Nursing Care For Hypertension Patients Using Brisk Walking Exercise To Reduction Blood Pressure In The Elderly At PSLU Tresna Werdha Natar

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ABSTRACT

Aging is considered as a natural process that cannot be avoided, walked continuously and sustainably. The more increase amount resident age carry on age will be influential to decline condition physique. Decline condition physique this is what brings to condition vulnerable from various type diseases, among others disease hypertension. Hypertension is a disease which is the most common and most common cardiovascular bear public. Hypertension is something circumstances where somebody experience blood pressure above normal which results to increase number of pain (morbidity) and numbers of death (mortality). Aim of this study is to know and analyse blood pressure in hypertension patients before and after given brisk walking exercise. This study used quantitative method with case study approach. The subject of this study is 2 elderly men. The result show that the average blood pressure systolic before intervention on respondent I (155 mmHg) and respondent II (140.66 mmHg) and after intervention average pressure systolic was respondent I (149 mmHg) and respondent II (136.333 mmHg). While pressure diastolic before intervention on respondent I (95 mmHg) and respondent II (86.666 mmHg) and after intervention pressure diastolic was respondent I (92.666 mmHg) and respondent II (86.333). Conclusions of the study this application therapy brisk walking exercise reduces blood pressure in elderly people who experience it hypertension at PSLU Tresna Werdha Natar.

Keywords: Brisk Walking Exercise Therapy, Elderly, Hypertension

INTRODUCTION

The ageing process is a cycle characterised by the decline in various functions of the body's organs due to increasing age (Sudewo, 2009). Aging is considered to be a natural process that cannot be avoided and continues continuously and uninterruptedly (Maryam, 2011). Thus, the increasing number of elderly people will have an impact on the decline in physical condition.

The decline in the physical condition of the elderly undoubtedly leads to conditions that make them susceptible to various types of disease. The problems often experienced by the elderly are the vulnerability of the elderly's physical condition to various diseases due to the reduced resistance of the body to external influences and the reduced efficiency of homeostatic mechanisms, namely the cardiovascular system (Tresnawan, 2023). Health problems that arise from the ageing process and often occur in the cardiovascular system, which is a degenerative process, including hypertension.

Hypertension is a chronic condition that is more prevalent in the elderly and is also one of the risk factors with the greatest impact on the incidence of heart and vascular disease (Pikir et al., 2015). Often, hypertension has no symptoms, so it is only recognised when it has caused organ damage such as impaired heart function or stroke (Ministry of Health of the Republic of Indonesia, 2018). as much as 13.4% (Ministry of Health of the Republic of Indonesia, 2018).

The World Health Organization (WHO) reports that approximately 1.13 billion people in the world suffer from hypertension, which means that 1 in 3 people in the world is diagnosed with hypertension. In Indonesia, the number of people with high blood pressure was estimated at 63,309,620 and the number of people dying from high blood pressure was 427,218. High blood pressure occurred in people aged 31-44 years (31.6%), 45-54 years (45.3%) and 55-64 years (55.2%). Among the 34 provinces in Indonesia, the highest rate is found in the province of South Kalimantan with 44.13%, while the lowest rate is found in the province of Papua with 22.22%. On the other hand, Lampung Province (Ministry of Health, 2018) ranks 16th with a figure of 29.94%.

The high number of complications of hypertension is partly due to people not understanding how to treat hypertension. The treatment and control of high blood pressure must be carried out by means of pharmacological and non-pharmacological methods, taking into account the complications of each chosen measure (Julistyanissa & Chanif, 2022).

Pharmacological treatment is the use of medication, while non-pharmacological treatment is the adjustment of diet, physical activity and health monitoring (Astuti et al, 2020). Nonpharmacological treatment is often an alternative which can control blood pressure. Brisk walking is an example of a non-pharmacological treatment that focuses on physical activity. Briskly walking, a type of physical activity similar to aerobic exercise, can help lower blood pressure when performed on a regular basis (Kowalski in Astuti et al., 2020).

Based on the above, the investigator is interested in the nursing care of patients with high blood pressure using the exercise to reduce blood pressure in older people at the PSLU Tresna Werdha Natar.

METHOD

Quantitative methods with a case study approach using pre-test and post-test techniques were used in the research design of this study. Purposive sampling was used to select 2 elderly people from PSLU Tresna Werdha Natar as research subjects. Inclusion criteria for the sample were willingness to be a respondent, age 60-74 years, clients with a history of hypertension, clients on hypertension medication, no musculoskeletal disorders, able to perform independent activities, and non-smokers. Blood pressure was measured before and after brisk walking. This therapy is performed 3 consecutive days per week. The instruments used in this research were an informed consent sheet, an observation sheet, a standard operating procedure sheet for the implementation of brisk walking exercise.

RESULTS

Data from blood pressure measurements in older people with hypertension before brisk walking exercise therapy in 2 participants from 1 to 3 April 2024, when the pre-test took place, with findings as follows:

Table 1. Blood pressure measurements before brisk walking exercise therapy (n=2)

Number	Name	Day 1		Day 2		Day 3	
		Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic
1	Mr.S	160	100	155	95	150	90
2	Mr. D	145	90	140	90	137	80

The results were obtained before brisk walking for 3 consecutive days per week, as shown in Table 1. On day 1, Mr S's systolic bloodpressure was 160mmHg and his diastolic bloodpressure was 100mmHg. On day 2, Mr S's systolic bloodpressure was 155mmHg and his diastolic bloodpressure was 95mmHg.

The following results were obtained from blood pressure measurements taken after giving brisk walking therapy to 2 subjects:

Table 2. Blood pressure measurements before brisk walking exercise therapy (n=2)

Number	Name	Day 1		Day 2		Day 3	
		Systolic	Diastolic	Systolic	Diastolic	Systolic	Diastolic
1	Mr.S	157	98	150	90	140	90
2	Mr. D	140	90	139	89	130	80

Based on Table 2, the measurement results were obtained after 3 consecutive days of brisk walking per week. On day 1, Mr. S's systolic blood pressure was 157 mm Hg and his diastolic blood pressure was 98 mm Hg and Mr. D's systolic blood pressure was 140 mm Hg and his diastolic blood pressure was 90 mm Hg. On day 2, Mr. S's systolic BP was 150 mm Hg with diastolic BP of 90 mm Hg and Mr. D's systolic BP was 139 mm Hg with diastolic BP of 89 mm Hg. On day 3, Mr S's systolic blood pressure was 140 mm Hg and his diastolic blood pressure was 90 mm Hg and Mr D's was 130 mm Hg and his diastolic blood pressure was 80 mm Hg.

DISCUSSION

Respondent Characteristics

The description of the characteristics of respondents based on age is 60 years and over based on this research. The age factor is one of the biological factors that cannot be avoided. Based on research (Nanga Bura et al., 2023), hypertension is theoretically associated with increasing age. The age at which hypertension tends to occur is usually between 31 and 55. The incidence of hypertension begins to rise as people reach middle age and can even continue to rise up to the age of 60 if not treated as early as possible. This is an effect of the degeneration that takes place in people as they age. The older a person gets, the more the elasticity of the

blood vessels decreases, so the blood pressure of an elderly person increases and exceeds normal limits.

According to the description of the characteristics of the 2 respondents in this study, their gender was male. Research (Cortas in Nanga Bura et al., 2023) indicates that the prevalence of hypertension in men is the same as in women. However, before the menopause, women have a protection against cardiovascular disease, and women who have not had the menopause have no protection. Pre-menopausal women are protected by the hormone oestrogen, which plays a role in increasing high-density lipoprotein (HDL) cholesterol levels. High levels of HDL cholesterol are a protective factor in the prevention of atherosclerosis. The protective effect of oestrogen is thought to explain the presence of immunity in premenopausal women. In premenopausal women, the hormone oestrogen gradually begins to protect the blood vessels from damage. This process continues, although the amount of oestrogen naturally changes with age, generally starting in women between the ages of 45 and 55. After the age of 65, the incidence of high blood pressure in women is higher than in men, due to hormonal factors.

Based on the characteristics of 2 respondents, the respondents were classified as having completed primary and secondary education. According to (Sutrisno et al., 2020), the higher a person's level of education, the more knowledge a person has about high blood pressure and its dangers, and the greater a person's involvement in the control of high blood pressure. However, education alone cannot fully control high blood pressure unless it is accompanied by an awareness of the importance of blood pressure control and real action on a daily basis.

According to the description of the characteristics of the 2 respondents in this study, they were unemployed/not in employment. According to (Nanga Bura et al., 2023), work has a close relationship with physical activity and physical stress. A high level of work pressure that is continuous and that lasts for a long period of time and that is supported by an unhealthy lifestyle can have an effect on the increase in blood pressure. One theory suggests that when people aren't working, they automatically exercise less, and this may increase their blood pressure.

While interviewing the participants of this study, the majority of the older people interviewed had experienced the loss of a partner, loss of employment and loss of social status. (Wells in Ramadi et al., 2017) explains that the abnormal or excessive psychological state of a person

can be a trigger for the emergence of high blood pressure. A person's immune system is strongly affected by any negative emotion. Physical and psychological health can deteriorate due to negative emotions

Blood pressure before being given brisk walking exercise

Based on data from 2 elderly respondents at UPTD Tresna Wredha Natar before the brisk walking exercise was performed, it was found that on the first day, 1 April 2024, Mr S 80x/minute and Mr D 90x/minute. On the second day, 2 April 2024, Mr S walked 85x/minute and Mr D walked 82x/minute. The third day, 3 April 2024, Mr S 81x/minute and Mr D 90x/minute with the maximum pulse rate of Mr D aged 63 being 157x/minute. In line with research by (Mansjoer, 2014) that the safe threshold for older people to be allowed to exercise can be seen by determining the maximum pulse rate. The formula is 220 - current age. A safe threshold is reached when you exercise to reach between 65 and 80 per cent of your maximum heart rate, which is known as the target zone. According to the calculation of the maximum pulse rate of the two interviewees, the safe threshold for older people to do sports is between 65 and 80 % of the maximum pulse rate of 147 beats per minute and between 102 and 125 beats per minute. We must therefore ensure that the 2 respondents do not exceed the safe threshold of 65-80% of their maximum heart rate during brisk walking.

In addition to monitoring the maximum pulse rate to ensure that it is safe for the elderly to do brisk walking exercises. Blood pressure measurements were carried out on elderly people with hypertension on 3 consecutive days from 1 to 3 April 2024 on 2 respondents. In the pre-test, 2 respondents before the brisk walking exercise therapy were carried out, the measurement results were obtained, namely on day 1, Mr. On day 2, Mr. S's systolic blood pressure was 155 mmHg with a diastolic of 95 mmHg and Mr. On day 3, Mr. S's systolic blood pressure was 155 mmHg with a diastolic of 95 mmHg. The results of the blood pressure measurements before the brisk walking exercise were a mean systolic blood pressure of 155 mm Hg with a diastolic of 95 mm Hg for Mr S and a mean systolic blood pressure of 140.666 mm Hg with a diastolic of 86.666 mm Hg for Mrs D.

Several things, such as age, medical history and activity, may influence the participants' high blood pressure. Based on the assumptions of the researchers and interviews with the participants. An increase in blood pressure is caused by a lack of physical activity in the people affected. People with hypertension still find it difficult to do physical activities such as

sport. This is, of course, consistent with high blood pressure being influenced by unhealthy living, such as smoking, eating fatty foods, stress and lack of physical activity (Fadhli, 2018).

Regular exercise is very important as this can lower blood pressure in people with high blood pressure by reducing vascular stiffening and increasing heart and lung endurance (Widyanto and Triwibowo in Putriastuti, 2017). Regular exercise can help the heart work because it lowers the heart rate but increases the force with which the heart pumps blood. One type of exercise that can be done is brisk walking.

Research conducted by (Julistyanissa & Chanif, 20-22) also explains that brisk walking exercise has many advantages in effectively controlling blood pressure by increasing the heart rate to the maximum possible capacity, increasing muscle contractility, increasing oxygen levels in the tissues, and helping the process of glycogenolysis, thus reducing the formation of plaques or vascular obstructions.

Blood pressure after being given brisk walking exercise

Based on data obtained on the first day of April 2024 from 2 older respondents in the UPTD, after brisk walking, Mr. S 85 times per minute and Mr. D 95 times per minute. The second day, 2 April 2024, Mr S 87x/minute and Mr D 99x/minute. The third day, 3 April 2024, Mr S 85x/minute and Mr D 101x/minute. The results of the measurement data show that the client's maximum pulse rate is not above the safe threshold in accordance with the research of (Mansjoer, 2014). According to the calculation of the maximum pulse rate of the two interviewees, the safe threshold for older people to do sports is between 65 and 80% of the maximum pulse rate of 147 beats per minute and between 102 and 125 beats per minute. These results suggest that brisk walking is safe for older people.

After measuring the pulse rates of the two participants. Blood pressure was then measured in 2 participants. The results were obtained after 3 consecutive days of brisk walking. On the first day, Mr S's systolic blood pressure was 157 mmHg with a diastolic of 98 mmHg and on the second day, Mr S's systolic blood pressure was 150 mmHg with a diastolic of 90 mmHg and Mr .D's was 130 mmHg with a diastolic of 80 mmHg. From the results of the blood pressure readings, the mean systolic blood pressure in Mr. S was 155 mm Hg with a diastolic of 95 mm Hg and the mean systolic blood pressure in Mr. D was 140.666 mm Hg with a diastolic of 86.666 mm Hg, then the mean systolic blood pressure after the brisk walking exercise for Mr. S was 149 mm Hg with a diastolic of 92.666 mm Hg and the systolic blood

pressure for Mr. D was 136.333 mm Hg with a diastolic of 86.333 mm Hg. This proves that in elderly people with a history of hypertension, brisk walking exercise therapy is effective in reducing blood pressure. According to research by (Hermansyah & Halalah, 2022), regular brisk walking exercise can cause a decrease in peripheral resistance when the muscles contract during exercise. This exercise can increase blood flow up to 30 times more quickly as the capillaries open up 10 to 100 times more when you move or walk. This process causes the vessels to dilate, which then helps to reduce the distance between the diffusion of oxygen and other metabolites, so that it can improve the functioning of the cells, as the oxygen is more quickly delivered to the vessels to the cells to carry out each function (Julistyanissa & Chanif, 2022). This is what leads to a reduction in blood pressure with regular brisk walking.

The brisk walking exercise therapy intervention used in this study was 1 km/15 minutes for 30 minutes, starting with a 5-minute warm-up, followed by a 5-minute rest period, and ending with a 5-minute cool-down, performed on 3 consecutive days within 1 week. The duration and speed of this exercise were determined by the investigators on the basis of the age of the subjects, which could have side effects from this exercise due to the decline in physiology that occurs with age. Setting exercise levels for older people is not the same as setting exercise levels for younger adults. Most people aged 65 and over are advised to reduce strenuous activity. Exercise or physical activity for older people needs to be tailored to the ability and condition of the individual.

The results showed that brisk walking exercise therapy was effective in lowering blood pressure in 2 elderly respondents at PSLU Tresna Werdha Natar. Brisk walking needs to be used in conjunction with other treatments, including antihypertensive medication, a low-salt diet, a low-cholesterol diet, smoking cessation, and stress management techniques (Andriati & Ikhsan, 2021).

The following conclusions can be drawn from the results of the research and discussion, Before giving brisk walking exercise therapy to elderly people with hypertension at PSLU Tresna Werdha Natar, the results of measurements of brisk walking exercise therapy measured using an observation sheet showed that the average systolic blood pressure in Mr S is 155 mmHg with diastolic 95 mmHg and Mr D The average systolic blood pressure is 140.666 mmHg with diastolic 86.666 mmHg.

After giving brisk walking exercise therapy on elderly people with hypertension at the Advanced Social Services UPTD Tresna Werdha's age with the results of brisk walking exercise therapy measured using an observation sheet shows the average systolic blood pressure in Mr S became 149 mmHg with diastolic blood pressure of 92.666 mmHg and systolic blood pressure in Mr D 136.333 mmHg with diastolic 86.333 mmHg.

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