



RISK FACTORS FOR PREVENTION OF ADOLESCENT HYPERTENSION IN THE WORK AREA OF MENDAHARA HEALTH CENTER, TANJUNG JABUNG TIMUR DISTRICT- JAMBI PROVINCE

Novi Berliana^{1*}, Renny Listiwaty²

^{1,2}Department of Public Health, Harapan Ibu Jambi Health Science Institute

*Corresponding author : noviberliana13@gmail.com

ABSTRACT

Data from the World Health Organization (WHO) in 2015 showed that around 1.13 billion people in the world have hypertension, meaning that 1 in 3 people in the world are diagnosed with hypertension. The number of people with hypertension continues to increase every year, it is estimated that by 2025 there will be 1.5 billion people affected by hypertension, and it is estimated that each year 9.4 million people die from hypertension and its complications. Measurement of blood pressure in children and adolescents is needed to detect whether there is a tendency for hypertension in children and adolescents. The management of hypertension in children and adolescents can reduce the prevalence of hypertension in adulthood. This study aims to analyze risk factors with the incidence of hypertension in adolescents in the Work Area of the Mendahara Public Health Center, Tanjung Jabung Timur District at Jambi Province.

This study used a quantitative approach with a survey research type with a cross sectional design with a total of 117 adolescents in the working area of the Mendahara Public Health Center, aged 13-18 years. Sampling technique with accidental. Data collection used a questionnaire. The results showed that there was a significant relationship between sex, smoking behavior and sleep patterns with adolescent hypertension in the work area of the Mendahara Public Health Center, Tanjabtim District ($p < 0.05$) become a reference for Mendahara Public Health Center to detect the risk of hypertension early in adolescents.

Keywords: hypertension, sex, smoking, sleep patterns, adolescent

INTRODUCTION

In the past few years, there has been an epidemiological transition in which the epidemiological transition is a change in the pattern of disease and death, which was originally dominated by infectious diseases turning into non-communicable diseases. Changes in the structure of society such as population structure, lifestyle, socio-economy, environment and technology trigger an epidemiological transition which results in a change in the pattern of infectious diseases to degenerative or non-communicable diseases^{1,2}. Non-communicable diseases (NCDs) kill 40 million people each year or the equivalent of

70% of deaths in the world³. Hypertension or high blood pressure is one of the most common non-communicable diseases, which is a condition of the blood vessels that constantly increase the pressure above normal⁴. Hypertension is a major risk factor for cardiovascular disease which is the leading cause of global death, which kills 17.7 million people annually⁵. The prevalence of hypertension continues to increase worldwide from 25% in 2000 until it is projected to be 40% in 2025. Hypertension also accounts for 45% of the disease burden globally⁶. Indonesia is a developing country with a serious health problem, namely hypertension. The prevalence of hypertension



in Indonesia has increased, namely the prevalence of hypertension from 25.8% (2013) to 34.1% (2018)^{6,7} . The prevalence of hypertension in Jambi Province is 24.6%

In general, hypertension occurs at the age more than 18 years, but in several studies it has shown that hypertension can appear since adolescence and its prevalence has increased over the last few decades, but many have not realized that it is the cause of hypertension in adults and the elderly⁸.

MATERIAL AND METHODS

This study used a quantitative approach with a survey research type with a cross sectional design with a total of 117 adolescents who were in the working area of the Mendahara Public Health Center, aged 13-18 years. Sampling technique with accidental. Data collection used a questionnaire and was carried out in August 2020

RESULTS

1. Univariat analysis

No	Variabel	Category	n	%
1	Sex	a Male	93	79,50%
		b Female	24	20,50%
2	Smoking behavior	a Yes	93	79,50%
		b No	24	20,50%
3	Sleep Patern	a Bad	85	72,60%
		b Good	32	27,40%

Base on the table above, data of adolescent based on male gender are 93 respondents (97,5%) and female 24 respondents (20,5%). Base on smoking behavior adolescent answered Yes werw 93 respondents (79,5%)

and 24 repondens answered No (20.5%). Data based on sleep patern adolescent have a bad sleep patern are 85 respondents (72,6%) and have a good sleep patern 32 (27,4%).

2. Bivariat analysis

Variabel	Hypertention		Normal		Total		OR	P value
	n	%	n	%	n	%		
Smoking Behavior								
a. Yes	9	9.70%	84	90.3%	93	100	0.730	0.000
b. No	6	25.0%	18	75.0%	24	100		
Sleep Patern								
a. Bad	35	41,2%	50	58,8%	85	100	12.14	0.000
b. Good	0	00,0%	32	100%	32	100		
Sex								
a. Male	30	27,8%	63	65,2%	93	100	0.276	0.276
b. Female	5	7,2%	19	16,8%	24	100		



From the table, it is known that male respondents have a risk factor for developing hypertension by 0.276 times compared to female adolescents. Then, poor adolescent sleep patterns have a risk factor of 12.14 times for developing hypertension. Adolescent smoking behavior has a risk factor of 0.730 for hypertension compared with adolescents who do not smoke.

DISCUSSION

The classification of blood pressure in adolescents is different from blood pressure in adults. Classification of blood pressure in adolescents is based on the percentile curve in which adolescents are classified as hypertensive with blood pressures of 130-139 / 80-89 mmHg.

From the research results, it is known that the most respondents were male, namely 79.6%. There were several risk factors associated with the incidence of adolescent hypertension, among others; gender, smoking behavior and sleep patterns. The most dominant risk factor is sleep patterns with an OR value of 12.14.

In this study, male gender had a significant relationship with the incidence of hypertension. This is in line with research in Pangkalpinang which states that men are more at risk for developing hypertension⁹. This happened because respondents who smoked were 79.5%. So that men who smoke have a risk factor of 0.4 times for developing hypertension. According to several surveys, smoking in adolescents is increasing, where the World Health Organization (WHO) states, smoking kills more than five million people per year, and is projected to kill ten million by 2020. Of that 70% of victims come from developing countries¹⁰

Furthermore, the results showed that sleep patterns have 12.14 times risk factors for hypertension. In this study, it is known that male adolescents have poor sleep patterns, this is in line with studies conducted in India that lifestyle factors such as poor sleep quality

are also known to have an influence on the incidence of hypertension in adolescents¹¹. This is because during the Covid-19 pandemic, teenagers carry out education online, so that teenagers have more time to do activities outside of their study hours. They will also more often meet with their peers until the evening. In addition, it is assumed that adolescents have poor sleep patterns influenced by gadgets, because 24 hours of gadgets with them are not restricted when they go to school. Teenagers have narcissistic tendencies, liking friends who have the same characteristics as themselves

CONCLUSION

Adolescents with high blood pressure can increase the risk of hypertension in adulthood and suffer from complications of diseases caused by hypertension¹². So it is necessary to have early prevention efforts to reduce the risk of morbidity and mortality.

REFERENCES

1. Bustan, M.N 2015. *Management of Non-Communicable Disease Control*. Rineka Cipta; 2015.
2. Masriadi 2016. *Epidemiology of Non-Communicable Diseases*. 1st edition. Jakarta: CV Trans Info Media. *Epidemiol Penyakit Tidak Menular Ed ke-1 Jakarta CV Trans Info Media*. Published online 2016.
3. World Health Organization (WHO) 2017. *World Health Organization (WHO)*. Published online 2017.
4. (WHO), *World Health Organization 2015. World Health Organization (WHO)*. Published online 2015.
5. (WHO), *World Health Organization 2016. World Health Organization (WHO)*. Published online 2016.



6. RI, Depkes 2013. Pharmaceutical Care For Hypertension. 1st edition. Jakarta. Indonesia. *J Epidemiology Public Health*. 2016;1 (1):27-36.
7. Kemenkes RI 2013. Riskesdas Jakarta: Health Research and Development Agency.
8. Chen Xiaoli dan Youfa Wang 2008. Tracking Blood Pressure From childhood to Adulthood : A Systematic Review and Meta Regression Analysis. *Journal of the American Heart Association*. Published online 2008:Heart Association 117 : 3171 – 3180.
9. Yusrizal M, Indarto D AM (2016). Risk of Hypertension in Overweight Adolescent in Pangkalpinang, Indonesia. *J Epidemiology Public Health*. 2016;1 (1):27-36.
10. M.Bustan. Management of Non-Communicable Disease Control. Published online 2015.
11. Kuciene R, Jhon M CV. Associations of Short Sleep Duration with Prehypertension and Hypertension Among Lithuanian Children and Adolescents : A Cross-Sectional Study. *BMC Public Health*.
12. Saing, Johannes 2016. Hypertension in Adolescents. *Sari Pediatrics*. Published online 2016.