

The Effect of Non-Pharmacological Therapy used in Indonesian Elderly with Hypertension: A Literature Review

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Abstract. Hypertension is the major risk factor for death as 23.7% out of around 1.7 million deaths in Indonesia were caused by hypertension. The combination of pharmacological and non-pharmacological management can increase the effectiveness of therapy. This study aimed to collect non-pharmacological therapies in Indonesia that can be used as additional therapy to reduce systolic and diastolic blood pressure in hypertensive elderly. The inclusion criteria used were full text journals indexed by SINTA, ISSN or DOI with the topic of non-pharmacological therapy, samples of pre-elderly hypertension, effective therapy to reduce systolic and diastolic blood pressure with a quasi-experimental design, journals using Indonesian and English with a span of time 2015- 2020. Non-pharmacological therapy used in Indonesian elderly and were effective include dietary regulation, increased physical activity, and relaxation therapy. Future researchers can continue their research with more journals and higher evidence.

Keywords: Elderly, Hypertension, Non-Pharmacological Therapy

1 Introduction

Currently the world is experiencing the phenomenon of population aging, along with an increase in the number of elderly people over seven percent. It is proven that in 2019, one in 11 people is elderly and it is estimated that in 2050 it will increase to one in six people who are over 65 years of age [1]. Based on the Central Statistics Agency (BPS), the percentage of the number of elderly people in Indonesia in 2015 reached 8.1% and in 2019 it increased to 9.7% of the total population of 25.9 million[2].

The increasing number of diseases in the elderly is caused by physical changes and physiological decline, including those that occur in the cardiovascular, respiratory, musculoskeletal, integumentary, sensory, gastrointestinal, and genitourinary systems [3]. Elderly often experience health problems, such as diabetes mellitus at 4.8%, stroke by 46.1%, arthritis by 51.9%, and hypertension with 57.6% the highest [4].

Hypertension is a world health problem. The prevalence of hypertension continues to increase, as evidenced by the year 2011-2015 hypertension sufferers in the world amounted to 1 billion and now 1.13 billion. By 2025 it is estimated that there will be 1.5 billion people with hypertension [5]. Increased blood pressure can increase the risk of damage to the heart and blood vessels, as well as large organs such as the brain and kidneys [3]. If this is not handled properly it will result in death. It is proven that deaths due to hypertension constitute 23.7% of 1.7 billion deaths in Indonesia [6].

This requires comprehensive management. Among them are pharmacological therapy and non-pharmacological therapy. The combination of pharmacological and non-pharmacological management is more effective in lowering blood pressure than pharmacological therapy alone. This is in line with a study conducted by 108 respondents, of which 60% used pharmacological and non-pharmacological combination therapy and 15-40% only used pharmacological therapy [7].

Research on non-pharmacological therapy in hypertensive patients has been widely conducted in Indonesia, including dietary potassium therapy such as consuming watermelon [8]. Then physical activity therapy such as elderly exercise [9]. There are also therapies for relaxation, such as slow deep breathing [11], progressive muscle relaxation [12], hypnotherapy [13], cupping [15], and mural [16].

However, not all published research results can be used effectively as adjunct therapy to lower systolic and diastolic blood pressure in elderly with hypertension. Given the importance of non-pharmacological therapy as an adjunct therapy, which can increase the effectiveness of treatment. This is in line with Nurhayati's research (2017), there is a decrease in blood pressure that is more effective when given pharmacological and non-pharmacological therapy, namely in the intervention group compared to the control group which is only given drugs or pharmacological therapy. [17]. Therefore, researchers are interested in conducting a literature review (collecting, identifying, and evaluating) the effect of several effective non-pharmacological therapies on reducing systolic and diastolic blood pressure in hypertensive elderly from various published literature.

2 Method

A comprehensive search using the Google Scholar electronic search tool, Science Direct, Cambridge, and Pubmed identified 13 literature for review. Keywords used to be entered into the search engine "*Terapi Nonfarmakologis AND Penurunan Tekanan Darah AND Hipertensi OR Tekanan Darah Tinggi pada Lansia*" as for the others "Non Pharmacological Therapy AND High Blood Pressure OR Hypertension Elderly Patient".

Inclusion criteria journal indexed SINTA, ISSN or DOI with the topic of non-pharmacological therapy. The sample used is pre-elderly with hypertension. Effective therapy lowers systolic and diastolic blood pressure. The journal uses a quasi-experimental design using Indonesian and English with a time span of 2015-2020. Exclusion criteria journals are not full text, the study does not have a control group, and the interventions are not realistic or harmful.

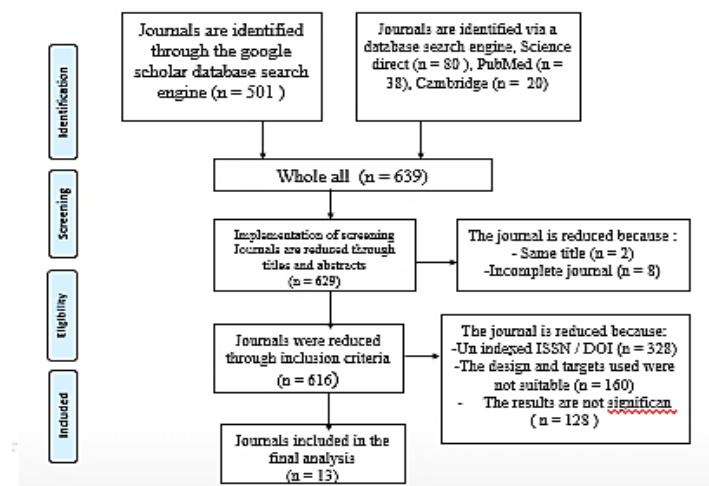


Fig. 1. Summary of literature search and number of articles

Journals were analyzed and evaluated using a transparent evaluation report with a non-randomized design statement (TREND), with a total of 45 points [19].

3 Result

The results showed that there were 13 non-pharmacological studies that proved effective as additional pharmacological therapies to reduce systolic and diastolic blood pressure. The highest decrease in systolic blood pressure was 23.33 mmHg in Elderly Gymnastics. And the highest decrease in diastolic blood pressure was 14.67 watermelon juice, here is the table:

Table 1. The effect of non-pharmacological therapy on blood-pressure in elderly with Hypertension

NO	Author & year	Type of non-pharmacological	Characteristic of samples	Measurement	Outcome
1.	Rina Puspita Sari, Eti Nurhayati Kamil, 2017	Elderly Gymnastics	Samples 72 elderly	Sphygmomanometer and stethoscope	Therapy is carried out 3-5 times a week with a duration of 20-60 minutes of exercise there was a decrease in blood pressure of around 23.33 and 10.22 mmHg.
2.	Rebbi Permata Sari, Ledia Restipa, Marsia Yonira Putri, 2017	Watermelon juice	Samples is 30 elderly	Sphygmomanometer and stethoscope	Watermelon juice therapy for 7 consecutive days reduce 18 mmHg and systolic blood pressure to 14.67 mmHg.

3.	Ilkafah, 2016	Soak feet with warm water	Samples 52 elderly	Sphygmomano meter and stethoscope	Warm water foot bath therapy (39 ⁰ C) were carried out twice a day with a duration of 15 minutes for two weeks. The decrease in systolic blood pressure is 9,12 mmHg and diastolic 9mmHg, with a value of P = 0.001 Therapy is given once a day every morning for six consecutive days so decreased systolic blood pressure to 14mmHg and diastolic 5.4mmHg.
4.	M. Ilham, Armina, and Hasyim Kadri (2019)	Progressive muscle relaxation therapy	Samples 30 elderly	Sphygmomano meter and stethoscope	Therapy is given twice daily for six consecutive days so decreased systolic blood pressure to 14mmHg and diastolic 5.4mmHg.
5.	Mareta Akhriansyah, 2019	Progressive Muscle Relaxation (PMR)	Samples 30 elderly	Sphygmomano meter and stethoscope	The therapy was carried out for three days and was given for 13 minutes 44 seconds in one measurement. There was a decrease in systolic pressure of 16mmHg and diastolic 6.17mmHg
6.	Edi Purnomo, Akbar Nur, Rachmawati Rahim, dan Zulhaini Sartika A. Pulunga, 2020	Musical instruments and hypnosis therapy	Samples 46 elderly	Sphygmomano meter and stethoscope	Deep breathing therapy was carried out for three consecutive days with the result p value 0.000 and 0.016.
7.	Irfan & Cornelia D. Y Nekada	Deep breath therapy	Samples 45 elderly	Sphygmomano meter and stethoscope	Guided imagery therapy was performed for five days systolic 19 mmHg and diastolic 8.69 mmHg, with hypothesis testing there is a significant difference of 0.000
8.	Anita Lufianti and Sutrisno (June, 2019)	Guided imagery therapy	Samples 84 elderly	Sphygmomano meter and stethoscope	There was a decrease in systolic blood pressure of 23 mmHg
9.	Istiqomah and Edi Soesanto (2018)	Music therapy	Samples 21 elderly	Sphygmomano meter and stethoscope	

11.	Kusumoningtyas , Dwinta Nuke and Ratnawati Diah (2018)	Slow stroke back massage therapy	Samples 30 elderly	Sphygmomano meter and stethoscope	and diastolic 10mmHg with a p-value of 0.001 Giving therapy 30 minutes 2 times per week for 3 weeks. The results obtained in the intervention group were 12.66 mmHg and diastolic 9mmHg
11.	Ni Wayan Trisnadewil Theresia Anita Pramesti, I made Sudarman Adiputra	Slow stroke back massage therapy	Samples 30 elderly	Sphygmomano meter and stethoscope	The results showed a decrease in systolic blood pressure of 12.459mmHg and diastolic 7.898mmHg
12.	Herdiman and Rizall Ilbert	Murotal Theraphy	Samples 30 elderly	Sphygmomano meter and stethoscope	Murottal therapy for 15 minutes for 3 days with the results of a reduction in systolic blood pressure of 10.07 mmHg and diastolic 7.60
13.	Yogie Bagus Pratama, Hanny Rasni, and Wantiyah (2018)	Cupping therapy	Samples 22 elderly	Sphygmomano meter and stethoscope	Performed once with a span of 15-30 minutes with a p value of 0.004 (systolic) and 0.046 (diastolic)

4 Discussion

Based on the literature review that the authors found, non-pharmacological therapy plays an important role in increasing the effectiveness of hypertension therapy. Non-pharmacological therapy is therapy that does not cause side effects. Research conducted by 108 respondents, found 60% of them using a combination of pharmacological and non-pharmacological therapy. And 15-40% use pharmacological therapy. This concept was developed by world nursing figure Florence Nightingale.

Researchers divided the non-pharmacology therapy for Indonesian elderly into three groups. Firstly, suitable research is non-pharmacological therapy through elderly exercise, a series of physical activity movements that are simple, systematic and can be carried out by the elderly. Second, the relaxation therapy and the third is diet, restriction or good dietary regulation to maintain and overcome the increase in blood pressure. In this case, according to the research criteria of the researcher is watermelon juice therapy. Adequacy of potassium properly can maintain blood pressure and make positive changes in the blood pressure of people with hypertension.

5 Conclusion

This literature review shows the important role of nonpharmacological therapy which can be used as an adjunct therapy to reduce systolic and diastolic blood pressure in elderly with

hypertension. It is proven by the results of the study that there are differences between the intervention group and the control group. Where the intervention group experienced a decrease in systolic and diastolic blood pressure faster, compared to the control group who was only given pharmacological therapy. In conclusion, the results of the review literature that have been conducted state that non-pharmacological therapy acts as a pharmacological adjunct therapy that can reduce systolic blood pressure ranging from 9 mmHg to 23.33 MmHg and decrease diastolic pressure ranging from 5,4 mmHg to 14.67 MmHg. Researchers suggest that future studies use literature with a higher level of evidence based and more journals.

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