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Effect Of Slow Deep Breathing Therapy On Hypertension Levels In Elderly

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ABSTRACT

Elderly is someone aged 45-60 and above. In old age, a person experiences a degenerative process to be more susceptible to disease, hypertension. Hypertension is a condition in which the blood vessels have persistently raised pressure. One of the complementary therapies to control blood pressure is slow deep breathing therapy. This therapy has through breathing. The purpose of this study was to prove whether there was an effect of slow deep breathing therapy on hypertension levels in the elderly. This research is a Pre Experiment. This study's population was 17 people, and the number of samples was 15 people selected by the Simple Random Sampling method. The statistical test used in this study is the Wilcoxon Test. The study results concluded that there is an effect of slow deep breathing therapy on hypertension level. There is a decrease in blood pressure after being given slow deep breathing exercise therapy.

Keywords: Elderly, Hypertension, Slow Deep Breathing

INTRODUCTION

The elderly are those who are in the age range of 45 to 60 years and over. Elderly is not a disease but is an advanced stage of a life process marked by a decrease in the body's ability to adapt to environmental stresses [1].From the evidence-based, it has known that older people mostly experience hypertension. The older a person is, the greater the risk of developing hypertension [2].

The cause of hypertension in the elderly is due to decreased elasticity of the blood vessels resulting in stiffness, causing blood from the heart to pass through the blood vessels that are narrower than usual. This condition causes an increase in blood pressure or known as hypertension [3]. Someone over 65 years of age increases the risk factors for hypertension incidence [4]

Hypertension increases systemic blood pressure with systolic blood pressure above 140 mmHg and diastolic blood pressure above 90 mmHg [5]. Signs and symptoms of hypertension are increased blood pressure at systolic and diastolic values accompanied by complaints such as dizziness and pain in the head's back. [6]

Hypertension is the organ system's failure, either partially or wholly, such as kidney failure, heart disease, and stroke. Increased blood pressure causes the blood supply to decrease so that systemic perfusion is insufficient. Hypertension is the silent killer (Sigarlak, 2011)

According to data from the World Health Organization (WHO) in 2016, it shows that about 1.13 billion people in the world have hypertension, meaning that 1 in 3 people in the world is diagnosed with hypertension. The number of people with hypertension continues to increase every year [7]

Research by the Ministry of Health Republic of Indonesia (2018) states that the percentage of hypertension cases in 2018 has increased by 1.90%. Most hypertension cases in Indonesia occur in the age group 18 years and over, with a total percentage of 25.80% [8]. According to the health profile of East Java Province (2019), data on hypertension sufferers obtained from the East Java Provincial Health Office, there are 275,000 people with hypertension [9].

Survey data from researchers in Kediri City obtained 352 elderly data. From these data, the number of elderly suffering from hypertension was 180 people. From the data above, it shows that the number of elderly with hypertension is relatively high. Of course, this condition becomes vulnerable and needs the nursing priority. From the data above, it shows that there are still many older people who experience hypertension. Most of them still need treatment from therapy. One of the complementary therapies given to the elderly is slow deep breathing therapy [10].

Slow Deep Breathing is a breathing method where the frequency of breath is below ten times per minute with a long exhalation phase [6]. The combination of deep breathing and slow breathing so that the patient takes deep breaths with a frequency of breaths less than or equal to 10 times per minute during the exercise.

The use and research of slow deep breathing have been researched and published officially. Slow deep breathing therapy with a breathing frequency of 6 times per minute in patients with premature ventricular complexes (PVC) can improve breathing and increase oxygen to improve their heart conditions [11].

The elderly are those who have the age of 45 years and over. Those in the elderly category are susceptible to disease due to a degenerative process [12]. The elderly in the middle age and elderly classification are prone to experiencing hypertension (Yuliantara, 2008). Hypertension is an increase in blood pressure characterized by the rise in systole and diastole value on examination using a sphygmomanometer.[12]

At this age, a person experiences susceptibility to blood viscosity, blood vessel elasticity, and decreased heart function. The condition of the pump, pipe, and the situation that starts to have problems makes the elderly often face the early phase of hypertension [13].

Elderly in the elderly and middle-age level if they have hypertension, most of the incidence rate is hypertension with pre and stage 1 categories. This condition requires treatment with complementary therapy, and it is possible to give satisfactory results in the prevention. on and early management of the hyper ethnic [13]

Complementary handling of the elderly with hypertension uses slow deep breathing exercises. This therapy is a development of the implementation of deep breathing—regulation of breath in the inhalation and exhalation phases. [14]

They were inhaling by taking deep breaths, using the chest muscles and the abdominal muscles. So that in inhalation, the client must feel the stomach lift. Inhalation is carried out slowly, felt until all the stomach and chest contract muscles or lift upward.

They performed approximately 3 seconds until the chest cavity feels full of air. The client must put both hands on the stomach. At the same time, they are feeling the contraction of the wrinkle lightly and slowly. In slow deep breathing, the breath inhaled is not directly exhaled, but there is a phase, namely, holding the breath.

In this condition, the client's mind must be relaxed, calm, and happy because this phase will help clients get relaxation from the body's endorphin expenditure. This phase occurs briefly in less than 3 seconds but has a significant role in therapy success.

The exhalation phase is carried out in the mouth's position, opening slowly and exhaling slowly into the air. Performed slowly, gradually CO_2 in the lungs is removed by mouth. The time in this phase is about 6 minutes.

The client expected to sit in a sitting position and recommend drinking a glass of water in which maximum results. In a relaxed state, the heart and mind are calm and happy. Consumption of appropriate water will help to dilute the blood properly. It makes blood have normal viscosity. Water is the best thinner in the blood. It is safe and does not have significant side effects [15].

Feelings of calm and happiness will help the brain to stimulate the release of endorphins, which stimulate parasympathetic conditions throughout the body so that blood vessels can relax. Endorphins and decreased viscosity from the adequacy of blood water make the RAA (renin-angiotensin-aldosterone) system in the body decrease so that the client's blood pressure can drop [12].

METHODS

This research used was a pre-experimental—one group pre-post-test design. The design in this study is inferential with the kind of collection using a survey. The source of research data is primary data.

The population in this study were all elderly aged 45-60 years suffering from hypertension, in this case, prehypertension and stage 1 hypertension in Kediri. as many as 17 elderly. Sampling in the study using a simple random sample amounted to 15 people. The variable in this study was the level of hypertension before and after slow deep breathing exercise therapy.

Data analysis was using univariate and bivariate. Descriptive Analysis showing to describe the results of the univariate. Analysis displayed in percentage form. Inferential bivariate data analysis was using the Wilcoxon Test.

RESULT

From the study, respondents' demographic data and blood pressure before and after the Brisk walking exercise therapy.

Table 1. Distribution of respondents' demographic frequency: age, education, and gender.

Category		Frequency	Percentage
Age	Pra Eledely (45 - 54)	10	67
	elderly (55-54)	5	33
Educatio	Elementary	5	33
n	Junior	7	47
	Senior high school	3	20
Gender	Male	2	13
	Female	13	87
Job	Working	3	20
Status	Stay At home (jobless)	12	80

The table above shows that most (67%) of the respondents were pre-elderly (45-54 years). Almost half (47%) had a junior high school education. Nearly all (87%) of the respondents have female gender. Almost all respondents in the study (80%) were elderly who were not working and spent more time at home.

The bivariate test found that the level of hypertension before and after giving slow deep breathing exercise (SDBE) therapy. Before being given treatment, there were as many people with Pre-hypertension and seven people with stage 1 hypertension. After being given treatment, their hypertension decreased. As many as six people, his blood pressure became normal—five people with prehypertension and four with Stage 1 Hypertension.

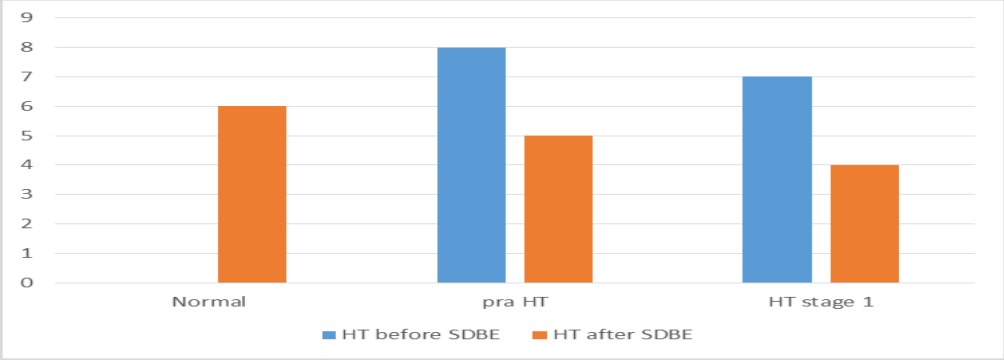

Figure 1. The level of hypertension in SDBE therapy

The Wilcoxon test results obtained a significance value (P-value) of 0.003. It concluded that there is slow deep breathing therapy on the hypertension level in the elderly in Kediri City. Low deep breathing is an action that could be done consciously to regulate breathing profoundly and slowly, which can cause a relaxing effect [16]. Slow deep breathing is a breathing method where the breathing frequency is less than ten times per minute with a long exhalation phase compared to the inhalation phase [6].

Based on Amandeep's (2015) study, slow deep breathing exercises are considered the most useful therapy in reducing hypertensive patients' blood pressure. Recent studies have shown that patients who regularly practice slow deep breathing have stopped taking antihypertensive drugs and have turned to SDB exercises. Various studies regarding the effects of slow deep breathing found a significant decrease in blood pressure after exercise [10].

Slow deep breathing exercises help the elderly train the breathing muscles to make ventilation and diffusion more optimal. Breathing that is made deep and slow helps the client to oxygenate properly so that the oxygen entering the body is sufficient and the CO_2 that comes out is also adequate [16].

Good breathing will help the brain to release endorphins so that the body's reaction becomes more relaxed. Circulating endorphins provide relaxation to all cells. Can repair cell damage and grow new tissue [17].

A slow deep breath is doing with a calm heart that will further help the body relax blood vessels and adequately help the heart work. Clients advised drinking enough water according to the indications where this condition will thin the blood circulating in the vessels [18].

The demographic characteristics of respondents support the effect of slow deep breathing on lowering blood pressure. Respondents at the early age of the elderly allow the body to respond well after being given therapy. Sufficient education and free time made it possible for respondents to attend therapy until the last session.

CONCLUSION

The elderly are prone to hypertension due to degenerative conditions in the blood vessels. A complementary need in the elderly with hypertension to help the quality of life in the elderly. Blood pressure in the elderly with hypertension can decrease with slow deep breathing exercise therapy.

Slo deep breathing is doing by adjusting the breath slowly and deeply. This therapy can increase oxygenation and relaxation in the client's body so that blood pressure can decrease.

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