

# PUBLIC KNOWLEDGE ABOUT HYPERTENSION BASED ON LIFESTYLE IN SENTANAN HAMLET, GUDO DISTRICT, JOMBANG REGENCY

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**Abstract.** Hypertension is one of the most dangerous health problems in the world because it often arises as a result of lifestyle changes. A person's lifestyle is closely related to the knowledge that person has. If someone has minimal knowledge about a disease, it will have an impact on the lifestyle they live, thereby influencing the occurrence of hypertension. The aim of this research is to identify public knowledge about hypertension based on lifestyle in Sentanan Hamlet, Gudo District, and Jombang Regency. This type of research uses descriptive research methods through a cross-sectional approach. The sample size used was 60 late adults, who were determined using a purposive sampling technique. The research was conducted from December 2022 to January 2023. The variable in this study was knowledge about hypertension based on lifestyle. Data was collected by filling out questionnaires and analyzed descriptively. The results of this study show that the majority of people have good knowledge about eating habits (70%), the majority have good knowledge about physical activity (61.7%), the majority have good knowledge about smoking habits (65%), the majority have good knowledge about alcohol consumption (61.7%), almost half had poor knowledge about coffee consumption (41.7%), and most had good knowledge about stress (51.7%). It is hoped that the adult community will always seek information about healthy lifestyles and hypertension through various media, such as print and electronic media. It is also hoped that the community will actively participate in health education held by local health officers to increase their knowledge.

**Keywords:** Knowledge, Hypertension, Lifestyle

## 1 INTRODUCTION

Hypertension is a non-communicable disease that is often referred to as a "silent killer", because it comes without showing symptoms or complaints. Hypertension is one of the most dangerous health problems worldwide because it often arises due to changes in a person's lifestyle that are influenced by society and the surrounding environment. If hypertension is not controlled, it will slowly and surely cause damage to vital cardiovascular organs such as the heart, brain, kidneys, and eyes (Tambunan et al., 2021; Mathavan et al., 2017).

WHO states that around 972 million people in the world, or 26.4% of people, suffer from hypertension. Of the 972 million people, 333 million are in developed countries, and 639 million are in developing countries. Dinas Kesehatan Jombang 2020 stated that the percentage of hypertension sufferers who received standard health services was 31.47%. Meanwhile, in 2021, the percentage of hypertension sufferers who receive health services according to standards will be 76.5% (Dinas Kesehatan Jombang, 2021).

High cases of hypertension can be caused by the lifestyle in which a person lives. If someone adopts an unhealthy lifestyle, such as not maintaining a healthy diet, smoking, consuming alcohol, not maintaining a sleeping pattern, stress, and a lack of

physical activity, it can increase the risk of developing hypertension. The lifestyle in which a person lives will be closely related to the knowledge that person has about a disease. If someone has minimal knowledge about a disease, it will have an impact on the lifestyle they live, which will influence the occurrence of hypertension (Dewi et al., 2017; Pristiany et al., 2023).

Hypertension can be prevented and controlled by implementing smart and obedient behavior. "Smart" behavior, namely regular health checks, getting rid of cigarette smoke, exercising diligently, having a balanced diet, getting enough rest, and managing stress. "Compliant" behavior, namely regular health checks and following doctor's recommendations, overcoming illnesses with proper and regular medication, sticking to a balanced nutritional diet, trying to do physical activity safely, avoiding cigarette smoke, alcohol, and carcinogenic substances (Ditjen P2PTM, 2018).

Based on the description above, the authors are interested in conducting research on community knowledge about hypertension based on lifestyle in Sentanan Hamlet, Gudo District, and Jombang Regency. This study aims to identify community knowledge about hypertension based on lifestyle in the Sentanan Hamlet, Gudo District, Jombang Regency.

## **2 METHOD**

This research is a descriptive study with a cross-sectional approach. The sample used in this study was a portion of the late adult community in Sentanan Hamlet, Gudo District, Jombang Regency, which was selected using a non-probability sampling technique of the purposive sampling type. The inclusion criteria set were late adults aged 36–45 years, able to read and write. The research instrument is a questionnaire. This questionnaire contains data on knowledge about hypertension based on lifestyle (eating habits, physical activity, smoking habits, alcohol consumption, coffee consumption, and stress). The data uses a Guttman scale questionnaire, so respondents can give a checklist (√) in the true or false column. The research was conducted from December 2022 to January 2023 in Sentanan Hamlet, Gudo District, and Jombang Regency. All eligible participants were asked to complete a self-administered questionnaire including demographic information and a questionnaire in Indonesian. Questionnaire distribution was carried out by researchers who visited residents' homes (door to door). Prior to data collection, the researcher explained the purpose of the study and ensured that written consent was obtained and that community participation was voluntary. In addition, the public is reassured that they can choose to remain anonymous and have the option of declining or not completing the survey questionnaire. Data analysis in this study was a descriptive analysis by presenting data on community knowledge about hypertension based on lifestyle in the form of frequencies and percentages in the frequency distribution table. Ethics approval was obtained from the Surabaya Ministry of Health Poltekkes Ethics Institute No. EA/1363/KEPK-Poltekkes\_Sby/V/2022. Administrative approval from the Investment Agency and PTSP for the selected Sentanan Hamlets was also obtained prior to research data collection.

### 3 RESULTS

#### General Data

General data in this research includes age, gender, education, type of work, and hereditary history of hypertension in Sentanan Hamlet, Gudo District, and Jombang Regency.

Table 1. Characteristics of the Community in Sentanan Hamlet, Gudo District, Jombang Regency

Characteristics	Category	Mean	Frequency (n)	SD	Percentage (%)
Age	36-40	41,08	24	2,625	40
	41-45		36		60
<b>Total</b>			<b>60</b>		<b>100</b>
Gender	Male		22		36,7
	Female		38		63,3
<b>Total</b>			<b>60</b>		<b>100</b>
Education	Elementary		6		10
	Junior High School		28		46,7
	Senior High School		21		35
	College		5		8,3
<b>Total</b>			<b>60</b>		<b>100</b>
Type of work	Housewife		34		56,7
	Private Sector Employee		21		35
	Farmer		5		8,3
	<b>Total</b>		<b>60</b>		<b>100</b>
Hereditary history of hypertension	No		28		46,7
	Yes		32		53,3
<b>Total</b>			<b>60</b>		<b>100</b>

Source: Primary Data2023

Based on the results of research on the general characteristics of the community in Sentanan Hamlet, Gudo District, Jombang Regency, it was found that more than half (60%) were aged 41–45 years, and a small portion (40%) were aged 36–40 years. The mean age was 41.08, and the standard deviation from age is 2.625. Based on gender, most were women (63.3%), and a few were men (36.7%). Based on education, almost half (46.7%) graduated from junior high school, and a small portion (8.3%) graduated from university. Based on work, more than half were housewives (56.7%), and a small portion were farmers (8.3%). Based on hereditary history of hypertension, more than half had a history of heredity (53.3%), and a small proportion did not (46.7%).

## Special Data

Table 2. Public Knowledge Based on Eating Habits in Sentanan Hamlet, Gudo District, Jombang Regency

<b>Knowledge About Eating Habits</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Good	42	70
Enough	11	18,3
Less	7	11,7
<b>Total</b>	<b>60</b>	<b>100</b>

Based on table 2, it shows that the majority of people have good knowledge, namely 42 people (70%), and a small portion have less knowledge, namely 7 people (11.7%).

Table 3. Public Knowledge Based on Physical Activity in Sentanan Hamlet, Gudo District, Jombang Regency

<b>Knowledge About Physical Activity</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Good	37	61,7
Enough	9	15
Less	14	23,3
<b>Total</b>	<b>60</b>	<b>100</b>

Based on table 3, it shows that the majority of people have good knowledge, namely 37 people (61.7%), and a small portion have sufficient knowledge, namely 9 people (15%).

Table 4. Public Knowledge Based on Smoking Habits in Sentanan Hamlet, Gudo District, Jombang Regency

<b>Knowledge About Smoking Habits</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Good	39	65
Enough	12	20
Less	9	15
<b>Total</b>	<b>60</b>	<b>100</b>

Based on table 4, it shows that the majority of people have good knowledge, namely 39 people (65%), and a small portion have less knowledge, namely 9 people (15%).

Table 5. Public Knowledge Based on Alcohol Consumption in Sentanan Hamlet, Gudo District, Jombang Regency

<b>Knowledge About Alcohol Consumption</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Good	37	61,7
Enough	11	18,3
Less	12	20
<b>Total</b>	<b>60</b>	<b>100</b>

Based on table 5, it shows that the majority of people have good knowledge, namely 37 people (61.7%), and a small portion have sufficient knowledge, namely 11 people (18.3%).

Table 6. Public Knowledge Based on Coffee Consumption in Sentanan Hamlet, Gudo District, Jombang Regency

<b>Knowledge About Coffee Consumption</b>	<b>Frequency(n)</b>	<b>Percentage (%)</b>
Good	20	33,3
Enough	15	25
Less	25	41,7
<b>Total</b>	<b>60</b>	<b>100</b>

Based on table 6, it shows that almost half of the people have insufficient knowledge, namely 25 people (41.7%), and a small portion have sufficient knowledge, namely 15 people (25%).

Table 7. Public Knowledge Based on Stress in Sentanan Hamlet, Gudo District, Jombang Regency

<b>Knowledge About Stress</b>	<b>Frequency (n)</b>	<b>Percentage (%)</b>
Good	31	51,7
Enough	9	15
Less	20	33,3
<b>Total</b>	<b>60</b>	<b>100</b>

Based on table 7, it shows that the majority of people have good knowledge, namely as many as 31 people (51.7%), and a small proportion have sufficient knowledge, as many as 9 people (15%).

## 4 DISCUSSION

### **Public Knowledge Based on Eating Habits in Sentanan Hamlet, Gudo District, Jombang Regency**

Data from research on public knowledge based on eating habits in Sentanan Hamlet, Gudo District, and Jombang Regency shows that most people have good knowledge (70%) and a small proportion have poor knowledge (11.7%).

The habit of consuming instant food can increase a person's blood pressure. Instant food tends to use preservatives such as sodium benzoate and flavor enhancers such as MSG, and these types of foods contain quite a lot of sodium (Rahma, 2017; Pramestutie&Silviana, 2016; Dipiro et al., 2017). Salt consumption has a direct effect on blood pressure. There is evidence that those with a hereditary tendency to suffer from hypertension have a lower ability to excrete salt from the body.

This is in line with research by Agita dan Anisa (2022) , which shows that from the results of the study, 44 respondents (45.7%) had good knowledge and had good eating habits (Rahma, 2017; Wulandari & Puspita, 2019; Asrina et al., 2020). The results of this study were proven by Auliarahmawati's research (2022), which stated that out of 99 respondents, hypertensive patients who had adequate sodium intake tended to be more likely than hypertensive patients who had high sodium intake. In the data obtained during the study, there were 70 respondents (70.7%) who had adequate sodium intake, while those with high sodium intake were 29 respondents (29.3%) (Auliarahmawati & Novitasari, 2022; Bogale et al., 2020; Bosu et al., 2019).

According to the researchers' assumptions, most people who have good knowledge based on eating habits have received information about healthy eating patterns to avoid hypertension. From the results of the study, it was found that there were still many people who answered incorrectly on food questionnaires that contained excess fat (fried), which could cause high blood pressure. The habit of eating fried foods should be slowly avoided by the community so as not to cause hypertension. The importance of maintaining eating habits to promote a healthy lifestyle needs to be increased and applied to all people.

It is hoped that people who already have good knowledge based on eating habits can implement good dietary patterns to prevent the occurrence of hypertension and complications due to hypertension for those who experience it. For people who still don't know well about hypertension diets, they can look for information from books, the internet, counseling, and health education, which is usually provided by cadres and local health workers.

### **Public Knowledge Based on Physical Activity in Sentanan Hamlet, Gudo District, Jombang Regency**

Data from research on public knowledge based on physical activity in Sentanan Hamlet, Gudo District, and Jombang Regency shows that the majority of people have good knowledge (61.7%) and a small percentage have sufficient knowledge (15%).

Physical activity is the movement of the body's muscles, which requires energy but is useful for improving health. When a person does not move, the heart rate increases, forcing the heart to work harder with each contraction (Rahma, 2017; Yang et al., 2017; Daniel, 2017). Examples of physical activities that can be done to reduce hypertension are morning walks, walking, gymnastics, cycling, and swimming. It is recommended that these activities be done for  $\geq 30$  minutes per day and  $\geq 3$  times per week. Exercise such as aerobics or brisk walking for 30-45 minutes, if done five times a week, can reduce TDS by 4 mmHg and TDD by 2.5 mmHg (Kemenkes RI, 2017).

This is in line with research by Herdianto (2014) which stated that of the 89 respondents, the results showed that the majority (58%) or 52 respondents had good knowledge, and almost half (42%) or 37 respondents had poor knowledge about

physical activity. hypertension. Hypertension sufferers' knowledge about physical activity is influenced by age, education, and information sources (Herdianto, 2014).

According to researchers' assumptions, people have good knowledge based on physical activity because they have received information regarding a healthy lifestyle for hypertension by carrying out activities that increase energy or energy expenditure. One factor that influences knowledge is age. Age can influence a person's understanding and thinking patterns. The older you get, the more your understanding and thinking patterns will develop, so that the knowledge you gain will get better.

Good public knowledge based on physical activity must be applied in everyday life so that people's health is maintained. Meanwhile, people who still don't understand the hypertension lifestyle related to physical activity can look for information from various sources and media, such as books, posters, leaflets, the internet, or take part in counseling.

### **Public Knowledge Based on Smoking Habits in Sentanan Hamlet, Gudo District, Jombang Regency**

Data from research on public knowledge based on smoking habits in Sentanan Hamlet, Gudo District, and Jombang Regency shows that the majority of people have good knowledge (65%), and a small percentage have poor knowledge (15%).

Smoking is a habit that has many negative impacts on health and can increase the risk of developing chronic diseases such as heart disease, blood vessels, lungs, etc. Cigarettes contain thousands of harmful chemicals, including nicotine. Smoking among people with hypertension will further increase the risk of damage to the arteries (Puspita & Fitriani, 2021). The smoking habit of people with hypertension can increase the risk of other cardiovascular diseases such as coronary heart disease (CHD), stroke, heart failure, and peripheral artery disease.

This is in line with research conducted by Jatmika dan Maulana (2015), which stated that half of the respondents knew that smoking could cause heart disease and hypertension. More than half of the respondents (66.7%) also knew that stroke was a result of smoking. Stroke is very common due to uncontrolled hypertension (Jatmika & Maulana, 2015).

According to researchers' assumptions, even though many people have good knowledge of smoking habits, there are still people who do not understand the dangers of smoking to their health, especially those suffering from hypertension. It can be proven from the people who give wrong answers regarding the question that consuming cigarettes can harm health. People's misconceptions about the dangers of smoking perpetuate the smoking culture in society. Most active smokers think that cigarettes are not dangerous as long as they still do sports activities to get rid of nicotine in the body through sweat.

The public is expected to seek more information. Social media makes it easier for late adults to get various information. So it would be better for people to follow forums

on Facebook or Instagram about health, especially about healthy lifestyles for hypertension by avoiding smoking and the dangers and impacts of smoking. People who already understand the impact of smoking can adopt habits to avoid smoking.

### **Public Knowledge Based on Alcohol Consumption in Sentanan Hamlet, Gudo District, Jombang Regency.**

Data from research on public knowledge based on alcohol consumption in Sentanan Hamlet, Gudo District, and Jombang Regency shows that the majority of people have good knowledge (61.7%) and a small portion have sufficient knowledge (18.3%).

Alcohol consumption can increase blood pressure due to the increased synthesis of large amounts of catecholamines. Alcohol has damaging properties on the artery walls, so that it narrows the blood vessels (Rahma, 2017). Alcohol, if consumed in excess and over the long term, can damage the liver and cause addiction. Several studies show a direct link between blood pressure and alcohol intake. It can be said that the effect on blood pressure only appears if you consume around 2-3 standard-sized glasses of alcohol every day (Kemenkes, 2017).

According to the results of the research, the knowledge of the people of Sentanan Hamlet based on alcohol consumption is mostly good, and a small portion is sufficient. This research is proven by Yanti's research (2022) (Yanti, 2022), which shows that of the 34 people who were respondents, the majority of respondents at RSUD Dr. Pirngadi Medan City in 2022 who did not consume alcohol were 28 respondents (82.4%), and the minority of respondents who consumed alcohol were 6 respondents (17.6%). Yanti's research results also explained that alcohol consumption was not significant in hypertension sufferers. Even so, it does not mean that alcohol consumption is not at risk of hypertension.

According to researchers, people still do not understand the dangers of alcohol if consumed in excess for health. This can be proven by people who still answer incorrectly on questionnaire questions about whether consuming around 2-3 standard-sized glasses of alcohol every day will have an impact on blood pressure, and death is one of the consequences of the habit of consuming alcohol. People assume that consuming alcohol will not have a fatal impact on health and can even lead to death if not stopped immediately. Excessive alcohol consumption can cause a person to lose consciousness, have seizures, and even die.

Based on the results of research on the knowledge of the community in Sentanan Hamlet regarding alcohol consumption, it is hoped that people who understand the dangers of consuming alcohol can maintain a healthy lifestyle by avoiding alcohol consumption. People who have sufficient and insufficient knowledge can expand their insight and seek information by discussing it with family, friends, and health workers.

### **Public Knowledge Based on Coffee Consumption in Sentanan Hamlet, Gudo District, Jombang Regency**

Data from public knowledge research based on coffee consumption in Sentanan Hamlet, Gudo District, Jombang Regency, found that almost half of the community had insufficient knowledge (41.7%) and a small proportion had sufficient knowledge (25%).

Excessive and long-term coffee consumption is one of the risk factors for hypertension because coffee contains the largest amount of caffeine. Caffeine is a substance found in coffee, tea, soft drinks, and chocolate. The caffeine contained in coffee can increase blood pressure, especially when the body is under stress (Rahmah, 2017). Caffeine in coffee stimulates the heart to pump blood and increases blood pressure from the heart to the arteries, which leads to an increase in blood pressure (Puspita & Fitriani, 2021).

The results of this study are proven by Supriati's research (2020), where a healthy lifestyle is not good because respondents have bad coffee drinking habits with an average question score of 1.9. One indicator that is not good is that respondents always drink coffee every day, with an average question value of 1.6. In general, the content contained in coffee is caffeine, which affects the sympathetic nerves, causing blood vessel constriction and an increase in blood pressure, or hypertension (Supriati, 2020).

According to the researchers' assumptions, people who have less knowledge because they are not exposed to information about coffee consumption, which can cause hypertension. It is evident from the many people who answered the wrong questions on the questionnaire that consuming caffeine can increase blood pressure and that someone who usually drinks coffee in small doses has a low adaptation to the effects of caffeine. People assume that drinking coffee has become a habit and will not cause an increase in blood pressure. A person's knowledge is greatly influenced by that person's education. It can be seen from the education factor of respondents who are highly educated that it is also easier to obtain information about the adverse effects of drinking coffee on health in people with hypertension. Knowledge can be obtained from information and experience in the surrounding environment, including the work environment. The more people who consume coffee in the work environment, the more experience and knowledge they gain about the bad effects of drinking coffee on health.

Based on the results of the research in Sentanan Hamlet, it is hoped that the community can increase knowledge about the impact or dangers of coffee consumption on people with hypertension. As health workers, it is hoped that they can provide counseling and health education regarding the impacts or dangers of coffee consumption on people with hypertension and a hypertensive lifestyle.

## **Public Knowledge Based on Stress in Sentanan Hamlet, Gudo District, Jombang Regency**

Data from public knowledge research based on stress in Sentanan Hamlet, Gudo District, and Jombang Regency found that most people had good knowledge (51.7%) and a small proportion had sufficient knowledge (15%).

Stress is the body's response to various demands or burdens on it, such as tension, anxiety, anger, frustration, and difficulty thinking clearly. If too much stress causes a disturbance and turns into a disease, stress can help a person be more aware of some of the disturbances that will occur (Aqsho, et al., 2021). Stress is considered a response, which is a condition or condition as a result of emotional pressure where the burden that is felt is not commensurate with the ability to overcome the burden so that it can trigger the onset or recurrence of hypertension (Setyawan, 2017).

The results of this study are proven by Kulsum's research (2022), which shows that more than half of hypertensive respondents experience a moderate level of anxiety; at this level, the field of perception of the environment decreases. Individuals focus on important things at that time and put other things aside. Anxiety experienced by respondents, both mild anxiety and panic, revealed that they often experienced physical tension, fast and shallow breathing, nervousness, forgetfulness, easily startled, lack of concentration, irritability and difficulty sleeping, confusion, anxiety, and fatigue (Kulsum, 2022).

Knowledge can be influenced by experience. According to the researcher's assumption, someone who has received information about stress related to lifestyle with hypertension will have broader insights and knowledge, and more experience will be gained. The more information obtained, a person will better understand, be able to take the actions that should be taken, and avoid actions that can harm themselves. The less information obtained, the lower the ability to think will be, and the less experience and knowledge gained will be.

Based on the research results in Sentanan Hamlet, it is hoped that the community can increase their knowledge about stress prevention and control. Cadres and local health workers are also expected to be able to improve services for the community by providing education regarding the stress experienced by hypertension sufferers.

## **5 CONCLUSION**

This research is basic and identifies public knowledge about hypertension based on lifestyle in Sentanan Hamlet, Gudo District, and Jombang Regency. The results of this study indicate that most people's knowledge is about good eating habits. Most people's knowledge about physical activity is good. Most of the public's knowledge is about good smoking habits. Most people's knowledge about alcohol consumption is good. Almost half of the public's knowledge about coffee consumption is lacking. As

well, most of the public's knowledge about stress is good. It is hoped that the adult community will always seek information about healthy lifestyles and hypertension through various media, such as print and electronic media. It is also hoped that the community will actively participate in health education held by local health officers to increase their knowledge.

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