

# HYPERTENSION MANAGEMENT APPROACH THROUGH MODIFIABLE RISK FACTORS IN JEMBER REGION COMMUNITY HEALTH CENTER

**Ancah Caesarina Novi Marchianti**, Department of Public Health, Medical Faculty, University of Jember, Kalimantan Street No. 37, Jember, Indonesia, [ancah@unej.ac.id](mailto:ancah@unej.ac.id)

## INTRODUCTION

Hypertension is still on top fifteen of the disease rank, based on data from the medical record of patient visits in Jember Region Community Health Center in 2014 (Jember Health Office, 2014). Hypertension is a cardiovascular disease that lead to various complications and became one of the main causes of premature death. Estimated 15 million people suffer from hypertension in Indonesia. National basic medical research in 2013 showed the prevalence of hypertension in Indonesia as much as 25.8%. The prevalence was 6 to 15% of adults and 50% of them do not realize having a hypertension, so they tend to be severe hypertension because they are not avoiding and not knowing the risk factors and 90% are of essential hypertension. Morbidity in patients with unknown or undiagnosed hypertension tend to be higher than morbidity in diagnosed hypertension patients at various health care facilities. This leads to the prevention of various complications of hypertension, such as stroke, coronary heart disease, and other complications, becomes difficult to be minimized.

Risk factors of hypertension can be divided into two which are modifiable (physical activity, drinking/eating habit, smoking habit, etc.) and non-modifiable (gender, age and genetic) risk factors (Adnyani and Sundana, 2014). Numerous attempts to intervene in the control of hypertension with risk factors need to be carried out through collaboration between the government, especially health workers, and the community. Strategies such as promotive and preventive efforts in controlling hypertension is an effort to improve the health status of the community.

Modifiable risk factors still have many prospects to be developed to overcome hypertension. Therefore, this study aims to evaluate the management of hypertension disease through the modifiable risk factors approach in Jember Region Community Health Center. From the evaluation, we hope to improve and make more innovation on the management approach of hypertension disease in the future.

## METHODS

This study was involving about four Community Health Centers in Jember Region as data sample.

Variable used to evaluate the succeed of the program were the knowledge, attitude and behavior of hypertension patients toward the regulation of their blood pressure by understanding more on risk factors and try to modify them. This type of research is included as a non-experimental descriptive studies. Descriptive research is a research in the form of survey sampling and does not require a specific control group. Data were collected from medical records, physical examination and questionnaire within the year of 2015. Data then were being analyzed using appropriate statistic tools. The results of the study are presented only according to the data obtained without conducting a deep analysis. The present study was following ethical principle for human research study at University of Jember, which is standardized to the Indonesian National guideline for human research study ethical clearance (informed consent, anonymity and confidentiality).

## RESULT AND DISCUSSION

Analyze on risk factors affecting significantly on hypertension patients in Jember Region was first to conduct in this study using Chi square bivariate analyzing, before the study on evaluating hypertension management approach. We then compared the changing of knowledge, attitude and behavior before and after the management approach through modifiable risk factors on hypertension patients toward the blood pressure regulation.

### Risk Factors

It took 40 hypertension patients as respondents and the result showed in Figure 1, where most of the significant risk factors related to hypertension were from the modifiable risk factors such as stress, BMI and bad eating habit. Some habitual such as smoking, drinking alcohol/soda, routine check-up and physically active did not showed significance here. Same as random blood pressure, due to variation also did not show significance.

Various cross-sectional and cohort studies have consistently shown a positive correlation between age and blood pressure in various regions that have different characteristics of geography, culture or socio-economic. Changes in blood pressure caused by the change of age due to the changes in the

vascular system. Increasing of age led to a decrease in the elasticity of blood vessels.

Psychosocial stressors enhance autonomic stimulation via the HPA axis, which increases circulating catecholamine and cortisol in humans. These heightened autonomic responses are associated with increased risk of hypertension and pro-inflammatory state and, consequently, development of coronary heart disease.

Hyperactivity of the sympathetic cardiovascular control is believed to contribute to high blood pressure in patients. Chronic psychosocial stress is associated with the onset and aggravation of ischemic heart disease and produces a greater increase in blood pressure in patients with labile hypertension than in normotensive subjects. Although stress-induced hypertension return to normal within a few days of termination of stress, prolonged mild-moderate hypertension may contribute to atherosclerotic cardiovascular diseases (Alkhadi, 2013).

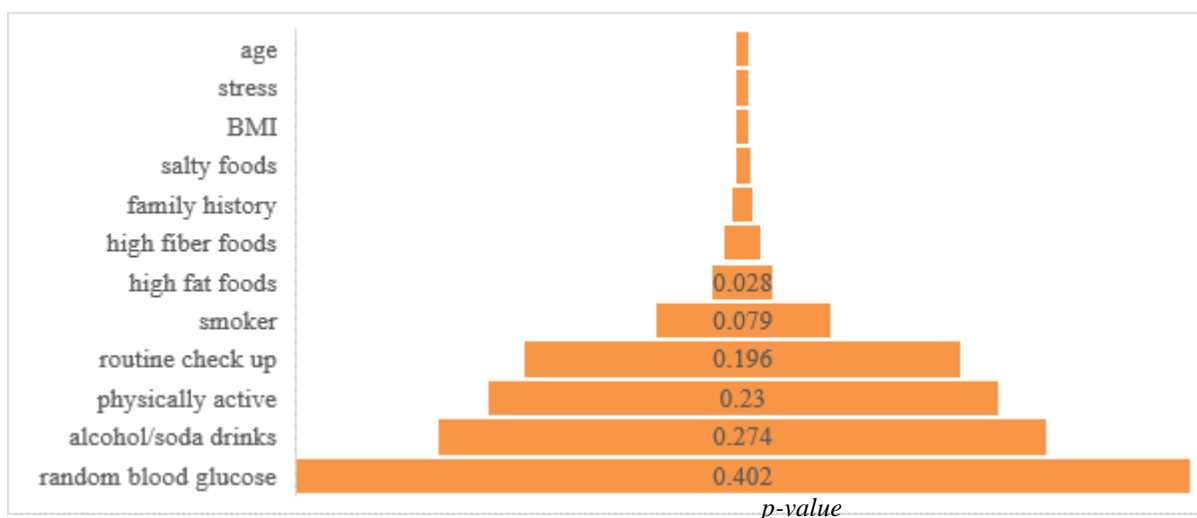
Analysis of the respondents indicated that most significant respondents diet affecting on blood pressure is a diet high in salt, as it illustrates the hallmark of the majority community of the district are Madurese who like processed foods that taste salty. The increased of sodium intake will cause the body to increase the volume of fluid retention and blood pressure (Mohan and Campbell, 2009).

Most respondents also do only light activities in daily life, they also do not exercise regularly. In fact, they rarely exercise and this relates to high BMI. If viewed from the body mass index (BMI), most hypertension respondents be classified in overweight and obese.

Abdominal circumference of respondents also showed excessive size (Haryanti, 2009). Less high fiber foods and many high fat foods consumption are also being related to the high BMI. Other factor that may also contribute well are the use of hormonal contraception in female gender (data not shown).

Obesity has been identified as a risk factor for hypertension. Various studies have shown a significant relationship between BMI and hypertension. This study shows that most hypertension occurs in people with a BMI of overweight and obese compared with those with underweight and normal BMI. This is in line with research conducted in Taiwan in 2013 which showed that the prevalence of hypertension increased progressively with increased BMI in both women and in men. In a person with obese BMI, blood flow in the body will be increased to provide the supply of oxygen and nutrients throughout the body. This causes the volume of blood circulating in the blood vessels increases, so that the blood pressure will also increase (Adnyani and Sundana, 2014).

Excessive weight gain can increase the risk factors of hypertension. One of the pathophysiological mechanisms that occur is related with the stimulation of renin-angiotensin system. This will stimulate the sympathetic nervous system and increase the reabsorption of sodium. In addition, obesity can also cause hyperinsulinemia, which can increase sodium reabsorption from the renal tubule and ultimately can increase blood pressure (Julius et al., 2000; Re, 2009).



**Figure 1. Risk factors affecting hypertension.**  
Significances showed by *p-value* < 0.05.

**Management Approach Through Modifiable Risk Factors**

Each Community Health Center in Jember Region has different management on dealing with non-communicable chronic disease such as hypertension. However, there are some standards on serving the

community. There is a unit who manage these senior citizen health problems i.e. Elderly Integrated Service Unit (Posyandu Lansia). They have monthly programs e.g. health and mental check-up, elderly exercise, nutrition consultation, educational

consultation, etc. and along with the Institution of Social Security on Health (BPJS Kesehatan) Chronic Disease Management Program (PROLANIS), both

were expected to manage the modifiable risk factors and to help the hypertension patients to regulate their blood pressure.

**Table 3. Elderly person enthusiasm on PROLANIS.**

Enthusiasm	Not at All Interest	Not Very Interested	Neutral	Somewhat Interested	Very Interested
Knowledge	0	10%	10%	70%	10%
Program	0	0	0	36.7%	63.3%
Medical consultation	0	10%	20%	60%	10%
Educational counseling	0	3.3%	0	33.3%	63.3%
SMS gateway	0	0	0	70%	30%
Home visit	0	0	0	50%	50%

Analyzing problems from environmental, behavioral, health services and population showed that many of Elderly Integrated Service Unit members were having low education and low awareness of their disease. The thought of hypertension as just a common illness in elderly period has withdrawn their willingness to cure or control the disease by doing routine check-up, treating with medicine and changing their lifestyle. The low economy and social status also affecting the way they were dealing with hypertension. While from the health services, there were still lack of program promotion and lack of cadre skill and knowledge.

Survey then was held to know the enthusiasm of these elderly person on following PROLANIS (BPJS, 2014), using Likert Scale, result showed in Table 1,

where almost all respondent showed good enthusiasm in all activities of PROLANIS. They also already have good knowledge about hypertension. This indicates that the patients may have suffered long enough from the disease and have often got medical treatment for the disease. Patient knowledge of the hypertension can also be an indicator of their high desire to heal. We also noticed that all of respondent expressed somewhat interested or very interested in PROLANIS. They found PROLANIS is a program that worth keeping, because PROLANIS offers convenience for them to make a referral, or later will be easier for them to get the specialist treatment in community health center primary care where they are registered for PROLANIS.

**Table 2. Knowledge, attitude and behavior before and after the management approach on hypertension patients.**

Effect	Before		After	
	Less	Good	Less	Good
Knowledge	61.4%	38.6%	56%	44%
Attitude	61.4%	36.6%	47%	53%
Behaviour	63.6%	36.4%	48%	52%

The most preferred PROLANIS activities by the patients enrolled in PROLANIS is the educational counseling event (63.3% were very interested). This is probably because in educational counseling event they can improve their knowledge, especially about how to treat their disease. Based on the literature study, it was found that factors associated with the occurrence of hypertension include aspects of one's knowledge, attitude and behavior about hypertension.

They are also welcoming well other activities like SMS gateway where they will get SMS to remind when to check-up, to have medical consultation or to have educational consultation. When they can't attend PROLANIS for more than three times, they will get home visit from cadre so they will not be left

behind. While educational consultation activity is held for community, the medical consultation is a more private activity where each of them, individually, can get treatment from health workers and make appointment for other PROLANIS activities.

**Effects on Hypertension Patients**

Evaluation of the programs effects on hypertension patients were checked by comparing knowledge, attitude and behavior toward the blood pressure regulation, before (88 respondents on January 2015) and after (68 respondents on October 2015) the management approach on hypertension patients through modifiable risk factors (Table 2). As well said that a good knowledge is needed to create a good

attitude and a good attitude is needed to build a good behavior (Notoatmodjo, 2003).

#### *Knowledge*

Lack of knowledge of these respondents may be due to several factors including: low education level of respondents who generally only primary school graduates, the lack of activeness/responsiveness of the respondent in following health information held by local health authorities and there were some respondents who are elderly (over 50 years) where the ability of respondents to receive health information is somewhat lacking. Comparing before and after the programs there were some improvements but still away to go to make more than 50% of them to have good knowledge on how to control blood pressure by modifying risk factors.

#### *Attitude*

Lack of attitude can be caused by several factors, including: lack of knowledge on efforts to prevent the recurrence of hypertension and lack of awareness or willingness of respondents to behave in a healthy life. There are also some respondents take a positive attitude due to their condition at that time, for example the respondents who were less knowledgeable about efforts on how to prevent uncontrolled blood pressure in hypertension, but because they are afraid that hypertension complication would result in worsening their health, respondents then took a positive attitude. This is perhaps the reason why after the programs, attitude showed better improvement than knowledge.

#### *Behavior*

Lack of behavior can be caused by several factors, including whether there is a willingness of respondents to recover/control their health, the lack of awareness on the importance of efforts to prevent the recurrence of hypertension and the difficulty on allocating time to check-up into the health service and following health counseling given by the health workers. There is also perhaps lack of family support in motivating respondents to make efforts in preventing the recurrence of hypertension, lack of attention of the family or the people closest to respondents will have a big impact in their desire to heal.

#### **Future Approach**

Hypertension management approach in Jember Region Community Health Center still needs more innovative programs to help hypertension patients more on regulating their blood pressure. Such as, creating social community for hypertension patients and families where they can support and encourage each other that might releasing their stress, lead to a better healthy lifestyle and improving their wellbeing. It is also can be done by improving Posyandu Lansia cadre skill and knowledge by

training and counseling and utilize technology in order to be more attractive in program promotion.

#### **CONCLUSION**

Hypertension management approach in Jember Region Community Health Center by Elderly Integrated Service Unit and Institution of Social Security on Health slightly improved the knowledge, attitude and behavior of hypertension patients to regulate their blood pressure by understanding more on risk factors and try to modify them. However, this early step still needs more innovative programs to help hypertension patients more on regulating their blood pressure. A further study also needs to be held, especially on how to make hypertension patients willingly to have healthy lifestyles on their own awareness.

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