

SCREENING OF BLOOD GLUCOSE, CHOLESTEROL, URIC ACID, AND BLOOD PRESSURE

Riri Indriyani¹, Nita Andriani Lubis², Geminsah Putra Siregar³, Selamat Riadi⁴,
Ice Ratnalela Siregar⁵, Dewi Setiyawati⁶, Melika Ostina⁷, Dian Pratiwi⁸, Nin Suharti⁹,
Sri Widia Ningsih¹⁰, Sri Wahyuni¹¹ Febri Sembiring¹²

Department of Medical Laboratory Technology, Health Polytechnic of the Ministry of
Health, Medan

Email : Indriyani199428@gmail.com

ABSTRACT

Early detection of cardiovascular and metabolic problems that might affect general health depends on health checkups. In a recent exam in Dusun XIII, Saentis Village, 100 people's vital signs—such as blood pressure, cholesterol, uric acid, and blood glucose—were measured. 21% of individuals had increased blood glucose levels, suggesting possible risks for diabetes, according to the screening's alarming results. A further finding was that 44% of people had high uric acid, which can cause gout and other problems. According to cholesterol testing, 38% of individuals had abnormal cholesterol levels, which raises the risk of stroke and heart disease. Particularly concerning blood pressure tests showed that 83% of patients having increased systolic blood pressure and 67% having abnormal diastolic blood pressure. These results underline the significance of early identification in averting major health consequences and the necessity of continuous health monitoring. The high frequency of aberrant outcomes across several important health indicators highlights the need for proactive steps to mitigate the risks associated with these illnesses and for greater community awareness. Enhancing the population's long-term health and well-being requires focused healthcare programs, lifestyle modifications, and routine tests.

Keyword : cardiovascular, Glucose, Cholesterol, Uric Acid and Percut Sei Tuan

INTRODUCTION

Health checks, particularly those that monitor uric acid levels and blood pressure, play a crucial role in detecting various metabolic disorders and overall health issues. Uric acid is the final product of purine metabolism, which is a vital component of nucleic acids found in the nuclei of body cells. Purines are obtained both from the food we consume and through production within the body. Normally, uric acid is excreted in the urine, but its levels can rise when there is a disruption in purine metabolism, often influenced by diet and lifestyle choices. This condition, known as hyperuricemia, leads to the accumulation of uric acid crystals in the joints, causing intense pain, particularly in larger joints such as the big toe, a condition referred to as gout. Uric acid levels are considered elevated if they exceed 7 mg/dl in men and 6 mg/dl in women. Factors such as a purine-rich diet, obesity, alcohol consumption, and dehydration

contribute to this increase, often leading to painful flare-ups that can significantly impact an individual's quality of life (Untari & Wijayanti, 2017).

longside uric acid testing, blood pressure monitoring is another essential aspect of health assessments. Blood pressure reflects the force exerted by circulating blood on the walls of blood vessels, which is generated as the heart pumps blood throughout the body. It is composed of two measurements: systolic pressure, which occurs when the heart's ventricles contract and push blood into the arteries, and diastolic pressure, which occurs when the ventricles relax and refill with blood. High blood pressure, or hypertension, is a condition that results from various lifestyle factors, including excessive salt intake, poor diet, lack of physical activity, smoking, and high stress levels. If left unmanaged, hypertension can lead to serious complications, such as heart disease, stroke, and kidney failure (Dewi et al., 2018). Conversely, low blood pressure can also pose health risks, often caused by dehydration, nutritional deficiencies, hormonal imbalances, or internal bleeding (Ministry of Health, 2022).

When taken together, blood pressure and uric acid measurements offer important information about a person's general health as well as how well their cardiovascular and metabolic systems are operating. Timely treatments can help delay the emergence of more serious health problems by detecting high blood pressure or excessive uric acid levels early. In order to promote long-term well-being, increase knowledge of the risk factors linked to these disorders, and encourage healthy lifestyle choices, routine health screenings—including these checks—are crucial. People may take proactive measures to improve their health management and lower their chance of developing chronic diseases by being aware of the links between nutrition, lifestyle, and key health indicators.

METHOD

1. Location Survey and Population Data Collection

A location survey was conducted in Dusun XIII, Saentis Village, to gather information about the population residing in the area. This population data is crucial for determining the number of respondents to be included in the study. Through this survey, we were able to understand the population distribution in Dusun XIII, as well as obtain an overview of the demographic characteristics of the community that constitutes the research sample.

2. Health Examination

Residents of Dusun XIIssI, Saentis Village, had health checkups to measure their blood pressure (both systolic and diastolic), blood glucose, cholesterol, and uric acid levels. The purpose of these tests was to identify possible cardiovascular or metabolic diseases in people. The purpose of the cholesterol test was to evaluate lipid levels that could influence the risk of heart disease, whereas the blood glucose test was used to determine the risk of diabetes.

Systolic and diastolic blood pressure monitoring was done to identify hypertension, and uric acid testing was done to gauge the possible risk for gout. Every test was carried out by trained medical specialists with standardized equipment.

3. Interview

Additional information on the lifestyle habits of the respondents was obtained through interviews. The aim of these interviews was to investigate everyday activities that may impact health, including eating habits, levels of physical activity, alcohol use, smoking, and other variables that may impact health outcomes. Using a pre-made structured interview guide, the interviews were conducted directly with the respondents in order to get accurate and pertinent information on their lifestyle. Correlations between lifestyle choices and the medical issues found during the tests will be found by analyzing the data gathered from these interviews.

RESULTS AND DISCUSSION

The total number of respondents in this study was 100 individuals, all of whom were residents of Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency. The characteristics of the respondents are as follows:

a. Gender

Table 1. Frequency Distribution of Gender in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency

No	Gender	Frequency (n)	Percentage (%)
1	Female	82	82
2	Male	18	18
Total		100	100

b. Age Distribution

Table 2. Frequency Distribution of Age in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency

No	Age (Years)	Frequency (n)	Percentage (%)
1	15-25	6	6
2	26-35	21	21
3	36-45	20	20
4	46-55	27	27
5	56-65	20	20
6	66-75	4	4
7	76-85	2	2
Total		100	100

c. Random Blood Glucose

Table 3. Frequency Distribution of Random Blood Glucose Results in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency

No	Result	Frequency (n)	Percentage (%)
1	Abnormal	21	21
2	Normal	79	79
Total		100	100

The overall random blood glucose examination of 100 individuals in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency, indicated that 21 individuals (21%) had abnormal results, while 79 individuals (79%) had normal results. According to established standards, a normal random blood glucose level is below 200 mg/dL.

d. Uric Acid

Table 4. Frequency Distribution of Uric Acid Test Results in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency

No	Result	Frequency (n)	Percentage (%)
1	Abnormal	44	44
2	Normal	56	56
Total		100	100

Based on the reference values, the normal uric acid levels are 2.4–6.0 mg/dL for females and 3.4–7.0 mg/dL for males. The examination conducted on the population in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency, revealed that 44 individuals (44%) had elevated uric acid levels, while 56 individuals (56%) had normal uric acid levels.

e. Cholesterol

Table 5. Frequency Distributin of Cholesterol Test Results in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency

No	Result	Frequency (n)	Percentage (%)
1	Abnormal	38	38
2	Normal	62	62
Total		100	100

The examination of 100 individuals in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency revealed that 38 individuals (38%) had abnormal cholesterol levels. According to clinical guidelines, a total cholesterol level considered normal is less than 200 mg/dL.

f. Blood Pressure

Table 6. Frequency Distribution of Blood Pressure (Systolic) Test Results in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency

No	Result	Frequency (n)	Percentage (%)
1	Abnormal	83	83
2	Normal	17	17
Total		100	100

Based on clinical guidelines, a normal systolic blood pressure value is considered to be below 120 mmHg. The results from the examination of 100 individuals in Dusun XIII, Saentis Village, indicate that 83 individuals (83%) had abnormal systolic blood pressure readings.

Table 7. Frequency Distribution of Blood Pressure (Diastolic) Test Results in Dusun XIII, Saentis Village, Percut Sei Tuan Subdistrict, Deli Serdang Regency.

No	Result	Frequency (n)	Percentage (%)
1	Tidak normal	67	67
2	Normal	33	33
Total		100	100

Commented [YAB1]: Gunakan bahasa inggris

Out of 100 individuals from Dusun XIII, Desa Saentis, 67 individuals (67%) exhibited abnormal diastolic blood pressure readings, while 33 individuals (33%) had normal diastolic blood pressure. For reference, a diastolic blood pressure value of 80 mmHg is considered within the normal range.

The increase in blood glucose levels beyond the normal range in individuals is often influenced by various factors, including the shift towards a more modern lifestyle. Factors such as unhealthy dietary habits, lack of physical activity, prolonged stress, and aging can contribute to metabolic disorders such as diabetes or prediabetes. In this study, of the 100 individuals examined for their blood glucose levels, 21 individuals (21%) showed abnormal results. Interviews with the local community revealed that lifestyle factors such as excessive stress, unstable emotions, frequent consumption of sweet tea, and insufficient sleep were the primary causes of elevated blood glucose levels. Additionally, hereditary factors also played a role in this metabolic disturbance (Rusdi, 2020).

Elevated uric acid levels were also found in a significant portion of respondents, with 44 individuals (44%) out of 100 showing abnormal levels. Increased uric acid levels can be caused by genetic factors, as well as dietary habits such as consuming high-purine foods like organ

meats, seafood, alcohol, and sugary beverages. This aligns with previous findings indicating that certain food consumption can affect uric acid levels in the body (Mariani E, 2022). Interviews revealed that the habit of consuming these foods was closely related to the rise in uric acid levels among the people of Dusun XIII.

Cholesterol, a type of lipid, is also a major risk factor for cardiovascular diseases. Among the 100 individuals examined, 38 individuals (38%) showed abnormal cholesterol levels. A normal total cholesterol level is considered to be below 200 mg/dL, and elevated cholesterol can be influenced by unhealthy eating habits, such as consuming foods rich in saturated fats. Interviews with the community showed that diets high in fats, such as consuming fatty meats, and irregular eating patterns played a significant role in increasing cholesterol levels. This is further supported by previous studies linking poor dietary habits with elevated cholesterol levels (Pane et al., 2020).

Blood pressure is an important indicator of heart and vascular health. Systolic and diastolic blood pressure examinations indicated that the majority of respondents had abnormal blood pressure readings. A total of 83 individuals (83%) had high systolic blood pressure, and 67 individuals (67%) had high diastolic blood pressure. The increase in blood pressure is associated with unhealthy lifestyle habits, such as excessive consumption of sugary, salty, and fatty foods, as well as lack of physical exercise. Interviews indicated that insufficient intake of fruits and vegetables, fatigue due to excessive activity, and stress were factors that exacerbated blood pressure conditions in individuals from Dusun XIII (Dewi et al., 2018; Kemenkes, 2022).

All things considered, the findings of these health assessments show that a sizable section of the populace in Dusun XIII, Saentis Village, suffers from health problems associated with everyday routines and lifestyle choices. As a result, it is imperative that the community focus more on eating a balanced diet, exercising frequently, and managing stress. Preventing and treating current health problems, enhancing quality of life, and lowering the prevalence of disorders that might present long-term health hazards can all be greatly aided by regular health screenings and health education.

CONCLUSION

Based on the results of the health examinations conducted on the residents of Dusun XIII, Desa Saentis, with parameters including random blood glucose levels, cholesterol, uric acid, and

blood pressure, it was found that 21% of individuals had abnormal blood glucose levels, 44% had abnormal uric acid levels, and 38% had abnormal cholesterol levels. Additionally, blood pressure measurements revealed that 83% of respondents had abnormal systolic hypertension, while 67% had abnormal diastolic hypertension. These findings indicate that although the majority of the community has implemented several preventive measures, there are still significant health issues that require further attention, particularly those related to lifestyle and daily habits.

ACKNOWLEDGEMENT

Acknowledgments are extended to Department of Medical Laboratory Technology, Health Polytechnic of the Ministry of Health, the educational staff in the Laboratory Technician role Department of Medical Laboratory Technology, Health Polytechnic of the Ministry of Health, as well as to the entire community of Dusun XIII, Desa Saentis, Kecamatan Percut Sei Tuan, Kabupaten Deli Serdang, for their support and participation in the successful implementation of this activity.

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