HYPERTENSION PREVALENCE AND LIFE STYLE IN SEMI RURAL URBAN WITH WHO INSTRUMENT ANALYSIS

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Abstract

Non-communicable diseases, also known as chronic diseases, tend to last longer and are the result of a genetic combination, physiological, environmental and behavioral factors. Non-communicable diseases kill 41 million people each year, equivalent to 71% of all deaths globally. People of all age groups, region and countries are at risk of contracting non-communicable diseases. (WHO, 2018) The research method used in this study is a quantitative descriptive research method with a cross-sectional design. The population of this study is the population of semi-rural urban areas, Lubuk Pakam, Deli Serdang Regency. The sample

consisted of 120 people; sampling method used the accidental sampling method with stepwise WHO instrument. Distribution majority respondent more have normal blood pressure with a percentage of 68.33%, pre-hypertension (22.5%), and hypertension amounted to 9.167% with many factors.

Keywords

Non-Communicable Diseases, Hypertension, Stepwise WHO, Semi-Rural Urban

1. Introduction

Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviour factors. Non-communicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally. People of all age groups, regions and countries are affected by NCDs. (WHO, 2018). Based on data from the World Health Organization around 972 million people or 26.4% of people worldwide suffer from hypertension, the figure is predicted to increase by 29.2% in 2025. From 972 people with hypertension, around 333 million people come from developed countries and the rest are from developing countries, one of which is Indonesia (Yonata, Knight, & Pratt, 2016).

The proportion of deaths due to non-communicable diseases is 63% compared to the incidence of non-communicable diseases. Deaths in Indonesia caused by non-infectious diseases increased from 37% in 1990 to 57% in 2015. Based on 2013 Riskesdas data, the prevalence of hypertension in Indonesia that occurs at age> 18 years of 25.8%, prevalence of DM of 6.9%, COPD of 3.7%, and asthma of 4.5% but an increase in 2018 is 34.1% (Ministry of Health Republic of Indonesia, 2018).

Risk factors that cause a person to contract non-communicable diseases include behavioral factors that can be changed such as tobacco use, physical activity, unhealthy diet, and the use of dangerous alcohol. Tobacco accounts for more than 7.2 million deaths each year (including from the impact of exposure to secondhand smoke) and is projected to increase sharply in the coming years. 4.1 million Annual deaths are caused by excess salt/sodium intake. Globally the main metabolic factors that increase the risk of non-communicable diseases are an increase in blood pressure (causing 19% of global deaths), followed by overweight, obesity and an increase in blood glucose. Besides, more than half of the 3.3 million annual deaths caused by

non-communicable diseases come from alcohol. 1.6 million deaths each year can be attributed to insufficient physical activity (WHO, 2018).

The main types of NCDs are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes (WHO, 2018). The cardiovascular disease usually occurs due to high blood pressure that also known as hypertension which disrupts the working system of the heart to pump blood throughout the body. Hypertension is called a "silent killer". Most people with hypertension are unaware of the problem because it may have no warning signs or symptoms. For this reason, blood pressure must be measured regularly. When symptoms do occur, they can include early morning headaches, nosebleeds, irregular heart rhythms, vision changes, and buzzing in the ears. Severe hypertension can cause fatigue, nausea, vomiting, confusion, anxiety, chest pain, and muscle tremors (WHO, 2019).

Based on the introduction, to be the reason for the author to research Hypertension Prevalence and Life Style in Semi-Rural Urban with WHO Instrument Analysis. Thus this proposal was prepared by the authors in the hope that the author's research can be accepted and aims to broaden the insight and knowledge of the author and reader.

2. Research Methods

The research method used in this study is a quantitative descriptive research method with a cross-sectional design. The population of this study is the population of semi-rural-urban areas, Lubuk Pakam District, Deli Serdang Regency. Measurements from this study using the WHO Stepwise questionnaire by direct measurement, and analysis of research results using the chi-square test Samples totaling 120 people, the sampling method using the accidental sampling method.

3. Results

Table 1: *Sample Characteristics*

Variable	n	%
Gender		
Man	31	26

Woman	89	74
Total	120	100
Age		
23-31	14	12
32-40	34	28
41-49	37	31
50-58	31	26
59-67	4	3
Total	120	100
Level of Education		
Primary School	7	5.83
Junior High School	9	7.5
Senior High School	44	36.67
College	60	50
Total	120	100
Profession		
Government Employees	57	48
Private Employees	6	5
Entrepreneur	22	18
Housewife	35	29
Total	120	100
Income		
≥ Regency Minimum Wage	44	36.67
≤ Regency Minimum Wage	76	63.33
Total	120	100

Source: Personal documentation, 2019

Table 1 shows the distribution of gender more in women with a percentage (74%). At the age, variable majority of respondents have 41-49 age groups (31%). In the education variable obtained the majority of respondents educated to higher education (50%). In the variable marital status, more respondents had already married status (90%). In the majority of respondents work

variable is dominated by government employees (48%). Then on the income variable majority of respondents earn less than the RMW (Regency Minimum Wage) with a percentage of 63.33%.

Table 2: *Overview of Blood Pressure*

Blood Pressure Status	n	%
Normal	82	68.33
Pre-hypertension	27	22,5
Hypertension	11	9.167
Total	120	100

Source: Personal documentation, 2019

In Table 2 shows the distribution of the majority of respondent more have normal blood pressure with a percentage of 68.33%, pre-hypertension (22.5%), and hypertension amounted to 9.167%.

Table 3: *Risk Factors of Blood Pressure Status and Life Style Distribution*

Variable	Blood Pressure Status			P-value
	Hypertension	Pre- Hypertension	Normal	
	n(%)	n(%)	n(%)	
Cigarette Consumption				
Yes	4 (11.8)	7 (20.6)	23 (67.6)	0.807
Not	7 (8.1)	20 (23.3)	59 (68.6)	
Fruit Consumption				
Not	0 (0)	0 (0)	1 (100)	
Once a Week	0 (0)	7 (36.8)	12 (63.2)	
Twice a Week	4 (12.9)	7 (22.6)	20 (64.5)	
Three Times a Week	3 (14.3)	6 (28.6)	12 (57.1)	0.714
Four Times a Week	0(0)	0(0)	1 (100)	
Five Times a Week	0(0)	0(0)	3 (100)	
Everyday	4 (9.1)	7 (9.9)	33 (75)	
Vegetable Consumption				
Not	1 (100)	0(0)	0(0)	
Once a Week	0(0)	4 (57.1)	3 (42.9)	

Twice a Week	3 (33.3)	2 (22.2)	4 (44.4)	0.000
Three Times a Week	3 (23.1)	4 (30.8)	6 (46.2)	
Everyday	4 (4.4)	17 (18.9)	69 (61.5)	
Oil Consumption				
Bulk Oil	1 (5.6)	4 (22.2)	13 (72.2)	0.840
Packaging Oil	10 (9.8)	23 (22.5)	69 (67.6)	
Physical Activity				
Not	0 (0)	9 (27.3)	24 (72.7)	0.092
Yes	11 (12.6)	18 (20.7)	58 (66.7)	
Body Mass Index				
Obesity	7 (10)	15 (21.4)	48 (68.6)	
Excess Weight	3 (10.7)	7 (25)	18 (64.3)	0.947
Normal	1 (5)	5 (25)	14 (70)	
Less Weight	0 (0)	0 (0)	2 (100)	

Source: Personal documentation, 2019

Based on the risk factor on the variable table cigarette consumption shows that the distribution of respondents who suffer from hypertension and cigarette consumption by (11.8%) and respondents who have elevated blood pressure in a pre-hypertensive group and cigarette consumption by (20.6%). In the variable consume fruits showed that respondents with hypertension and do not eat vegetables at (0%) and respondents who suffer from pre-hypertension and do not eat vegetables at (0%).

In the vegetable, variables showed that respondents with hypertension and do not eat vegetables equal to (100%) and respondents who suffer from pre-hypertension and do not eat vegetables at (0%). In the oil-consuming variables obtained respondents who suffer from hypertension and consumes the bulk of oil (5.6%) and respondents who suffer from pre-hypertension and mnegkonsumsi bulk oil by (22.2%). On the physical activity variables didapatn respondents with hypertension and no physical activity at (0%) and respondents who suffer from pre-hypertension and physical activity melaukan not equal to (27.3%). In the variable obtained a body mass index of respondents suffering from hypertension and obese amounted to (10%) and respondents who suffer from pre-hypertension and obese amounted to (21.4%).

4. Discussion

4.1 Consumption of Cigarettes

Based on the risk table smoking variables obtained respondents who suffered hypertension and do not have a habit of smoking with the percentage (8.1%) and respondents who suffered hypertension and have a habit of smoking are 4 people with a percentage of 11.8%. Based on the test results using the chi-square statistic p-value = 0807 (p> 0.05), meaning that there is no significant relationship between the habit of smoking behavior with hypertension. Although the number of respondents who suffered from hypertension and do not smoke but some respondents suffer from hypertension and smoking habits so researchers assume that smoking cannot be said to be due to factors that are not related by (Singalingging, 2011) smoke could increase high blood pressure (hypertension) because cigarettes contain nicotine leads to calcification of the wall of blood vessels and by (Anggara & Prayitno, 2013) in cigarettes are nicotine and carbon dioxide can damage the endothelial lining of the arteries, elasticity pembulh blood is reduced resulting in blood vessels become rigid and disruption of blood flow which results in increased blood pressure. Although in this study found no association between consumption of cigarettes with hypertension researchers assumed that respondents who suffer from hypertension and smoking tobacco-only, but due to the activity of the respondents were less or minimal.

4.2 Fruit Consumption

Based on the results of respondents who suffered from hypertension and eat fruits every day and 2 times a week are 4 people. Based on the test results using the chi-square statistic was obtained p = 0714 (p> 0.05), meaning that there is no significant correlation between the consumption of fruits and hypertension. Respondents were more likely to have hypertension in this study are in the group of respondents who consumed fruit two times a week is 4 people. World Health Organization (WHO) generally recommend the consumption of vegetables and fruits for a healthy life a number of 400gr per day, consisting of 250gr vegetable (equivalent to two servings) and 150gr fruit (equivalent to three pieces of banana, one piece of papaya or three medium-sized orange) while respondents have not yet reached that category. High intake of potassium can cause relaxation of the smooth muscle of blood vessels that can lower blood pressure in patients with hypertension (Wulandari & Wuri, 2016).

4.3 Vegetable Consumption

Based on the results of respondents who experienced hypertension consume more vegetables every day for 4 people with a percentage of 4.4%. Based on the test results using the chi-square statistic was obtained p = 0.000 (P <0.05), meaning that there is a significant relationship between the consumption of vegetables with hypertension. In this study, respondents were riskier for respondents with hypertension and do not consume vegetables because fibre contained in vegetables has benefits that can lower high blood pressure. Consumption of fibre found in vegetables is in a better category that can bind bile acids, making patients feel fuller, helps prevent constipation which can decrease the risk of high blood pressure (Yuriah, Astuti, & Inayah, 2019).

4.4 Oil Consumption

Based on the results of respondents who experienced hypertension consume more oil packaging by 10 people with 9.8% and the percentage of respondents who suffer from hypertension and consume the bulk oil by one person with a percentage of 5.6%. Based on the test results using the chi-square statistic was obtained p = 0840 (p> 0.05), meaning that there is no significant relationship between oil consumption and hypertension. Researchers assume that other factors can lead to hypertension. Bulk oil is also one risk factor for hypertension caused cooking oil is a vegetable oil that is experienced only once while filtering oil filtration packaging experience twice. Because only once filtering makes the bulk oil contains more saturated fat can raise levels of LDL cholesterol that can clog the heart and blood vessel walls of the brain subsequently concerning the blockage of blood vessel walls will increase the blood pressure on the heart, causing hypertension (Lempang, 2016).

4.5 Physical Activity

Based on the results of respondents who suffered hypertension and do physical activity are 11 person with the percentage 12.6% and respondents who suffer from hypertension and do not a physical activity is 0 people with a percentage 0%. Based on the test results using the chi-square statistic was obtained p = 0.092 (p> 0.05), meaning that there is no significant relationship between physical activity and hypertension. Researchers assume that the respondents did physical activity after suffering from hypertension. Thus, physical activity is undertaken by respondents to be one of the factors that will reduce hypertension in respondents and not prevent the occurrence of hypertension among Non-communicable diseases caused by

lack of physical activity proportion of 35.5% (Ministry of Health Republic of Indonesia, 2018). Inadequate physical activity is one of the ten major risk factor for global mortality. People with less physical activity (20-30%) are more at risk of developing the disease even cause death. According to research (Meylen, Bidjuni, & Malara, 2014) found a strong relationship between physical activity with hypertension.

4.6 BMI

Based on the results of respondents who suffered hypertension and obesity with a percentage of 10%. Based on the test results using the chi-square statistic was obtained $p = 0.947$ ($p > 0.05$), meaning that there is no significant relationship between body mass index and hypertension. This is in line with the results of research conducted by (Delmi, 2012) that the incidence of hypertension is more common in obese respondents. This is because obesity causes disturbances in the autonomic system, insulin resistance and abnormalities in the structure and function of blood vessels (Lumoindong, Umboh, & Masloman, 2013).

5. Conclusions

Distribution majority respondent more have normal blood pressure with a percentage of 68.33%, pre-hypertension (22.5%), and hypertension amounted to 9.167%. In the table of risk factor distribution of respondents with hypertension and cigarette consumption by (11.8%) that are not related by (Singalingging, 2011) smoke could increase high blood pressure (hypertension) because cigarettes contain nicotine leads to calcification of the wall of blood vessels. In the variable consume fruits respondents with hypertension and do not eat vegetables at (0%). High intake of potassium can cause relaxation of the smooth muscle of blood vessels that can lower blood pressure in patients with hypertension (Wulandari & Wuri, 2016).

In variable eating vegetable respondents with hypertension and do not eat vegetables equal to (100%). Consumption of fiber found in vegetables is in a better category that can bind bile acids, making patients feel fuller, helps prevent constipation which can decrease the risk of high blood pressure (Yuriah, Astuti, & Inayah, 2019). In the oil-consuming variable respondents who suffer from hypertension and consumes the bulk of oil (5.6%) Because only once filtering makes the bulk oil contains more saturated fat can raise levels of LDL cholesterol that can clog the heart and blood vessel walls of the brain subsequently concerning the blockage of blood vessel walls will increase the blood pressure on the heart, causing hypertension (Lempang,

2016). In physical activity variables respondents who suffer hypertension and no physical activity (0%). People with less physical activity (20-30%) are more at risk of developing the disease even cause death. According to research (Meylen, Bidjuni, & Malara, 2014) found a strong relationship between physical activity with hypertension. In the variable obtained a body mass index of respondents suffering from hypertension and obese amounted to (10%) This is because obesity causes disturbances in the autonomic system, insulin resistance and abnormalities in the structure and function of blood vessels (Lumoindong, Umboh, & Masloman, 2013).

6. Suggestion

To prevent the occurrence of hypertension several things, among others: it is recommended to eat five servings of fruits and vegetables per day because it contains enough potassium that can lower blood pressure. The next step is to overcome obesity or lose excess weight, exercise regularly by following aerobic exercise or brisk walking for 30-45 minutes (as far as 3 kilometers) five times per week.

The only way to detect hypertension is to have a health professional measure blood pressure. Measuring blood pressure is quick and painless. Individuals can also measure their blood pressure using an automated device; however, an evaluation by a health professional is important for risk assessment and related conditions (WHO, 2019). By getting a healthy lifestyle such as not smoking, not drinking alcohol, reduce excessive salt intake and keep the weight to avoid excessive or underweight with regular exercise can help reduce the occurrence of hypertension.

7. Acknowledgement

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