

## Chronic Disease Management Programs Based On Caring Theory With Blood Pressure Reduction

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### ABSTRACT

**Background:** Hypertension cases to overcome the patient's hypertension condition would be well or prosperous condition and the patient could prevent complications and control blood pressure. Activities in Chronic Disease Management Program (Prolanis) include medical or educational consultations, home visits, reminders, club activities.

**Purpose:** This study aimed to analyze the application of the prolanis program based on the caring theory by reducing blood pressure in hypertensive patients.

**Methods:** The design of this research is pre-experimental with cross sectional study approach. The population in this study were all patients with hypertension who took part in management program activities in the public health center (PHC), a number of 40 people, with the sampling technique used was accidental sampling and the total sample was 28 people. The data collection method used a questionnaire. The data analysis of this research is to use the Paired t test.

**Results:** The result of this study is that there is a relationship between the application of a chronis disease management programs based on caring theory with blood pressure reduction with an average systolic blood pressure before the intervention of  $142 \pm 26.15$  and after the intervention of  $138 \pm 1.21$  with  $p = 0.000$  which means that the module intervention can decrease systolic and diastolic blood pressure. While for diastolic blood pressure, the results of the study showed that the mean blood pressure before the intervention was  $85 \pm 10.36$  and after the intervention was  $85 \pm 7.61$  with  $p = 0.000$ .

**Conclusion:** It can be concluded that there is a possitive effect between giving prolanis module based on caring theory with systolic and diastolic blood pressure.

**Keywords:** Chronic Disease Management Program, Caring, Blood Pressure.

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**BACKGROUND**

Hypertension is caused by several factors that increase the risk of hypertension, namely lifestyle, fast food, obesity, smoking and alcohol. Problems that usually arise in clients with hypertension are activity intolerance disorders, pain (headaches), high risk of injury, and lack of knowledge related to lack of information. If not managed properly, hypertension can cause complications such as stroke, coronary heart disease, heart failure, chronic kidney disease, kidney failure (M. Christopher 2016).

The high prevalence of chronic and degenerative diseases, one of which is a health problem is hypertension. Hypertension can occur in everyone, both young and old. The government through Health Assurance launched a Chronic Disease Management Program (Prolanis) purposed at patients with chronic disease such as hypertension cases to maintain stability the patient's hypertension condition (BPJS 2014). Activities in Chronic Disease Management Program (Prolanis) include medical or educational consultations, home visits, control blood pressure, and club activities.

WHO 2013 data found that 79% of people are at risk of experiencing hypertension, and 67% of people in the world are positive for hypertension with relatively high blood pressure (WHO 2013). In Indonesia, hypertension is a case that is often experienced, especially in old age. From the public health survey data, it was found that hypertension still dominates disease cases in Indonesia, with 59% incidence. From the monthly report data of the East Java Provincial Health Office, it was found that hypertension cases were included in the top 10 diseases with 65% of cases.

The government through health assurance seeks one program to overcome these problems through the Chronic Disease Management Program (Prolanis) (BPJS 2014). The aim of the chronic disease management program activities is to encourage participants with chronic diseases, especially hypertension to achieve optimal quality of life with an indicator that 75% of registered participants who visit first level facilities have good results on specific examinations of Type 2 Diabetes Mellitus and Hypertension according to related clinical guidelines so that can prevent disease complications (BPJS 2014). The targets in Chronic Disease Management Program (Prolanis) are all health assurance participants with chronic diseases such as Type 2 Diabetes Mellitus and Hypertension (BPJS 2014). With the running of the program will be able to overcome cases of hypertension experienced by patients, on the contrary, if the program does not run, the cases of hypertension will be resolved longer because the program can be used as screening for cases of hypertension and as a medium for evaluating the extent to which cases of hypertension are experienced by the community.

It needs the role of various parties, both from health workers who should strive for the chronic disease management program to run so that it can overcome cases of patient hypertension, using promotive, preventive, curative, and rehabilitative methods. In this program, health workers can do promotive by providing counseling about the disease experienced, preventive by providing counseling about prevention that clients must do such as implementing a low salt and high potassium diet by not consuming salty foods and often consuming fruit such as oranges. Curative action can be done in collaboration in providing therapy. And rehabilitative can be done by providing support to patients to recover, as well as restoring the patient's condition to the state before being sick (Rachmawati, Prihhastuti-Puspitasari, and Zairina 2020). Patients should be more active in participating in the program so that they can overcome hypertension, which is seen from normal blood pressure. This study aim to analyzed the effect of Chronic Disease Management Program (Prolanis) based on caring theory to reduced blood pressure in hypertensive patients in Public Health Center Malang City.

**METHODS**

The research design in this research is pre experiment with cross sectional approach (Nursalam 2011). The population was all people with hypertension who participated in the Prolanis activities which were carried out every month with a total of 40 people. The sampling technique used in this study was accidental sampling with a sample size of 28 people. From respondents who are willing to be given a Prolanis module based on the caring theory that can be used as a guide for hypertensive sufferers who participate in these activities. Data collection in Februari- Maret 2020 at Pandanwangi Public Health Center Malang using a questionnaire instrument. Analysis of the data in this study used Paired t test. The protocol used in this study was approved by the Ethical Commission of Faculty of Medicine and Health Science Maulana Malik Ibrahim University.

**RESULTS**

This research was conducted in the working area of the Pandanwangi Health Center starting from February 2<sup>nd</sup> to March 12<sup>th</sup> 2020. The management of hypertension patients (Prolanis) at the Pandanwangi Public Health Center in Malang City was in accordance with the operational standards of the Puskesmas when new patients were found with blood pressure reaching 140/90 mmHg. to make lifestyle changes, both eating patterns, increasing physical activity, losing weight, limiting and even stopping smoking, and stress management for one month. Furthermore, the patient was asked to come back for control to the Public Health Center, if the blood pressure was found to be at a fixed value or increased, then proceed to the treatment program. If the blood pressure falls, then lifestyle arrangements are continued at home and asked to return in the following month.

The results of general data analysis that researchers got in this study based on gender, age, education, occupation, history of hypertension, and history of kidney disease are as follows: Results describe the major findings of the study. It should be clear, concise and can be reported on texts or graphics. Please provide some introduction for the information presented on tables or images.

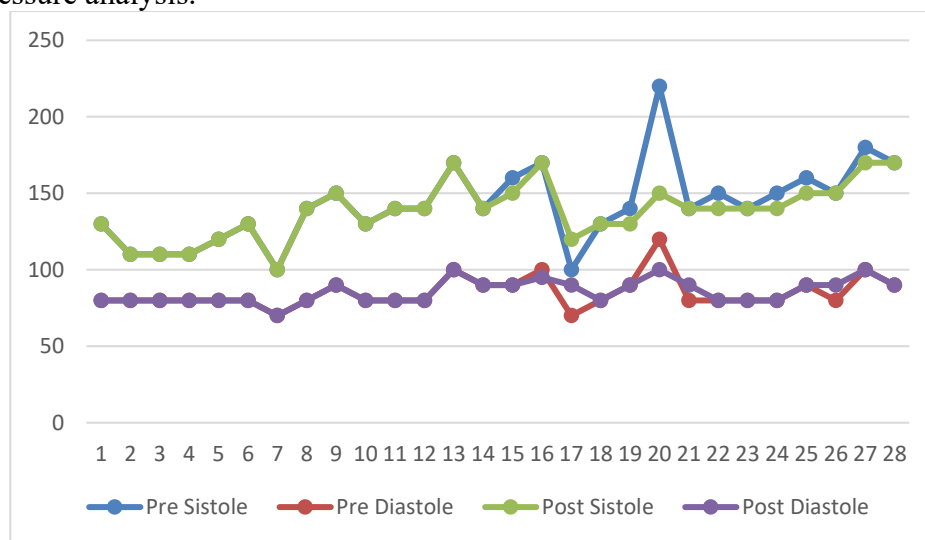
Table 1 General Data Respondent Characteristic

<b>Responden Characteristic</b>	<b>Frequency (person)</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Men	8	29
Women	20	71
<b>Age</b>		
36-45 years	2	7
46-55 years	26	93
<b>Education</b>		
Primary school	9	32
Junior high school	10	36
Senior high school	8	39
Higher education	1	4

Occupation		
Housewife	15	54
Private employee	8	29
Civil servant	2	7
Entrepreneur	3	11
History of hypertension		
Yes	16	57
No	12	43
History of Renal Disease		
Yes	0	0
No	28	100

Based on table 1, it can be seen that most of the respondents in this study were female, namely a total of 20 respondents (71%) with almost all of them being 46-55 years old as many as 26 people (93%) and most of the education levels were junior high school as many as 10 people (36 types almost half of them are housewives as many as 15 people (54%). History of hypertension Most of them have as many as 16 people (57%) and none of them suffer from kidney disease

Specific research data will describe the respondent's data including, pre-test and post-test blood pressure analysis.



Picture 1. Blood Pressure Pre and Post

Table 2 The Results Of Blood Pressure Analysis Pre Test And Post Test

Blood Pressure	Sistole	Diastole
	Mean $\pm$ SD	Mean $\pm$ SD
Pre Test	142 $\pm$ 26.15	85 $\pm$ 10.36
Post Test	138 $\pm$ 1.21	85 $\pm$ 7.61
	p=0.000	p=0.000

Based on table 2, it was found that the pretest systolic blood pressure had a mean of  $142 \pm 26.15$  and the post-test decreased to  $138 \pm 1.21$ , with a value of  $p=0.000$ . Diastole blood pressure in the results of the study showed that the pretest diastolic blood pressure had a mean of  $85 \pm 0.36$  and the post test  $85 \pm 7.61$ , with a value of  $p = 0.000$ .

## DISCUSSION

From the results of statistical tests, it shows that  $H_0$  is rejected, meaning that there is an effect of Chronic Disease Management Program (Prolanis) on systolic blood pressure and diastolic blood pressure in patients with hypertension. The results showed that the data showed that most of the respondents' education level was junior high school. However, the approach provided with simple and practical health information is easier for respondents with hypertension to follow and work on. The Chronic Disease Management Program (Prolanis) that is given directly to the respondent is applicable, for example simple activities that involve the respondent directly are easier to catch and remember by the respondent and then easy to implement. This activity also involves the active role of village health cadres who are very helpful in getting directly involved and motivating respondents.

This fact is in accordance with the theory of Huffman (2007) that the practice of health education and promotion with the aim of improving individual health and promoting the achievement of health goals, which effectively stimulates behavioral change in an organized manner through a supportive interaction between nurses and hypertension respondents. (Notoatmodjo 2014). It is also in line with research which states that Chronic Disease Management Program (Prolanis) can influence patient behavior in managing their disease (Rachmawati, Prihhastuti-Puspitasari, and Zairina 2020). Prolanis can motivate behavior change as stated there are three factors in achieving behavior change, namely the individual's readiness to change behavior in order to avoid a disease or minimize health risks, the encouragement in the individual's environment that makes him change behavior, and behavior itself (Priyoto 2014).

During the research process, most of the Intervention module filling had been filled in correctly according to the column, were orderly, neat, routine, and filled out consciously and did not feel burdened. Some respondents who are not good at writing took the initiative to ask their family for help in writing about their diet, activities and blood pressure that they do every day. Respondents themselves also felt that it was helped by filling in this booklet because they could automatically adjust the diet and what activities were carried out.

This prolanis module is given with the aim of increasing the patient's understanding and confidence in their disease that the dangers of hypertension are very dangerous and even cause death if it is not followed up with changes in physical activity behavior. Increase the confidence and enthusiasm of respondents that there is still time and the ability to make changes. The activities carried out include the selection of recommended physical activities and regular supervision in carrying out these physical activities by involving the family.

Another factor that affects blood pressure is gender. Most of the sex of the respondents were postmenopausal women. As mentioned, several factors supporting the occurrence of hypertension are the female sex with post menopausal age (Singh, Shankar, and Singh 2017). In research which analyzed factors related to hypertension, it was found that more than half of the research respondents were women with most of them being over the age of 20 years, which is the age of menopause (Alloubani, Saleh, and Abdelhafiz 2018). It was also reported that the percentage of incidence of hypertension increases in women over 49 years.

Because the permeability of major blood capillaries declines with age until the seventh decade, systolic blood pressure, while diastolic blood pressure rises until the fifth and sixth decades then persists or tends to decrease. With increasing age, several physiological changes occur, such as increased peripheral resistance and catecholamine activity, decreased sensitivity to blood pressure regulation, especially the baroreceptor reflex, and a reduced role of the kidneys, as measured by renal blood flow and glomerular filtration rate. As a result of the kidneys' failure to appropriately eliminate the salt load, salt and water resistance occurs, resulting in an increase in plasma volume. Furthermore, if the glomerular cells of the apparatus in the kidney secrete the hormone renin, which activates angiotensinogen in plasma to become angiotensin I, which subsequently goes through the pulmonary circulation, the kidney's filtration rate would decrease, the granular cells of the apparatus in the kidney will secrete the hormone renin which activates angiotensinogen in plasma to become angiotensin I which then passes through the pulmonary circulation and is converted by Angiotensin Converting Enzyme (ACE) to angiotensin II which is a strong vasoconstrictor. Angiotensin II stimulates the production of aldosterone from the adrenal cortex, causing a rise in salt retention and a rise in plasma osmolality, which is then countered by a rise in water absorption. This will cause an increase in cardiac output which will then increase arterial blood pressure (Sherwood 2011).

The hormone estrogen, which has a role in increasing levels of High Density Lipoprotein, protects women who have not gone through menopause (HDL). High HDL cholesterol levels are indeed a protective factor in the prevention of atherosclerosis. The presence of immunity in premenopausal women is assumed to be due to estrogen's protective influence. Women in premenopause begin to lose the hormone estrogen, which has been protecting blood vessels from damage, progressively. This process continues as the estrogen hormone naturally increases in quantity with a woman's age, which usually begins in women between the ages of 45 and 55. Menopause happens to women over 50 years old in a variety of ways, including physical, hormonal, and mental changes. Fatigue, anxiousness, headaches, insomnia, sadness, irritability, joint and muscle pain, dizziness, and heart palpitations are some of the symptoms. Unstable emotions can also cause sleep disturbances (Association 2013).

Psychological difficulties of the respondents that generated stress, such as the presence of a sick family member, a disaster, urgent economic demands, employment challenges, and problems with children, were some of the things discovered throughout the study that may be utilized as causes. This condition manifested evident near the end of the study, resulting in an increase in the blood pressure of some respondents.

Peripheral vascular resistance, cardiac output, and parasympathetic central nervous system activity generally rise in stress response. Busyness, infection, trauma, obesity, old age, psychological disorders, medicines, disease, surgery, and medical therapy are just some of the stressors that can cause stress. The sympathetic nerves are activated in response to stress (nerves that work when we are active) (Priyoto 2014). Increase in blood pressure is caused by increased sympathetic nerve activity. Stress can cause the adrenal glands to release adrenal hormones and the heart to beat faster and stronger, resulting in an increase in blood pressure. This can happen because most of the respondents' jobs are housewives who carry out the same routine every day, do the same tasks, and focus on family and existing family problems without any distraction of entertainment with a 24-hour workload (James, PA, S Oparil, BL Carter, J Handler WC Cushman 2014). When family problems arise, it will become the focus of thought for the respondent. This can be a stressor and cause stress for the respondent which can result in an increase in the respondent's blood pressure.

## CONCLUSION

Based on the results of the research that has been done, it can be concluded that:

There is a difference in systolic blood pressure before and after intervention with systolic blood pressure  $142 \pm 26$  and after  $138 \pm 1.21$  ( $p=000$ ).

There is a difference in systolic blood pressure before and after intervention with dyastolic blood pressure  $85 \pm 10.36$  and after  $85 \pm 7.61$  ( $p=000$ ).

So it can help the community to increase activities in the Chronic Disease Management Program (Prolanis) and module intervention can be used by nurse to nursing interventions to improve behavior change, maintain blood pressure stability and regularly control their blood pressure.

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