



**Daily Physical Activity, And Sociodemographic Hypertensive Patients In An Effort To
Prevent Complications Of Hypertension
In West Kotawaringin Regency**

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Article details:

Received: 12 March, 2020

Revision: 13 March, 2020

Accepted: 21 March, 2020

Published: 23 March, 2020



IJHES

Hypertension in Central Kalimantan province increased significantly from year to year, ie 26% in 2013 according to age group ≥ 18 years of age to 34% in 2018.⁽¹⁾ Hypertension in West Kotawaringin ranked first of several non-communicable diseases (57.5%) and 17.23% of them result in complications and death (among others, heart failure, cerebrovascular disease, chronic renal failure, and retinopathy). Daily Active physical activity is one of the efforts of non-pharmacological management of hypertension and there have been several studies related to the support. People in West Kotawaringin actively engaged in physical activities is only 37.6%, regular exercise at least 30 minutes / day is only 24.8%. Consume fewer fruits and vegetables (9% and 6%) compared to the consumption of

cigarettes (13%). Compliance will be healthy behavior is the key to the successful management of hypertensive disease so that patients can improve their quality of life. The aim of this study was to know if daily active physical activity can help those with hypertension in minimizing the incidence of complications and death.

This is a cross sectional quantitative explanatory research with descriptive analytic approach. Proportionate probability sampling method using stratified sampling for 141 respondents (40 men and 101 women). Respondents are people with hypertension aged adults (25-45) years and has been confirmed through a diagnosis by a doctor. The sampling was conducted at 18 health centers throughout West Kotawaringin and in some hospital outpatient clinic "RSSI" through a questionnaire. The results of the research data will be analyzed using multiple logistic regression with Backward LR method using SPSS version 19.0.

Results: daily sedentary physical activity have the value of OR = 3.818, which means respondents were too lazy to move (inactive) daily 3.82 times (95% CI; 0,997 – 14,624) greater chance of complications of hypertension compared to whom more active, and while some other sociodemographic factors were not enough to prove as a predictor of the incidence of hypertension complications (age: p value = 0.997; Gender: p value = 0.537; Job: p value = 0.509; education level : p value = 0.309).

Daily Active physical activity might improve the quality of life for those who has been diagnosed with hypertension.

Peer groups for patients with hypertension and other chronic diseases should be supported and facilitated better, not only by providers but also multi-sector health facilities.

Keywords : *Daily physical activity, Complications of Hypertension, adulthood*

To cite this article :

Retno Widya Ningsih, Zahroh Shaluhiah, Y. S. (2020). Daily Physical Activity, And Sociodemographic Hypertensive Patients In An Effort To Prevent Complications Of Hypertension. *International Journal of Health, Education and Social (IJHES)*, 3(3), 24–30.



INTRODUCTION

Hypertension is a non-communicable disease (Noncommunicable Disease) which the number of sufferers continues to increase every year, it is estimated that in 2025 there will be 1.5 billion people affected by hypertension. It is also estimated that every year there are 9.4 million people die from hypertension and its complications (Global Health Estimate, 2016).

Hypertension is not a contagious disease that is chronic. Chronic illness is not easy to deal with, not only because of its management, but also because they have suffered in the period of a lifetime. This is not only affects the patient, but also for families who have to bear the burden, both physically, socially, also financially if not addressed comprehensively and sustainably.

Chobanian et al. found that poorly controlled hypertension caused seven times greater chance of having a stroke, six times greater risk of congestive heart failure and three times greater risk of heart attack (Chobanian, 2003)

The prevalence of hypertension in West Kotawaringin Regency also ranks the second most disease for three consecutive years since 2015 - 2017 after Upper Respiratory Infection, which amounted to 889 cases in 2015, increased sharply in 2016 which amounted to 13,977 cases and in the year 2017 found 7,127 cases. Data from the West Kotawaringin District Health Office in 2019 stated that there were 13882 sufferers of hypertension, whereas for non-communicable disease cases, hypertension was ranked first in defeating Type II Diabetes Mellitus with 5606 cases and followed by Bronchiale Asthma in third with 1304 cases (Dinas Dinas Health of the Regency of Kobar, 2018).

According to the latest data from internal and neuro department of Sultan Imanuddin Pangkalan Bun Hospital within one month from 01 to 30 June 2019 there were 55 patients treated with hypertension and its complications, including Kidney Failure which necessitates to Haemodialysis, Stroke, Chest Pain, Transient Ischemia Attack, vertigo, and retinopathy. Even 4 (four) of them died from haemorrhagic stroke and kidney failure.

"Silent Killer" is a popular name for hypertension, because they do not have any symptoms until it has caused complications or further stages. Elisabeth J. Corwin said that four major sequele caused by hypertension are stroke, myocardial infarction, renal failure, encephalopathy and retinopathy.



Table 1. Classification of hypertension according to the American Society of Hypertension and the International of hypertension, 2018.

KI Classification	Sistolik (mmHg)	Diastolik (mmHg)
O Optimal	<<120	<<80
N Normal	11120 - 129	8 80-84
N Normal High	11130 - 139	8 85-89
HiHipertensi Stage I	11140 - 159	9 90-99
HiHipertensi Stage II	11160 - 179	1100 - 109
HiHipertensi Stage III	$\geq \geq 180$	$\geq \geq 110$
Isolated systolic HiHipertensi	$\geq \geq 140$	<<90

Quoted from the 2018 ESC / ESH Hypertension Guidelines

Shifting lifestyles of modern society-millennial at 4.0 era has affected many aspects, particularly with ease and sophistication offered by digital applications. Its needs shorten time, energy, and cut complicated process. On the other hand, it is effects of a such convenience lifestyle, e.groutine sedentaryactivity.

As well as other body movements which require regular exercises to keep the muscles function properly, so do with the muscles of heart. Active daily physical activity is needed to maintain the stability of the heart muscle pump power especially when it has became to hypertension. Changing lifestyles is able to manage of blood pressure as a non pharmacology treatment, such as keeping active.

On physical examination there are no abnormalities other than high blood pressure, but can also be found on changes in the retina, such as bleeding, exudate, narrowing of blood vessels, and in severe cases can be found pupillary edema (edema of the optic disc). If symptoms occur, the hypertension is usually advanced. The classic symptoms of headaches, epistaxis, dizziness and tinnitus that are thought to be related to rising blood pressure, are as frequent as those found in those without high blood pressure. But the symptoms of headaches are blurry eyes, depression, nocturia, apparently increased in untreated hypertension (Steddon SNAACJC, 2014)

METHODS / DESIGN

A total of 13882 population hypertension cases in 2019 there were 1421 patients in productive age between 25 - 45 years. Samples were taken using probabilitas sampling with stratified sampling method as much as 10% (141 respondents) consisted of 40 men and 101 women. Questionnaires have previously been tested for validity and reliability in one of the first-level health facilities private practitioners in Pangkalan Bun for later in the scatterplot in 18



health centers and two outpatient clinics Government Hospital in West Kotawaringin Regency. The collected data is then processed and analyzed using multiple logistic regression approach SPSS version 19.0

RESULT

Several sociodemographic factors in this research was not significant when associated with the incidence of hypertensive complications, because of the p value < 0.05 . Corresponding bivariate analysis showed that age $p = 0.997$; gender $p = 0, 0.537$; Job: $p = 0.509$; education level: $p = 0.309$.

Daily active physical activity get p value = $0.033 < 0.05$. and the results of multiple logistic regression analysis showed that the value OR = 3,82 (95% CI: 0,997 – 14,624). Marital status OR = 0,274 (95% CI; 0,063 – 1,201)

Table 2. Baseline of sociodemographic factors

Sociodemographic Characteristics	Frequency	P - Value	Adjusted Odds Ratio
Physical activity	Sedentair (n = 07) 4.9%	0.033	3,82 (95% CI: 0,997 – 14,624).
	Active (n = 11) 7.8%		
Age	25-35 years old (n = 0) 0%	0.997	
	36-45 years old (n = 18) 12.8%		
Gender	M (n = 4) 2.8%	0.537	
	F (n = 14) 9.9%		
Profession	Jobless (n = 08) 5.7%	0,509	
	Employee (n = 10) 7.1%		
Level of education	Low Education (n = 9) 6.4%	0.309	
	High Education (n = 9) 6.4%		
marital status	Married (n = 11) 7.8%	0,016	0,274 (95% CI; 0,063 – 1,201)
	Not Married (n = 7) 4.9%		



DISCUSSION

The more blood flowing and the narrower the walls of the arteries, the higher the blood pressure will be. People with hypertension face a higher risk of more serious conditions / complications such as heart attacks and strokes. Sajjad Muhammad et al (2016) mentioned in his study that 10% - 20% of hypertension sufferers will continue with intracranial system disorders, 7 out of 10 cases continue to be PRES (posterior reversible encephalopathy syndrome) where 82% of sufferers are women (Muhammad, 2016). In addition, Yonata also found that 60% of people with hypertension end in stroke (Kobar District Health Office 2017).

Observe the risks that can be caused by hypertension that is not handled properly, such as changing lifestyle to be healthier (maintaining ideal body weight by undergoing regular active physical activity, regular exercise at least 30 minutes per day, maintaining healthy eating patterns), not smoking and drinking alcohol, managing stress well is an effort to control hypertension (Indonesian Hypertension Doctors Association, 2019).

The sociodemographic characteristics of respondents in Kotawaringin Barat District were mostly in the late adult age group (35-45) of 65.2% with the most female sex (71.6%) having low education, mostly only up to elementary school (37.6 % from 61% up to primary education until junior high school) and not working / as housewives (51.8%) and most of the income is still below the minimum wage (69.5%), married (82.3%). and stage I and III hypertension were the most (26.9% each).

Healthy and unhealthy living behaviors undertaken by the respondents of this study include doing light daily physical activity (62.4%), lack of regular exercise at least 30 minutes / day (75.2%).

Factors related to the incidence of hypertension complications in this study were two independent variables with p values <0.05, namely marital status p = 0.016, and physical activity variables p = 0.033.

Factors not related to the incidence of hypertension complications in Kotawaringin Barat District include 17 variables with a p value > 0.05, namely age (p = 0.997), gender (p = 0.537), occupation (p = 0.509), level education (p = 0.309), income (p = 0.410), routine exercise (p = 0.998).

Factors that influence the incidence of hypertension complications in this study are two variables, namely the marital status variable and have a family history of hypertension as a protective factor for the incidence of hypertensive complications, each of which has an OR value of 0.274 and 0.147. And finally, the daily sedentary physical activity variable has an OR value of 3.818, which means that respondents who are lazy to move (not active) daily have a 3.82 times



greater chance of developing hypertension complications compared to respondents whose daily physical activity is active.

CONCLUSIONS AND RECOMMENDATIONS

Marital status is social bonds of a legal agreement between men and women and might certain solved complex problems than those who does not. Problems in marriage could be a stressor for those with hypertension that trigger several hormones (eg cortisol) increased so that the blood pressure becomes unmanageable.

Meanwhile daily sedentary physical activity could be a trigger as factor of hypertensive complications, because the muscles of heart rarely exercised.

For national health insurance providers, in this case BPJS Health should change the paradigm of health development targets significantly by increasing the facilities and infrastructure related to promotive and preventive programs compared to curative and rehabilitative so far (such as health screening funding and efforts - other promotive efforts that can reach more directly to the community rather than prioritizing services at the advanced level / terminal stage) which in fact require much cheaper costs.

The first-level health facility providers are expected to be able to always improve the scientific capacity of their health workers in accordance with the development and tendency of the disease which can change at any time.



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