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Research Paper

Relationship of knowledge and attitude to diet of patients with type II diabetes mellitus in the working area of the simpang IV sipin public health center, jambi city, 2022

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ABSTRACT

Background: This research is a quantitative study using a cross-sectional approach design. Population in this study are type II diabetes mellitus patients who visited the Simpang IV Sipin Public Health Center in 2021 with a total of 1,564 patients. Sample in this study is 94 respondents who suffered from type II diabetes mellitus using a proportional random sampling technique. Data analysis in this study is analyzed by bivariate analysis.
Objective: This study aims to analyze relationship of knowledge and attitude to diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022.
Results: The results show that there is a relationship between knowledge and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022. There is a relationship between attitude and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022.
Conclusions: There is a relationship between knowledge and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022. There is a relationship between attitude and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022.

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1. INTRODUCTION

Diabetes mellitus is a metabolic disease characterized by hyperglycemia occurring due to abnormalities in insulin secretion, insulin action or both [1]. Signs that occur in a patient with diabetes mellitus damage to the pancreas, increased blood sugar levels, urine surrounded by ants, and symptoms that occur a lot of urinating at night (polyuria), easy thirst and drink a lot (polydipsia), easy hunger and eat a lot (polyphagia), tired easily and often sleepy, blurred vision, frequent dizziness and nausea, continued weight loss, and frequent tingling and itching of the feet and hands [2].

According to the International Diabetes Federation (IDF) 2019, approximately 463 million adults (20 to 79 years) are living with diabetes, this represents 9.3% of the world's population in the age group (20 to 79 years). The number is expected to increase to 578 million (10.2%) in 2030 and to 700 million (10.9%) in 2045 [3]. The number of deaths due to diabetes and its complications in 2019 is estimated at 4.2 million. The number of people with diabetes is steadily increasing in most countries. 79% of adult diabetics live in high- and middle-income countries, more than low-income countries, the possibility of diabetes is less likely [4].

Indonesia is a developing country in Southeast Asia which ranks 6th in the world with the number of people with diabetes mellitus which continues to increase from year to year. Complications that occur due to diabetes can be in the form of blood vessel disorders, nervous system disorders (neuropathy). These disorders occur in newly diagnosed type II diabetes. Macrovascular complications generally affect the heart, brain and blood vessels, while microvascular disorders can occur in the eyes and kidney [1]. Actually, diabetes mellitus can be prevented by managing diabetes mellitus with 5 pillars, namely diet regulation, exercise or physical exercise, pharmacological therapy, self-control of blood sugar, and education [5].

Glucose in the blood that is not controlled will occur arteriosclerosis will cause impaired blood circulation. High blood glucose levels will also cause disturbances in blood circulation and damage to various body systems, especially to the eyes, kidneys, heart, skin infections, and wounds that are difficult to heal. The health of a person with diabetes mellitus can control their blood sugar level with their diet. In diabetics, eating patterns are important, including the type of food, frequency, and meal schedule that must be considered [6]. Diet is a lifestyle of a person in which there are types, amounts and schedules that are interrelated to be carried out every day to control good eating patterns. Diet is one of the determining factors and is closely related to the incidence of diabetes, in other words, a poor diet has a 10-fold risk of developing diabetes mellitus, especially type 2. A good diet must be understood by sufferers in managing their diet. includes setting schedules, amounts, and types of meals [7].

Diet is determined from the amount of food, type of food, and eating schedule. This excessive amount of food, especially carbohydrates and fats, triggers an increase in blood glucose. A good diet for people with diabetes mellitus is recommended to eat on a regular schedule. The amount of food is sufficient, eat with a variety of menus, for example on a day there must be food sources of protein, carbohydrates, vegetables and fruit, limit consumption of sugar or sweet foods, drink calories [8]. This study aims to analyze relationship of knowledge and attitude to diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022.

2. METHODOLOGY

This research is a quantitative study using a cross sectional approach design which aims to determine the relationship between the independent variables and the dependent variable at the same time [9].

Population is the subject (humans) in a study that will be examined by meeting predetermined criteria [10], [11]. Population in this study are type II diabetes mellitus patients who visited the Simpang IV Sipin Public Health Center in 2021 with a total of 1,564 patients. Sample in this study is 94 respondents who suffered from type II diabetes mellitus using a proportional random sampling technique, in which the research subjects are taken and the areas where the samples are taken are divided according to the objectives determined by the researchers [12].

Data analysis in this study is analyzed by bivariate analysis. Bivariate analysis is used to determine the relationship between the independent variables and the dependent variable [13]. Bivariate analysis using chi-square statistical test with a significance degree of 0.05.

3. RESULTS AND DISCUSSION

3.1. Characteristics of Respondents

- **Age:** From the results it is known that of the 94 respondents, more than half are aged 45 to 60 years as many as 61 respondents (64.9%). Over the age of 45 years there is a decrease in insulin production so that it is susceptible to diabetes mellitus. Meanwhile, the older a person is, the less work of his organs is, so that the risk of developing diabetes mellitus increases, and there is a decrease in insulin secretion or resistance, so that the body's ability to control high blood glucose is not optimal [14]. There is a relationship between age and level of knowledge and attitude to diet of diabetics. Someone over 45 years of age has an increased risk of developing diabetes mellitus due to decreased organ function which results in disruption of glucose metabolism and insulin production.
- **Gender:** From the results it is known that of the 94 respondents, the majority are female, 57 respondents (60.6%) that women's metabolism is slower than men, resulting in women having a great risk of developing type II diabetes mellitus [15]. That the incidence of type 2 diabetes mellitus is found more in women than men. The female sex is more susceptible due to differences in sex chromosomes, expression of autosome-specific genes, and sex hormones. There is a relationship between gender and knowledge, attitudes, and diet of type II diabetes mellitus, in women. This is because men have lower low-density lipoprotein (LDL) than women. Because women are during peri-menopause and menopause, my estrogen hormone decreases which results in an increase in LD levels.
- **Education:** From the results it is known that of the 94 respondents, the majority had high school education, as many as 53 respondents (56.4%). Based on the results of this study, it is closely related to one's knowledge. The higher a person's education, the easier it is for them to receive information and in the end the more knowledge they have. Increasing the level of education will increase awareness of healthy living and pay attention to lifestyle and diet. Individuals with low education have a risk of paying less attention to lifestyle and diet and what to do to prevent diabetes mellitus. Education is the most effective thing in increasing knowledge. Several studies have shown that education can increase knowledge based on clinical theory, lifestyle and a positive environment. Compliance with diabetes patients in treating diabetes, diet, and physical activity have a major effect on controlling diabetes [3].
- **Work:** From the results it is known that of the 94 respondents, almost half work as housewives, 57 respondents (60.6%). Work status factors and their relationship to the incidence of diabetes mellitus [12]. A person's work affects the level of physical activity, people who do not work have less physical activity thereby increasing the risk of obesity. The type of work can trigger disease through the presence or absence of physical activity at work, so it can be said that a person's work affects his physical activity.

3.2. Bivariate Analysis

Relationship of Knowledge to Diet of Patients with Type II Diabetes Mellitus in the Working Area of the Simpang IV Sipin Public Health Center, Jambi City, 2022

Table 1. Relationship of Knowledge to Diet of Patients with Type II Diabetes Mellitus in the Working Area of the Simpang IV Sipin Public Health Center, Jambi City, 2022

Knowledge	Diet of Patients with Type II Diabetes Mellitus				Amount		P-Value
	Not Good		Good				
	f	%	f	%	f	%	
Not Good	42	80.8	10	19.2	52	100	0.000
Good	3	7.1	39	92.9	42	100	
Amount	45	87.9	49	112.1	94	100	

Table 1 above show that of the 52 respondents who have not good knowledge, there are 42 respondents (80.8%) who diet is not good. The 42 respondents who have good knowledge, there are 39 respondents (92.9%) who good diet. The results of statistical analysis show a p-value of 0.000 (α=0.05) that there is a relationship between knowledge and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022. Someone who has knowledge that understands will understand about the application of diet in their daily life. Diet is characteristics of activities that repeatedly eat individuals or each person eats to meet food needs.

According to researchers, the relationship between knowledge and diet of people with type II diabetes mellitus has a relationship with managing a good diet, of course good knowledge is needed to carry out or apply dietary adjustments. Relationship of Attitude to Diet of Patients with Type II Diabetes Mellitus in the Working Area of the Simpang IV Sipin Public Health Center, Jambi City, 2022.

Table 2. Relationship of Attitude to Diet of Patients with Type II Diabetes Mellitus in the Working Area of the Simpang IV Sipin Public Health Center, Jambi City, 2022

Attitude	Diet of Patients with Type II Diabetes Mellitus				Amount		P-Value
	Not Good		Good				
	f	%	f	%	f	%	
Negative	36	90.0	4	10.0	40	100	0.000
Positive	9	16.7	45	83.3	54	100	
Amount	45	47.9	49	52.1	94	100	

Table 2 above show that of the 40 respondents who have a negative attitude, there are 36 respondents (90.0%) who diet is not good. The 54 respondents who have a positive attitude, there are 45 respondents (83.3%) who good diet. The results of statistical analysis show a p-value of 0.000 (α=0.05) that there is a relationship between attitude and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022.

Irregular diet that occurs in today's society can cause an increase in the number of degenerative diseases, one of which is diabetes mellitus. According to researchers, the relationship between attitude and diet in type II diabetes mellitus sufferers has something to do with it. It is said that dietary adjustments can be made if you have a positive attitude to regulate diet as recommended by diabetes mellitus sufferers.

4. CONCLUSION

The results show that there is a relationship between knowledge and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022. There is a relationship between attitude and diet of patients with type II diabetes mellitus in the working area of the Simpang IV Sipin Public Health Center, Jambi City, 2022.

From the results of the research above, the suggestions for this research are:

4.1. For Nursing Education Institutions

It is hoped that this research can be used as input or reference for the development of further research, especially in providing education on good diet.

4.2. For Public Health Center

It is hoped that this research will be useful as information material and input for the working area of the Simpang IV Sipin Public Health Center, Jambi City to pay more attention to patient problems regarding poor diet of people with diabetes mellitus such as patients who rarely come to Public Health Center by increasing the provision of information through media leaflets and posters posted at Public Health Center or visits to each patient and family take an approach in order to increase the patient's motivation in maintaining the patient's diet.

4.3. For Further Researchers

It is hoped that this can be used as input material and research development with different variables, trigger factors, different places and expansion of variations in the number of respondents so that new problems will be found and ways to overcome health problems that will arise related to diabetes mellitus.

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Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
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Solha Elrifda	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓
Fardiah Tilawati Sitanggang	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
Lastri Maranatha Samosir	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this research.

Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

Ethical Approval

Not Applicable.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

REFERENCES

[1] S. A. Soelistijo, D. Lindarto, E. Decroli, and H. Permana, 'Pedoman Pengelolaan dan Pencegahan Diabetes Melitus Tipe 2 di Indonesia 2021', vol. 46, 2021.

[2] M. Nixson, 'Keperawatan Medikal Bedah', Keperawatan Medikal Bedah. Jakarta: CV. Trans Info Media, 2018.

[3] B. Bertalina and P. Purnama, 'Hubungan Lama Sakit, Pengetahuan, Motivasi Pasien dan Dukungan Keluarga dengan Kepatuhan Diet Pasien Diabetes Mellitus', J. Kesehat., vol. 7, no. 2, p. 329, Aug. 2016. doi.org/10.26630/jk.v7i2.211

[4] T. Ansari et al., 'Assessment of Knowledge, attitude, and practice of dietary pattern in patients with type 2 diabetes mellitus: a locality-based perspective study', Int. J. Med. Dev. Ctries., pp. 581-585, 2019. doi.org/10.24911/IJMDC.51-1547743129
[5] L. Romli, 5 Pilar (Langkah Antisipatif Bagi Penderita Diabetes). 2020.
[6] A. Manuntung, 'HUBUNGAN PENGETAHUAN DAN SIKAP DENGAN POLA MAKAN SEBAGAI FAKTOR RESIKO DIABETES MELITUS', Media Informasi, vol. 15, no. 2, pp. 138-142, Feb. 2020. doi.org/10.37160/bmi.v15i2.393
[7] 'Pengaruh Pola Makan Terhadap Kejadian Diabetes Melitus di Puskesmas Rawat Inap Sidomulyo Kota Pekanbaru', Prosiding SainsTeKes Semnas MIPAKes UMRi, vol. 1, pp. 1-7, 2019.
[8] Nur, Syamsiyah. (2017). Berdamai dengan Diabetes. Jakarta: Bumi Medika.
[9] M. Imas, Metode Penelitian Kesehatan. Jakarta: Pusat Pendidikan Sumber Daya Manusia Kesehatan. 2018.
[10] Nursalam. (2012). Rancangan Penelitian Eksperimen.
[11] A. Montero, 'Hubungan Pola Makan dengan Kejadian Penyakit Diabetes Mellitus Tipe II', vol. 1, pp. 1-10, 2013.
[12] N. Fitriani and A. Siregar, Faktor Resiko Kejadian Diabetes. 2006.
[13] D. Subagiyono, Metode Penelitian Kantitatif, Kualitatif dan R&D. Bandung: Alfabeta, 2017.
[14] R. Yosmar and D. Almasdy, 'Survei Risiko Penyakit Diabetes Melitus terhadap Kesehatan Masyarakat Kota Padang', Jurnal Sains Farmasi dan Klinis, pp. 134-141, 2018. doi.org/10.25077/jsfk.5.2.134-141.2018
[15] C. Widiyoga, 'Hubungan Tingkat Pengetahuan tentang Penyakit Diabetes Melitus pada Penderita terhadap Pengaturan Pola Makan dan Physical Activity', Sport Science Health, vol. 2, no. 2, pp. 152-161, 2020.

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