

# CHAPTER I

## INTRODUCTION

### 1.1 Background

Non-communicable diseases (NCDs) have now become a major aspect of death at the global level, with around 37 million people dying from NCDs each year (Mandagi et al., 2022). One type of NCD is hypertension, which is a condition where a person's blood pressure exceeds the normal threshold; this can trigger various serious health disorders or even lead to death. Hypertension is diagnosed if a person's blood pressure reaches a figure above 140/90 mmHg (Sudirman et al., 2023). This disease is very dangerous because it can increase the chances of heart attacks, heart function disorders, kidney damage, strokes, and various other diseases that can result in death at a young age (Siswanto et al., 2020 in the Purnomo et al., 2023). It is estimated that 1.1 billion people around the world live with hypertension, equivalent to more than a quarter of men and a fifth of women globally. According to the World Health Organization (WHO), about 22% of the world's population suffers from hypertension, with the highest prevalence in Africa (27%), followed by Southeast Asia, which has about 25% of the total population (WHO, 2022).

Based on WHO data from 2023, there are approximately 1.28 billion adults aged 30 to 79 years worldwide living with hypertension. The majority, about two-thirds of that total, are in low- and middle-income countries. Interestingly, around 46% of those with hypertension are unaware of their

condition, less than half of them (about 42%) have been diagnosed and received treatment, and only about 21% of adults have successfully managed their high blood pressure well (WHO, 2023). The number of hypertension sufferers is projected to continue to increase, and it is predicted that up to 29% of the world's population will have hypertension by 2025 (Sudirman et al., 2023).

From the report of the Basic Health Research of Indonesia (Riskesdas) 2021, around 34.1% of hypertension cases were recorded in Indonesia (Kemenkes RI, 2021a). In Indonesia, 36% of the population experiences hypertension, with the majority of sufferers being elderly (Silvianah & Indrawati, 2024). The prevalence of hypertension in the elderly based on age groups records a hypertension prevalence of 45.9% at ages 60-64 years, 57.6% at ages 65-74 years, and 63.8% at ages over 75 years. When compared to ages 55-59 years, the risk of hypertension increases 2.18 times at ages 60-64 years and 1.5 times at ages 65-69 years, and at ages over 70 years it increases 2.97 times (Prमितasari & Cahyati, 2022).

The Riskesdas 2018 report indicates that South Kalimantan Province recorded the highest prevalence of hypertension in Indonesia with a figure reaching 44.1%, while Papua is in the lowest position with a prevalence of 22.2%. In East Java, the number of hypertension sufferers is ranked fifth at 36.3%, which is a significant increase compared to 26.2% in Riskesdas 2013. Based on the Health Profile of East Java 2023, around 11,702,478 people aged over 15 years in East Java suffer from hypertension, with 48.8% of them being male and 51.2% female. Of that number, 73.8% or around 8,632,039 people

have received health services, which is an increase of 12.2% compared to 2022, which was only 61.6%. Blitar City recorded the highest achievement in health services for hypertension sufferers in East Java, namely 102.8%, while Jember Regency has the lowest achievement, namely 30.5%. Malang Regency is ranked third lowest with 35.3% (Dinas Kesehatan Jawa Timur, 2024).

From the Malang Regency Health Office (2024), in Malang Regency, hypertension is the most common non-communicable disease (PTM) suffered by the community. In 2023, around 829,638 people in Malang Regency suffered from hypertension, with a male proportion of 50.17% and female 49.83%. Of that number, 35.3% or 292,618 people have received health services. Bululawang community health center has the highest number in health services for hypertension sufferers is 70.3%, while Pujon health center and Lawang health center are in the lowest position, each with 20.0% and 12.1%. Several other health centers, including Tajinan (21.4%), Ngantang (22.4%), and Kasembon (23.0%), also indicate low service numbers.

The report from the Malang District Health Office reveals that there are still many hypertension sufferers in various health center work areas who have not received health services, including at the Pakis health center. In the work area of the Pakis health center, the number of hypertension sufferers who have not received treatment is the highest in Malang District, namely 45,624 people, with only 12,542 people (27.5%) who have received health services (Dinas Kesehatan Kabupaten Malang, 2024). One area under the Pakis health center that contributes to the number of hypertension sufferers is Sekarpuro Village,

which consists of seven hamlets, including Ngadipuro Lor hamlet. In Ngadipuro Lor hamlet, especially in RW 01, many residents suffer from hypertension, with the majority of sufferers coming from RT 03, which consists of the elderly, based on information from local posyandu cadres.

Systolic blood pressure tends to rise with age, often accompanied by an increase in blood pressure, caused by changes in the structure and elasticity of the main blood vessels, where the channels become narrower and the walls become stiffer. Essentially, hypertension often occurs with increasing age because the body requires higher blood pressure to circulate blood to the brain and other vital organs. In addition, natural changes in the body that affect heart function, blood vessels, and hormonal balance also play a role as causes of why the elderly often experience hypertension (Prमितasari & Cahyati, 2022).

The aging process affects various dimensions of life, including social, economic, and health aspects. In terms of health, the following physical complaints related to age are increasing Natural Factors and Diseases. The goal of health programs for the elderly is to ensure they have a happy and productive old age, increasing preventive and promotional efforts. In order for the elderly to remain healthy and productive, coaching activities must begin from pre-elderly age with counseling, health services, nutrition, and psychological support. Coordination among various sectors and community health centers is very important to improve the welfare of the elderly, involving community leaders. The Regulation of the Minister of Home Affairs Number 59 of 2021 establishes health service indicators for the elderly as part of the minimum

service standards (SPM) in the health sector (Dinas Kesehatan Kota Malang, 2024). Health services for individuals aged 60 and above or the elderly are provided through health education and elderly screening according to standards every year in one work area (Dinas Kesehatan Kabupaten Malang, 2023). Compared to the previous year, the health service indicators for the elderly in Malang Regency in 2023 increased to 90.6%, from 82.87% in the previous year. However, the following figures are classified as low and still far from the ideal target, thus becoming a challenge for the government and health workers to focus more on elderly health programs, especially in community health center areas, so that the morbidity rate, including hypertension, can decrease (Dinas Kesehatan Kabupaten Malang, 2024).

The problems faced in handling hypertension include a lack of understanding and awareness, lack of family support, many hypertension sufferers who do not check themselves at community health centers, and low patient compliance in taking medication. Therefore, more socialization and education are needed to prevent and anticipate non-communicable diseases (NCDs). The government must be more active in supporting and strengthening Community-Based Health Efforts (UKBM), one of which is by implementing PTM Posbindu. The community must also be educated about the importance of reducing the risk of hypertension through prevention and control of its risk factors (Dinas Kesehatan Jawa Timur, 2024).

Aspects that support the increase in hypertension risk include age, gender, family history, unmodifiable genetic factors, smoking, excessive salt

consumption, saturated fats, the use of used cooking oil, obesity, lack of physical activity, stress, and the use of estrogen. Among all the following risk factors, dietary patterns and bad habits related to food are the biggest causes. To address this, lifestyle changes and dietary therapy need to be implemented in addition to consuming antihypertensive medication. A low-salt diet (LS) is one of the dietary patterns that is often recommended for hypertension sufferers, with the aim of controlling blood pressure and keeping it stable within the normal range. This diet also helps reduce other risks, including obesity, high cholesterol, and high uric acid levels in the blood. In addition, it is important to pay attention to other degenerative diseases that often accompany hypertension, including diabetes, heart disease, and kidney disorders (Nortajulu et al., 2023).

The principle of the diet for people with high blood pressure is to consume a variety of foods with balanced nutrition. The type and portion of food are adjusted to the health condition of the sufferer, with restrictions on salt intake. The salt referred to is sodium, which is found in almost all types of food, whether from animal or plant sources. Considering that table salt is the main source of sodium, it is recommended to consume no more than 1/4 to 1/2 teaspoon each day. As an alternative, non-sodium salt can be applied (Nortajulu et al., 2023).

The DASH diet (Dietary Approaches to Stop Hypertension) or low-salt diet has become one of the approaches widely applied to manage high blood pressure. The main goal of this diet is to lower hypertension. The DASH eating pattern includes foods such as fish, low-fat milk, legumes, fruits, and

vegetables. This diet has been proven effective in lowering blood pressure by limiting salt and sugar intake, enriching the consumption of essential nutrients including potassium, magnesium, calcium, fiber, and protein. In addition, the DASH diet does not consume high-fat foods, red meat, sweet drinks, and processed meat products (Astuti et al., 2021).

Several researchers in Indonesia have conducted studies related to the application of the DASH diet. Heryudarini Harahap (2009) in Uliatiningsih (2019) researched using a clinical experimental method for five days a week over eight weeks. The results showed that the DASH diet adjusted for the Indonesian population reduced body weight by up to 3.7 kg and lowered blood pressure by 11.7/9.3 mmHg in pre-hypertensive individuals who were obese (Uliatiningsih & Fayasari, 2019). Fianita (2017) found that hypertensive patients at Sentolo community health center indicated significant changes in blood pressure, understanding of the DASH diet, and there were significant differences in carbohydrate consumption patterns before and after receiving counseling, where  $p < 0.05$  (Fianita, 2017). Research by Fitriyana and Wirawati (2022) also indicated that hypertensive patients in Kalikangkung Village, Semarang, successfully lowered blood pressure after implementing the DASH diet (Fitriyana & Karunianingtyas, 2022). In addition, research at Karang Anyar community health center found that DASH diet intervention for three days helped lower blood pressure in hypertensive patients (Nortajulu et al., 2023). Another study at BSLU Mandalika by Wahyuningsih et al. (2024) indicated that after undergoing DASH diet intervention for 14 days, a significant decrease in

systolic and diastolic blood pressure was found (Wahyuningsih et al., 2024). The following findings prove that the DASH diet has the potential to be an effective method for managing hypertension.

Although several studies have proven that the DASH diet can be effective in lowering blood pressure, there is still a lack of research specifically examining its application in hypertensive elderly individuals in Indonesia. This issue particularly applies in areas such as Malang Regency, especially in Sekarpuro Village, Pakis District. Most previous research has focused more on the general population or younger age groups, thus not providing further insight into how the DASH diet can be applied and adjusted for the elderly with various health conditions.

The following research not only highlights medical aspects but also considers local and cultural factors that can influence the success of implementing the DASH diet. For example, eating habits, food preferences, and the availability of food ingredients in the local area. By considering these factors, the designed diet program will be more suitable and easier to accept by the elderly, as it aligns with their habits and culture.

The following research not only assesses the results of the diet implementation but also designs a special education program for the elderly. The program includes guidelines for choosing healthy foods, creating menus in accordance with the DASH diet, and managing sodium intake. With a structured educational approach, it is hoped that the elderly can more easily understand and apply the diet in their daily lives.

The following research measures blood pressure before and after the implementation of the DASH diet. This method allows researchers to see directly the difference in blood pressure before and after implementing the diet. With this approach, it is hoped that the research findings can provide more accurate data on the effectiveness of the DASH diet for elderly individuals with hypertension in the studied area.

Based on the description that has been presented, the author is interested in conducting research entitled “Difference In Blood Pressure Before And After Implementing Dietary Approaches To Stop Hypertension (DASH) Diet In Elderly People With Hypertension In RT 03 RW 01 Sekarpuro Village Pakis District Malang Regency”.

## **1.2 Problem Formulation**

Referring to the explanation of the background above, the problem formulation in the following research can be arranged as follows :

1. How is the implementation of the Dietary Approaches to Stop Hypertension (DASH) diet for elderly people with hypertension in RT 03 RW 01 Sekarpuro Village Pakis District Malang Regency in 2025?
2. How is the difference in systolic and diastolic blood pressure in elderly people with hypertension before and after implementing the DASH diet in RT 03 RW 01 Sekarpuro Village Pakis District Malang Regency in 2025?

## **1.3 Research Objectives**

1. General Objective

The main objective of the following research is to examine the difference in blood pressure before and after implementing Dietary Approaches To Stop Hypertension (DASH) Diet in elderly people with hypertension in RT 03 RW 01 Sekarpuro Village Pakis District Malang Regency in 2025.

## 2. Specific objective

The specific objectives of the following research are to :

- a. Implementing the Dietary Approaches to Stop Hypertension (DASH) diet in elderly people with hypertension in RT 03 RW 01 Sekarpuro Village Pakis District Malang Regency in 2025.
- b. Measuring changes in blood pressure in elderly people with hypertension in RT 03 RW 01 Sekarpuro Village Pakis District Malang Regency, before and after the implementation of the Dietary Approaches to Stop Hypertension (DASH) diet in 2025.

### **1.4 Research Benefits**

Several benefits expected from the research conducted include :

#### a. For the community

It is hoped that this research can increase community knowledge about the importance of a healthy diet in the prevention and management of hypertension, as well as encourage healthier lifestyle changes.

#### b. For health workers

It is hoped that this research can serve as a reference and provide additional insights for health workers and cadres, especially in the area of RT 03 RW 01 Sekarpuro Village, Pakis District, to implement intervention program in

the form of the Dietary Approaches to Stop Hypertension (DASH) diet for hypertensive patients, especially the elderly.

c. For further research

The next research is expected to be able to develop research on the application of the DASH diet in hypertensive patients with other research designs that are analytical.