DESCRIPTION OF THE HEALTH CONDITION OF
INDONESIAN SOLDIERS 1ST INFANTRY DIVISION
KOSTRAD CILODONG

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ABSTRACT

Community service aims to determine the health picture of Indonesian soldiers in the 1st Infantry Division of Kostrad Cilodong. Therefore, researchers conduct general health screening by measuring body mass index, blood pressure, and glucose levels in the blood. This study used a descriptive method. This method describes a subject or object under study in depth, detail, and breadth. This study used two types of data: primary and secondary. The results of community service as a whole, when viewed from blood pressure measurement data and glucose levels in the blood, can be said to be normal. The routine of Indonesian soldiers is like regular exercise, a healthy and stable diet, and adequate rest influences to reduce risk factors for diabetes mellitus.

KEYWORDS

Body Mass Index, Blood Pressure, Diabetes Mellitus

INTRODUCTION

To find out the picture of the health condition of the Indonesian soldiers of the 1st Infantry Division of Kostrad Cilodong, the medical assistance team organization of the Republic of Indonesia Defense University carried out a general health screening. The goal is to determine the risk of developing diabetes mellitus in Indonesian army soldiers. Public screening conducted by Republic of Indonesia Defense University medical assistance team members includes Body Mass Index (BMI), blood pressure, and blood sugar levels.

The first screening performed is BMI measurement. BMI is one of the nutritional status measurement indexes that use components of height and weight...
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(Edwards et al., 2019; Faradisa et al., n.d.; Marshall et al., 2022; Ouyang et al., 2022). This measurement determines the categories of malnutrition, undernutrition, good nutrition, risk of overnutrition, and obesity (Wooldford et al., 2021). A person's nutritional status will also affect his blood sugar levels. One of the factors that cause type 2 diabetes mellitus is obesity, especially central obesity. Excessive fat deposits will affect the blood sugar levels of people with diabetes mellitus, namely the occurrence of insulin resistance. Compared to a low BMI, individuals with a high BMI have a two times greater risk of developing type 2 Diabetes Mellitus (DM) (Permatasari & Chadirin, 2022). Factors that affect BMI include age, diet, physical activity, and gender (Tang et al., 2021). The formula for calculating BMI is:

$$\text{BMI} = \frac{\text{Weight (Kg)}}{\text{(Height(m))}^2}$$

Then, the BMI value to determine a person's nutritional status is thin weight with a BMI below 18.5; normal weight with a BMI between 18.5 and 22.9; excessive weight with a BMI between 23.0 and 24.9; and obesity with a BMI above 25. The subsequent screening examination is blood pressure measurement. In general, the use of a sphygmomanometer has the function of measuring blood pressure. A person is said to have normal blood pressure if his blood pressure is less than 120/80 mmHg. Blood glucose levels in the body are closely related to normal blood pressure (Ręgwelski et al., 2019).

Pre-hypertension is a grouping of blood pressure that is not normal but not hypertensive, also called borderline hypertension. According to the Joint National Committee (JNC 7), pre-hypertension is systolic blood pressure of 120-139 mmHg and diastolic blood pressure of 80-89 mmHg. Hypertensive conditions constitute a significant risk factor for diabetes mellitus (Khosravi et al., 2018). If blood pressure is above 120/80 mmHg, it is called hypertension. But if it is below 120/80 mmHg, it is called Hypotension. Factors influencing changes in blood pressure are heredity, age, sex, physical and psychological stress, obesity, unhealthy diet, high salt consumption, lack of physical activity, alcohol consumption, caffeine consumption, other diseases, and smoking (Buch et al., 2021).

The last screening check is the measurement of blood glucose levels. In establishing the diagnosis of diabetes mellitus, enzymatic glucose examination with venous plasma blood material is the recommended test. If there are classic complaints such as polyuria, polydipsia, polyphagia, and weight loss that have no cause, the patient likely has diabetes mellitus. However, in this study, only blood sugar measurements were carried out at any time. The results of blood tests for diabetes patients can determine blood glucose and diabetes screens. However, this examination is not the standard for diagnosing diabetes mellitus (Cherfan et al., 2020).

Diabetes mellitus refers to a group of metabolic diseases. Severe hyperglycemia gives rise to classic symptoms such as polyuria, polydipsia, fatigue and loss of performance, unexplained weight loss, visual impairment, and susceptibility to ketoacidosis or non-ketoacidosis infections, hyperosmolar syndrome with the risk of coma (Daryabor et al., 2020; Galicia-Garcia et al., 2020; Westman, 2021). Chronic hyperglycemia also causes disturbances in insulin secretion and action. It is associated with long-term damage and dysfunction of various tissues and organs.
(eyes, kidneys, nerves, heart, and blood vessels) and cancer (Widyaswara et al., 2022).

Elevated blood sugar is the main effect of uncontrolled DM and, over a long period, can result in severe damage to nerves and blood vessels. Diabetes Mellitus is a clinical syndrome characterized by polyuria, polydipsia, and polyphagia, accompanied by elevated blood glucose levels or hyperglycemia (fasting glucose levels ≥ 126 mg/dl or postprandial ≥ 200 mg/dl or glucose when ≥ 200 mg/dl). Diabetes mellitus consists of three types based on the cause, namely type 1 diabetes, type 2 diabetes, and gestational diabetes (Kemenkes RI, 2020).

According to the International Diabetes Federation (2021), the number of people with diabetes mellitus worldwide has reached 540 million in 2021, with a mortality rate of 6.7 million. It means that there is one death every 5 seconds, and the average DM sufferer does not know he has DM, and patients only know their condition when the disease has developed for a long time with genuine complications (Cheng et al., 2021; Logan et al., 2020).

In the same year, the number of people with diabetes in Indonesia increased rapidly within ten years, reaching 19.47 million. The death rate due to diabetes reached 236 thousand and placed Indonesia in 5th place on this list. The West Java Health Office found 46,837 people with diabetes in 2021, and 17,379, or 37.1%, did not receive proper medical care according to government standards.

**RESEARCH METHOD**

The method used in this study is descriptive, describing the subject or object under investigation in more depth, detail, and broadly. The population of this study was soldiers of the Indonesian State Soldiers 1st Infantry Division Kostrad Cilodong, Depok. This study was conducted on Saturday, September 30, 2023. The samples taken were 59 soldiers of the Indonesian soldiers with an age range (Chan et al., 2021).

Researchers collect research data based on primary and secondary data. Primary data includes sample identity, namely name, age range, address, ethnicity, education, several screening questions, and health condition checks in the form of body mass index measurements, blood pressure, and blood sugar levels. Meanwhile, to obtain secondary data, namely from existing journal literature.

**RESULT AND DISCUSSION**

**Body Mass Index (BMI)**

Researchers conducted health screening in the form of BMI on 59 people. Here are the results:
BMI measurements in 59 people showed 28% normal, 18% overweight, and 53% obese. It indicates that not everyone has paid attention and maintained their lifestyle. Even the majority are still in the obesity category. Based on some literature, the causative factors are genetic, environmental, drug, and hormonal.

**Blood Pressure**

Researchers conducted health screening in the form of blood sugar on 59 people. Here are the results:

The blood pressure measurements of 59 people showed 53% normal, and 19.7% had a result of 120/70. It indicates they have followed a healthy lifestyle, such as eating nutrient-rich foods, exercising regularly, and having adequate sleep. However, as many as 37.7% have prehypertension, increasing the risk of heart disease, stroke, and other complications. These are essential health warnings. Risk factors inherent in people with hypertension include smoking, low-fibre diet, dyslipidemia, excessive salt consumption, lack of physical activity, stress, excessive weight/obesity, consumption of alcohol, gender, and genetics.

**Blood Sugar**

Researchers conducted health screening in the form of blood sugar on 59 people. Here are the results:
From the results of blood sugar screening conducted by 59 people, all of them had normal glucose results. It indicates that they have a good health condition in terms of their blood glucose. Some factors related to blood sugar levels include diet, physical exercise, age, obesity, genetics, stress, and smoking habits.

Paying attention to the intake and type of food is essential in preventing increased blood sugar levels. One is limiting the intake of carbohydrates that the body converts into sugar and energy substances (Harreiter & Roden, 2019; Sasmalinda, 2013).

In addition to applying a healthy lifestyle by eating healthy foods, you also have to maintain your state of mind so as not to feel stressed quickly. The influence of stress can make blood sugar levels increase. It happens because stress hormones also increase and make the body release adrenaline and cortisol hormones, which cause an increase in respiratory rate and blood flow throughout the body.

CONCLUSION

The results of a general screening examination on Indonesian soldiers of the 1st Infantry Division of Kostrad Cilodong, Depok, showed that 59 people were in top condition. The results of normal blood pressure and glucose levels in the blood evidenced it. However, the results of the BMI examination are that 53% of people are obese, and 18% of people are overweight. So, finding unhealthy lifestyles needs further investigation using Bioelectrical Impedance Analysis or bodpod.

But overall, when viewed from the data measuring blood pressure and glucose levels in the blood, it can be said to be normal. The routine of Indonesian army soldiers, such as regular exercise, a healthy and regular diet, and adequate rest, can affect blood pressure and glucose levels to normal. Activities carried out by soldiers of the Indonesian military play an essential role in maintaining normal blood sugar levels and blood pressure to reduce the risk of developing diabetes mellitus.

REFERENCES


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