



THE RELATIONSHIP OF LIFESTYLE TO HYPERTENSION IN YOUNG ADULTS: A CROSS-SECTIONAL STUDY

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ABSTRACT

Hypertension is called the silent killer because it occurs without any complaints, it is a type of non-communicable disease. Lifestyle is an individual's life pattern expressed in his interests, activities, and opinions that are influenced by the environment, daily behavior and individual functions in work, activities, and pleasure. One of the factors causing hypertension is lifestyle. Objective to determine the relationship between lifestyle and the incidence of hypertension in young adults in the community in one of the urban villages in Tangerang Regency. Research methods using a correlational quantitative method with a cross-sectional research design. The population in this study were one of the urban villages in Tangerang Regency with an age range of 18-40 years and the sample was selected using purposive sampling. The research instruments used were lifestyle questionnaires and PSQI. Data analysis used univariate and bivariate analysis using the Spearman correlation test. Results showed that there was no relationship between lifestyle and the incidence of hypertension, but there was 1 indicator in lifestyle that had a relationship with the incidence of hypertension, namely smoking with (p-value = 0.013). Respondents are expected to maintain a good lifestyle such as physical activity, diet, not smoking and not consuming alcohol, and respondents can improve sleep patterns to continue to have an overall healthy lifestyle.

Keywords: hypertension; lifestyle; society

First Received 28 March 2024	Revised 28 April 2024	Accepted 30 April 2024
Final Proof Received 08 July 2024		Published 01 October 2024
How to cite (in APA style) Roring, I. L., Banggiling, I. K., Winanti, R. E., Manurung, E. I., & Silitonga, E. (2024). The Relationship of Lifestyle to Hypertension in Young Adults: A Cross-Sectional Study. <i>Indonesian Journal of Global Health Research</i> , 6(6), 3537-3544. https://doi.org/10.37287/ijghr.v6i6.3783 .		

INTRODUCTION

Young adulthood (18-40 years) is the peak stage of development where the physical condition has stabilized due to reaching full development (Chung, 2018). A person in young adulthood has a density of activities where they focus on pursuing goals, careers, working, learning to live independently, and producing something that benefits themselves, their families, and others (Chung, 2018) (Hird et al., 2019). The density of these activities triggers unhealthy living behaviors such as lack of physical activity (exercise), smoking, drinking alcohol, unhealthy diets such as consumption of foods high in salt, fat, and less to consume fruits and vegetables, and irregular sleep patterns. This results in health problems such as metabolic and cardiovascular diseases, joint and bone problems, obesity, and one of them is hypertension (Hird et al., 2019). These diseases will have a negative impact on the lives of young adults such as a decrease in quality of life, can be a burden on the family if the disease will continue, and the worst possibility that can occur is death and has an impact on Indonesia, especially in

the fields of economy and human resources (Chaidir et al., 2017); (Chendra & Zulkarnain, 2020).

Hypertension is a condition where blood pressure exceeds normal limits with systolic ≥ 140 mmHg and diastolic ≥ 90 mmHg (WHO, 2023). Hypertension or the silent killer is a non-communicable disease that occurs without complaints so that most people do not realize they have hypertension, and hypertension has a very high prevalence globally (Kemenkes, 2019a). Many factors cause hypertension, one of which is lifestyle. The lifestyles of the people of the world and Indonesia tend to be unhealthy and get worse when COVID-19 strikes because there are restrictions or health protocols carried out by the government, namely work from home or people are encouraged to stay at home (Hanafi et al., 2021). These things that trigger an increase in the incidence of hypertension.

Approximately 1.13 billion people in the world suffer from hypertension and from year to year it is increasing with an estimate of around 1.5 billion people suffering from hypertension in 2025 and an estimated 10.44 million people experience death each year caused by hypertension and its complications (Kemenkes, 2019b). Based on national measurements, the prevalence of hypertension in Indonesia at the age of >18 years is 34.1% and the highest is in South Kalimantan with 44.1% while the lowest is in Papua with 22.2% (Riskesdas, 2019). In 2020, hypertension cases experienced a slight decrease from 1,857,866 cases in 2019 to 1,839,842 cases in 2020 (BPS Banten, 2021). The incidence of hypertension in Tangerang Regency in 2020 was around 806,218 cases (BPS Banten, 2021). The number of young adults in Kelapa Dua Village in 2021 is around 17,190 people (BPS Kabupaten Tangerang, 2021). Based on the data obtained regarding the incidence of hypertension in Kelapa Dua Village, it was found that there was an increase in hypertension in the last three years, namely in 2020 there were around 3,830 people, in 2021 around 5,119 people, and in 2022 around 6,713.

The lifestyle of the people in Kelapa Dua Village tends to be unhealthy. Based on the results of interviews conducted with 30 people in Kelapa Dua Village, 90% of people said they rarely exercise because of their busy work, but still do daily physical activity and 70% of people said they get tired easily when doing physical activity, 80% of people also said that they like to consume fatty foods, fried foods, and foods that are high in salt. About 67% of people said that they smoke every day with a frequency of 1-2 packs per day. In addition they also consume coffee every day about 1-2 cups per day and about 33% of people said that their heart felt pounding after consuming strong black coffee without any milk mixture. 40% of people said that if a serious problem occurs, they will get angry easily and can even cause headaches. About 33% of them also said that they often sleep late or stay up late to play online games or relax with neighbors at the poskamling.

Efforts that have been made by the government to reduce the incidence of hypertension and have been implemented by the health center in one of the urban villages in Tangerang Regency since 2018 are implementing CERDIK in daily activities to socialize and monitor non-communicable diseases (NCDs) by conducting NCD evaluation and screening, education about NCD prevention, periodic health checks and health consultations. Based on preliminary data at the puskesmas, it is evident that since 2018 efforts to prevent hypertension have been made, but in the last 3 years from 2020-2022 there has still been an increase in the incidence of hypertension and the highest occurred in 2022. This made the researcher want to conduct a study to see if there is a relationship between lifestyle and the incidence of hypertension in one of the urban villages in Tangerang Regency. The aim of this study was to analyze the

relationship between lifestyle and the incidence of hypertension in young adults in one of the urban villages in Tangerang Regency.

METHOD

This study used a correlational quantitative approach with a cross-sectional research design. This research has passed the ethical test by the Ethics Committee of the Faculty of Nursing, Pelita Harapan University with No.026/KEPFON/I/2023. This research was conducted from February to April 2023 on 100 respondents aged 18-40 in one of the urban villages in Tangerang Regency. The technique used was purposive sampling. The instrument used in this study was a lifestyle questionnaire from Halim & Sutriyawan (2022) which was modified to assess lifestyle towards the incidence of hypertension in young adults (Halim & Sutriyawan, 2022). This questionnaire was tested for validity and reliability on 60 respondents in different villages from the research site with the same characteristics, with the results of the r count in the validity test 0.266-0.502, and the results of the Cronbach's Alpha reliability test 0.625 so that it was declared valid and reliable. At the time of data collection, the researcher gave an explanation of the research and distributed informed consent sheets and lifestyle questionnaires to be filled in by respondents and took blood pressure measurements using a sphygmomanometer which was carried out 2 times where the first measurement was carried out before filling out the questionnaire and the second measurement after filling out the questionnaire with a distance of 5-10 minutes. The results of blood pressure measurements taken are the results of the second blood pressure measurement. The data analysis used is univariate analysis and bivariate analysis with the Spearman correlation test to determine whether or not there is a relationship between two variables for data that is not normally distributed.

RESULTS

Table 1.
Overview of People's Lifestyle

Lifestyle	f	%
Healthy	67	67
Not Healthy	33	33

Table 1 shows that 67% of respondents have a healthy lifestyle and 33% of respondents have an unhealthy lifestyle. The table shows that 62% of respondents have active physical activity, 69% of respondents have a healthy diet, 51% of respondents do not smoke, 91% of respondents do not drink alcohol, but 70% of respondents have poor sleep patterns.

Table 2.
Overview of Blood Pressure Levels

Blood Pressure Levels	f	%
Hypotension	0	0
Normal	23	23
Pre-Hypertension	50	50
Grade 1 Hypertension	20	20
Grade 2 Hypertension	7	7

Based on the table, there are no people in the area who have hypotension. But there are 50 young adults who suffer from pre-hypertension. Respondents' blood pressure in this study was categorized into 5, namely hypotension (< 90/60 mmHg), normal (< 120/80 mmHg), pre-hypertension (120/80 mmHg - 139/89 mmHg), grade 1 hypertension (140/90 mmHg - 159/99 mmHg), and grade 2 hypertension (> 160/100 mmHg).

Table 3.
Relationship between Lifestyle and Hypertension in Young Adults

Lifestyle	Hypertension								P-value
	Normal		Pre-Hypertension		Grade 1 Hypertension		Grade 2 Hypertension		
	f	%	f	%	f	%	f	%	
Health	16	16	33	33	13	13	5	5	1.000
Not Health	7	7	17	17	7	7	2	2	

Table 3 shows that 33 (33%) respondents have a healthy lifestyle but are classified as pre-hypertension (120/80 mmHg - 139/89 mmHg). In addition, as many as 2 (2%) respondents have an unhealthy lifestyle and are classified as grade 2 hypertension. The results of data processing show a p-value = 0.145 so it is concluded that there is no relationship between lifestyle and the incidence of hypertension.

DISCUSSION

The results showed that the lifestyles of young adults in one of the urban villages in Tangerang Regency are healthy. The majority of people have active physical activity, a good diet, do not smoke or consume alcohol, but have poor sleep patterns. The better a person's lifestyle, it will improve their health condition and vice versa, the worse the lifestyle, it can trigger disease (Liawati et al., 2021). Lifestyle such as physical activity, diet, smoking or consuming alcohol and sleep patterns can affect the incidence of hypertension in young adults (Liawati et al., 2021). The results showed that 62% of respondents had active physical activity, 69% of respondents had a good diet, 91% of respondents did not consume alcohol, 51% of respondents did not smoke, but 70% of respondents had poor sleep patterns. It can be concluded that the four lifestyle indicators of the Kelapa Dua community have good results (67%) or have a healthy lifestyle. A healthy lifestyle can have an effect on preventing hypertension and conversely an unhealthy lifestyle will increase the risk of occurrence (Roza, 2017).

The results of the research conducted show that the majority of young adults have a healthy lifestyle with 67 respondents but there are 51 respondents classified as pre-hypertension, grade 1 hypertension, and grade 2 hypertension and those with normal blood pressure are 16 respondents. While those who have an unhealthy lifestyle are 33 respondents and 26 of them are classified as pre-hypertension, grade 1 hypertension, and grade 2 hypertension and there are only 7 respondents who have normal blood pressure. Bivariate analysis that has been done shows that there is no relationship between lifestyle and the incidence of hypertension, where the value (p value = 1.000). These results indicate that there is no difference between a good lifestyle and a bad lifestyle on the incidence of hypertension. The results of this study are not in line with research conducted (Wijaya et al., 2018) which states that there is a relationship between lifestyle and the incidence of hypertension. However, the results of this study are in line with research conducted by (Roza, 2017) which states that there is no relationship between lifestyle and the incidence of hypertension. Based on the results of the study, the majority of respondents had a healthy life style but few had normal blood pressure, the rest of the respondents had begun to fall into the pre-hypertension category. The criteria for respondents that researchers need to fill out questionnaires are 18-40 years so that the majority of them are still in the pre-hypertension category. The older a person gets, the more the risk for a person to develop hypertension increases. This is because with increasing age, the artery walls will thicken due to the accumulation of collagen substances in the muscle layer, making the blood vessels narrow and become stiff. The increase in blood pressure occurs because blood vessels lose their flexibility so that pumping blood requires stronger pressure.

The smoking lifestyle is one of the factors that can affect the incidence of hypertension. Cigarettes or cigarette smoke contain nicotine, which causes an increase in blood pressure after the first puff. Nicotine is absorbed by the blood vessels in the lungs and circulated into the bloodstream which eventually the brain reacts to the nicotine by signaling the adrenal glands to release epinephrine, epinephrine causes constriction of blood vessels and forces the heart to work harder due to higher pressure thereby increasing blood pressure or hypertension. In a study by Wijaya et al (2018) conducted on 74 young adult respondents which showed an association between smoking and the incidence of hypertension (p-value = 0.031), and 68.9% of respondents did not smoke and 100% of respondents were exposed to cigarette smoke which triggered hypertension. This shows that one of the factors that can trigger hypertension in young adults is smoking.

Apart from smoking, a lifestyle that can trigger hypertension is physical activity. Someone who has active physical activity will prevent hypertension and low physical activity will increase the risk of hypertension (Ahadiyati et al., 2020). Physical activity is beneficial for heart health and affects blood pressure stability, inactive people tend to have a higher heart rate, triggering the heart muscle to work harder, the harder the heart muscle pumps blood, the greater the blood pressure, which causes an increase in blood pressure (Ahadiyati et al., 2020). However, the effect of physical activity on hypertension is still not very significant because many factors affect hypertension such as age, the quality of activities that are strenuous or not, the duration of exercise or exercise, diet, sleep patterns, smoking and comorbidities (Cosimo Marcello et al., 2018). This research is supported by Fadhli's (2018) research on 82 young adult respondents with the results that there is no relationship between activity and the incidence of hypertension. Most respondents have strenuous activities such as gardening, and have good body health so they are not susceptible to hypertension (Fadhli, 2018).

Diet is one of the lifestyle indicators. Diet can affect the incidence of hypertension, a good diet will prevent hypertension (Elvira & Anggraini, 2019). This is in line with research conducted by Elvira et al (2019) to 51 respondents who showed there was no relationship between diet and the incidence of hypertension (p-value = 0.083), and there were 41 (83.7%) respondents had a good diet because they had the awareness to maintain their diet. An unhealthy diet such as often consuming foods high in sodium and fat in excess of body needs can cause blood pressure to increase (Sya'id et al., 2023). There is a significant relationship between diet and the incidence of hypertension. Foods high in sodium and fat can cause fat in the body to accumulate so that blood flow is obstructed and cannot flow towards the heart (Artiyaningrum & Azam, 2016). However, poor diet, such as consuming alcoholic beverages, can trigger hypertension. Alcohol affects hypertension because alcohol reduces the sensitivity of baroreceptors which is a key factor in regulating blood pressure, where baroreceptors function to detect changes in blood pressure and can maintain blood pressure by controlling heart rate, contractility, and peripheral resistance (Ayogu et al., 2021). Alcohol consumed in high doses has a biphasic effect on blood pressure, i.e. alcohol can reduce BP within 12 hours of consumption and increase BP > 13 hours after consumption. This indicates that alcohol consumption is associated with hypertension (Tasnim et al., 2020).

Another lifestyle indicator that needs to be considered is sleep patterns. Good sleep patterns include adequate sleep duration or according to needs, deep sleep, and not waking up for something while sleeping. Meanwhile, poor sleep patterns include sleep duration that is less than needed, sleeping late at night, not sleeping well, often waking up during sleep (Fatmawati et al., 2017). The autonomic system, namely sympathetic and parasympathetic,

affects blood pressure. A person's poor sleep quality will cause an increase in sympathetic activity and a decrease in parasympathetic activity (Fatmawati et al., 2017). Poor sleep patterns are one of the factors in the occurrence of hypertension. Continuous short-duration sleep patterns cause an increase in blood pressure, heart rate, sympathetic nervous system, and increased salt retention which causes structural adaptation of the cardiovascular system so that blood pressure increases (Rusdiana et al., 2019). However, the effect of sleep patterns on hypertension is not very significant because hypertension is also influenced by several other factors such as smoking, drinking alcohol, lack of physical activity, and poor diet (Fatmawati et al., 2017). Sleep pattern is one of the risk factors for hypertension that can still be controlled, therefore, a good sleep pattern is very important to maintain one's health. We can organize and control sleep patterns that are good for our health, so that blood pressure does not increase (Li & Shang, 2021).

CONCLUSION

A description of the lifestyle of the people in one of the sub-districts in Tangerang Regency shows that as many as 67 (67%) respondents have a healthy lifestyle. There is no relationship between lifestyle and the incidence of hypertension in young adults in one of the sub-districts in Tangerang Regency. In future research, it would be best to analyze the lifestyle indicators that most influence the incidence of hypertension in young adults, so that by identifying these factors, nurses can design appropriate interventions according to the causes of hypertension that occurs in a person.

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