

Description Of Blood Sugar Levels In Diabetes Mellitus Patients Who Have A Smoking Habit In Tambakrejo Bojonegoro

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ABSTRACT

Modern lifestyles with choices food menu and unhealthy ways of life are increasingly spreading to levels of society, causing an increase in the number diabetes mellitus, a phenomenon in the Working Area Tambakrejo, where most people with diabetes mellitus have smoking habits. The purpose of the study was to identify blood sugar levels in people with diabetes mellitus who have a smoking habit. This type of research is descriptive with descriptive survey approach. The population of all young couples is 345 respondents, with a total sample of 117 respondents, sampling using non-probability sampling with accidental sampling technique. Collecting data by observing the results of blood sugar while then in editing, coding, scoring, tabulating and presenting the results. The results showed that more than some respondents had abnormal sugar levels 80 people (68.4%) and less than some respondents had normal sugar levels 37 people (31.6%). The conclusion is that more than half of the blood sugar levels in people with diabetes mellitus who have a smoking habit in the Working Area Tambakrejo Bojonegoro are not normal. Can add information and insight related to blood sugar levels in people with diabetes mellitus can be a motivation for behave in a healthy life.

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1. INTRODUCTION

Modern lifestyles with food menu choices and unhealthy lifestyles are increasingly spreading to all levels of society, causing an increase in the number of non-communicable diseases, one of which is diabetes mellitus [1]. An increase in blood sugar levels after eating or drinking stimulates the pancreas to produce insulin. A random glucose test is a method for measuring the amount of glucose or sugar circulating in a person's blood. When a blood sugar test result is below 200 mg/dL, it indicates normal sugar levels. Smoking behavior is a behavior that involves the process of burning tobacco and then inhaling the smoke, either using a cigarette or a pipe. Diabetes mellitus is a collection of symptoms that arise in a person caused by an increase in blood glucose levels due to a progressive decrease in insulin secretion against the background of insulin resistance [2]. Diabetes mellitus poses a serious threat to sufferers because it can cause blindness, kidney failure, diabetic leg ulcers (gangrene) which result in amputations, heart disease and stroke. Based on the phenomenon in the Tambakrejo Health Center Work Area, namely that most people with diabetes mellitus have smoking habits and do not know how to prevent diabetes mellitus

The International Diabetes Federation (IDF) estimates that at least 463 million people aged 20-79 years in the world suffer from diabetes in 2019 (9.3%) of the total population at the same age, the number is predicted to continue to increase until it reaches 578 million in 2019. 2030 and 700 million in 2045. Indonesia is ranked 7th out of 10 countries with the highest number of sufferers, namely 10.7 million and Indonesia is the only Southeast Asian country, so it can be estimated that Indonesia's contribution to the prevalence of diabetes cases in Southeast Asia [3]. It is estimated that around 15%

of people with diabetes mellitus in the course of their disease will experience complications of diabetic ulcers, around 14-24% of diabetic foot sufferers require amputation. The prevalence of diabetes mellitus according to the Perkeni 2015 consensus in residents ≥ 15 years increased by 10.9%. East Java ranks fifth in the province in Indonesia with the highest prevalence of diabetes mellitus, reaching 2.6% in 2018, an increase from 2013 of 2.1%. Whereas in East Java, the prevalence of diabetes mellitus is in the range of 1.25% of the entire population [4]. Based on data from the Bojonegoro Health Office, the prevalence of DM in 2020 is 22,877 people [3]. Based on data at the Tambakrejo Health Center in 2021, there were 345 people with diabetes mellitus. Based on the initial survey on 03/01/2021 conducted by researchers on 3 people with diabetes mellitus in the Tambakrejo, all (100%) had smoking habits.

Smoking habits not only cause lung cancer, but it turns out that smoking addiction can also cause diabetes. We recommend starting to reduce the number of cigarettes smoked each day. Diabetes can indeed strike anyone regardless of gender and age. If diabetes is left alone, it can have a negative impact on health where diabetes can take the lives of sufferers. Diabetics need to make sure to keep their blood sugar levels within normal limits. Smoking can make it more difficult for diabetics to control blood sugar levels [5]. This is because the nicotine content in cigarettes changes the chemical processes in the body's cells so that the cells do not respond to insulin. This condition is known as insulin resistance. Body cells need insulin to be able to absorb glucose (sugar) from blood vessels and use it as energy. When cells do not respond to insulin, absorption of glucose from the blood cannot be carried out so that blood sugar levels remain high. Diabetics who smoke often require larger doses of insulin to keep blood sugar levels within safe limits. Uncontrolled blood sugar levels and the risks. The risks of smoking can exacerbate symptoms and lead to serious complications of diabetes, such as kidney failure, heart disease and blood vessels. Diabetes complications can also get worse from smoking. Several studies have shown that smoking increases diabetic microalbuminuria and worsens diabetic nephropathy. Smoking is also cited as a major risk factor for both the occurrence and progression of diabetic neuropathy. If this is left unchecked and not controlled properly it can result in blood vessel and nerve disorders, followed by infection, which can then become "gangrene wounds" and make the situation worse, which in turn often results in amputations of the legs [6]. Diabetes mellitus poses a serious threat to sufferers because it can cause blindness, kidney failure, diabetic leg ulcers (gangrene) which result in amputations, heart disease and stroke [7].

Efforts that can be made by people with diabetes mellitus, both in prevention and treatment, to control diabetes. The Ministry of Health itself has established 13,500 Integrated Development Posts (Posbindu) to facilitate access for citizens to carry out early detection of diabetes. In addition, the Minister of Health appealed to the public to take CERDIK action, namely by conducting regular health checks to control body weight so that it remains ideal and not at risk of getting sick easily, check blood pressure, blood sugar and cholesterol regularly, Get rid of cigarette smoke and do not smoke. Be diligent in doing physical activity for at least 30 minutes a day, such as exercising, walking, cleaning the house. Try to do it properly, correctly, regularly and measurably. Balanced diet by consuming healthy food and balanced nutrition. Consume at least 5 servings of fruit and vegetables per day. As much as possible, reduce sugar consumption to a maximum of 4 tablespoons or 50 grams per day. Avoid foods/ sugary or carbonated drinks. Get enough rest and manage stress properly and correctly [4]. The way that can be done is to replace cigarettes with sugar-free candy or by doing hypnotherapy. Physical exercise can improve insulin sensitivity, so that it will improve glucose control and besides that it can also reduce body weight and can prevent chronic complications, good DM control is needed. Well-controlled diabetes mellitus does not only mean that the blood glucose level is good, but that the blood glucose level, nutritional status and blood pressure must be comprehensive. In addition, nurses' efforts to carry out their role in efforts to treat diabetes mellitus by providing good education control to all patients and families need to be given education as an effort to reduce smoking habits.

Based on the description of the background above, the researcher is interested in conducting research with the title "Description of Blood Sugar Levels in Patients with Diabetes Mellitus Who Have Smoking Habits in the Work Area of the Tambakrejo Health Center, Bojonegoro Regency in 2022"

The purpose of this study was to identify blood sugar levels in people with diabetes mellitus who have smoking habits in the Working Area of the Tambakrejo Health Center, Bojonegoro Regency in 2022.

2. METHOD

This study uses a descriptive method with a survey approach. The population is 345 people. Sampling by accidental sampling, so the total sample is 117 people. The sample criteria used in this study was a non-probability sampling technique by means of accidental sampling, namely a sampling technique that was carried out by taking cases or respondents who happened to be present or willing to be research respondents. Data was collected using observation which was then carried out by an editing process, namely an attempt to re-check the correctness of the data obtained or collected, then tabulated and grouped by giving a Normal assessment if the blood sugar level was 70 mg/dL to 200 mg/dL and abnormal if the blood sugar level >200 mg/dL. Then in the code where each respondent is coded according to the serial number and the variables studied if normal are coded 1 and abnormal are coded 2. Then presented in the form of a frequency table with percentages and narration.

3. RESULTS AND DISCUSSION

Table 1. Distribution based on Respondent Characteristics in the Work Area of the Tambakrejo, Bojonegoro in June 2022.

| No | Characteristic | Total | Percentage(%) |
|-------|--------------------------------|-------|---------------|
| 1 | Age | | |
| | 1)20-29 years | 0 | 0,0 |
| | 2)30 – 39 years | 21 | 17,9 |
| | 3)40 – 49 years | 24 | 20,5 |
| | 4) ≥49 years | 72 | 61,5 |
| 2 | Education | | |
| | 1)not finish elementary school | 12 | 10,3 |
| | 2)Elementary school | 56 | 47,9 |
| | 3)Junior High School | 27 | 23,0 |
| | 4) Senior High School | 9 | 7,7 |
| | 5) College | 1 | 0,8 |
| 3 | Occupation | | |
| | 1)farmer | 62 | 53,0 |
| | 2)private | 0 | 0,0 |
| | 3)Entrepreneur | 51 | 43,6 |
| | 4)Civil worker/police/army | 4 | 3,4 |
| 4 | Smoking Habbit | | |
| | 1)Yes | 117 | 100,0 |
| | 2)No | 0 | 0,0 |
| Total | | 117 | 100% |

Based on table 1, it is known that more than half of the 117 respondents, namely 72 people (61.5%) aged ≥49 years; less than half, namely as many as 56 people (47.9%) have basic education (SD); more than half, namely as many as 62 people (53.0%) work as farmers; and the majority, namely as many as 117 people (100.0%) had a smoking habit.

Table 2 Distribution of blood sugar levels in people with diabetes mellitus who have smoking habits in the Working Area Tambakrejo Bojonegoro.

| No. | The result blood sugar level | F | Percentage (%) |
|-----|------------------------------|----|----------------|
| 1 | Normal | 37 | 31,6 |
| 2 | Not normal | 80 | 68,4 |

| | | |
|-------|-----|--------|
| Total | 117 | 100,00 |
|-------|-----|--------|

The results of the study in table 2 above show that out of the 117 respondents studied, more than half of the respondents had abnormal sugar levels, namely 80 people (68.4%) and less than some of the normal sugar levels, namely 37 people (31.6 %).

Discussion

From the results of a study conducted in June 2022 in the Working Area of the Tambakrejo Health Center, Bojonegoro Regency, regarding blood sugar levels in people with diabetes mellitus who have a smoking habit, more than half of the respondents have abnormal sugar levels, namely as many as 80 people (68.4%) and less than some of the normal sugar levels were as many as 37 people (31.6%).

Diabetes mellitus is a metabolic disorder characterized by hyperglycemia in the absence of treatment. Pathologically, diabetes mellitus occurs due to the inability to secrete insulin, impaired insulin action or both, and disturbances in carbohydrate, fat and protein metabolism. Specific effects of diabetes include retinopathy, nephropathy and other complicating neuropathy. Diabetics also have the potential to get other diseases including heart disease, peripheral arterial and cerebrovascular disease, obesity, cataracts, erectile dysfunction and non-alcohol. They also have the potential to be exposed to infectious diseases such as tuberculosis. The risk factors for diabetes mellitus consist of modifiable and non-modifiable factors, one of which is that active smokers have a higher risk of developing diabetes mellitus than non-smokers. Nicotine in cigarettes affects insulin secretion resulting in a buildup of glucose in the blood. Smoking can not only increase a person's risk of developing type 2 diabetes but also dangerous diabetes complications. The deadliest complication of diabetes is high blood pressure which can cause heart disease. Some of the content of cigarettes can damage the walls of blood vessels resulting in high blood pressure and stroke. In addition, smoking activity can cause inflammation. If inflammation occurs in diabetics, this inflammation will be difficult to overcome so that diabetics will most likely have to be amputated.

Based on the results of research in the Tambakrejo Community Health Center Work Area, Bojonegoro Regency, it can be seen that less than half of the respondents have elementary school education. sufferers who have the habit of smoking, besides that seen from the work of respondents who more than half work as farmers, lack of time for daily activities so that it will affect the lack of understanding of the information that may be due to individuals not playing an active role in society and social life so they get information inaccurate and it will affect the level of knowledge, especially about blood sugar levels in people with diabetes mellitus who have smoking habits. In addition, blood sugar prevention is aimed at groups of people with diabetes who have experienced complications in an effort to prevent further disability and improve quality of life. Rehabilitation efforts for patients are carried out as early as possible, before the disability persists. In tertiary prevention efforts, counseling is still carried out for patients and families. Extension materials include rehabilitation efforts that can be carried out to achieve optimal quality of life. Tertiary prevention requires comprehensive and integrated health services between related disciplines, especially in referral hospitals. Efforts to prevent this complication include strict control of metabolic disorders in Diabetes Mellitus (blood glucose, lipids) and other factors that affect blood vessel damage, such as blood pressure, smoking and so on. Things to note: managing diet, blood sugar control, exercise and psychosocial factors. Diabetes Mellitus can provide a psychosocial burden for sufferers. Negative emotional responses can hinder efforts to lower blood glucose because negative reactions arise, for example: not changing a healthy lifestyle such as: exercising, taking medication, managing diet, and being able to behave unhealthy (smoking, consuming alcoholic beverages). Diabetes is one of the health hazards that can arise from smoking. In fact, active smokers have a 30-40% higher risk of developing diabetes compared to non-smokers. This is because the nicotine in cigarettes makes blood sugar levels too high or too low. In addition, nicotine changes the chemical processes in cells so that they cannot respond to insulin. The condition is called insulin resistance. When insulin resistance occurs, blood sugar levels in the body can be too high. This is because the hormone insulin is responsible for helping the body to absorb glucose. Disruption of

insulin due to smoking, makes blood sugar levels also become out of control. If left unchecked, this condition can increase diabetes complications such as heart problems, kidney, nerve and eye damage

4. CONCLUSION

The conclusion that can be drawn from the results of this study is that more than half of blood sugar levels in people with diabetes mellitus who have smoking habits in Sukorejo Village, Tambakrejo District, Bojonegoro Regency are not normal.

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