

BRISK WALKING EXERCISE AS A NURSING INTERVENTION IN LOWERING BLOOD PRESSURE IN HYPERTENSIVE ELDERLY

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ABSTRACT

Elderly hypertension is one of the diseases that are often suffered by the elderly which is influenced by several factors. One of the influencing factors is the aging process. Lack of physical activity carried out regularly by the elderly triggers an increase in blood pressure. Brisk walking exercise is a form of aerobic exercise with moderate exercise capacity which can be done in elderly with hypertension by using brisk walking technique for 15-30 minutes. Is there any effect of Brisk Walking Exercise on blood pressure of elderly with hypertension. This research is a quantitative research using a pre-experimental research type One Group Pretest-Posttest Design. Data analysis in this study uses the Wilcoxon statistical test. Based on bivariate analysis using the Wilcoxon test, a *p-value* of 0.000 was obtained, it can be concluded that doing Brisk Walking Exercises can reduce blood pressure in hypertensive elderly. There is an effect of brisk walking exercise on blood pressure in the elderly with hypertension in Palur Village, Sukoharjo Regency

Keywords: Elderly, Hypertension, Brisk Walking Exercise

BACKGROUND

Hypertension or high blood pressure is a condition when the blood pressure in the blood vessels continues to increase chronically. The higher the pressure, the harder it is for the heart to pump (AHA, 2017). According to data from the World Health Organization (WHO) in 2011, one billion people in the world suffer from hypertension and two-thirds of them are in developing countries with low-moderate income. Hypertension in the elderly is often caused by degenerative factors or aging. The process by which the elderly will experience progressive changes due to changes that can result in organ dysfunction and failure of certain organs or other body systems. Anatomical and physiological systems that experience a decrease with age, cause metabolic processes in the body to decrease and if there is no balance between increased physical activity and a decrease in the amount of food consumption which will cause excess calories to be converted into fat which can cause the elderly to easily experience obesity or obesity (Adriani (2012). Hypertension in the elderly can also be caused by a decrease in metabolic processes in the body of the elderly. Many factors influence the incidence of hypertension in the elderly, including: 1) the age factor, someone who is over 40 years old has 11 times the risk of developing hypertension compared to those who are less than 40 years old. 2) Exercise habits, elderly who do not exercise regularly have a 44 times risk of developing hypertension. 3) alcohol consumption, someone who consumes excess alcohol will be 6 times at risk of developing hypertension. 4) smoking habits, someone who has a smoking habit will be 8 times at high risk of experiencing hypertension compared to those who do not smoke (Anggara, 2012).

The prevalence of hypertension over the age of 18 in Sukoharjo Regency is 12.7% (Riskseddas, 2018). Hypertension is a major challenge in the Indonesian health care system, uncontrolled hypertension can cause damage to the kidneys (kidney failure), heart (heart disease), and brain (causing stroke). Hypertension complications cause

around 9.4 deaths worldwide each year. Hypertension causes at least 45% of deaths due to heart disease and 51% of deaths due to stroke (Kemenkes, 2018). Efforts to control blood pressure The National Heart, Lung and Blood Institute from the United States Department of Health and Human Services through the Seventh Report of the Joint National Committee recommends several lifestyle changes in preventing and treating high blood pressure in addition to pharmacological therapy including changes in diet by maintain a healthy diet and reduce salt consumption, undergo an anti-hypertensive medication program, maintain a normal weight, stop smoking, limit alcohol consumption and regular physical activity.

One of the physical activities that can be done is brisk walking exercise. Brisk walking exercise as a form of aerobic exercise is a form of moderate activity exercise for hypertensive patients using a brisk walking technique for 20-30 minutes with an average speed of 4-6 km/hour. The advantage is that this exercise is effective enough to increase the maximum capacity of the heart rate, stimulate muscle contraction, breakdown of glycogen and increase tissue oxygen. This exercise can also reduce plaque formation through increased use of fat and increased use of glucose. Brisk walking exercise/brisk walking has an impact on reducing the risk of mortality and morbidity in hypertensive patients through the mechanism of burning calories, maintaining body weight, helping the body relax and increasing beta endorphins which can reduce stress as well as the safety level of applying brisk walking exercise at all age levels of hypertensive patients. Kowalski (2010).

According to the study, there was a significant difference in systolic and diastolic blood pressure in the intervention group before and after brisk walking (Sukarmin, 2013). In the results of the study, the decrease in systolic pressure due to the DASHI-J diet and brisk walking was greater than the decrease in diastolic pressure in all groups. Factors that affect the decrease in systolic pressure are thought to be mostly caused by a decrease in cardiac output, while a decrease in diastolic pressure is caused by a decrease in peripheral resistance (Kamal, et.al 2013). The results of a preliminary study conducted on 8 people in Palur had a history of hypertension with an average blood pressure between 140/100 mmHg to 160/110 mmHg. Respondents said that so far they had been lacking in physical activity and only taking hypertension medication. Some respondents said that they rarely control blood pressure, only at certain times if they are in an unhealthy condition they go to a health service. This study aims to determine the effect of brisk walking exercise on blood pressure in elderly people with hypertension in Palur Village, Sukoharjo Regency

METHODS

This research is a quantitative study using the type of pre-experimental research One Group Pretest-Posttest Design. In this study, blood pressure was measured before and after the intervention (brisk walking exercise) at the time of the study and it was hoped that there would be an effect on the subject after the intervention. Inclusion criteria in this study were the elderly with systolic pressure > 140 mmHg and diastolic > 100 mmHg, upper and lower limbs in normal condition. Exclusion criteria in this study were hypertensive patients with systolic pressure > 200 mmHg. The sample in this study is a number of 25 respondents with a sampling technique using purposive sampling Data analysis in this study used the Wilcoxon statistical test

RESULTS

| Blood Pressure | N | Mean | Std |
|----------------|----|-------|------|
| Systole | 25 | 162,3 | 11,8 |
| Diastole | 25 | 106,8 | 7,13 |

The results of the study in table 1 show that the average systolic blood pressure before the Brisk Walking Exercise was 162.3 mmHg with a standard deviation of 11.8 with the highest blood pressure being 180 mmHg and the lowest

being 150 mmHg. The average diastolic blood pressure before the Brisk Walking Exercise was 106.8 mmHg standard deviation of 7.13 with the highest blood pressure being 125 mmHg and the lowest being 100 mmHg.

Blood pressure Frequency distribution of blood pressure after Brisk Walking Exercise

| Blood Pressure | N | Mean | Std |
|----------------|----|-------|------|
| Systole | 25 | 143,3 | 7,97 |
| Diastole | 25 | 93,4 | 6,02 |

The results of the study in table 1 show that the average systolic blood pressure after the Brisk Walking Exercise was 143.3 mmHg with a standard deviation of 7.97 with the highest blood pressure being 150 mmHg and the lowest being 130 mmHg. The average diastolic blood pressure before the Brisk Walking Exercise was 93.4 mmHg with a standard deviation of 6.02 with the highest blood pressure being 100 mmHg and the lowest being 90 mmHg.

Effect of Brisk Walking Exercise on blood pressure in elderly hypertensive

| Blood Pressure | | Mean | <i>p-value</i> |
|----------------|--------|-------|----------------|
| Systole | Before | 162,3 | 0.000 |
| | After | 143,3 | |
| Variable | | Mean | <i>p-value</i> |
| Diastole | Before | 106,8 | 0.000 |
| | After | 93,4 | |

The results of statistical analysis using the Wilcoxon test showed that there was an effect of Brisk Walking Exercise on blood pressure in hypertensive patients with a *p-value* significance level of 0.000. These statistical results were carried out on systolic and diastolic pressure before and after the brisk walking exercise intervention.

DISCUSSION

Hypertension is a disease that affects many Indonesian people. Hypertension also affects all ages, both young and old. The results of systolic and diastolic blood pressure measurements before being given the Brisk Walking Exercise intervention showed that all respondents had high blood pressure and had a history of hypertension. This condition is caused by an irregular lifestyle, often staying up late and unhealthy eating patterns. Food is very influential on blood pressure. Research by Andamsari et al (2015) The conclusion of this research is even though there is no relationship between intake of fat, calories, vitamin C and calcium with blood pressure.

Elderly hypertension is a disease that is often suffered by the elderly which is influenced by several factors. One of the influencing factors is the aging process. Lack of physical activity that is carried out regularly by the elderly triggers an increase in blood pressure. This condition is supported by thickening of the blood vessels so that blood flow is disrupted which has an effect on increasing blood pressure (Rahmatika (2019) Walking exercises are part of moderate aerobic exercise activities, which are useful for lowering blood pressure in elderly people with hypertension. Based on the results of the study showed a decrease in blood pressure with a *p* value of 0.000. Brisk walking exercise is a form of aerobic exercise with a moderate exercise capacity that can be carried out in the elderly with hypertension by using a brisk walking technique for 15-30 minutes (Rofacky, 2015) These activities lower blood pressure by decreasing peripheral resistance when muscles contract during physical activity. The effect that occurs is arterial dilation which can increase the supply of blood, oxygen and nutrients to the organs of the body so that there is an increase in the function of the organs of the body (Ganong, 2015).

The activity of brisk walking exercise in the elderly can have an effect on the breathing process and heart

contractions so that there is an increase in dissolved oxygen in the blood. This process occurs through an improvement in blood flow which becomes smoother and a decrease in blood flow resistance so that blood can flow more smoothly. According to research which states that aging causes a decrease in physical activity, organ function, endurance so that the heart rate is faster. By implementing the Brisk walking exercise for 15-30 minutes using the jogging method, it is proven to be able to reduce blood pressure in elderly hypertensives (Saraswati, 2019). Research Sonhaji et al (2020) states that giving Brisk Walking Exercise can reduce systolic and diastolic blood pressure in people with hypertension.

This research is also supported by the results of research from Astuti et al (2020) that there was a change in blood pressure after being given an action in the form of brisk walking exercise three times in both systole and diastole. The length of time the exercise is given also has an effect on reducing blood pressure. Giving therapy for 30 minutes was more effective in reducing postprandial lipemia and systolic blood pressure in male respondents. (Astuti, 2020). Giving brisk walking exercise can reduce blood pressure in elderly hypertensives in the village of Palur, Sukoharjo Regency. The length of time given can affect the optimality of reducing blood pressure, by doing brisk walking exercise for 3 meetings with a duration of 30 minutes can reduce blood pressure in elderly hypertensives more optimally. Research Sonhaji et al (2020) states that giving Brisk Walking Exercise can reduce systolic and diastolic blood pressure in people with hypertension. The key to getting a great workout with brisk walking is to maintain a pace that gives your heart and lungs a challenging workout, but not so hard that run out of steam too quickly.

CONCLUSIONS AND SUGGESTIONS

The conclusion in this study is that there is an effect of brisk walking exercise on blood pressure in elderly people with hypertension in Palur Village, Sukoharjo Regency Suggestion Brisk Walking Exercise is expected to be one of the nursing interventions that can be done in the elderly and reduce dependence on anti-hypertensive drugs.

REFERENCES

- AHA. (2017). High blood pressure clinical practice guideline for the prevention, detection, evaluation. A report of the American college of cardiology. America : J Am Coll Cardiol
- World Health Organization. The World Medicine Situation 2011 3ed. Rational Use of Medicine. Geneva, 2011.
- Wilkinson, J., & Ahern, n. R.. Buku Saku Diagnosis keperawatan edisi 9 Diagnosis NANDA, Intervensi NIC, Kriteria hasil NOC. Jakarta: EGC. 2013
- Adriani, M., Wirjatmadi, B. (2012). Pengantar Gizi Masyarakat. Jakarta: Kencana
- Anggara H. D. dan Prayitno N. Faktor-Faktor yang Berhubungan dengan Tekanan Darah di Puskesmas Telaga Murni, Cikarang Barat Tahun 2012. Jurnal Ilmiah Kesehatan, Vol 5 No.1. Jan 2013
- Andamsari Nur Miftah, Nur Indrawati Lipeto, Husnil Kadri (2015) Hubungan Pola Makan Dengan Tekanan Darah Pada Orang Dewasa di Sumatera Barat. Majalah Kedokteran Andalas, Vol 38 No 1. 2015
- Riset Kesehatan Dasar (Riskesdas) (2018). Badan Penelitian dan Pengembangan Kesehatan Kementerian RI tahun 2018. http://www.depkes.go.id/resources/download/infoterkini/materi_rakorpop_2018/Hasil%20Riskesdas%202018.pdf – Diakses Agustus 2022
- Kemntrian kesehatan RT. 2018. Profil Kesehatan 2017. Jakarta: Kemntrian RI. dari

<http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatanindonesia/Profil-Kesehatan>. Diakses pada tanggal 2 Februari 2020

Kowalski, P. 2010. Terapi Hipertensi: Program 8 Minggu Mengurangi Tekanan Darah Dan Mengurangi Resiko Tekanan Jantung Dan Stroke Secara Alami. Bandung: Mizan Pustaka

Sukarmin. 2013. PENURUN TEKANAN DARAH PADA PASIEN HIPERTENSI MELALUI BRISK WALKING EXERCISE. Jurnal Keperawatan Indonesia, Volume 16 No.1, pp.33-39 Maret 2013,

Kamal, M., Kusmana, D., Hardinsyah., Setawan, B., Damanik, R. M. . PENGARUH OLAHRAGA JALAN CEPAT DAN DIET HIPERTENSI TERHADAP TEKANAN DARAH PENDERITA PRAHIPERTENSI PRIA. Jurnal Kesehatan Masyarakat Nasional. 7(6). 2013

Rusiani, H. (2017). Gambaran Pola Konsumsi Pada Lansia Penderita Hipertensi

Nadesul, H. 2011. Sehat Itu Murah. Jakarta: Kompas Media

Brunner & Suddarth, (2013). Buku Ajar Keperawatan Medikal Bedah Edisi 8 volume 2. Jakarta EGC

Rahmatika, D. (2019). Hubungan Antara Dukungan Emosional Dengan Kepatuhan Diet Lansia Penderita Hipertensi. The Indonesian Journal of Public Health, 14(2), 252.

Rofacky, H. F. and Aini, F. (2015) 'Pengaruh Terapi Spiritual Emotional Freedom Technique (SEFT) terhadap Tekanan Darah Penderita Hipertensi', Jurnal Keperawatan Soedirman, 10(1), PP.41-52

Ganong, W. 2015. Buku Ajar Fisiologi Kedokteran. Penerbit Buku Kedokteran: EGC

Saraswati, R. U. (2019) 'PENGARUH BRISK WALKING EXERCISE TERHADAP DENYUT NADI ISTIRAHAT PADA LANSIA HIPERTENSI RINGAN DI POSYANDU LANSIA RAMPAL CELAKET'. University of Muhammadiyah Malang.

E.Astuti, E. Suryani, and A. Andriyani, "PENGARUH BRISK WALKING EXERCISE TERHADAP TEKANAN DARAH PADA LANSIA DENGAN HIPERTENSI DI KLINIK MITRA HUSADA GUNUNGKIDUL", JKMLH, vol.5, no.2, pp.112-118, Dec.2020

Sonhaji *et al* (2020) Sonhaji, S.Hapsari, S.N.K. Khotimah (2020) Pengaruh Brisk Walking Exercise Terhadap Tekanan Darah pada lansia. Jurnal kesehatan Al Irsyad Vol 13 No 1 Mar 2020

Ganong, W. 2015. Buku Ajar Fisiologi Kedokteran. Penerbit Buku Kedokteran: EGC

Saraswati, R. U. (2019) 'PENGARUH BRISK WALKING EXERCISE TERHADAP DENYUT NADI ISTIRAHAT PADA LANSIA HIPERTENSI RINGAN DI POSYANDU LANSIA RAMPAL CELAKET'. University of Muhammadiyah Malang.

E.Astuti, E. Suryani, and A. Andriyani, "PENGARUH BRISK WALKING EXERCISE TERHADAP TEKANAN DARAH PADA LANSIA DENGAN HIPERTENSI DI KLINIK MITRA HUSADA GUNUNGKIDUL", JKMLH, vol.5, no.2, pp.112-118, Dec.2020

Sonhaji *et al* (2020) Sonhaji, S.Hapsari, S.N.K. Khotimah (2020) Pengaruh Brisk Walking Exercise Terhadap Tekanan Darah pada lansia. Jurnal kesehatan Al Irsyad Vol 13 No 1 Mar 2020