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The Relationship of Dietary Habits with the Incidence of Diabetes Mellitus Disease at the Cimalaka Community Health Centers in 2023

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ABSTRACT

Diabetes Mellitus (DM) is a chronic metabolic disorder with multiple etiologies characterized by high blood sugar levels accompanied by metabolic disorders of carbohydrates, lipids and proteins as a result of insulin function insufficiency. The incidence of Diabetes Mellitus is influenced by several risk factors for Diabetes consisting of modifiable factors and non-modifiable factors of age and heredity. This study aims to influence the factors associated with the incidence of Diabetes Mellitus at the Cimalaka Health Center in 2023. The method used in this study is the Cross-Sectional research method. The sampling technique is the total population with a total of 75 respondents. Data analysis using Univariate and Bivariate analysis was performed using the chi-square test. From the results of this study that there is a significant relationship of diet (p value = 0.000) with the incidence of Diabetes Mellitus at the Cimalaka Health Center. the conclusion of this study is that there is a relationship between descent, diet, and there is no relationship between age and the incidence of Diabetes Mellitus. It is recommended that the Cimalaka Health Center conduct counseling about Diabetes Mellitus and increase counseling or guidance to the community about risk factors for Diabetes Mellitus.

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1. INTRODUCTION

Diabetes Mellitus (DM) is a chronic metabolic disorder with multiple etiologies characterized by high sugar levels accompanied by metabolic disorders of carbohydrates, lipids and proteins as a result of insufficient insulin function. in people with diabetes, the pancreas is unable to produce insulin according to the body's needs. Meanwhile, without insulin, body cells cannot absorb and process glucose into energy (WHO, 2016).

The cause of the increase in blood sugar levels is the basis for classifying types of diabetes mellitus, namely type 1 diabetes, type 2 diabetes and gestational type diabetes. Type 1 diabetes mellitus is caused by an autoimmune reaction that causes the immune system to attack beta cells in the pancreas so that it cannot produce insulin at all. Meanwhile, type 2 diabetes mellitus occurs due to insulin resistance where cells in the body are unable to fully respond to insulin. Gestational diabetes is caused by the increase in various hormone levels during pregnancy that can inhibit the work of insulin.

The incidence of diabetes mellitus is influenced by several diabetes risk factors consisting of modifiable factors and non-modifiable factors. Non-modifiable risk factors are race, ethnicity, age, gender, family history of diabetes mellitus, history of labor > 4000 grams, history of birth with low birth weight (LBW or < 2500 grams) (Fatria, 2022). Modifiable risk factors are overweight, abdominal/central obesity, physical inactivity, stress, hypertension, dyslipidemia, unhealthy and unbalanced diet (high calorie), prediabetes condition

characterized by impaired glucose tolerance (IGT 140-199 mg/dl.) or impaired fasting glucose (IFG < 140 mg/dl), and smoking (Ministry of Health, 2014).

The International Diabetes Federation (IDF) notes that 537 million adults (aged 20-79 years) or 1 in 10 people live with diabetes worldwide. Diabetes also causes 6.7 million deaths or 1 every 5 seconds. China has the largest number of adults with diabetes in the world. 140.80 million Chinese people lived with diabetes in 2021, followed by India with 49.19 million people with diabetes, Pakistan with 32.96 million and the United States with 32.22 million. Indonesia is in 5th place with 1947 million people with diabetes with a population of 179.72 million, this means that the prevalence of diabetes in Indonesia is 10.6%. IDF estimates that there are still 44% of adults with undiagnosed diabetes (International Diabetes Federation, 2021).

The number of people with diabetes mellitus in West Java is 1,078,857, an increase of 21.36% in 2020 from the average number of people with Diabetes Mellitus per year is 963,656 in the last 2 years. Data from the Cimalaka Puskesmas profile obtained data on diabetes mellitus disease for the last 3 years, in 2020 there were 1,112 people who came for treatment to the Cimalaka Puskesmas, in 2021 there were 1,108 people who came for treatment to the Cimalaka Puskesmas, and in 2022 there were 1,292 people who came for treatment to the Cimalaka Puskesmas. This shows that diabetes mellitus disease that occurs at the Cimalaka Health Center has increased in 2022 (Cimalaka Health Center Profile, 2022). There have been many studies conducted on risk factors associated with the incidence of Diabetes Mellitus. However, the risk factors associated with the incidence of Diabetes Mellitus in each region will be different. So it is important to conduct research to find out the risk factors for the incidence of Diabetes Mellitus in certain areas that are not yet known.

Based on preliminary studies at the Cimalaka Health Center on April 14, 2023, the results of an interview with one of the health workers at the Cimalaka Health Center stated that the number of people who came to the Cimalaka Health Center with a history of diabetes mellitus, as well as to patients suffering from diabetes mellitus mostly occurred due to variables including age, heredity, diet. The data that I got from the PTM surveillance officer of the Cimalaka Health Center, obtained data on diabetes mellitus in January-March 2023 as many as 293 people who came for treatment to the Cimalaka Health Center. So based on the description above, the researcher is interested in conducting research on relationship of dietary habbit with the incidence of Diabetes Mellitus disease at the Cimalaka Health Center in 2023.

2. METHOD

In this study, the type of research used was quantitative using a Cross Sectional approach. The population in this study were Diabetes Mellitus patients who sought treatment in January-March 2023, namely 293 people at the Cimalaka Health Center. The sampling technique in this study was carried out using the Accidental Sampling technique. While Accidental Sampling is a sampling technique based on chance. The instrument used was to distribute research questionnaires directly to respondents. Data analysis includes univariate and bivariate analysis using chi-square tests.

3. RESULTS AND DISCUSSION

3.1. Results

A. Incidence of Dietary Patterns at Cimalaka Health Center in 2023

Table 1
Distribution Frequency based on Dietary Patterns at Cimalaka Health Center in 2023

Dietary habit	*Frequency*	*Percent* (%)
Poor	41	54.7
Good	34	45.3
Total	**75**	**100.0**

Source : Primary Data (2023)

Based on table 1, it can be seen that the study at the Cimakaka Health Center shows that 41 (54.7%) respondents with poor diet.

B. Incidence of Diabetes Mellitus Disease at Cimalaka Community Health Centers in 2023

Table 2 Distribution Frequency based on incident Diabetes Mellitus in Community Health Centers Cimalaka in 2023

Diabetes mellitus	*Frequency*	*Percent* (%)
Yes	48	64.0
Total	**75**	**100.0**

Source : Primary Data (2023)

Based on table 2, it can be seen that of the 75 respondents studied 48 (61.5%) had a history of Diabetes Mellitus.

C. Relationship between diet and incidence of diabetes mellitus

Table 3

Relationships between eating patterns with Incident Diabetes Mellitus Disease at the Community Health Center Cimalaka

Dietary habit	Incidence of Diabetes Mellitus						*P Value*
	Yes		No		Total		
	F	%	F	%	F	%	
Poor	35	46	6	8	41	54.6	
Good	13	17	21	28	34	45.3	**0,000**
Total	**48**	**73**	**27**	**35.9**	**75**	**100.0**	

Source : Primary Data (2023)

Based on table 3 statistic results using chi-square, the p-value = 0.000 < α = 0.05, so H0 is rejected, which means that there is a relationship between diet and the incidence of Diabetes Mellitus at the Cimalaka Health Center in 2023.

3.2 Discussion

A. Incident Diabetes Mellitus in Community Health Centers Cimalaka Year 2023

From the results research that has been done can concluded that more respondents suffering from Diabetes Mellitus that is as many as 48 (64.0%). Diabetes mellitus is circumstances Where body cannot produce appropriate insulin needs or body can't utilise in a good way the hormone insulin is produced, so happen enhancement rate sugar above normal Diabetes mellitus can also occur give rise to various complications almost all over system body man start from skin until heart.

B. Distribution Results Eating Pattern Frequency with Incidence of Diabetes Mellitus in Community Health Centers Cimalaka

From the results of the research that has been done, it can be seen that most respondents have a poor diet of 41 (54.7%). Diet is a way or effort in regulating the amount and type of food with certain intentions such as maintaining health, nutritional status, preventing or helping cure disease. Theory explains that a poor diet, namely a diet that is high in carbohydrates with a high glycemic index repeatedly or over a long period of time and in large quantities, can affect insulin resistance which results in impaired blood sugar levels (Sutanto, 2010). Respondents in this study who suffer from diabetes mellitus who come for treatment on average have an unhealthy diet because respondents still like to consume sweet foods and drinks, high-fat foods, and high carbohydrates which cause diabetes mellitus.

C. Dietary Relationships with Incidence of Diabetes Mellitus in Community Health Centers Cimalaka Year 2023

Based on table 7 shows that respondents who suffer from diabetes mellitus are more likely to be caused by a poor diet of 35 respondents (46.6%) compared to patients who have a good diet of 13 respondents (17.3%). The results of the statistical test analysis conducted using the chi square test obtained a significant value of p-value = 0.000 < α = 0.05 where Ho is rejected, which means that there is a relationship between diet and the incidence of diabetes mellitus at the Cimalaka Health Center.

The results of this study are in line with research conducted by Yessica et al (2022) at the Namorambe Health Center, Deli Serdang Regency which shows that a bad diet will increase glucose in the blood excessively so that it will affect glucose control in the blood so that the diet should be regulated so that it will normalize insulin levels in the blood. Showing the results of the chi square statistical test obtained ρ value = 0.001 < α = 0.05 which means there is a relationship between diet and the incidence of Diabetes Mellitus.

Diet is a description of the type, amount and composition of food consumed by a person on a daily basis in a way or effort to regulate the amount and type of food for certain purposes such as maintaining health, nutritional status preventing or helping cure disease. Daily diet is a person's diet related to his eating habits every day (Nova Rita, 2015 in Fatria, Maidar, Arifin, 2022). Diet plays an important role in regulating diet to avoid diabetes complications and energy balance is altered by eating foods high in carbohydrates and fats and by reducing physical activity. The importance of a healthy diet, especially one with enough fiber, carbohydrates, fat, and exercise, is especially important for older people, as physiological changes occur and reduced physical activity can lead to diabetes complications (Marianda et al., 2023).

The results of this study are not in line with those conducted by Ningrum et al (2023), entitled the relationship of dietary behavior and physical activity to the incidence of Diabetes Mellitus shows the results of the chi square test obtained a p value = 1,000 (P≥0.05). This indicates that diet does not have a significant effect on the risk of diabetes mellitus.

According to the researcher's assumption, there is a relationship between diet and the incidence of Diabetes Mellitus when conducting research, most respondents, especially those with Diabetes Mellitus, still have poor dietary habits, including frequent consumption of foods and drinks high in sugar, high in fat and high in carbohydrates. Moreover, most of those who suffer from diabetes are found to consume sweet drinks more often in a day such as drinking tea, coffee, and syrup.

D. CONCLUSION

Based on research that has been conducted on 75 respondents at the Cimalaka Health Center, it can be concluded as follows:

1. An overview of dietary factors at the Cimalaka Health Center in 2023, which has a poor diet as many as 35 respondents (46.6%).
2. An overview of the incidence of Diabetes Mellitus in the Cimalaka Health Center Working Area in 2023, as many as 48 respondents (61.5%).
3. There is a relationship between diet and the incidence of Diabetes Mellitus at the Cimalaka Health Center in 2023 with a p-value of - 0.000 < α = 0.05 so H0 is rejected.

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