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TANDAK SAMBAS (SELATASI) ELDERLY EXERCISE AS AN ALTERNATIVE TO CONTROL BLOOD PRESSURE IN ELDERLY WOMEN WITH HYPERTENSION

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ABSTRACT

Elderly exercise helps maintain physical fitness and body freshness by training bone strength, increasing heart function, and reducing the level of free radicals in the body. The Tandak Sambas dance is a traditional dance originating from the Malay tribe in Sambas Regency, West Kalimantan, which still maintains its authenticity to this day. By combining elderly exercise and the Tandak Sambas Dance, we can create a sports program that not only helps maintain the physical health of the elderly but also preserves valuable cultural heritage. The aim of this research is to assess the Tandak Sambas Elderly Exercise (SELATASI) as a viable additional option for treating blood pressure in elderly women with hypertension in the Tekarang Community Health Center working area. This research is included in the quasi-experimental research category with sThe sample in this study was divided into 2 groups, namely the control group and the intervention group, totaling 34 respondents and each group totaling 17 respondents. The results of the Mann-Whitney test used showed a p-value of 0.06, the average systolic blood pressure in the intervention group was 122.12 mmHg after the intervention, while in the control group it was 132.88 mmHg. However, after treatment, the average diastolic blood pressure in the intervention group was 81.59 mmHg compared to 91.53 mmHg in the control group, with a p-value of 0.000. In conclusion, this research will help elderly people with hypertension to receive supportive therapy in addition to the pharmaceutical treatment they are currently undergoing.

Keywords: blood pressure; elderly women; hypertension; tandak sambas elderly exercise

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INTRODUCTION

The aging process is a natural phase experienced by every individual, so the changes that occur during aging, also known as senescence, need to receive immediate attention because they can result in a decrease in a person's work productivity and physical abilities (Lubis et al, 2020). Elderly group (elderly) have a very significant contribution to the dynamics of family and society, and the elderly population continues to grow along with increasing life expectancy. The role of the elderly in the social and family context is very valuable, and their increasing number is a challenge and opportunity for governments and health organizations to provide support and services that suit their needs. According to demographics, population aging has a major impact on how public policies are planned. By 2020 (Central Statistics Agency, 2020), there will be 29 million elderly people in Indonesia, or around 11.4% of the entire population. This shows that as time goes by, the number of elderly people in Indonesia is increasing (Badan Pusat Statistik, 2020). According to Hernawan and Rosyid (2017), elderly people often suffer from a number of degenerative diseases, such as diabetes mellitus, heart disease, cataracts, heart disease, joint disorders and hypertension (Hernawan & Rosyid,

2017).

The danger of these various health problems increases as life expectancy increases. The physical vulnerability of the elderly to various diseases as a result of the body's lower ability to fend off external influences and weakened body homeostatic processes is one of the challenges they often face (Fadoli, 2018). So, paying attention to the welfare and health of the elderly is very important to ensure they remain healthy and empowered. In addition, it is important to remember that efforts to maintain the health of the elderly are not only their individual responsibility, but also the responsibility of their families and society. This requires collective awareness of the importance of adequate care for the elderly in their environment. Next, preventing disease by adopting a healthy lifestyle, such as following a balanced diet and exercising regularly, can be a key factor in reducing the risk of degenerative diseases in the elderly. By championing a healthy lifestyle among the elderly, we can contribute to helping them live their old age with a better quality of life and maintain a higher level of activity. Encouraging the adoption of a balanced diet and regular exercise in the elderly is an effective preventative measure to maintain their health, reduce the risk of disease, and improve overall body function. Thus, promoting a healthy lifestyle must be an important part of the health care of the elderly to ensure that they can enjoy old age well, actively, and free from degenerative diseases that are generally associated with old age. Additionally, educating seniors about the benefits of a healthy lifestyle and providing the support and resources necessary to implement such changes can also help increase their awareness of the importance of maintaining health through good lifestyle choices. In this way, collaboration between medical personnel, family and society can play a role in inspiring and helping elderly people achieve a better quality of life as they age (Fadoli, 2018).

According to Tina et al. (2002), hypertension is a condition characterized by an unusual increase in blood pressure, with systolic pressure above 130 mmHg and diastolic pressure above 80 mmHg (Tina et al, 2021). Sumartini et al (2019) stated that hypertension poses a significant risk for various diseases, including heart disease, kidney failure, diabetes, and stroke (Sumartini et al, 2019). Apart from that, hypertension is also the main cause of death every year. When systolic and diastolic pressures are more than 140 and 90 mmHg respectively, hypertension, also known as high blood pressure, occurs. This is a complicated condition caused by the interaction of several variables. Apart from factors related to lifestyle, aging can also be a trigger for hypertension. Increasing age often influences physiological changes in the body, including increased peripheral resistance and sympathetic nervous system activity (Setiawan, 2014). This means that it is important to understand that hypertension is not just a matter of high blood pressure itself, but also changes in the body that are related to age. Management of hypertension is very important, especially among the elderly, because it can help prevent the development of serious diseases related to high blood pressure. With proper treatment and healthy lifestyle changes, many cases of hypertension can be well controlled, allowing seniors to live healthier and more active lives. Thus, recognizing risk factors such as age in managing hypertension is a key step in maintaining the health of the elderly. Proper treatment and healthy lifestyle changes, such as regular exercise and a balanced diet, are important in keeping blood pressure at a healthy level. Through these efforts, many cases of hypertension in the elderly can be well controlled, allowing them to live healthier, more active lives and free from the risk of serious diseases associated with hypertension. Awareness of the role of aging in hypertension is the first step in realizing effective treatment and prevention of heart disease, kidney failure, diabetes, and stroke associated with this condition (Setiawan, 2014).

According to statistics released by the World Health Organization (WHO) in 2012, around 22% of the world's population has hypertension (WHO, 2012). In contrast, data taken from Basic Health Research in 2018 shows that the prevalence of hypertension in Indonesia in individuals over 18 years of age reached 34.11%. This figure indicates a quite striking increase compared to the prevalence rate of hypertension in 2013, which was only around 25.8%. It should be noted that the prevalence of hypertension also differs between genders, with a higher incidence rate in men (approximately 12.2%) than in women (approximately 15.5%). Hypertension is often a common health problem faced by the elderly population, as stated by Milla Evelianti Saputri et al. in his research in 2023. The findings of research on the socio-economic status and health of the elderly conducted by the National Commission on Elderly in 10 provinces in 2012 also showed that joint disease (52.3%) and hypertension (38.8%) were the two most common diseases. many elderly people suffer from it (Milla et al, 2023). According to Siswati et al (2002), these two diseases are the main causes of disability in the elderly. This data emphasizes the importance of increasing awareness regarding hypertension, especially in the elderly population, as well as the need for more effective prevention and management efforts to reduce the negative impact of this disease on the quality of life of the elderly in Indonesia (Siswati et al, 2021).

Physical activity is a very effective method for improving health and preventing disease in the elderly, but it is unfortunate that only a few women aged 40 to 60 years undertake regular physical activity according to established guidelines (Sternfeld et al, 2011). Aerobic exercise is one efficient strategy to help individuals get better sleep, according to the study "Aerobic Exercise Improves Self-Reported Sleep Quality and Quality of Life in Older Adults with Insomnia." There are many health benefits to aerobic exercise, including better sleep. This is caused by several things, including reduced stress levels caused by organized movement, increased brain oxygenation caused by increased cardiorespiratory activity, and social benefits caused by aerobic exercise (Yustiana, 2014). Regular exercise can also help reduce the risk of a number of health problems, including heart disease, diabetes and osteoporosis, which are often experienced by the elderly. Exercise can maintain flexibility and increase muscle strength, all of which are necessary for aging independently and actively. It is important to raise awareness of the benefits of exercise among women aged 40 to 60 years and encourage them to make physical activity an integral part of their lifestyle. By doing so, we can improve the quality of life and health of seniors, and reduce the risk of age-related diseases (Yustiana, 2014).

The decline in physical and body capacity associated with aging can be slowed by doing aerobic activities, such as exercise. In addition, exercise can improve body fat composition, increase cardiorespiratory endurance, and reduce fasting blood sugar levels. This is because exercise in general can maintain the health of the cardiovascular system (heart and lungs) and the musculoskeletal system (muscles and bones). Elderly Gymnastics, which is included in the General Gymnastics category and has regular movements and is recognized as a safe activity, is one type of exercise. Very good exercise for the elderly. The Indonesian Elderly Fitness Gymnastics (BLI) is one example (DaSilva, 2015). According to Utumo et al. (2012), this exercise has gone through a thorough research process and has been tested over a long period of time to ensure that the movements truly suit the characteristics and movement needs of the elderly. Doing elderly exercises like BLI regularly can provide great benefits in maintain the physical health and mental well-being of the elderly. This can improve their quality of life, maintain body fitness, and slow down the aging process. It is important to educate and encourage older adults to engage in this type of physical activity to support their health as they face the challenges of aging (Utomo et al, 2012).

Elderly exercise is a light and simple activity that is very good for the elderly and does not burden their bodies. This activity helps maintain body health by strengthening bones, improving heart function, and helping to remove too many free radicals from the body (Susanti et al, 2023). Regular physical activity, such as exercise, can also help prevent chronic diseases such as hypertension. The movements used in geriatric exercise have been modified to suit the needs and characteristics of the elderly. The exercise routine is divided into four stages: warm-up, core exercises, transition exercises, and cool-down. All body components, from the upper extremities to the lower extremities, are intended to be able to move during elderly activities. It consists of exercises for the neck, shoulders, back, hips, thighs, and legs as well as movements to improve blood circulation and respiratory health. Elderly activities place a strong emphasis on developing body abilities such as balance, coordination and muscle strength in addition to maintaining physical fitness. This helps seniors live more active, independent and healthier lives. By engaging in senior exercise regularly, they can improve their quality of life as they face the challenges of aging. Education and promotion about the benefits of senior exercise are very important to inspire and involve more seniors in this activity (Susanti et al, 2023).

The Tandak Sambas dance is a form of traditional dance originating from the Malay tribe in Sambas Regency, West Kalimantan, which still maintains its authenticity. This dance originally came from a folk game which in ancient times was played by men. In the game, men pair up with other men and raise their hands to shoulder height. They alternately perform simple movements and steps. The musical instruments used in this dance are also very simple, including a board or piece of bamboo that produces sound. The art of Tandak Sambas dance has developed over time, and its development really depends on the creativity of the dance artists. The movements in this dance do not have specific names or specific meanings. During its development, the Tandak Sambas dance has also involved women in its performance, which has resulted in interesting partner dance collaborations. The Tandak Sambas dance is an important part of cultural heritage and traditional arts that needs to be preserved. This not only reflects the rich culture of the Malay tribe in Sambas, but is also a valuable part of local identity and history. By preserving and caring for these dances, we can ensure that future generations will remain connected to the rich roots of this traditional culture and art. Therefore, efforts to preserve the Tandak Sambas dance are very important to keep this valuable cultural heritage alive (Sirisha, 2015).

Tandak Sambas elderly exercise (SELATASI) is a modification of elderly exercise and the Tandak Sambas dance. One of the main objectives of SELATASI is to inspire and increase the enthusiasm and motivation of elderly women who suffer from hypertension to be active in sports. The existing elderly exercise movements were then changed by adding musical accompaniment and elements of the Tandak Sambas dance, this aims to make exercise activities more interesting and entertaining for the elderly. With this modification, it is hoped that the elderly's interest in SELATASI exercise will increase significantly. Apart from providing physical benefits, this exercise also provides a more enjoyable and memorable experience for the participants. This can be a positive step in improving the quality of life of elderly people with hypertension, by making exercise a more enjoyable and meaningful part of their daily routine. Apart from the physical benefits, SELATASI exercise can also play a role in building community and establishing social relationships among participants. This social exercise activity can help overcome feelings of loneliness and improve the mental well-being of the elderly. Thus, SELATASI is not only about physical health, but also about the emotional and social well-being of its participants. The importance of SELATASI exercise is to ensure that elderly people with hypertension have a fun and effective way to maintain their

health. Through this exercise, it is hoped that they can live more active, healthy and happy lives when facing the aging process. Apart from that, this exercise program also supports the preservation of the Tandak Sambas dance culture, making it an integral part of the welfare of the elderly (Sirisha, 2015). This research is aimed at providing a deeper understanding of the effectiveness of SELATASI exercise as a non-pharmacological therapy in blood pressure management in this population. The findings from this research are expected to provide strong empirical evidence about the benefits of the SELATASI exercise program in improving the quality of life and well-being of elderly women with hypertension in the Tekarang Community Health Center working area in 2023. The data obtained from this research will have the potential to become a basis for updating and developing programs. more effective health programs for the elderly population who are vulnerable to high blood pressure problems. In relation to the information previously provided, the author is interested in conducting research with the title "The Effect of Tandak Sambas Elderly Exercise (SELATASI) as an Alternative in Regulating Blood Pressure in Elderly Women Suffering from Hypertension in the Work Area of the Tekarang Community Health Center in 2023" aimed at investigating the impact of the SELATASI exercise program on blood pressure regulation in a group of elderly women suffering from hypertension.

METHOD

Design

This research is included in the quasi-experimental category using a pre-test and post-test design and has a control group. In the context of this research, the intervention was given to one group of respondents, while the comparison group was not randomly selected to determine the treatment group or control group. This study consisted of two groups selected non-randomly, namely the intervention group and the control group, all of whom underwent a pretest as the first step in the research. Pretest success was measured by the absence of significant differences between the two groups. In the intervention group, respondents received the SELATASI exercise program along with hypertension treatment, while the control group only received hypertension treatment without an exercise program. This research was carried out at the Tekarang Community Health Center, Sambas Regency, and lasted for 6 months, starting from the proposal planning stage to submitting the research results report. In order to measure the impact of the intervention, this study utilized a quasi-experimental design by observing differences before and after the intervention and comparing them with a control group that did not receive the SELATASI exercise program. With this approach, the research seeks to provide a better understanding of the effectiveness of SELATASI exercise in managing blood pressure in elderly women with hypertension.

Sample and sampling technique

Hypertensive elderly women at the Tekarang Community Health Center in Sambas Regency were the research subject population. This research uses a non-probability sampling technique with a purposive sampling strategy to estimate the sample size. A total of 34 respondents were selected, 17 of whom were assigned to the intervention group and 17 to the control group. To ensure that the final sample would be considered representative and relevant for this study, respondents were selected according to pre-established inclusion and exclusion criteria. Thus, sampling was carried out carefully in accordance with pre-established guidelines to ensure the right group of respondents in this study . In this way, research can produce accurate and reliable results. The process of selecting respondents was carried out carefully and carefully in accordance with previously established guidelines. This was done to ensure that the samples taken truly reflected the elderly population with hypertension at the Tekarang Community Health Center, Sambas Regency. With this approach, research can provide more valid and

reliable results, which will be a strong basis for making appropriate conclusions and recommendations regarding the effects of the SELATASI exercise program on blood pressure in hypertensive elderly people. In addition, careful sampling procedures also help ensure that the results of this study can be applied more widely in the health management of elderly people with hypertension in various health care settings.

Instrument

In this study, diastolic and systolic blood pressure measurements were carried out using the OMRON HEM-7130 series digital blood pressure meter, which is the main tool that is very accurate and reliable for measuring blood pressure. This tool has been proven to provide consistent and reliable results in blood pressure measurements. Apart from that, various other supporting equipment was also used, including observation sheets specifically designed to record blood pressure data, questionnaires used to collect additional information about respondents, and standardized SOP (Standard Operating Procedure) for the Tandak Sambas Elderly Gymnastics (SELATASI). The use of standardized SELATATION SOPs is very important in carrying out exercise programs with high consistency. This ensures that each exercise session is performed in the same way, so that results can be compared with high accuracy. All of these tools and documents are an integral part of carrying out this research to ensure that the data produced is accurate, structured and reliable. By using standardized tools and documents, this research can be carried out with high quality and produce valid results. This is an important step in maintaining the integrity and validity of the research so that it can provide a valuable contribution to the understanding of the effect of SELATASI exercise on blood pressure in hypertensive elderly people.

Intervention

Before the intervention started, both groups, namely the control group and the intervention group, underwent systolic and diastolic blood pressure measurements as an initial step. Apart from taking antihypertensive medication in the form of captopril 25 mg once a day, the intervention group was involved in an elderly exercise program and the sambas Tandak dance which involves a series of regular and purposeful movements. On the other hand, the control group only received hypertension medication in the form of captopril 25 mg once a day for one month without an exercise program as part of their intervention. Systolic and diastolic blood pressure measurements were repeated in both groups after the intervention period was completed. The purpose of repeating this measurement is to evaluate the effectiveness of the intervention that has been given and see whether there are significant changes in blood pressure in each group. This study aims to answer whether the SELATASI exercise program and the use of antihypertensive drugs have a real impact on changes in blood pressure in the intervention group and the control group. Thus, blood pressure measurements taken before and after the intervention are an important step in evaluating the effectiveness of both methods.

Data Analysis

In this research, data was collected through various methods, including observation, identification, interviews, and filling in observation sheets. Next, the collected data was analyzed using SPSS statistical software, applying the t-test (Mann-Whitney) as one of the data analysis components. The results of this analysis will be the basis for discussion of the problem statement and can be presented in table form which will help in reaching accurate and relevant research conclusions. In addition, the data collection and analysis process aims to provide clear answers to research questions and evaluate the impact of the intervention given to the intervention group and control group. Therefore, data analysis has a very important role

in this research, because it provides deeper insight into the effects of SELATASI exercise and hypertension treatment on blood pressure in the elderly population. With careful data analysis, it is hoped that this research will be able to provide strong empirical evidence about the benefits of the SELATASI exercise program as an integral part of hypertension management strategies in the elderly population. It is also hoped that the conclusions resulting from this data analysis can provide a solid basis for recommendations and further action in an effort to improve the quality of life of elderly people suffering from hypertension.

Ethical considerations

In consideration of ethics, the researcher has implemented important steps to ensure compliance with ethical principles in this research. After all permits and ethical approval were obtained, the researcher then applied for a research permit to the Tekarang Community Health Center, Sambas Regency to collect data. During the data collection process, researchers have committed to complying with research ethical principles. This includes maintaining the confidentiality of respondents' identities, maintaining data anonymity, and respecting respondents' autonomy. Before starting the research, the researcher obtained valid participation consent from all respondents through the informed consent procedure. Thus, ethical aspects have been properly considered in this research to protect the rights and privacy of respondents and ensure the integrity of the research.

RESULTS

Table 1.
Frequency distribution of respondents in terms of age, occupation, education, history of metabolic disease, family history of disease and Body Mass Index (BMI) based on demographic data

Category	Group				*P value*
	Intervention		Control		
	f	%	f	%	
Maternal age (mean±SD)	53,65±5,862		52,12±4,045		0,122*
Min-max	45-64		46-59		
Work					
IRT	5	29,4	6	35,3	0,847*
This	1	5,9	2	11,8	
Pekebun	1	5,9	1	5,9	
Private	5	29,4	4	23,5	
Honorary	3	17,6	4	23,5	
Civil servants	2	11,8	0	0	
Education					
SD	4	23,5	4	23,5	0,633*
JUNIOR HIGH SCHOOL	3	17,6	5	29,4	
SMA	4	23,5	5	29,4	
Diploma	4	23,5	1	5,9	
Masters	2	11,8	2	11,8	
History of metabolic disease					
There is	6	35,3	7	41,2	0,508*
There isn't any	11	64,7	10	58,8	
Family history of illness					
There is					
There isn't any	5	29,4	3	17,6	0,118*
	12	70,6	14	82,4	
IMT					
Normal	8	47,1	11	64,7	0,649*
Fat	6	35,3	4	23,5	
Obesity	3	17,6	2	11,8	

**Levene statistical homogeneity test*

Table 1 above illustrates the results that the intervention group and control group have the same or homogeneity in terms of age, occupation, education level, history of metabolic disease, family history of disease, and Body Mass Index (BMI), with the same or consistent p value above. 0.05, indicating that there is no significant difference between these groups.

Table 2.
Difference in mean systolic blood pressure before and after treatment in the intervention group and control group

TDS Variable	Mean±SD	
	Intervention	Control
Before intervention	146,76±2,463	146,12±2,147
After intervention	122,12±8,601	132,88±10,833
P value	0,000*	0,000*

**Wilcoxon test **Paired t test*

In the intervention group, there was a statistically significant difference in the average systolic blood pressure in the two time periods (p=0.000). Before and during the intervention, the average systolic blood pressure in the control group changed significantly (p=0.000). Based on these findings, it can be concluded that both the intervention group and the control group experienced interventions that had a major impact on the respondents' systolic blood pressure.

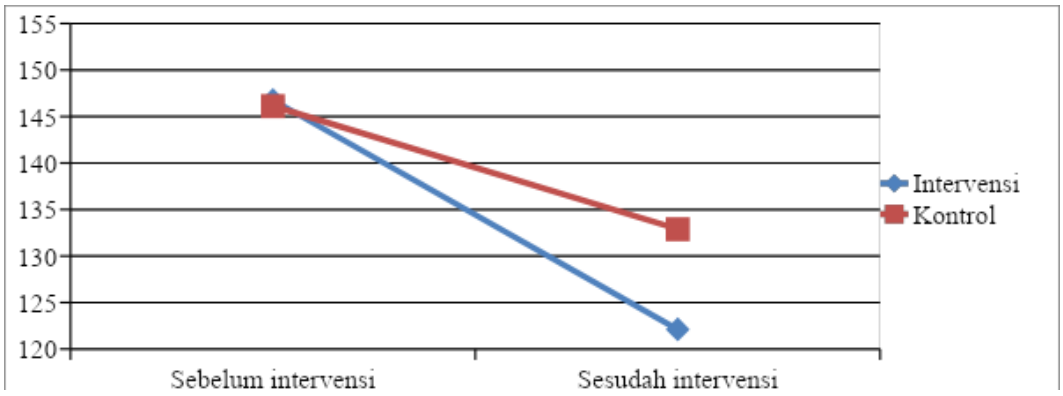

Figure 1. Graph of changes in mean systolic blood pressure in the intervention group and control group

The graph above indicates that there was a significant change in systolic blood pressure before and after treatment in both groups, both the intervention group and the control group.

Table 3.
Analysis of differences in mean systolic blood pressure between the intervention group and the control group

TDS Variable	Mean±SD		*P value*
	Intervention	Control	
Before intervention	146,76±2,463	146,12±2,147	0,234*
After intervention	122,12±8,601	132,88±10,833	0,006*
Delta	24,65±7,921	13,24±10,797	0,003*

**Mann Withney test **Independent t test*

The mean systolic blood pressure in the intervention group after the intervention was 122.12 mmHg, a figure that has surprising clinical value. The delta test results between the two groups showed a significant difference in terms of reduction in systolic blood pressure, with a

p value below 0.05. This confirms that the intervention had a greater effect in reducing systolic blood pressure in the intervention group than in the control group. These findings provide strong support for the benefits of the SELATASI exercise program in treating systolic blood pressure in the elderly population with hypertension. Furthermore, these results highlight the importance of a holistic approach that includes physical activity in the management of blood pressure in the elderly.

Table 4.
Difference in mean diastolic blood pressure before and after treatment in the intervention group and control group

TDD variables	Mean±SD	
	Intervention	Control
Before intervention	95,76±2,107	96,12±1,409
After intervention	81,59±3,874	91,53±3,044
P value	0,000**	0,000**

**Wilcoxon test* ***Paired t test*

A very significant difference in the average diastolic blood pressure level in the intervention group before and after the intervention was shown by data analysis, with a p-value of 0.000. The average diastolic blood pressure in the control group was also significantly different before and after the intervention, with a difference of p=0.000. The success of the intervention in reducing diastolic blood pressure in both study groups is demonstrated by these findings, which support the important findings of this study. Hypertension therapy in the elderly population involves this transformation, which is very important.

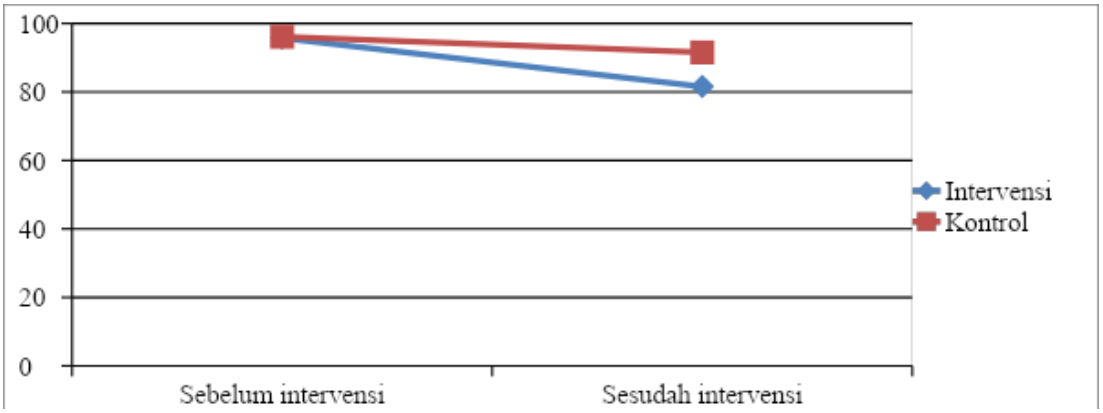

Figure 1. Graph of changes in mean diastolic blood pressure in the intervention group and control group

The graph above shows clearly that diastolic blood pressure changed significantly in the intervention group and control group before and after treatment.

Table 5.
Analysis of differences in mean diastolic blood pressure between the intervention group and the control group

TDD variables	Mean±SD		*P value*
	Intervention	Control	
Before intervention	95,76±2,107	96,12±1,409	0,660*
After intervention	81,59±3,874	91,53±3,044	0,000**
Delta	14,18±5,003	4,59±3,501	0,000**

**Mann Withney test* ***Independent t test*

After the intervention, the average diastolic blood pressure in the intervention group was 81.59 mmHg, and this figure has considerable clinical relevance. The delta test in both groups showed a significant difference between the intervention group and the control group in terms of mean diastolic blood pressure (p 0.05). These results prove that, compared with the control group, the intervention significantly affected diastolic blood pressure in the intervention group.

DISCUSSION

The average systolic blood pressure in the intervention group decreased significantly, in accordance with the research findings that have been presented. Before the intervention, the average systolic blood pressure of the intervention group was 146.76 mmHg; however, after intervention, there was a significant decrease to 122.12 mmHg, indicating a reduction of 24.65 mmHg. On the other hand, the control group also reported a decrease in systolic blood pressure; The baseline mean before intervention was 146.12 mmHg, and after intervention, it decreased to 132.88 mmHg, indicating a decrease of approximately 9.08% from baseline. The mean systolic blood pressure between the intervention group and the control group was significantly different, as was shown by statistical analysis (p = 0.003, 95% CI). These findings provide real support for the theory that the SELATASI exercise program has an almost clinically significant effect on reducing systolic blood pressure. This indicates that the positive impact of the intervention on systolic blood pressure in the intervention group contributed significantly to reducing blood pressure. In managing hypertension in the elderly population, this study has significant consequences, indicating that the SELATASI exercise program can be a viable option in reducing systolic blood pressure in elderly hypertensive patients. This research also makes an important contribution to the development of non-pharmacological therapies to treat hypertension in the elderly, creating the potential to improve their quality of life.

The findings from this study also showed that after receiving intervention in the form of Tandak Sambas exercise, there was a very significant difference in the average diastolic blood pressure between the intervention group and the control group (p=0.000, 95% CI). After the intervention, diastolic blood pressure decreased in both groups, although the decrease in the intervention group was much more significant (14.18 mmHg compared to 4.59 mmHg in the control group). These results indicate that the Tandak Sambas exercise program has a real impact in reducing diastolic blood pressure in the intervention group. This research has important implications in the management of hypertension in the elderly population. These findings provide strong evidence that the Tandak Sambas exercise program can be a very effective alternative in reducing diastolic blood pressure in elderly people with hypertension. This represents a positive development in the development of non-pharmacological therapies that can help control blood pressure and improve the health of elderly people suffering from hypertension. As a result, the Tandak Sambas exercise program can be considered as one of the valuable therapeutic options in the treatment and health management plan of elderly people with hypertension, and further research is needed to understand its mechanisms and long-term benefits.

Hypertension treatment involves two types of therapy, namely pharmacological and non-pharmacological therapy. Pharmacological therapy involves administering antihypertensive drugs, while non-pharmacological therapy includes various methods such as exercise, which can help lower blood pressure. Tandak Sambas elderly exercise is a modification of elderly exercise combined with the traditional Tandak Sambas dance. The Sambas Tandak dance is a typical dance in Sambas Regency, West Kalimantan. This combination of gymnastics and

regional dance is one of the innovations that can be developed by the Sambas people. Tandak elderly exercise is easy to implement because most of the Sambas people have memorized and often dance Tandak. The types of foot steps in the Sambas Tandak exercise are also relatively simple so they are safe, easy and comfortable for elderly participants to carry out. In Tandak Sambas exercise, there are also warm-up movements, core movements and cool-down movements. Warming movements have the benefit of increasing blood circulation, warming tissues, and reducing adhesions between tissues, thereby preventing injury during movement. During core movements, the heart can work optimally. Meanwhile, cooling movements help regulate breathing and stretch the body's muscles. This produces a feeling of relaxation, comfort and calm which can reduce blood pressure. Thus, this exercise process helps the body as a whole, including blood circulation and the well-being of the mind and body.

The findings from this study show that the sambas Tandak exercise has an effect on reducing blood pressure, and although each participant received the same therapy, their blood pressure reactions were different. Several things may be the cause. One of them is the level of physical activity or exercise habits of each participant. The majority of research participants are housewives, who often do household work such as ironing and cleaning dishes or clothes. The body's cells, tissues, and organs may require more energy when they are physically active. The result is an increase in arterial blood pressure due to increased venous return, which in turn increases the amount of blood the heart pumps. However, there are reactions that can decrease respiratory and skeletal muscle activity after an initial period of increased arterial blood pressure, which in turn decreases sympathetic nerve activity. This can then cause a decrease in heart rate, a reduction in the amount of blood the heart pumps, and dilatation of blood vessels and arterioles. All of these modifications cause a decrease in total peripheral resistance and cardiac output, which in turn reduces blood pressure (Andarwulan, 2021). A family history of hypertension can also have an impact on blood pressure lowering results. People who have a family history of hypertension are more likely to get this condition than people who do not (Krisnawati et al, 2018).

Differences in blood pressure reduction in each individual can also be influenced by different levels of stress. Stress can arise because the cerebral cortex activates the hypothalamus, which is the part of the brain that controls two neuroendocrine systems, namely the sympathetic system and the parasympathetic nervous system. The sympathetic nervous system is responsible for activating various organs and smooth muscles that are under its influence, while the parasympathetic nervous system plays a role in calming or calming the body. The hypothalamus stimulates the pituitary gland to send chemical messages to the adrenal glands thereby releasing cortisol and aldosterone into the bloodstream. The combined effect of stress hormones activates the sympathetic system which will cause vasoconstriction thereby increasing blood pressure (Subramaniam, 2015). Based on a literature review conducted by Fadila, elderly exercise has the potential to effectively reduce blood pressure in elderly people who suffer from hypertension. Hypertension conditions are more likely to occur as individuals age. Given the physiological changes associated with aging, the risk of developing hypertension is higher in the elderly population. In this case, geriatric exercise therapy has been proven to be able to reduce blood pressure more effectively than walking therapy. This is caused by elderly exercise movements which can stimulate increased heart activity and help relax blood vessels, which in turn increases blood flow (Fadila, 2022). The findings from this study confirm that elderly exercise can be a very useful option as a form of non-pharmacological therapy in managing blood pressure in the elderly population with hypertension. However, to gain a deeper understanding of the mechanism of action of this exercise and its long-term benefits in managing hypertension in the elderly, further research

may be needed. It is hoped that future research will provide further insight into the effectiveness and relevance of elderly exercise in the treatment and prevention of hypertension in the elderly (Fadila, 2022).

Majid conducted research in 2023 involving 33 elderly participants. The results of the study showed significant changes in systolic and diastolic blood pressure before and after following the hypertension training program for 3 weeks, with a p value = 0.001. Before participating in the hypertension exercise program, the average systolic and diastolic blood pressure was 160 mmHg and 90 mmHg respectively. After undergoing a hypertension exercise program, the average systolic blood pressure decreased to 145 mmHg, and the average diastolic blood pressure decreased to 85 mmHg (Majid et al., 2023). Then, in 2019, Sumartini also conducted a similar study involving older hypertension patients. Before starting the hypertension exercise program, the average systolic and diastolic blood pressure was 151.80 mmHg and 94.73 mmHg. The majority of the 23 respondents initially fell into the hypertension stage I category. However, after participating in the hypertension exercise program, the average systolic and diastolic blood pressure decreased to 137.13 and 90.27 mmHg. Most of the total of 22 respondents shifted to the pre-hypertension category (Sumartini et al., 2019). Thus, these two studies suggest that hypertensive exercise has the potential to lower blood pressure in older hypertensive patients. These findings support the therapeutic benefits of hypertension exercise in the treatment of elderly people with hypertension. For a deeper understanding of the mechanisms and long-term benefits of hypertension exercise treatment, further research is needed (Majid, et al 2023).

In the pre-elderly and elderly, there is a tendency to increase the risk of hypertension with increasing age. Therefore, efforts need to be made to prevent increases in blood pressure through a healthy lifestyle. A healthy lifestyle includes aspects such as a balanced diet, getting enough rest, and one of them is having an exercise routine. One form of exercise that can be used as an alternative is the Tandak Sambas exercise, which combines dance movements with gymnastics, creating a useful physical activity. Tandak Sambas gymnastics combines elements of dance and gymnastics movements, which not only provide good muscle training, but can also increase feelings of happiness by stimulating the release of endorphins in the body. This exercise activity will also increase the body's need for oxygen, which in turn will increase heart rate and the volume of blood pumped by the heart. This can help increase cardiac output and increase the volume of blood pumped. Apart from that, the release of endorphins produced by Tandak Sambas exercise can also help reduce stress levels, which in turn can help keep blood pressure stable. Thus, Tandak Sambas exercise is a good choice as part of a healthy lifestyle to prevent hypertension in the pre-elderly and elderly. This exercise is not only physically beneficial but also has a positive impact on mental well-being, all of which contributes to keeping blood pressure within a healthy range.

CONCLUSION

Based on the results of this research, it can be concluded that the Tandak Sambas Elderly Exercise (SELATASI) has great potential as a successful alternative in regulating blood pressure in elderly women who suffer from hypertension. These findings indicate that, apart from the routine use of drug therapy, Tandak Sambas exercise can significantly improve blood pressure control in elderly people with hypertension. Therefore, elderly exercise is an effective solution to help elderly women with hypertension live healthier lives by lowering their blood pressure. This research provides a strong basis for considering Tandak Sambas exercise as a valuable therapeutic option in the treatment plan and health management of elderly people with hypertension. It is important to conduct further research to better

understand the mechanisms and long-term benefits of Tandak Sambas exercise in managing hypertension in the elderly. The results of this study also emphasize the importance of a holistic approach that includes a healthy lifestyle and physical activity as an integral part of health care for elderly people with hypertension. All this must be realized through close collaboration between health professionals and patients to achieve optimal blood pressure management. Thus, this effort can improve the quality of life and welfare of elderly people suffering from hypertension. Future research could focus on implementing the SELATASI exercise program on a wider scale, as well as deepening understanding of its impact on various aspects of elderly health, such as quality of life, physical activity levels, and complications of hypertension-related diseases. With further research, we can continue to improve our understanding of the important role of geriatric exercise in the management of hypertension in the elderly population.

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