

## ***HYPERTENSION RISK FACTORS IN WORKERS AT THE DEPOK CITY SERVICE***

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### **ABSTRACT**

*Non-communicable diseases (NCDs) have become a health burden in developing countries like Indonesia. Hypertension is a public health threat because of its potential to cause complications such as stroke, coronary heart disease, and kidney failure. Various factors can cause Hypertension. This study aims to produce information about Hypertension's prevalence and risk factors. This study was conducted using secondary data sourced from the results of hypertension screening on workers at the Depok City Service. This study used a cross-sectional design study with a descriptive method. The unit of analysis in this study was workers who were at the Depok City Service with a sample of 280 respondents. Data was collected using SIPTM secondary data in 2022, obtained when there was a health screening in the Depok City Government Environment, and then analyzed descriptively. The results showed that the prevalence of blood pressure > 140/90 was 124 respondents (44.3%), 159 respondents (56.8%) were female, 51 respondents (18.2%) smoked, 120 respondents (42.9%) lack of physical activity (less than 30 minutes without stopping/day), 147 respondents (52.5%) lack of fruit and vegetable consumption, 73 respondents (26.1%) who consume excess salt (more than one teaspoon/day), 100 respondents (35.7%) consumed excess fat/oil (more than 5 tablespoons/day). Further research is needed to determine the relationship between risk factors and the incidence of Hypertension.*

**Keywords:** *Hypertension, Risk Factors, Depok City Service.*

### **INTRODUCTION**

Non-communicable diseases (NCDs) have become a health burden in developing countries like Indonesia. Hypertension is a preventable disease associated with several factors, such as an unhealthy lifestyle, including alcohol consumption, a sedentary lifestyle, and smoking. (1). Hypertension is a non-communicable disease that is one of the world's leading causes of premature death. Hypertension is a public health threat because of its potential to cause complications such as stroke, coronary heart disease, and kidney failure (2) Diagnosing Hypertension can be done by measuring blood pressure by health workers or health cadres by competence. The results of blood pressure measurements show a systolic pressure of > 140 mmHg or a diastolic pressure of > 90 mmHg and are declared hypertension (3).

Hypertension has also become a health problem in developing and Southeast Asian countries. Several research reports indicate an increasing prevalence of Hypertension in developing countries. Based on the 2013 Basic Health Research, the prevalence of Hypertension in Indonesia was 25.8%, and in 2018 the prevalence of Hypertension increased by 34.11%. This will continue to increase with age. The province with the highest hypertension prevalence is South Kalimantan Province at 44.13%, West Java at 39.6%, and East Kalimantan at 39.3% (3). West Java Province occupies the second position

after South Kalimantan, with a high prevalence of Hypertension. If you compare it with the National figure, the prevalence rate of Hypertension in West Java exceeds the National figure (2).

Factors that affect Hypertension are divided into two groups, namely factors that cannot be changed, such as genetics, age, gender, race, and factors that can be changed, such as diet, physical activity, and others. For Hypertension to occur, the following factors need to play a role. In other words, one factor alone is not enough to cause Hypertension: (4). Hypertension is the most critical risk factor for death in industrialized countries. It increases atherosclerosis, predisposing individuals to heart disease, peripheral vascular disease, and stroke. Types of heart disease that may occur include: myocardial infarction, heart failure, and left ventricular hypertrophy. Other complications include hypertensive retinopathy and hypertensive nephropathy. Lifestyle measures to lower blood pressure include reducing alcohol intake, reducing sodium chloride intake, increasing physical activity, and controlling excess weight. Lifestyle interventions also can reduce the need and amount of medication needed for hypertensive patients and prevent high blood pressure from developing in non-hypertensives. Furthermore, lifestyle interventions play an important role in controlling other cardiovascular risk factors that are not always associated with Hypertension, such as smoking, elevated cholesterol levels, or diabetes, hence the importance of a multifunctional approach for effective hypertension risk reduction (5).

Previous studies have generally reported that physical activity, a diet low in fruit and vegetables, being overweight or obese, and diabetes are substantial risk factors for high blood pressure. The risk of Hypertension increases linearly with each additional exposure (6). The same study suggested that increasing age was an independent risk factor for Hypertension (7). This study aims to produce information on the prevalence of Hypertension and associated risk factors. Thus, the researchers wanted to examine the description of the risk factors for Hypertension in workers at the Depok City Service.

## **METHOD**

This research used a cross-sectional design study with a descriptive method to describe the risk factors for Hypertension. This study's unit of analysis was workers in the Depok City Service, with a sample of 280 respondents. Data was collected using SIPTM secondary data in 2022, obtained when there was a health screening in the Depok City Government Environment, and then analyzed univariately and presented descriptively.

## **RESULT AND DISCUSSION**

Based on the results of the univariate analysis in table 1, most of the 280 respondents who were sampled had blood pressure  $> 140/90$  by 124 respondents (44.3%). There are 121 respondents (43.2%) male and 159 respondents (56.8%) female. For smoking behavior, 229 respondents (81.8%) do not smoke, and 51 (18.2%) are smokers. Respondents who lack physical activity (less than 30 minutes without stopping/day) 120 respondents (42.9%) do not do physical activity. Respondents who consume

fruit and vegetables there are 147 respondents (52.5%) less fruit and vegetable consumption. There are 73 respondents (26.1%) who consume excess salt (more than 1 teaspoon/day). Respondents who consumed excess fat/oil (more than 5 tablespoons/day) were 100 respondents (35.7%)

**Table 1. Distribution Frequency of Hypertension Risk Factors to Workers at the Depok City Service**

| Variable                                  | Category   | Amount | Percentage |
|---|------------|--------|------------|
| Blood pressure                            | <140/90    | 156    | 55.7       |
|   | >=140/90   | 124    | 44.3       |
| Gender                                    | Woman      | 159    | 56.8       |
|   | Man        | 121    | 43.2       |
| Smoke                                     | Not        | 229    | 81.8       |
|   | Yes        | 51     | 18.2       |
| Lack of Physical Activity                 | Not        | 160    | 57.1       |
|   | Yes        | 120    | 42.9       |
| Less consumption of fruits and vegetables | Enough     | 133    | 47.5       |
|   | Not enough | 147    | 52.5       |
| Excessive Salt Consumption                | Not        | 207    | 73.9       |
|   | Yes        | 73     | 26.1       |
| Excessive Fat/Oil Consumption             | Not        | 180    | 64.3       |
|   | Yes        | 100    | 35.7       |

The female group had a higher proportion of Hypertension than the male group. This pattern occurs in the results of Riskesdas in 2013 and 2018. The results of the analysis show that the incidence of Hypertension is more common in women than men. In line with research (8) that the incidence of Hypertension was higher in women by 53.7% compared to 45.9% in men.

Behavior that is a risk factor for Non-Communicable Diseases (NCD) in the picture above is less consumption of fruits and vegetables, lack of physical activity, consumption of salty foods, and smoking. These behaviors have increased in Riskesdas 2013 and Riskesdas 2018 (2). Toxic chemicals such as nicotine and carbon monoxide inhaled through cigarettes that enter the bloodstream can damage the endothelial lining of the arteries, resulting in atherosclerosis and high blood pressure. In an autopsy study, it was proven a close relationship between smoking habits and the presence of atherosclerosis in all blood vessels. Smoking also increases the heart rate and the need for oxygen to be supplied to the heart muscles (9). In a study conducted by Maulidina (2019) that the incidence of Hypertension showed that smokers (50.7%) had more Hypertension than respondents who did not smoke (49.3%). However, the *Chi-Square* test result shows no significant relationship between smoking and the incidence of Hypertension (8).

Regular exercise can help lower blood pressure and is beneficial for people with hypertension light. Through sports activities, the heart can work more efficiently. The pulse rate decreases, but the strength of the heart gets more robust; the heart's oxygen demand decreases at a certain intensity, reduces body fat and weight, and lowers blood pressure. In a study conducted by Maulidina (2019) that the incidence of Hypertension showed that those who had light physical activity (53.5%) had more

Hypertension than respondents who did the moderate physical activity (37.9%). The *chi-square* test shows no significant relationship between physical activity and the incidence of Hypertension (8).

The behavior of less consumption of fruits and vegetables has a very high percentage among other sedentary behaviors, namely 93.5% in 2013 to 95.4% in 2018. This shows that most Indonesian population consumes fewer fruits and vegetables. The increasing trend of people consuming less fruit and vegetables can be caused by the growing prevalence of packaged and fast food products which tend to be preferred by the public because of the enjoyment of taste and the ease of obtaining what is offered. In the study, respondents who rarely consumed vegetables and fruit experienced more pre-hypertension (78.3%) than those who frequently consumed vegetables and fruit (10).

Consumption of excess salt will increase the amount of sodium in the cells and disrupt the fluid balance. The entry of fluid into the cells will shrink the diameter of the arteries so that the heart must pump blood more forcefully, resulting in increased blood pressure. An increase in blood pressure affects the heart's work, which in turn will increase the risk of having a heart attack and stroke. The results of the analysis in the study (11) showed that high salt consumption experienced more pre-hypertension (64.7%), while average salt consumption had normal blood pressure (60.5%).

Consumption of saturated fat above 10% of the total energy risk of increasing LDL levels plays a role in bringing cholesterol to the coronary arteries. Coronary blood vessels will experience narrowing (atherosclerosis) and cause heart attacks and strokes in certain circumstances. This is in line with research that states that respondents who consume excess fat/oil can experience Hypertension. With, *Chi-Square* test results have a significant relationship (11).

## CONCLUSIONS AND SUGGESTIONS

The results showed that the prevalence of blood pressure >140/90 was 124 respondents (44.3%), 159 respondents (56.8%) were female, 51 respondents (18.2%) smoked, 120 respondents (42.9%) lack of physical activity (less than 30 minutes without stopping/day), 147 respondents (52.5%) lack of fruit and vegetable consumption, 73 respondents (26.1%) who consume excess salt (more than 1 teaspoon/day), 100 respondents (35.7%) consumed excess fat/oil (more than 5 tablespoons/day). It is necessary to make prevention efforts regarding the risk factors that influence the incidence of Hypertension—reducing modifiable risk factors such as smoking, doing physical activity, consuming vegetables and fruit, reducing excessive salt consumption, and reducing excessive fat/oil consumption. It is hoped that the results of this study can provide information as reference data for further research using methods and techniques, adding variables, and using a larger number of samples to obtain maximum data.

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