

**HEALTH EXAMINATION AND HYPERTENSION GYMNASTICS FOR OLDER ADULTS
AT BINA BHAKTI FOUNDATION BABAKAN SETU, TANGERANG****Yakobus Siswadi¹, Masrida A. P^{2*}, Marianna T³, Bima A. S⁴, Elissa O. H⁵**¹⁻⁵Lecturers and Clinical Educator University of Pelita Harapan

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DOI: <https://doi.org/10.33024/jkpm.v5i11.7583>**ABSTRACT**

Background: Older adults are those entering the age of 60. Life expectancy among elderly has been a valuable indicator for the overall health of inhabitant. Older adults commonly experience a decline in health, due to aging or diseases. Several programs to increase the life expectancy of elderly population are hence of urgency. The direct survey revealed that there are 100 older adults in Bina Bhakti foundation, of which 66 people are able to walk and use wheelchairs, while 34 people are on complete bed rest. Furthermore, many of them had chronic diseases such as joint disease, hypertension, and heart disease. The Management of Bina Bhakti Foundation conducts periodic health examination once a month for those who are on total bed rest, and once a year for those who are still physically active. It is all carried out by nurses and general practitioners at the Bina Bhakti Foundation. **Objective:** This community service aims to provide hypertension education and gymnastics with the theme of “*being healthy and independent elderly*”. **Method:** The target is all elderly people being detected to have an increase in blood pressure. The program encompasses lecturing session, health screening, and hypertension gymnastics. Screening test of glucose, cholesterol, and blood pressure was conducted at the end of program. To ensure that each process went well, the team held discussion, practice and assistance to the elderly during gymnastics. **Result:** In a nutshell, all activities under this program went well. As many as 66 elderly people underwent health checks which included blood pressure, blood sugar, and cholesterol. It was found that among 66 respondents, 19 elderly had increased blood pressure, 1 person had an increased in blood sugar and 13 people had a high cholesterol without high blood pressure from 66 respondents. **Conclusion:** The survey showed that many older adults in Bina Bhakti were diagnosed with hypertension, joint disease, heart disease, and diabetes mellitus. Respondents and nurses of the Bina Bhakti Foundation said that this educational activity and hypertension gymnastic were the first at Bina Bhakti Foundation. We expected that the program could be carried out with different topics about the effect of self acupressure on reducing blood pressure.

Keywords: Older adults, Hypertension education, Hypertension Gymnastics

1. INTRODUCTION

According to Rhosma (2014), an older person is those entering the age of 60. Life expectancy is an indicator closely linked with health conditions of a country's population. A healthy nation is hence marked by the long-life expectancy of its population. Judging from the results of the Ministry of Health survey from the World Population Prospects, the 2012 Revision.

life expectancy (UHH) faces challenges in the form of birth rates, disease burden (communicable and non-communicable) and increasing productive and non-productive dependents due to an increase in the percentage of the elderly population (60+ years). It is estimated that the percentage of the elderly group will increase compared to other age groups in the future. This applies to all countries in the world, including Indonesia. This is based on the findings that show a significant increase in the elderly population since 2013 (8.9% in Indonesia and 13.4% in the world). In 2050, the percentage is expected to increase by 21.4% in Indonesia and 25.3% in the world. While in 2100, the percentage is predicted to reach 41% in Indonesia and 35.1% in the world (World Population Prospects, 2013).

On the other hand, the percentage of age group of 0-14 years and 15-59 years is estimated to decrease by 2050 and 2100. This indicator increases the number of burdens in healthcare systems given that the greater the number of older populations, the more health deficit to be considered. On top of that, elderly people will naturally experience a decrease in the function of body organs and chronic diseases such as hypertension, which is one of the most common diseases found among elderly. (Endang Triyanto, 2014)

WHO data shows about 972 million people or 26.4% of people worldwide suffer from hypertension. This figure tends to increase to 29.2% in 2025. Meanwhile, of the 972 million people with hypertension in the world, 333 million are in developed countries and the remaining 639 are in developing countries, including Indonesia (Yonata, 2016). The most common disease in the elderly based on Basic Health Research in 2013 was hypertension, with a prevalence of 39.1% at the age of 40-49 years, 49.2% at the age of 50-59 years and 63.8% at the age of 60 years. Based on data on the prevalence of blood pressure measurements in residents aged 18 years in West Java Province in 2016, cities with high hypertension levels include Cirebon with prevalence (17.18%) and Sumedang Regency (9.43%). Bogor reached (3.2%) patients with hypertension in the elderly (The Health Office of West Java, 2016). The high prevalence of hypertension in the elderly in the Bogor city area can be a concern for health workers to take precautions so that health complications do not occur in the elderly.

Physical activity such as gymnastics is able to encourage the heart to work optimally (Hernawan, 2017). One of the exercises that can be done by the elderly is tera gymnastics (Khasanah & Nurjanah S., 2020). The results of research conducted by (Eriyanti et al., 2016) said that tera exercise was effective in reducing blood pressure in the elderly with hypertension at the Elderly Posyandu, Pabelan Kartasura Village, where treatment I obtained a probability value (p-value) of significant systolic blood pressure of 0.000 and pressure 0.034 diastolic blood (significant). In the second treatment, the probability value of systolic blood pressure was 0.005 (significant) and diastolic blood pressure was 0.004 (significant). Until the IV treatment, the results were significant. The results of the study (Parwati & Mangku, 2013), said that if tera exercise was carried out 3 times a week it could improve

cardiovascular fitness in the elderly group at the Wana Seraya Nursing Home, Denpasar Bali.

Rofika & Yuniastuti (2018) said that there was a significant influence of Tera gymnastics and Healthy Heart gymnastics on blood pressure among elderly with hypertension in Sinomwidodo village Tambakromo Subdistrict Pati District. P value of < 0.05 meant that Tera gymnastics and Healthy Heart gymnastics were effective to lower blood pressure in elderly with hypertension. There was no significant influence showed in the blood pressure measurement in the control group in Sinomwidodo Village, Tambakromo Subdistrict, Pati District.

Based on the research done by Kemenkes RI (2013), about 76% of hypertension cases in the community have not been diagnosed. This can be seen from the results of blood pressure measurement at the age of 18 and over where a prevalence of 31.7% of hypertension was found in Indonesia (Kemenkes RI, 2013) Hypertension is often found in older adults. In 2012, National Commission held a study regarding socioeconomic and health conditions among elderly in 10 provinces. It was found that most common diseases suffered by the elderly were joint disease (52.3%) and hypertension (38.8%). The diseases are assumed to be the main causes of disability in old age (Kemenkes RI, 2019)

From the data above, it can be concluded that in the future, there will be an increase in the elderly which is also one of the indicators of increasing national development. The increase in national development requires careful planning and the provision of health programs such as counseling to maintain physical fitness, eating healthy foods, getting enough rest, not smoking, and attending regular health checks. (Giri Susilo et al., 2022) These programs aim to help older people to enjoy their life and maintain both their strength and fitness. Furthermore, physical activity such as hypertension gymnastics is proven to encourage the heart to work optimally. (Bustan, 2015)

The relationship between hypertension exercise and blood pressure control among elderly was explained in (Wahyuni S, 2015) research that there is an improvement in respondents' blood pressure, but it does not reach the desired level of significance. This may be due to uncontrollable confounding factors related to blood pressure, including diet, stress, physical activity, genetics and pharmacology.

One of the cities in Indonesia where the population has a fairly high UHH is Bogor. Bogor has a quite rapid development in various fields like the city of DKI Jakarta. This causes the UHH of the population of the city of Bogor to be fairly high; the age of 45-49 totaling 70589, age 55-59 totaling 47492, age 60-69 totaling 20560 and age > 75 years totaling 15084 residents in 2017 (Bogor Central Bureau of Statistics, 2018))

The results of the survey showed that many older adults in Bina Bhakti were diagnosed with hypertension, joint disease, heart disease, and diabetes mellitus. Given this background, the Faculty of Nursing at Pelita Harapan University provides care assistance to increase life expectancy among elderly at Bina Bhakti Foundation, Babakan, Setu, Tangerang, by conducting health screening and hypertension gymnastics programs.

2. PROBLEMS AND QUESTION FORMULATION

From the survey at the Bina Bhakti Foundation, Tangerang Regency, the following problems were found:

- a. Two people who help the elderly do not have a health/nursing background.
- b. The polyclinic is managed by one nurse with a nursing diploma education background (Sr. Yovita) and is still attending lectures for the nursing strata.
- c. Routine checks for cholesterol and blood sugar are carried out by one doctor and one nurse at the beginning of month on Tuesday, and the target of the examination is the elderly with chronic diseases related to cholesterol and blood sugar.
- d. Morning exercise and sunbathing is done every morning but only by the elderly who are still physically active and use a wheelchair. The exercise that is carried out is not specifically for the elderly with hypertension, hence the polyclinic hopes that hypertension exercise can be conducted for the elderly, either for those who are still active, using wheelchairs, or those who are on total bed rest.

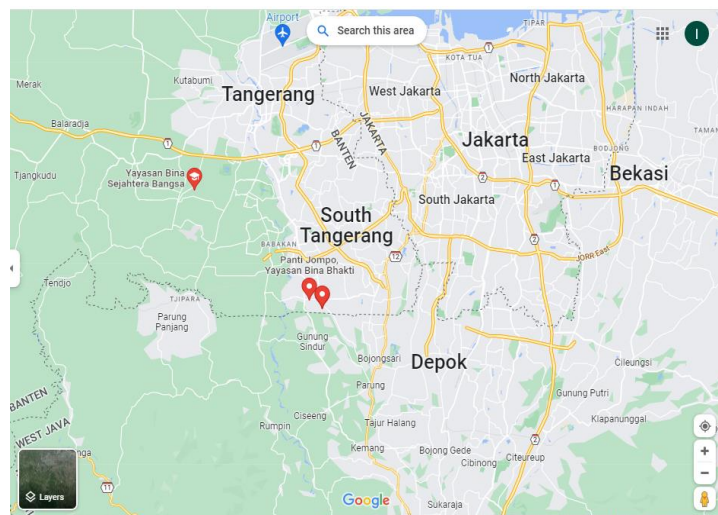


Figure 1. Location Map

3. LITERATURE REVIEW

Hypertension is an increase in systolic blood pressure of at least 140 mmHg or diastolic pressure of at least 90 mmHg (Smeltzer, 2013). Patients with hypertension are not only at high risk of heart disease, but also other diseases such as diseases of the nerves, kidneys, and blood vessels and the higher the blood pressure, the greater the risk (Nurarif & Kusuma, 2016). According to the American Heart Association (AHA) in (Kemenkes RI, 2019), hypertension is a silent killer where the symptoms vary widely in each individual and are almost the same as other diseases. These symptoms are headache or heaviness in the neck, vertigo, heart palpitations, fatigue, blurred vision, ringing in the ears or tinnitus and nosebleeds. Diabetes Mellitus is a syndrome caused by disruption of insulin in the body, causing hyperglycemia accompanied by abnormalities in carbohydrate, fat and protein metabolism (Donnelly R, 2021).

WHO data reveals that of the 972 million people with hypertension in the world, 333 million are in developed countries and the remaining 639 are in developing countries, including Indonesia (Yonata, 2016). The most common disease in the elderly based on Basic Health Research in 2013 was hypertension, with a prevalence of 39.1% at the age of 40-49 years, 49.2% at the age of 50-59 years and 63.8% at the age of 60 years. Based on data on the prevalence of blood pressure measurements in residents aged 18 years in West Java Province in 2016, cities with high hypertension levels include Cirebon with prevalence (17.18%) and Sumedang Regency (9.43%) (RISKESDAS 2018, 2019). Bogor reached (3.2%) patients with hypertension in the elderly (The Health Office of West Java, 2016). The high prevalence of hypertension in the elderly in the Bogor city area can be a concern for health workers to take precautions so that health complications do not occur in the elderly (Eriyanti et al., 2016). Physical activity such as gymnastics is able to encourage the heart to work optimally (Hernawan, 2017). One of the exercises that can be done by the elderly is tera gymnastics (Khasanah & Nurjanah S., 2020). The results of research conducted by (Eriyanti et al., 2016) said that tera exercise was effective in reducing blood pressure in the elderly with hypertension at the Elderly Posyandu, Pabelan Kartasura Village, where treatment I obtained a probability value (p-value) of significant systolic blood pressure of 0.000 and pressure 0.034 diastolic blood (significant). In the second treatment, the probability value of systolic blood pressure was 0.005 (significant) and diastolic blood pressure was 0.004 (significant). Until the IV treatment, the results were significant. The results of the study (Parwati & Mangku, 2013), said that if tera exercise was carried out 3 times a week it could improve cardiovascular fitness in the elderly group at the Wana Seraya Nursing Home, Denpasar, Bali.

Elderly is the final stage of the human life cycle, the unavoidable life process that will be experienced by every individual. At this stage, the individual experiences many setbacks in various functions and abilities that he once had. The changes in question are physical and mental appearance, especially deterioration in various functions and abilities (Surti et al., 2017).

The elderly have several characteristics including: (1) having reached the age of 60 (sixty) years and over; (2) Having needs and problems that range from health to illness, from biopsychosocial to spiritual needs, and from adaptive to maladaptive conditions (Milla et al., 2022). The life expectancy of the world's population is projected to continue to increase and is estimated to reach 77 years in the next 2045-2050 period (United Nations., 2015). Life expectancy (UHH) is one indicator of the success of national development, including in the health sector. The success of development in the health sector is also seen in Indonesia, which increased from 70.7 years in the 2010-2015 period to 71.7 years in the 2015-2020 period (Kemenkes RI, 2014).

Elderly hypertension exercise is structured by always prioritizing the ability of the heart, large muscle movements, and joint flexibility, as well as incorporating as much oxygen as possible. In addition to an increased feeling of well-being and the ability to cope with stress, other benefits of regular cardiac exercise are reduced blood pressure, reduced obesity, reduced frequency at rest and reduced insulin resistance (Ni Putu Sumartini et al., 2019).

4. METHODOLOGY

This community service program was carried out using a continuous approach method with health checks, education, practice, hypertension exercise and evaluation activities. To ensure that each process went well, the team held discussion, practice and assistance to the elderly during gymnastics. In general, the approach process was very helpful for partners to carry out additional health activities at the Bina Bhakti Foundation to increase life expectancy in the elderly. The target of this activity is approximately 115 people, including the older adults and officers in the Bina Bhakti Foundation, Babakan, Setu, Kab. Tangerang.

5. THE RESULT AND DISCUSSION

The community service activity was conducted on September 4, 2019 at Bina Bhakti Foundation, Setu, Tangerang. The committee prepared the tools and consumption needed then headed to Bina Bhakti Foundation at 06.00 WIB and arrived at 07.15. Shortly after coming, the committee prepared a place for the activities and helped the participants to gather in the field. The activity started at 07.40 WIB with a prayer, continued with hypertension gymnastics, health education, health check-ups. It was then closed with a distribution of Goodie Bags and briefing from the head of the community service University of Pelita Harapan. During the programs, the participants seemed enthusiastic in following each activity. All the equipment used is functioning properly with the help of the Bina Bhakti Foundation.

The evaluation was led by the head of community service. In a nutshell, all activities under this program went well. As many as 66 elderly people underwent health checks which included blood pressure, blood sugar, and cholesterol. Meanwhile, 34 other people had undergone an examination the day before this activity was carried out, which was on September 3, 2019. It was found that among 66 respondents, 19 had increased blood pressure, 1 had increased blood sugar and 13 people had a high cholesterol. The evaluation results also show that the elderly, nurses, and employees have understood the ways of doing hypertension exercise and they decide to continue doing it every morning as an additional activity for the elderly.



Figure 2. Blood Sugar, Cholesterol and Uric Acid Checking



Figure 3. Blood Pressure Checking



Figure 4. Hypertension gymnastic

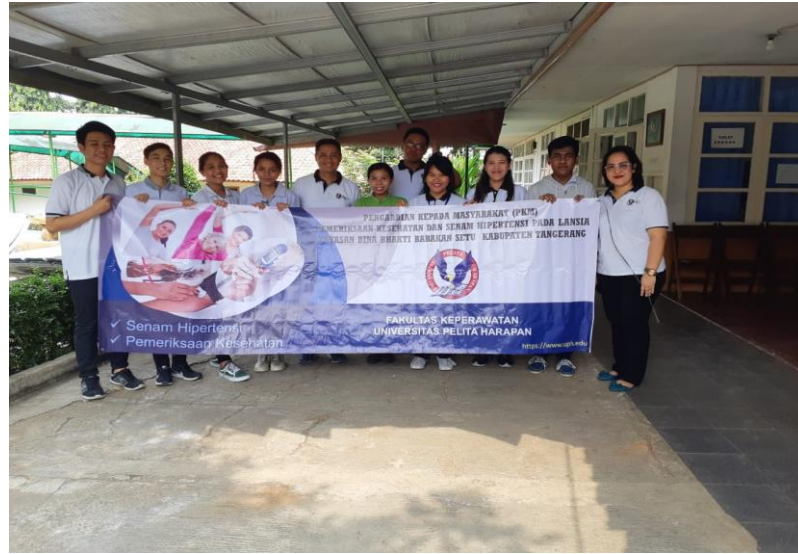


Figure 5. Activity implementation team

Table 1 Demographic distribution of Hypertension gymnastic respondents

Variable	n	%
Gender		
Man	31	46.96
Woman	35	53.04
Total	66	100

Table 1 Most of the respondents participated in hypertension gymnastic was women (53.04%).

Table 2 the average results of blood pressure measurements

Result	n	%
<140/90 mmHg	47	71.21
≥140/80 mmHg	19	28.79
Total	66	100

Table 4.2 the table shows as many as 47 people (71.21) have blood pressure <140/ 90 mmHg.

Table 3 the Average Results of Blood Sugar levels

Result	n	%
<100 mg/dL	24	36.37
100 - 199 mg/dL	41	62.12
≥200 mg/dL	1	1.51
Total	66	100

Table 4.3. as many as 41 respondents (62.12%) got blood sugar levels at 100 - 199 mg/dL.

Table 3 The mean of cholesterol levels

Result	n	%
<200 mg/dL	53	80.33
≥200 mg/dL	13	19.67
Total	66	100

Table 3 as many as 53 respondents (80.33%) got the cholesterol levels <200 mg/dL.

6. CONCLUSION

- 19 respondents (28.79%) still experienced an increase in blood pressure after hypertension exercise.
- 1 respondent (1.51%) experienced an increase in blood sugar level.
- 13 respondents (19.67%) experienced an increase in cholesterol level.
- There were 66 older adults participating in this program. All of them were then considered as a total sample of community service participants until evaluation phase.
- Respondents and nurses of the Bina Bhakti Foundation said that this educational activity and hypertension gymnastic were the first at Bina Bhakti Foundation. They expected that the program could be carried out with different topics.
- The follow-up of this activity is research about the correlation between elderly with high blood pressure and hypertension gymnastics or self-acupressure.

This activity can also be used as initial data for a study on the effect of hypertension gymnastics on reducing blood pressure in hypertensive patients.

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