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The Incidence of Hypertension of Posbindu PTM Participants

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Abstract: *Non-communicable diseases cannot be transmitted to others, but their development occurs slowly over a long period of time. One of the non-communicable diseases that is a priority in global health today is hypertension. Hypertension often causes complications such as stroke, heart disease, and kidney failure. The aim is to describe the incidence of hypertension in Posbindu PTM Bumiroso participants. The quantitative descriptive method using the total sampling technique obtained 38 respondents. The data was analyzed descriptively to describe the results of the respondents' blood pressure examinations. The results of the study based on the classification of hypertension, participants who experienced pre-hypertension and hypertension level 1 were 12 (31.58%), hypertension level 2 was 9 (23.68%) and normal was 5 (12.16%). The conclusion is that more than half of Posbindu PTM participants experience hypertension, as a suggestion, they can carry out routine checks at the nearest health facility.*

Keywords*: Blood pressure, hypertension, Posbindu, NCDs*

1. INTRODUCTION

Non-communicable diseases (NCDs) are diseases that cannot be transmitted from one individual to another, their development occurs slowly and over a long period of time (chronic) (Kemenkes RI, 2019). Morbidity and mortality of non-communicable diseases are increasing in Indonesia. WHO data in 2014 of the 57 million deaths in the world, 36 million of which were caused by Non-Communicable Diseases (NCDs). Cardiovascular disease is in the highest position as a cause of death, namely 39%, and in 2015 stroke, coronary heart disease, cancer, diabetes, and hypertension were the most cases (Yarmaliza & Zakiyuddin, 2019). One of the non-communicable diseases that is a priority in global health today is hypertension (Ansar & I. Dwinata, 2019).

The epidemiological transition has resulted in a double burden of infectious and non-communicable diseases in all developed and developing countries. Non-communicable diseases such as hypertension are a global health problem and are increasing every year (Burnier & Egan, 2019). Population studies estimate that 1 in 8 adults under the age of 40 have hypertension (Hinton & et. al., 2020). Globally, hypertension in young adults is 31%. Hypertension in adults in low- and middle-income countries is reported to be 31.1%, while the prevalence of hypertension in adults in high-income countries is 28.5%, and is expected to increase with changing lifestyles (Mills et al., 2020).

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Hypertension significantly increases cardiovascular disease complications and the risk of stroke in adulthood (Ueda & et. al., 2014). However, disease diagnosis is consistently lower in young adults and when identified, treatment control is often less than optimal (Gooding & et. al., 2014; Williamson & et. al., 2016). Similar results were expressed by (Zhang & Moran, 2017) in a population study in the United States, finding lower hypertension control in young adults compared to older adults (74.7%), in addition, the failure to undergo treatment was only 50%. In Indonesia, similar results also occurred where 20% of young adult hypertensive patients were not treated, and 75% had uncontrolled blood pressure (Turana et al., 2020).

Hypertension is a disease that is categorized as the silent disease, namely a disease that does not show any symptoms before becoming a partner and sufferers only realize their disease after conducting a blood pressure examination (Tandililing et al., 2017). Hypertension is a disease with risk factors that are not known for certain and can cause serious morbidity and mortality. Some determinants of hypertension consist of factors that can be changed such as diet, smoking, obesity, stress, and lack of physical activity and factors that cannot be changed such as age, gender, race and heredity (Nuraini. B, 2015).

The prevalence of hypertension in Indonesia is 31.7%, which means that 1 in 3 people have hypertension and 76.1% do not know that they have hypertension so they do not get hypertension treatment. Data from Riskesdas (2018) shows that 13.3% of the population diagnosed with hypertension do not take medication. This result shows that most hypertension sufferers do not know that they are suffering from hypertension so they do not undergo treatment, even though hypertension sufferers require long-term treatment to control blood pressure and prevent complications (Kementerian Kesehatan Republik Indonesia, 2018). Hypertension often causes complications such as stroke (36%), heart disease (54%), and kidney failure (32%) (Kemenkes RI, 2018a). These complications occur because hypertension sufferers do not undergo adequate treatment related to their illness (Kemenkes RI, 2018c). This has made researchers interested in identifying the incidence of hypertension in Posbindu PTM Bumiroso participants.

2. LITERATURE REVIEW

Hypertension is a manifestation of multi-factor hemodynamic imbalance in the cardiovascular system, so its mechanism cannot be explained singly. According to Kaplan, hypertension is closely related to genetic factors, the environment and the hemodynamic regulation center. If simplified, hypertension is the interaction of cardiac output (CO) and total peripheral resistance (TPR) (Rahajeng & Tuminah, 2009). High blood pressure or hypertension

is a condition in which a person experiences an increase in blood pressure above normal which shows systolic and diastolic numbers on blood pressure examination using a blood pressure measuring device. Increased blood pressure can cause various complications such as stroke, kidney failure, and right ventricular hypertrophy (Dewi, 2011).

Factors that cause hypertension are age, gender, family history, genetics (risk factors that cannot be changed/controlled), smoking habits, obesity, lack of physical activity, stress, estrogen use and one of which can cause hypertension is a pattern of salt consumption with excessive intake (Dewi, 2011). Causes of hypertension include consumption of salty foods, caffeine, consumption of mono sodium glutamate (MSG, soy sauce, shrimp paste) (Indrawati et al., 2009). Hypertension is a major risk factor for coronary heart disease, heart failure, and stroke (LeMone et al., 2018). Hypertension is classified into two, namely Primary Hypertension (Essential) and Secondary Hypertension (Udjianti, 2010).

3. METHODS

A descriptive qualitative study was used to describe the incidence of hypertension in participants of Posbindu PTM in Bumiroso Village, Waitumalaing District, Wonosobo Regency. The research population was participants of Posbindu PTM in June 2024, the total sampling technique was used to determine the research sample and the number of respondents was 38. Respondents were registered and then blood pressure measurements were carried out, the results of blood pressure measurements in the categories included normal (systolic ≤120 mmHg and diastolic ≤80 mmHg), pre-hypertension (systolic 121-139 mmHg and diastolic 81-89 mmHg), hypertension grade 1 (systolic 140-159 mmHg and diastolic 90-99 mmHg) and hypertension grade 2 (systolic ≥160 mmHg and diastolic ≥100 mmHg). The research data was carried out in a descriptive analysis to describe the results of the examination carried out by the Posbindu PTM Bumiroso participants.

4. RESULTS

Based on the descriptive test analysis, the results of the demographic data and hypertension categories of participants in Posbindu PTM Bumiroso are explained below.

Table 1. Demographic data and hypertension categories of participants

Variable	Frekuensi	Prosentase
Gender		
Male	6	5,79

Female	32	84,21
Total	**38**	**100**
Age		
41-50 year	9	23,68
51-60 year	12	31,58
61-70 year	16	42,11
>70 year	1	2,63
Total	**38**	**100**
Hypertension Classification		
Normal	5	12,16
PreHypertension	12	31,58
Level 1	12	31,58
Level 2	9	23,68
Total	**38**	**100**

Based on table 1, it shows that the respondents of the study were 32 (84.21%) female while the respondents were 6 (5.79%). Based on the age of the respondents, the respondents were 61-70 years old as many as 16 (42.11%), 51-60 years old as many as 12 (31.58%), 41-50 years old as many as 9 (23.68%) and >70 years old as many as 1 (2.63%). Based on the classification of hypertension, participants who experienced pre-hypertension and grade 1 hypertension were 12 (31.58%) each, grade 2 hypertension was 9 (23.68%) and normal was 5 (12.16%).

5. DISCUSSION

The results of this study explain based on gender that the respondents of the study were 32 women (84.21%) while 6 men (5.79%). (Chang & Lee, 2014) stated that women are more likely to suffer from hypertension after menopause, this result occurs because of a decrease in hormones that causes a decrease in body homeostasis. After the age of 45 years, women are more at risk of developing hypertension because of the production of the hormone estrogen which affects the levels of High Density Lipoprotein (HDL). Changes in these hormones can cause hypertension and thickening of the blood vessels or atherosclerosis. Supported by the

results of the study by (Mustajab et al., 2023) showing that as many as 3,734 (52.49%) of hypertension sufferers were suffered by women and as many as 3,380 (47.51%) men.

The results of this study explain based on the age of the respondents of the study aged 61-70 years as much as 16 (42.11%), aged 51-60 years as much as 12 (31.58%), aged 41-50 years as much as 9 (23.68%) and aged> 70 years as much as 1 (2.63%). Age is also a risk factor for individuals to get hypertension. Many studies have explained that there is a relationship between increasing age and the incidence of hypertension (Hari et al., 2021). Based on this age factor, women are at greater risk of developing hypertension after menopause because there is a decrease in hormones which causes the body's homeostasis to also decrease. Women who are >45 years old experience a decrease in the hormone estrogen which results in women being more at risk of developing hypertension. The production of the estrogen hormone influences the presence of High Density Lipoprotein (HDL). The occurrence of changes in these hormones can cause women to suffer from high blood pressure disease and develop arteriosclerosis or damage to the walls of blood vessels. Blood pressure increases with age. As many as 50% of individuals aged 55-66 years tend to experience hypertension and entering 65 years and above the case is increasingly high. This is because the elasticity of blood vessels decreases with age (Imelda et al., 2020).

The results of this study explain based on the classification of hypertension in participants who experienced pre-hypertension and grade 1 hypertension of 12 (31.58%) each, grade 2 hypertension of 9 (23.68%) and normal of 5 (12.16%). CDC (Centers for Disease Control and Prevention)(CDC, 2023) states that four classifications of hypertension include normal blood pressure if systolic is less than 120 mmHg and diastolic is less than 80 mmHg, pre-hypertension if systolic is 120-129 mmHg and diastolic is less than 80-89 mmHg, grade 1 hypertension if systolic is 130-139 mmHg and diastolic is 90-99 mmHg and grade 2 hypertension if systolic is ≥140 mmHg and diastolic is ≥150 mmHg. ≥100 mmHg. (WHO, 2021) states that there are two risk factors for hypertension, namely risk factors that can be changed and cannot be changed. Modifiable risk factors include unhealthy diet (excessive consumption of alcohol, consumption of foods high in saturated fat and trans fat, low intake of fruits and vegetables), lack of physical activity, smoking and alcohol, and obesity or being overweight. Some risk factors that cannot be changed include a history of hypertension in the family, age at 65 years and comorbidities including diabetes mellitus or kidney disease.

(Soenarta et al., 2015) stated that hypertension is a disease that cannot be cured, but can be controlled and can remain stable thereby reducing the risk complications of other organ payments. Management of hypertension is one of the effects that can be treated as an effort to

prevent the occurrence of complications from other diseases. (Kemenkes RI, 2014) also added that hypertension management that can be carried out includes a combination of medication and lifestyle modifications such as reducing exercise, exercising, resting, controlling stress and avoiding certain drugs that can improve a person's blood pressure. The study by (Mustajab & Khoiriyah, 2023) explained that the components of self-fluid management in hypertension sufferers included sufficient self-integration 15 (50%), sufficient regulation 20 (66.7%), interaction with other health workers and less 12 (40%), pressure monitoring of less 15 (50%) and compliance with recommended water was sufficient 14 (46.7%). The level of self-control half of the research respondents had a high level of self-control

6. CONCLUSION

Hypertension is increasingly affecting the wider community, by conducting earlier examinations, appropriate treatment can be carried out immediately so that more serious complications do not occur. Participants of Posbindu PTM who have carried out blood pressure measurements are found to have more than half of them experiencing hypertension. It is recommended for the community to be able to take advantage of the Posbindu PTM or other Posbindu that are available in the village to carry out early detection of PTM and if it has been detected, they can carry out routine checks at local health facilities.

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