STRADA : Jurnal Ilmiah Kesehatan
DOI: https://doi.org/10.30994/sjik.v11i1.884
ISSN: 2252-3847 (print); 2614-350X (online) Vol.11 No.1 May 2022 Page. 45-50

The Relationship between Physical Activity and the Incidence of Hypertension at the Work Area of the Ampenan Health Center

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ABSTRACT

The incidence of hypertension from year to year has a significant increase, many people with high blood presssure do not realize they have hypertension until they felt signs and symptoms. One of the supporting factors to keep tension stable is do physical activity regularly. The research purpose was to determine the relationship between physical activity and the incidence of hypertension. This research uses descriptive quantitative analysis method with cross sectional approach. The results of this study was the average respondent was 41 to 50 years old, the gender of more Female, all of respondence Had ever received information about hypertension, most of the respondents in the category of moderate physical activity and most of the respondents were in the normal blood pressure category, and and the results of bivariate analysis show p value = 0.142, it's mean there is no relationship of physical activity with the incidence of hypertension.

Keywords: activity, hypertension, physical

Received March 3, 2022; Revised April 22, 2022; Accepted May 20, 2022

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BACKGROUND

According to WHO data, worldwide about 972 million people or 26.4% of people worldwide have hypertension, this figure is likely to rise to 29.2% by 2025 (purqoti, 2019). Riskesdas (2018) Reveal that people with hypertension at the aged ≥18 years at 34.1%, the highest in South Kalimantan (44.1%), while the number of people in Papua was (22.2%). The estimated number of hypertension cases in Indonesia is 63,309,620 people, while the death rate in Indonesia due to hypertension amounted to 427,218 deaths (Istiana et al., 2021).

Based on data from the NTB provincial Health Office, the estimated number of hypertension sufferers in Mataram city is 1,587 people spread across 11 health centers in Mataram city. (Dinkes NTB, 2020). People do not know that they suffer from hypertension, people only realize if there have been complications. High prevalence is associated with population growth, aging and risk factors and behavioral risk factors such as unhealthy diet, smoking, alcohol consumption. less of physical activity, and stress. Regular physical activity is beneficial in regulating weight and strengthening the heart system and blood vessels. Low of physical activity can cause a person to develop hypertension. In theory, physical activity greatly affects the stability of blood pressure. People who are not active in doing activities tend to have a higher heart rate frequency. This causes the heart muscle to work harder on each contraction. The harder the heart muscle pumps blood, the greater the blood pressure that imposes on the artery wall so that peripheral defenses cause an increase in blood pressure. Less of physical activity can also increase the risk of being overweight which will reduce the risk of hypertension increased (Triyanto, 2014 in Rihiantoro & Widodo, (2018)). Based on data obtained at the Ampenan Health Center in 2017, it shows that people with hypertension number 465 people, the data in 2018 amounted to 746 people and the data in 2019 amounted to 1008. Based on hypertension data from 2017-2019, it can be concluded that from year to year hypertension sufferers in the Work Area of The Ampenan Health Center have increased. Regular activity can improve the quality of life of people with blood pressure. Some examples of physical activity that can and should not be done by people with hypertension. Sports is an example of physical activity that can be done such as walking, swimming, riding a bicycle. It is not recommended to do stressful exercises such as boxing, wrestling or weightlifting, because strenuous exercise can even cause hypertension, eating fresh fruits and vegetables because it contains a lot of vitamins and minerals, fruits that contain a lot of potassium minerals can help lower blood pressure, do not smoke and do not drink alcohol. Routinely consume hypertension drugs prescribed by doctors and carry out prevention such as limiting salt consumption, Avoiding obesity (obesity), Limiting fat consumption is done so that blood cholesterol levels are not too high, because high blood cholesterol levels can result in cholesterol deposits in the walls of blood vessels, over time if cholesterol deposits increase will clog the veins and interfere with blood circulation.

METHODS

The research is descriptive analytic with cross sectional design with a sample of 30 people. The sampling technique in this study is Simple Random Sampling, International Physical Activity Questionnaire (IPAQ) is instrument to measure the physical activity and the blood pressure is measured by tensimeter, while the data analysis used the Chi Square test.

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RESULTS

Table 1. Distribution characteristics of respondents

Characteristics of Respondents	N	%
Age		
31-40 years		
41-50 years	10	33.3%
51-60 years	15	50.0%
	5	16.7%
Total	**30**	**100%**
Sex		
Male	11	36.7%
Female	19	63.3%
Total	**30**	**100%**
Received information about hypertension		
Yes	30	100%
No	0	0.00%
Total	**30**	**100%**
Physical activity		
Low	12	40.0%
Moderate	13	43.3%
High	5	16.7%
Total	**30**	**100%**
Hipertension		
Normal	12	40.0%
Stadium 1	10	33.3%
Stadium 2	8	26.7%
Total	**30**	**100%**

Source: Primary data 2021

Based on Table 1. From the data results, information is distribution of age respondents averaged 31-40 years 15 respondents (50.0%) and The largest distribution of respondents is female as many as 19 respondents (63.3%), all of respondence Had ever received information about hypertension, most of the respondents in the category of moderate physical activity 13 respondents (43.3%) and most of the respondents were in the normal blood pressure category 12 respondents (40.0%).

Table 2. The relationship physical activity with incidence of hypertension at the work area of the ampenan health center on 2020

physical activity	Incidence of hypertension						*P Value*
	Normal		Stadium 1 dan 2		Total		
	N	%	N	%	N	%	
Low	7	23.3	5	16.7	12	40.0	
Moderate	6	20.0	7	23.3	13	43.3	
High	0	0	5	16.7	5	16.7	0.142
Total	**13**	**43.3**	**17**	**56.7**	**30**	**100**	

Source: Primary data 2021

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Based on table 2, the results of the analysis relationship between The Physical activity Relationship with incidence of hypertension show that most of the respondents in the category of moderate physical activity and most of the respondents were in the normal blood pressure category, and the results of bivariate analysis show p value = 0.142, it's mean there is no relationship of physical activity with the incidence of hypertension.

DISCUSSION

1. Characteristics of respondents

Based on the results of the study, it was found that the mayotitas of respondents aged 41-50 as many as 15 respondents (50.0%) and the majority of physical activity in the moderate category 13 respondents (43.3%) and most had normal blood pressure as many as 12 respondents (40.0%). According to WHO (2018), there is an increased risk of death by 20%-30% in people with less physical activity compared to active physical exercise for at least 150 minutes with moderate intensity per week on a regular basis. This is due to several factors such as increasing age (age >40) (Minhetal., 2015 in goddess 2019). Increasing age will affect a person's physical activity, this is because increasing age will be accompanied by a decrease in physical capacity in the form of decreased muscle mass and strength, maximum heart rate, increased body fat, and decreased brain function Junaidi, (2011) in Dewi & Wuryaningsih, (2019). Research of Lestari et al., (2017) states that the level of physical activity can be influenced by several factors, one of which is age. Generally hypertension occurs in individuals over the age of 40 years. Individuals over the age of 40 years will experience a condition that will occur in the walls of blood vessels a state of loss of elasticity. Such conditions will result in increased blood pressure due to blood continuing to pump in the absence of dilation of blood vessels. Age increases cause changes in the normal function of the body's organs (Anggara, 2012). The results of this study are also in line with research Purqoti (2021) which states that age is one of the factors that affect blood pressure in the elderly. As you get older, your blood pressure will also increase. The walls of the arteries will experience thickening caused by the build up of collagen substances in the muscle layer, resulting in blood vessels narrowing and becoming stiff after the age of 40 years. As for other factors that affect the incidence of hypertension is gender, women are at greater risk of hypertension than men. Sustainable Abdurrachim et al., (2017) shows women suffer from hypertension more than men. Woman Menopause is more susceptible to hypertension, this is due to the reduced of the hormone estrogens.

In menopausal women so that they can causes narrowing of blood vessels and make increased blood pressure. The results of the study stated that male physical activity is better than female activities Fajar et all, (2018). Based on the results of research that factors that affect the incidence of hypertension are not only age but how many influence the incidence of hypertension such as obesity, excessive salt consumption and others.

2. Relationship of physical activity with the incidence of hypertension

Based on the results of the analysis conducted using the chi square test obtained a p-value of .142 > 0.05 which Berate Ho received Ha rejected, meaning there is no association of physical activity with the incidence of hypertension. The results of this study are in line with the results of research conducted by Lestari et al., (2017) with a p-value = 0.5 result in the meaning that there is no relationship between physical activity and the incidence of hypertension. The results showed that most of the respondents had moderate to light intensity of activity. This is because most of the respondents have an elderly age category, so they are no longer able to do activities that are rather heavy. In addition, most of the respondents were housewives whose activities were mostly carried out at home with light intensity. Most of the respondents rarely do regular exercise and never do sports in their spare time.

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Physical activity greatly affects the stability of blood pressure. People who are not active in physical activities tend to have a higher heart rate frequency. This causes the heart muscle to work harder on each contraction. The harder the effort of the heart muscle in pumping blood, the greater the blood pressure charged on the artery wall so that peripheral resistance causes an increase in blood pressure. Lack of physical activity can also increase the risk of being overweight which will cause the risk of hypertension to increase, Physical activity, such as exercise, can reduce blood pressure not only due to weight loss, but also due to how blood pressure is generated. (Triyanto, 2014 in Dewi & Wuryaningsih, (2019). In Purqoti, (2021) research stated that physical activity has an influence on increasing the blood pressure of the elderly. In line with Mulia et al., (2020) research states that there is an influence between brisk walking excercise on blood pressure reduction in the elderly with hypertension. In theory that physical activity can affect the incidence of hypertension but in this study there is no visible association between activity and hypertension. This is because the incidence of hypertension is the number of other factors that can affect the incidence of hypertension, One of them is physical activity. As for other factors such as family history with hypertension, age, gender, and ethnicity. On the other hand, modifiable factors are nutrition, stress, obesity, and harmful substances such as cigarettes and excessive alcohol consumption, as well as physical activity (Putra, 2016 in Purqoti, (2019).

CONCLUSION

The mayotitas of respondents aged 41-50 as many as 15 respondents (50.0%) and the majority of physical activity in the moderate category 13 respondents (43.3%) and most had normal blood pressure as many as 12 respondents (40.0%)**.** The results of statistical tests obtained p value = 0.142, this means that there is no association of physical activity with the incidence of hypertension.

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