

# The Effects of Self Efficacy and Collective Efficacy on Preventions Behavior of Community with Hypertention in Kupang City East Nusatenggara Province

Rafael Paun Chatarina U.W Hari Basuki Notobroto Rachmat Hargono  
Public Health Sciences Postgraduate Program, Nusa Cendana University, NTT-Indonesia

## Abstract

**Background.** Basic Health Research (Riskesdas) in 2007 showed that the prevalence of hypertension in the population of Indonesia is about 30.3%. While in East Nusa Tenggara, The prevalence of Hypertension is still higher than national Standard; it is about 38%. An initial study conducted in several community groups in Kupang, 2010 revealed that the prevalence of Hypertension among communities was 40%. Moreover the study found out that the cases were mostly influenced by the lack of understandings in terms of preventions behavior of Hypertension. Unfavorable behavior reached 72% among those with hypertension and poor behavior in people who are not diagnosed by Hypertension (48%). The purpose of this study is to examine the effect of self-efficacy and collective-efficacy on preventions Behavior of Community with Hypertension. **Methods.** The observational analytic within case control design is used to study the variables with a convenience sample of 180 people with hypertension. The analysis technique used is based Smart Structural Equation Modeling Partial Least Square (Smart-PLS). **Results.** The study also showed that the self-efficacy's people in Kupang are high. The results showed 32.8% of respondents have good perception of self-experience. Based on Hypertension status, self-experience was 27.8% in people with hypertension and 37.8% in people who are not diagnosed by hypertension is categorized as good. Other people's experiences, about 38.9% are good category. While based on hypertension status, other people's experience who are diagnosed and are not diagnosed by hypertension is mostly categorized in good and very good, 30% and 47,8% successively. While for verbal persuasion, 26.1% of them are good category. For those with Hypertension, 30.0% have good verbal persuasion and 34.4% of those without hypertension have excellent verbal persuasion. For Emotional state variable; 43.3% respondents have good perception in terms of emotional state. Community perception about self-regulation or self-management ability from external factors is counted at 23.9% unfavorable category. Moreover, 25,6% Hypertension people's self-management ability is bad category, while people without hypertension is counted at 25,6% regarding good enough self-management. The Internal factors, 28,9% are pretty good. Behavior prevention practiced by people in Kupang City consists of weight control, diet, exercise/ sports, restrict smoking habits and doing leisure activities and hobbies. The results showed that 31,2 % people always doing such activity to control their weight. While, 33,3 % people who have already experienced Hypertension, does not do sufficient exercise, and 30% people without hypertension are always doing exercise. The study showed that the self efficacy has a significant effect on self-regulation, with a path coefficient of 0,276 and T-Statistic value of 3,108. Collective efficacy also has a positive and significant impact to self-regulation, with a path coefficient of 0,275 and a value of 12,289 T-Statistic. On the other hand self-regulation has a positive effect on behavior prevention, with a path coefficient of 0,887 and T-Statistic value of 41,962. Hypertension prevention behaviors have positive and significant effect on hypertension, with a marked positive path coefficient of 0,955 with T-Statistic value of 422,475. **Conclusions:** Self-efficacy and collective efficacy directly affects self-regulation, and then influence the hypertension prevention behavior. It is therefore suggested to create health policy regarding health promotion to communities.

**Keywords:** Self-efficacy, Collective efficacy, prevention behavior, hypertension

## INTRODUCTION

Healthy Behavior is an action taken by a person to maintain, attain, or regain good health and to prevent illness. Health behavior reflects a person's health beliefs. Some common health behaviors are exercising regularly, eating a balanced diet, and obtaining necessary inoculations. Healthy behaviors exhibited by individuals who feel that they are medically fit although they are not necessarily truly healthy. Disease prevention behaviors aimed at reducing and limiting all risk factors for diseases. Hypertension is well known diseases occurred due to behavioral factors.

WHO report showed that 8-18% of the world population suffered from hypertension. According to Basic Health Research in Indonesia, 2007, the prevalence of hypertension on population over the aged of 18 was 29.8% (based on measurements). While based on the diagnosis or the symptoms assessed by health providers, the prevalence of hypertension among Indonesia Population was around 30.3%. Meanwhile, the prevalence of hypertension in East Nusa Tenggara was 28.1% based measurement and according to diagnosis of symptoms by health workers was about 38.0%, higher than the national prevalence [5].

Provincial Health Department reported regarding the ten highest diseases in 3 (three) last year showed that

the case of hypertension was steadily increased, which in 2008 ranked the nine (9) of 10,386 (3.44%). In 2009 hypertension is 6 (six) rank; 16,562 (5.55%). In 2010, Hypertension badly occupied on the 7 (seven); 13 807 (4.76%). Meanwhile, based on the Surveillance Integrated Health Centers (STP) 2009-2011, the number of new cases of hypertension varied. In 2009 the number of new cases is 4786 (2287 male and 2227 female cases), and in 2010 the number of new cases is about 3521 cases (1834 male and 1687 female cases). In 2011 the case of Hypertension increased dramatically to 5303 cases (2386 male and 2916 female cases) [6]

An Initial study conducted in Kupang, 2010 showed that the prevalence of hypertension in Airnona Village was about 40%. The study also showed that 72% people with hypertension practiced unfavorable behavior, while people who are not diagnosed by hypertension is about 48%. In Comparison to the study conducted in 2011, there were 35.07% of people with hypertension have a historical family of hypertension with low level of knowledge in terms of hypertension prevention. Other results showed that most of the respondents had bad behavior especially in doing exercise which accounted 56%; 76,1% had a bad habits in consuming salty foods, 74.6% consumed fatty foods, 85.8% liked to consume pork, and 67.44% of respondents consumed alcohol and 32.1% smoked. Those risky Behaviors such as consuming fatty foods were existed and becoming an obligation for communities during traditional party and easily found in several restaurants in Kupang. People's behavior is mostly influenced by the culture in which some of the foods are should be presented on the traditional party and low level of the plant-derived food due the geographical condition and drought [8].

## MATERIAL AND METHODS

Currently, the estimation of young people with hypertension is increasing steadily, 2-12%. Hypertension is defined as elevated of systolic or diastolic pressure above the normal range that is  $\geq 140/90$ . At the aged of 50 and more, Hypertension is classified if the BP reaches 160/90 mmHg, while at the aged of 13 – 50 is determined at 140/90 mmHg. Hypertension is a core risk factor for coronary heart disease, kidney disease and peripheral vascular disease. Hypertension is defined as elevated blood pressure over the agreed limit of normal, which is 90 mmHg diastolic or systolic 140 mmHg. Hypertension is divided into two categories: primary hypertension or essential hypertension and secondary hypertension. Most of cases are primary hypertension. Approximately 90% cases of hypertension are classified as essential hypertension in which the causes are not really recognized.

The incidence of Hypertension more likely occur (28%) if one parent is diagnosed by Hypertension or 41% cases if both parents are Hypertension. At old age, high blood pressure is a major risk factor for cardiovascular diseases. Many reports indicate that 20% elderly people have systolic hypertension (systolic pressure over 160 mmHg) or mild diastolic hypertension (greater than 90 mmHg). The incidence of hypertension varied widely by race and sex. In the USA hypertension among black Americans 38.2% compared with 28.8% who were white. In blacks, hypertension becomes more severe with a greater risk of target organ damage when compared with white people. The incidence of man with Hypertension is higher than in women, but it will be increased if women take birth control pills, overweight or have a family history of high blood pressure. Other risk factors for hypertension are obesity, smoking, stress and salty and fatty foods [7].

Salty foods which lead to hypertension remain unclear. Some research revealed that salty food can cause the increasing of fluid volume, sensitivity cardiovascular mechanism or renal adrenergic effect, or through some other mechanism such as the mechanism of renin-aldosterone-angiotensin. In contrast, the excessive of salty food intake does not cause hypertension for all people and the reduction of salty food intake does not lead to decrease BP. The effect of sodium foods intake influence some people. Therefore, identification of high risk factors to reduce the sodium intake is one of the non pharmacological managements of hypertension [7].

Screening programs conducted in some countries to more than 1 million people, found that the frequency of hypertension in overweight men at the aged 20-39 years more likely happen 2 times than those of normal weight and 3 times for people who are underweight. It has been proved that the distribution of fat is a core risk factor for hypertension. Intake fatty foods results to elevate blood pressures due to the narrowing of arteries. Fats or lipids mainly derived from meat such as pork and dog meat.

Studies showed that there is a relationship between alcohol consumption and hypertension in which 10% of the causes of hypertension associated with alcohol consumption. It is undoubtedly that alcohol consumption more than 3 times/day might be increased the incidence of hypertension. Systolic pressure is more affected than diastolic pressure. High blood pressure can be repaired or returned to normal level when alcohol consumption is reduced or eliminated [6,7].

Lifestyle or peoples' behavior are mostly influenced by various factors such as low level of self confidence to control and prevent such risky behaviors lead to Hypertension known as self-efficacy. Self-efficacy is defined as the individual's belief about its ability to achieve the level of performance by using the past experience that affects their entire life. Peoples' ability to feel, think, behave, motivated is mainly determined by their self-efficacy

Collective efficacy is defined as a group's shared belief, which emerges from an aggregation of individual group members' perception of the group's capabilities to succeed at a given task (Bandura, 1991; Glanz Karen,

et al 2008) [1,10]. Efficacy beliefs play an important role both for individual and groups in terms of motivation because people have relied, to some extent, to complete their tasks. Self regulation is defined as the capabilities to think and then it will be used to manipulate the environment to bring changes in the environment caused by such activities. People can set their own behavior (Bandura) [1,3,4].

The research was conducted in Kupang city-NTT during January to April 2013. The observational analytic study, with case-control study design is used to analyze the variables. The two-stage cluster random technique is used which then started from cluster neighborhoods (Rukun warga), and cluster neighborhood (rukun tetangga) and finally sample unit random. The sample size is about 180 people who have a historical family member with Hypertension, which then divided into two groups; 90 people with hypertension and 90 people are not hypertensive. Instruments used in the study is mercury tension meter to measure BP; twice and followed by interview using developed questionnaire. Structural equation modeling Variance-based or component based or Smart Partial Least Square (Smart-PLS) is used to analyze the study.

## **ETHICAL APPROVAL**

Participation of the respondents in the primary data collection. questionnaires were used with attached clear instruction. written informed consent after explaining the objectives and expectation of the study was employed

## **RESULTS**

The study showed that Self-efficacy has a significant and positive effect on self-regulation. The fact can be observed from the positive path coefficient of 0,144 with T-statistic a value of 3,255 which is greater than 1,96. The study also showed that the self-efficacy's people in Kupang are high. The results showed 32.8% of respondents have good perception of self-experience. Based on Hypertension status, self-experience was 27.8% in people with hypertension and 37.8% in people who are not diagnosed by hypertension is categorized as good. Other people's experiences, about 38.9% are good category. While based on hypertension status, other people's experience who are diagnosed and are not diagnosed by hypertension is mostly categorized in good and very good, 30% and 47,8% successively. While for verbal persuasion, 26.1% of them are good category. For those with Hypertension, 30.0% have good verbal persuasion and 34.4% of those without hypertension have excellent verbal persuasion. For Emotional state variable; 43.3% respondents have good perception in terms of emotional state.

Other results showed that collective efficacy has significant and positive effect on self-regulation. It can be observed from the positive path coefficient that is 0,309 with T-Statistic 10,938 which is greater than 1, 96. Community perception on Collective efficacy is quite high. The result revealed that 42, 2% of community perception are good category. Based on diagnosis, 34.4% people with hypertension and (50.0 %) without hypertension are classified as good.

Self-regulation has a significant and positive effect on behavior prevention. The path coefficient exist on positive mark that is 0,887 with T-statistic value about 47.540, greater than 1.96. Community perception about self-regulation or self-management ability from external factors is counted at 23.9% unfavorable category. Moreover, 25,6% Hypertension people's self-management ability is bad category, while people without hypertension is counted at 25,6% regarding good enough self-management. For the Internal factors, 28,9% are pretty good.

Prevention behaviors showed positive and significant effect on hypertension. This is evident from the marked positive path coefficient of 0,955 with T-Statistic valued at 435,724 greater than 1,96. Behavior prevention practiced by people in Kupang City consists of weight control, diet, exercise/ sports, restrict smoking habits and doing leisure activities and hobbies. The results showed that 31,2 % people always doing such activity to control their weight. While, 33,3 % people who have already experienced Hypertension, does not do sufficient exercise, and 30% people without hypertension are always doing exercise. On the other hand 33,9% people cannot control diet (bad category). Regarding the hypertension status, 36,7% people with Hypertension cannot control their diet and 32,2% people without hypertension have good self-management in terms of diet control.

Exercise has strongly believed to control Hypertension. The study showed that 41.7% people have very good intention for exercise. Based on hypertension status, 44,4% diagnosed by Hypertension rarely do exercise, while for those without hypertension that is 43,3% are doing exercise (good category). Smoking is one of the modifiable factors for Hypertension. The study revealed that 58,3% respondent used to smoke. Moreover 60% respondent who diagnosed by Hypertension experienced to smoke, and 56,7% do not smoke. Another factor to control Hypertension is having more time for relaxation. The study found that only 36,7% respondent are using their leisure for relaxation.

Table 1. Inner Weigth, Standard Deviations and Significance

Effect	Inner Weight	Standard Deviation	t statistic	Explanation
Self Efficacy-> Self Regulation	0,144	0,044	3,255	Significant
Colective Efficacy-> Self Regulation	0,309	0,028	10,938	Significant
Self Regulation-> behavior Prevention	0,887	0,019	47,540	Significant
Behavior Prevention -> hypertension	0,955	0,002	435,724	Significant

Table 1 shows the value of T-statistics greater than 1,96. It can be concluded that exogenous variables directly affects endogenous variables. The model then can be figured out in the picture 1

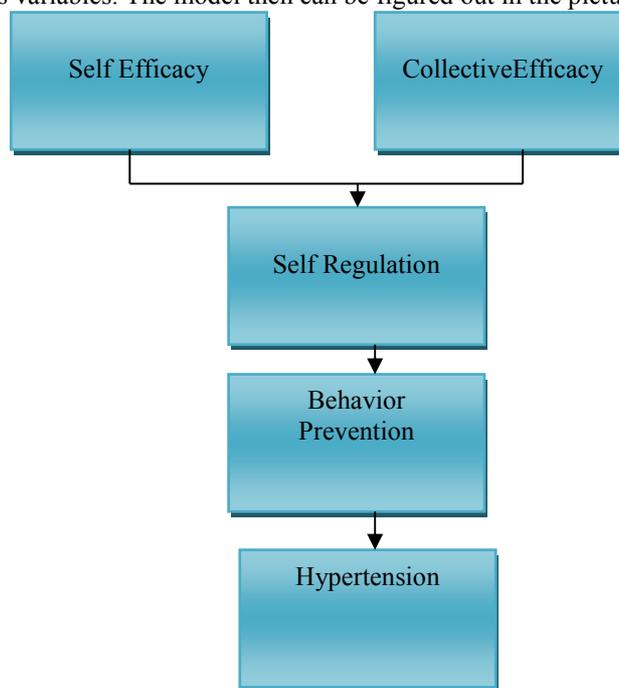


Figure 1 Relationship between Exsogenous factors to Endogenous Factors

Figure 1 shows the most influenced and dominant factors successively : the influence of prevention behavior to the incidence of hypertension is about 0,955, the influence of self-regulation to prevention behavior is 0,887, and the effect of collective efficacy on self-regulation is 0,309 and the self efficacy to self-regulation is about 0,144.

The results of the blood pressure measurements and then classified by the Joint National Committee VII, as shown in Table 2 below:

Table 2. Blood Pressure Classification Society Kupang, Year 2013

Blood Pressure ( mmHg)	Hypertension Status		Total
	Hypertension	not Hypertension	
Normal ≤ 120/80	0 (0,0%)	54 (60,0%)	54 (30,0%)
Pre Hypertension : 120 - 139 / 80 - 89	0 (0,0%)	36(40,0%)	36 (20,0%)
Hypertension stage 1: 140 - 159 / 90 – 99	49(54,4%)	0(0,0%)	49 (27,2%)
Hypertension stage 2: ≥160/ 110	41(45,6%)	0(0,0%)	41 (22,8%)
Total	90 (100%)	90 (100%)	180(100%)

Table 2 shows the majority of respondents (54.4%) are categorized as stage hypertension and 45.6% are stage II hypertension and 60.0% of people have normal Blodd Pressure.

## DISCUSSION

The results showed that self-efficacy directly affects on Self-regulation. People’s believe on their ability to cope will lead them to behave accordingly. Stress and depression on the other hand will lead people to difficult situation including motivation. Self-efficacy perception plays an important role to initiate anxiety. People who have a good coping to control and manage threat will not develop wrong thoughts. In contrary, people who do not have a good coping will experience high anxiety. They are then categorized on coping deficiency, who always consider everything as threats, and worry about something happen in the future. Through these destructive thoughts they make themselves stress and interfere their own ability. Coping efficacy perception will manage anxiety [1,2,3,4].

Collective efficacy directly influences the self-regulation. Therefore, groups and family belief’s will create

individual trust manage and cope threats. Social support plays a crucial role to develop groups' ability to manage and control the group. Collective efficacy creates a trust relationship among community members and shared willingness to achieve goals. The capacity to do informal social control and social cohesion are the core factors to attain community objectives. Model of self-regulation is based on three components (interpretation, coping and appraisal) which connected each other to maintain balance. Consequence, if an individual is getting sick, according to the model the individuals then are motivated to recover. Motivation can be defined as internal and external factors including 1) the desire and interest to do the activities, 2) the encouragement and needs to perform activities, 3) the expectations and ideals, 4) self respect and appreciation, 5) good environment, and 6) the existence of interesting activities [2,3].

Self-regulation affects on hypertension prevention behaviors. An Initial study to analyze the related factors to self-regulation; men and women were shown to have attitudes, subjective norm, and anticipated positive emotions to reduce and maintain blood pressure (Baghianimoghadam, et al, 2011) [4]. Behavioral act or practice is focused on activities taken by individual in order to maintain health including knowledge, attitude and practice. There are four indicators for practice; (1) The act or practice related to infectious and non-infectious diseases, (2) The act or practice with respect to the factors that influence health, (3) the act or practice to access health care facilities, (4) the act or practice to avoid accidents both household accidents, traffic or in public places [6].

The results showed hypertension prevention behaviors directly affect hypertension. The study revealed that most of the respondents do not really care about hypertension prevention behaviors (bad category) such as weight controls behavior, diet control, and smoking. Even though some of the prevention behaviors are performed in a good way of practice such as exercise, and relaxing time, the practice of prevention behavior to Hypertension by people in Kupang is not fully executed. Most of the people used to drink alcohol and coffee, eating salty food, fatty food derived from pork and dog, less exercise, and excessive smoking which can interference body metabolism [7,9].

## CONCLUSION AND RECCOMENDATIONS

In conclusion, Self-efficacy and collective efficacy directly affects self-regulation, and then influence the hypertension prevention behavior. It is therefore suggested to create health policy regarding health promotion to communities. Further research needed is to implement the prevention model to improve efficacy Self-efficacy and collective-efficacy.

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