequate, impaired insulin action (insulin resistance) or maybe a combination of both.

Research purposes: To determine what factors are associated with treatment compliance in patients with diabetes mellitus (DM) in the sub-district Clinic Tobelo Middle Pitu

Types of research: This study uses a quantitative research design, the research describe or explain the situation problem. With a view to determining whether there facto-factors related to treatment compliance (independent variable) in patients with diabetes mellitus (dependent variable).

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The sample is part of a number of characteristics at Milki by the population used to research. The sample in this study was 60 orang. Result test analysis statistical software (SPSS) to make use of the chi-square test know that the value ($p = 0.00 < \text{sig } 0.05$), it can be in concluding that the factors associated with treatment compliance are accepted. Based on the research results have shown that there are factors associated with treatment compliance in patients with diabetes mellitus.

Preliminary

Diabetes mellitus (DM) is a collection of symptoms in a person's body as a result of metabolic disorders which results in increased levels of sugar in the blood. Disturbance can be caused by insulin secretion inadequate, impaired insulin action (insulin resistance) or maybe a combination of both.¹

World Health Organization(WHO) Currently, there are 366 million people with diabetes in the world, in Indonesia in 2000 as many as 8.4 million people and will increase to 21.8 million in 2030, Indonesia ranks fourth after the United States, China, and India among country- countries with a higher number of people with diabetes, with the largest population in world. Patient case of PTM as DM should do therapy so that the management of their health status can be controlled and avoid the complications of the disease in patients with diabetes mellitus Noncompliance therapy is one of the causes of the failure in the treatment of diabetes, Based on data obtained from northern Maluku provincial health profile can be determined the prevalence of Diabetes Mellitus in North Maluku in 2014 of 2.1%⁷. According to Riskesdas conducted by the Ministry of health, North Maluku is a region with a prevalence of diabetes mellitus (DM) is the highest in Indonesia, namely 11.1%. Of all the counties and cities at the province North Maluku, city Eclectus is the city with the prevalence of diabetes mellitus (DM), the second-largest after Halmahera 16% of the total prevalence of diabetes in North Maluku, or 2% below the North Halmahera, north is the region with the highest prevalence, ie 18% of the total prevalence of diabetes mellitus (DM) in

North Maluku. Based on data from northern Halmahera district health offices,

Based on preliminary data taken from the clinic pitu number of patients with diabetes mellitus in the year 2019 from the month of February to May amounted to 60 patients, patients Diabetes.⁹

Formulation of the problem

From the above background, the formulation's problem is the facto-factors that patronizing treatment adherence of patients with diabetes mellitus (DM).

Research purposes

General purpose

To see what factors are associated with adherence to treatment of patients with diabetes mellitus (DM) in Clinic Pitu Tobelo District of Central.

Special purpose

- a. For any know the factors associated with adherence treatment in patients with diabetes mellitus (DM) in Clinic Pitu Tobelo District of Central.
- b. To determine the total number of patients with diabetes mellitus (DM) abiding treatment at Clinic Pitu Tobelo District of Central

Benefits of Research

for researchers

As a means to increase knowledge and insight regarding the factors associated with adherence to treatment of patients with diabetes mellitus (DM) in the sub-district health centers Pitu Tobelo.

For Educational Institutions

- a. As additional material science at the high school nursing students STIKMAH of the factors associated with adherence to treatment of patients with diabetes mellitus (DM).
- b. The Information can be used as a comparison for conducting advanced research for students and lecturers.

For Further Research

Hopefully, this research can increase knowledge, skills and broaden their horizons and could be material/resource for researchers in the analysis of the factors associated with adherence to treatment of patients with diabetes mellitus (DM).

Literature review

Diabetes mellitus

Diabetes mellitus is a metabolic disorder that is marked by hyperglycemia associated with abnormalities in the metabolism of carbohydrates, fats, and proteins caused by a decrease in insulin secretion or a decrease in insulin sensitivity or both cause chronic microvascular complications and neuropathy.¹⁰

Classification of Diabetes Mellitus (DM)

a. Type 1 diabetes

Type 1 diabetes is called juvenile diabetes or insulin-dependent diabetes, is usually first diagnosed in children, teenagers, or young adults.

b. Diabetes Type 2

Type 2 diabetes is called adult diabetes or non-insulin dependent diabetes, is the most common form of diabetes.

c. Another type of diabetes

Another type of diabetes is gestational diabetes suffered by some women during the late stages of pregnancy.

Etiology

The cause of diabetes is a lack of insulin products (either absolute or ratify to the needs of the body), production of defective insulin (which is rare), or the inability of cells to use insulin properly and efficiency lead to hyperglycemia and diabetes.¹¹

Causative factor

Whereas the causes of diabetes disease can be caused by some things, namely:¹¹

a. Dietary habit

The pattern of overeating and exceeds the caloric content that is already available by the body to stimulate the onset of diabetes. It this is caused by the amount or concentration of insulin by pancreatic β cells for maximum has the capacity secreted.

b. obesity

People who are obese with a body weight greater than 90 kg have a tendency more likely to develop diabetes than non-obese with people.

c. genetic factors

A child can inherit genes that cause diabetes than people old. Usually, a person suffering from diabetes has affected the family that members as well.

d. Chemicals and pharmaceuticals

Certain chemicals can irritate the pancreas that causes inflammation of the pancreas.

e. Disease and infection of the pancreas

Microorganisms such as bacteria and viruses can infect the pancreas, causing inflammation that causes cells to the pancreas

The thing pancreas does not work optimally in secreting insulin.

Pathophysiology

a. Patofisiologi Diabetes Mellitus

In type 1 diabetes mellitus (5% -10%) typically develops in childhood -school or early in adulthood and generally occurs due to damage cells of the pancreas self caused by an autoimmune reaction resulting in insulin deficiency.

B. DM Type 1 (DMT Depending 1 = Diabetes Mellitus Insulin)

DMT 1 is an insulin-dependent diabetes mellitus. In DMT 1 abnormality lies in beta cells that can be idiopathic or immunologic. The pancreas is not able to synthesize and secrete insulin in sufficient quantity and or quality, sometimes nothing at all. So, in this case, there is a shortage of insulin in a way absolut.¹¹

In the first DMT usually, insulin receptors in peripheral tissues and its quality enough or normal quantity

(number of insulin receptors antara 30.000-35.000 DMT 1) the number of insulin receptors on normal people \pm 35.000. sedang in DM with obesity \pm 20,000 receptors insulin.¹¹

DMT 1, usually diagnosed since childhood. In DMT 1 tubuh patients is only slightly produce insulin or even completely do not produce insulin, and therefore to survive sufferer's life must receive insulin injections every day. Without settings DMT1 daily, in an emergency, can occur.

C. DM Type 2 (Not Dependent Diabetes Mellitus Insulin = DMT 2)

DMT 2 is insulin-dependent diabetes mellitus. In this type, at first, abnormalities are located in peripheral tissues (insulin resistance) and then followed by pancreatic beta-cell dysfunction (defects sekresi insulin), namely as continues.¹¹

1. The secretion of insulin by the pancreas may be sufficient or less so that glucose has been absorbed into the blood but an effective amount of insulin is not adequate.
2. The number of receptors in peripheral tissues less (between 20,000-30,000) on obesity the number of receptors even just 20,000.
3. Sometimes a sufficient number of receptors, but the quality worst recipe so ineffective insulin action (insulin binding or affinities or impaired insulin sensitivity).
4. There is an abnormality in the post-receptor so that the process cellular disturbed.
5. Abnormalities mix between numbers 1,2,3 and 4. DM type 2 usually occurs in adulthood. Most people not aware have suffered type 2, although the situation is very serious already become. Type 2 diabetes has become common in Indonesia, and the numbers continue to increase due to lifestyle not healthy, overweight and lazy to exercise¹¹

Signs and symptoms

Other possible symptoms are complained of tingling, itching, blurred eyes, and impotence in men, and whitish in women.¹¹

Medication Compliance relationship Diabetes Mellitus

Diabetes mellitus treatment compliance consists of making control to the doctor/health care regularly every month, perform laboratory tests on a regular basis every month and discipline to take medication prescribed by a doctor regularly in accordance with the rules as a doctor.¹¹

Diagnosis

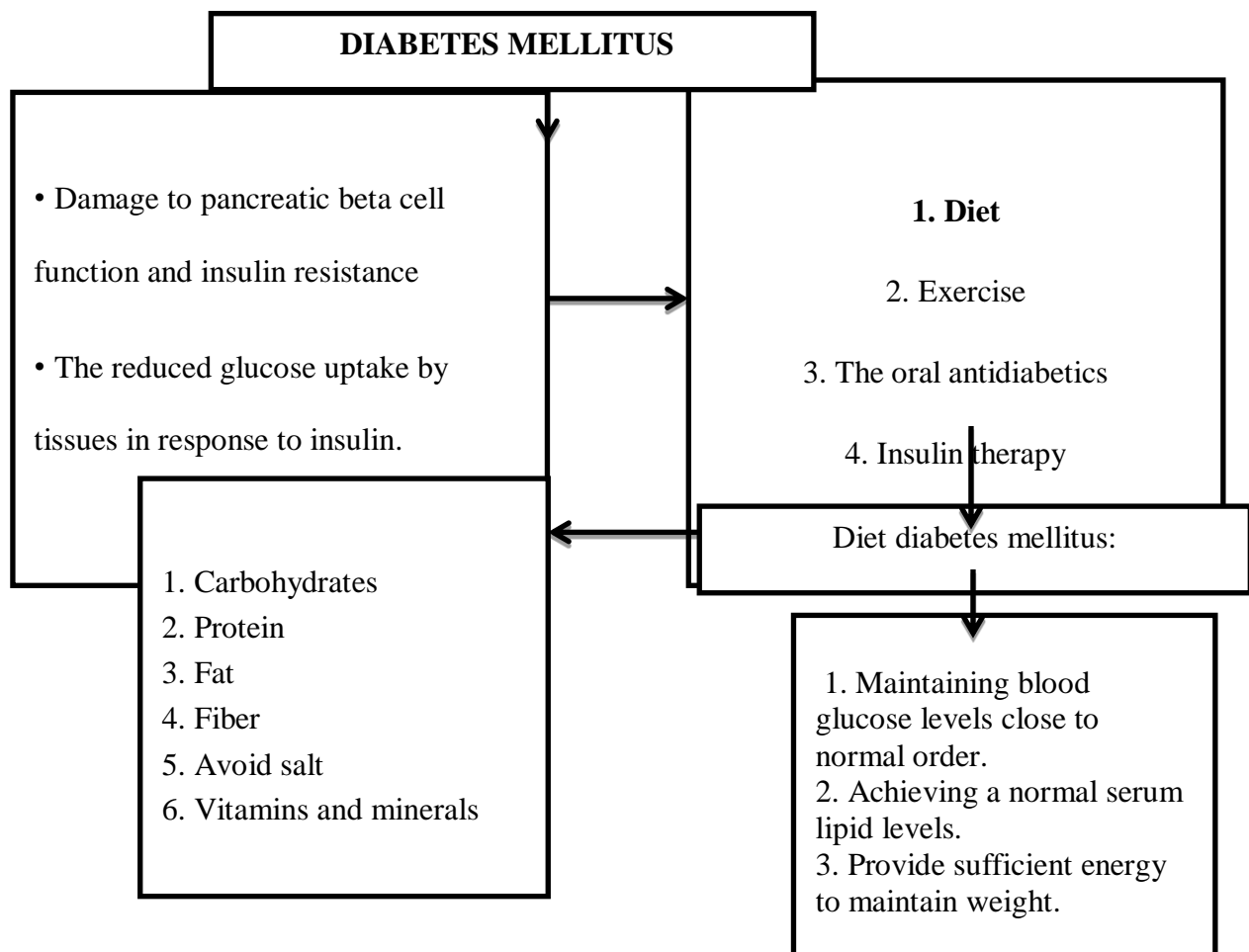
The clinical diagnosis of diabetes is made when there are typical symptoms of diabetes such as polyuria, polydipsia, polyphagia and weight loss that can not be explained why. If are typical symptoms and examination of Blood Glucose When (GDS) \geq 200 mg/dl diagnosis of DM is already established. Test results in Fasting Blood Glucose (FBG) \geq 126 mg/dl can also be used for diagnostic guidelines DM.¹¹

complication

In uncontrolled diabetes that can occur acute metabolic complications and chronic vascular complications, both microangiopathy or macroangiopathy. In the United States, diabetes is the leading cause of the end-stage renal disease (ESRD), lowering nontraumatic amputation, and adult blindness.¹¹

Theory Framework 3.1

3.1.1 Framework Schema Theory



Operational definition

Operations table variable

No.	variables	Operational definition	Measuring instrument	Measure scale	Measure Results
1.	Diabetes mellitus	Diabetes mellitus is a medical disorder that is a collection of symptoms because of increased levels of blood sugar (glucose) due to deficiency or insulin resistance.	questionnaires	Nominal	1. Yes 2. No
2	treatment compliance	Compliance DM in therapy is one of the causes of the failure in the treatment of diabetes	questionnaires	Nominal	1. Either category if the value is $\geq 75\%$ 2. Category sufficient if the value is 56-74% 3. Category less if the value $\leq 55\%$

This study design using quantitative analytical research, ie research that describes or explains the problem situation.

Location And Time Research

Research Sites

The research was conducted in the region Pitu health centers, District tobelo central North Halmahera.

Research time

This study was conducted during one month, starting from June - July 2019

Method of collecting data

Data collection technique

- 1) Primary data
interview (interview) directly interviewing the researchers to obtain data to support research.¹³
- 2) secondary data
Secondary data was taken from the journals of research related to the study, and the data obtained from Clinic Pitu.¹³

Data Collection Procedures

Research data collection procedure is as follows:¹³

Administrative procedures

Data collection was conducted after obtaining permission from the head of clinic Pitu

- 1) License attached
Sosisalisai did some research on the plan Chief Data collection was conducted after obtaining permission from the head Pitu health center.
- 2) In place of study
Researchers explain the purpose of the research, benefits and research procedures

Data analysis

Data analysis is the grouping and tabulation of the data based on the variable and types of respondents, presentation of data in each variable studied, the data to answer the problem formulation and counter data to test hypotheses that have made data analysis was conducted after all the data collected.

univariate analysis

An analysis measurement in the form of a variable frequency distribute, mean, proportion, standard deviation, variance, median, mode and so on

to test the feasibility of these variables and to determine the image data to be used as material research. In this study, the univariate analysis performed on each variable covers.

- a. The independent variable: Level of depression
- b. Dependent variable: Quality of life

b. analysis bivariate

Variable. Analysis constitutes on the bivariate analysis used to link a variable rate of depression in this study life. inside quality variables, the analysis tested using rank test contained in the application SPSS Spearman Rank 16. The test used to test the relationship between two variables were scaled ordinal. Level depression is an ordinal variable with the scale and quality of life are also variable with ordinal scale.

Discussion

Univariate analysis

Gender

Based on the results of the female sex as much as 25 respondents (41.7%), while the male respondents as many as 35 respondents (58.3%)

Respondents age

Results of research done on 60 respondents showed that the majority of respondents aged 30-51 years old from 38 respondents (63%), 52-73 years of 17 respondents (28%) and 74-80 years 5 respondents (8%).%). Adulthood is a period in which a person considered to have mature, both physiological, psychological, and cognitive or rational thinking habits increased in early adulthood and middle adulthood.

Education

The results of this study showed that most respondents education is elementary that a total of 20 people (28.33%), It can be concluded that the majority of respondents by the level of primary school education means indicates that existing knowledge is still lacking that possessed. But science is not only obtained from formal education, but also can be obtained from the ease in obtaining information from various sources through the press, electronic, print, and also from a health worker. With the

growing technology, it is increasingly easy for people to acquire the knowledge to innovate formation major effect on the opinions and beliefs of everyone.

Occupation

The results of this study showed that there were 60 respondents who work as farmers 25 respondents (41.7%), while the IRT 20 respondents (33.33%) and the rest as BURUH as many as 10 respondents (16.67%) and civil servants by 5 respondents (8.3%). These results indicate that in the everyday life of work is the main thing that the better a job where someone can affect a person's quality of life.

Bivariate analysis

Patient Medication Adherence Level Relationships Diabetes Mellitus

Based on the research results conducted in villages in the region of cape naira Pitu health centers can be from 60 respondents were adherent 24 people (40%) were non-compliant as many as 36 people (60%)

From the above results, it can be concluded that there is a relationship diabetic patient treatment compliance level in Tanjung area Mellitus Clinic Pitu district Tobelo Middle. Hal can also be seen from the results of data analysis using the Chi-Square test, p-value alpha value = 0.00 to 0.05 (p-value <0.05). This means that H_0 is rejected so it can be concluded that there is a relationship between the level of compliance for the treatment of diabetes mellitus.

The research that is done in the form of the questionnaire by researchers with a variety of questions on average have less good intentions to adhere to treatment. Patients are still reluctant to do the effort to adhere to treatment such as taking medicine right on time, always check your blood sugar at least once a week. Sports although only a walk every afternoon or in the morning run The lack of physical activity at the start of its intention to adhere to the treatment less owned by the patient meticulous researcher. Patients also tend to not keep his diet, for example, it is still consuming a high carbohydrate, does not reduce the sugar in the diet, it is still consuming excessive carbohydrates, not on a diet to reduce the complications of diabetes mellitus type II.

The research that is inconsistent is an investigational Tania (2016) showed that the percentage of respondents who participated in the study with male gender more (58.3%) than

women (41.7%), however, the statistical tests Tania (2016) showed that there is no significant relationship between gender and treatment compliance of patients with diabetes mellitus. Meaninglessness between the sexes with treatment compliance in patients with diabetes can because gender is not a factor directly related to the treatment compliance behavior of patients with diabetes mellitus.

This study is in line with what is done by Septyani (2016) who found there is a relationship diabetes patient treatment compliance level Mellitus.

This research line will be undertaken by Boyoh (2015), in the clinic umbrella Semarang who finds that there is a relationship between medication adherence type 2 diabetes mellitus with a P-value of 0.001. According to Notoatmodjo said that the formation of a person's behavior constituted in relation to compliance if the higher drug use knowledge respondents about treatment compliance, the higher the level of compliance of the respondents in treatment.

This research is the opposite of that done by Yulia (2015) in Clinicpundak umbrella of the city, which found that there is a relationship between support healthcare workers with patient treatment compliance of diabetes mellitus.

Based on the findings that the respondent's ignorance because of factors that affect a person in treatment are compliance officer factors, drug factors, and patient factors. The obtain factors affecting medication adherence are tough to do not indicate towards healing, long time, side effects of drugs. Factors that cause ignorance patients were age, sex, occupation.

Conclusion

Factors associated with treatment compliance of patients with diabetes mellitus in Desa Tanjung Niara In sub-district Clinic Pitu Middle Tobelo North Halmahera is the correlation between DM patient treatment compliance.

Based on the research results conducted in villages in the region of cape naira Pitu health centers can be from 60 respondents were adherent 24 people (40%) were non-compliant as many as 36 people (60%).

From the above results, it can be concluded that there is a relationship diabetic patient treatment compliance level in Tanjung Wilaya Mellitus Clinic Central Kec.Tobelo Pitu. It

also can be seen from the results of data analysis using the Chi Square test, p-value Value = 0.00 with an alpha of 0.05 (p-Value <0.05). This means that H_0 is rejected so it can be concluded that there is a relationship between the level of compliance for treatment of diabetes mellitus.

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