Jurnal Kegawatdaruratan Medis Indonesia (JKMI)
Volume 3 Issue 2, August 2024, pp 156-163
https://ebsina.or.id/journals/index.php/jkmi
EISSN 2502-2717

Application of Brisk Walking Exercise to Blood Pressure for Hypertension Patients in Joyotakan, Surakarta

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ARTICLE INFO

Article History:
Submitted: 14-06-2024
Revised: 14-07-2024
Accepted: 02-08-2024
Published: 11-08-2024

doi.org/10.58545/jkmi.v3i2.346

ABSTRACT

Background: Hypertension is a common chronic disease worldwide commonly known as high blood pressure. Hypertension is a chronic state characterized by increased blood pressure on the walls of arterial arteries. The percentage of hypertensive cases in central Java is 37.57%. One of the non-pharmacological therapies hypertensive is brisk walking exercise. Brisk walking exercise is highly effective in stimulating maximum heart rate, stimulating muscle spasms, glycogenic fission, and increased oxygen of the target **Objective:** To find out how brisk walking exercise leads to blood pressure in Joyotakan village. **Method:** Using a descriptive method with a case study design approach, the respondents used 2 patients with hypertension in Joyotakan village, Serengan distric, Surakarta city. The identification of respondents to the inclusion and exclusion criteria, the application of brisk walking exercise makes 4 times in one week, using a sphygmomanometer measure of blood pressure. **Results:** brisk walking exercise reduced blood pressure in 2 respondents after brisk walking exercise 4 times in 1 week in Joyotakan village. **Conclusion:** There is a change to 2 respondents after brisk walking exercise during 4 days of adoption in Joyotakan village, Serengan distric, Surakarta city.

Keywords: Brisk Walking Exercise, Hypertension, Blood pressure

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How to cite:
Alfatikhah, A., & Susilowati, T. (2024). Application of Brisk Walking exercise to Blood Pressure for Hypertension Patients in Joyotakan Surakarta. Jurnal Kegawatdaruratan Medis Indonesia, 3(2), 156–163. https://doi.org/10.58545/jkmi.v3i2.346

1. INTRODUCTION

Hypertension is among the most serious health problems today. Hypertension is of serious concern because of its adverse effects on humans. Health experts propose that, among the most damaging effects of hypertension are kidney failure, stroke, even death. Hypertension is a common chronic disease worldwide commonly known as high blood pressure (Lacey et al, 2018). Hypertension is a chronic condition characterized by increased blood pressure on the artery wall. This hypertension, or so-called "silent killer," must surely be of interest (Schiffrin, 2020).

Raised blood pressure (BP) is the leading attributable risk factor for death

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globally, accounting for 10.8 million deaths in 2019. During the past four decades, the number of people with hypertension has increased by 90%, mainly in low- and middle-income countries (Schutte et al, 2023). Hypertension cases in Indonesia are very high. 1 out of 3 Indonesians is hypertensive, and even this number continues to rise every year. On the same occasion, the leader of heart and vascular disease, prevention and disease control states that hypertension in Indonesia is 34.1% by national surveys (Riskesdas, 2018). Shavings indicate the prevalence of hypertension is increasing every year. Data from the kratonan administration (2023) of hypertensive people aged about 631. By gender, hypertension preservations in women by 320 are larger than 311 males. In Joyotakan village RT 02 RW 01, 24 people have hypertension.

The greater number of hypertensive livings has been divided into two, that is, pharmacology and non-pharmacology by far, the use of hypertensive drugs is usually the choice for hypertension. Of course, the use of hypertensive drugs is important. Even non-pharmacological efforts may be alternatives to hypertension (Evbayekha et al, 2022). Practicing a lot of physical activity that can be done to lighten loads or lower hypertension in old age. One of the physical activities the elderly can perform is to exercise brisk walking (Rochman, Kurdi, & Kholis, 2024).

Brisk walking exercise is one type of aerobic exercise, which is medium activity that employs 20-30 minutes of brisk walking atan average of 4-6 km/ h done 3 to 5 times a week (Marin, 2023). Benefits of this brisk walking exercice are highly effective in stimulating maximum heart rate (Bai et al, 2022). Also, stimulating muscle spasms, glycogenic rupture, and increased tissue oxygen, this brisk walking exercise can be used as a complementary therapy for hypertensive patients (Boudehri, 2023).

The above research suggests that brisk walking exercise has a significant impact on hypertension decline. So far, however, hypertensive drug consumption is still a prime alternative to older people on research sites to control or lower hypertension.

2. METHODS

The design of the study used in compiling this scientific work is a descriptive study design in the form of the case study. By nonrandomized pre-tests and post-test. The case study conducts a gerontic nursing process with hypertension that offers implementation of brisk walking exercise to pressure including research, nursing diagnosis,

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intervention, implementation, and evaluation through interviews, observation, and inspection of two respondents.

3. RESULTS

It is determined that the value of blood pressure before the application of brisk walking exercise to Mrs R's got blood Based on table 1 it is known that a systolic and diastolic change in respondents (Mrs. R) and respondent (Mr. T), but to the respondent (Mr. T) for his diastolic blood pressure there is no change (fixed) in the fourth day measurement (4), the development of blood pressure on the patient before and after 3 days of application of brisk walking exercise results in significant daily drop in blood pressure.

Based on table 2 found differences in blood pressure scores in both respondents after the application of brisk walking exercise. A greater drop in blood pressure was made on those of 10/10 mmHg, while those of 1 fell 10/5 mmHg.

Table 1. Monitoring of implementation Brisk Walking Exercise

Day	Blood pressure					
	Mrs. R		info	Mr. T		info
	Before	After		Before	After	
1st day	150/90 mmHg	145/85 mmHg	Systolic: 5 mmHg Dyastolic: 5 mmHg	160/90 mmHg	152/85 mmHg	Systolic: 8 mmHg Dyastolic: 5 mmHg
2nd day	153/87 mmHg	147/82 mmHg	Systolic: 6 mmHg Dyastolic: 5 mmHg	161/90 mmHg	156/80 mmHg	Systolic: 5 mmHg Dyastolic: 10 mmHg
3rd day	148/89 mmHg	140/82 mmHg	Systolic: 8 mmHg Dyastolic: 7 mmHg	150/82 mmHg	145/80 mmHg	Systolic: 5 mmHg Dyastolic: 2 mmHg
4th day	145/91 mmHg	140/85 mmHg	Systolic: 5 mmHg Dyastolic: 6 mmHg	158/80 mmHg	150/80 mmHg	Systolic: 8 mmHg Dyastolic: 0 mmHg

Table 2. Comparisons Blood pressure scores with hypertension before and after application of brisk walking exercise

Respondents	Blood pressure		discrepancies	
	before	after	Systolic	Dyastolic
Mrs. R	150/90 mmHg	140/85 mmHg	10 mmHg	5 mmHg
Mr. T	160/90 mmHg	150/80 mmHg	10 mmHg	10 mHg

4. DISCUSSION

Blood pressure before the application of brisk walking exercise

Blood pressure scores before the application of brisk walking exercise to Mrs. R was 150/90 mmHg, whereas on Mr. T with a blood pressure score of 160/90 mmHg. Both of the respondent's blood pressure levels indicate high results.

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This suggests that, there is enough difference in blood pressure from day one through day four. When classified, blood pressure on the 1st and 2nd day, classification blood pressure II. Meanwhile, on the 3rd and 4th day of blood pressure classification I. Conceptually, there is a factor that causes blood pressure in a person, that is, one that cannot be changed or one that can be changed (Rifka, 2019). When viewed by unchangeable factors, some of them are family history, age, and gender

Blood pressure after application of brisk walking exercise

Results of applying brisk walking exercise to the respondents obtained results from a drop in blood pressure on both respondents. Mrs. R had dropped their blood pressure to be 140/85 mmHg, while those Mr. T came to 150/80 mmHg. This suggests that after the application of brisk walking cis, in general Mrs. R and Mr. T's classification blood pressure.

This suggests that brisk walking exercise can significantly affect blood pressure, where prior to the application of brisk walking Mrs. R and Mr. T's classification of blood pressure II, and after brisk walking was conducted the blood pressure classification I. However, it is important to point out that Mrs. R and Mr. T also take hypertensive drugs, and it must be acknowledged that the exercise is not the only one to affect lower blood pressure.

Changes in blood pressure before and after applying brisk walking exercise

It is known that there has been a development in systolic and diastolic blood pressure after the application of brisk walking exercise, However, on the respondents (Mr. T) for his diastolic blood pressure there was no change (fixed) on the fourth day (4) Tuesday, March 5, 2024. This suggests that there are changes in systolic and diastolic blood pressure before and after the adoption of brisk walking exercise.

The results of this study are in-line with Mustika & Sudiantara (2019), Their research responses are much greater than the number of 34. Their research shows that, with the intervention group, systolic blood pressure data are conducted for Wilcoxon, and value Asymp. Sig. (2-tailed) = 0,000 (Asymp. Sig. < 0.05), which suggests a decline in systolic blood pressure which is meaningful before and after treatment of the intervention group. As well as diastolic blood pressure data, in the intervention group, diastole blood pressure data is conducted by Wilcoxon tests showing Asymp. Sig. (2-tailed) = 0.001 (Asymp. Sig <0.05), which suggests a

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significant drop in diastole blood pressure before and after being treated by the intervention group.

Blood pressure ratio before and after the application of brisk walking exercise to respondents.

Comparative inflection on both sides is the result of differences in blood pressure reduction between before and after brisk walking exercise on both respondents. Mrs. R have dropped the systolic blood pressure by 10 mmHg as the blood pressure is down actually 5 mmHg, while the blood pressure is down by 10 mmHg. The results of the application of high blood pressure have been greater on Mr. T than Mrs. T. R because the age factors of both respondents were different. To Mrs. Mr. T's physical activity has been reduced and Mr. T's physical activity is more frequent than Mrs. R.

This would be similar to the theory that women experience more blood pressure when they are over 55 years of age, while men experience more blood pressure under 55 years of age (Aulia, 2019). Well, research suggests that Mrs. R is 60 years old, and Mr. T is 58. This is one factor in the difference in her diastolic blood pressure. R with Mr. T, though the difference is only 5 mmHg or not so far.

Brisk walking exercise is one of the nonpharmacological alternatives that can be applied to blood pressure. Studies have shown it. In addition to reducing blood pressure, brisk walking exercise is intended to help the body relax, reduce the risk of mortality and morbidity of hypertensive patients through the caloric burning mechanism, to maintain weight, to increase muscle contraction so that it can break glycogenic and increase tissue oxygen (Sari & Sari, 2022)

5. CONCLUSIONS

Based on the results of brisk walking exercise over the next four days, it may be drawn to the following conclusion. Blood pressure before the application of brisk walking exercise to the two respondents in qualifications for blood pressure II. Blood pressure after application of brisk walking exercise to two respondents in qualifications for blood pressure I. Based on prior to and subsequent use of brisk walking exercise to the two respondents have been significant changes. Blood pressure ratio before and after the application of brisk walking exercise to two respondents was down 10/5 mmHg, while Mr. T was down 10/10mmHg.

ACKNOWLEDGEMENT

The author would like to thank all parties who have supported the author in completing this study until publication. Thank you for Joyotakan village, Serengan distric, Surakarta and Universitas 'Aisyiyah Surakarta that facilitated this research.

AUTHOR CONTRIBUTIONS

Substantial contribution to conception, data collections, and analysis: Aliya Alfatikhah and Tri Susilowati. Writing Manuscript and revisions: Aliya Alfatikhah.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

The data are not publicly available due to privacy or ethical restrictions.

REFERENCES

Bai, X., Soh, K. G., Omar Dev, R. D., Talib, O., Xiao, W., & Cai, H. (2022). Effect of Brisk Walking on Health-Related Physical Fitness Balance and Life Satisfaction Among the Elderly: A Systematic Review. In Frontiers in Public Health (Vol. 9). Frontiers Media SA. https://doi.org/10.3389/fpubh.2021.829367

Boudehri, M. E. amine, Belkadi, A., Dahoune, O., & Atallah, A. (2023). effects of circuit exercise training strategy on health-related physical fitness level and biomarkers in elderly people with cardiovascular diseases. In Quality in Sport (Vol. 11, Issue 1, pp. 16–31). Uniwersytet Mikolaja Kopernika/Nicolaus Copernicus University. https://doi.org/10.12775/qs.2023.11.01.002

Dinas Kesehatan Provinsi Jawa Tengah. (2019). Profil Kesehatan Provinsi Jateng Tahun 2019. Dinas Kesehatan Provinsi Jawa Tengah. 3511351(24).

Evbayekha, E. O., Okobi, O. E., Okobi, T., Ibeson, E. C., Nwafor, J. N., Ozobokeme, O. E., Olawoye, A., Ngoladi, I. A., Boms, M. G., Habib, F. A., Oyelade, B. O., Okoroafor, C. C., Chukwuma, V. N., Alex, K. B., & Ohikhuai, E. E. (2022). The Evolution of Hypertension Guidelines Over the Last 20+ Years:

A Comprehensive Review. Cureus, 14(11), e31437. https://doi.org/10.7759/cureus.31437

Lacey, B., Lewington, S., Clarke, R., Kong, X. L., Chen, Y., Guo, Y., ... & Chen, L. (2018). Age-specific association between blood pressure and vascular and non-vascular chronic diseases in 0· 5 million adults in China: a prospective cohort study. The Lancet Global Health, 6(6), e641-e649. https://doi.org/10.1016/S2214-109X(18)30217-1

Marin, S. (2023). The Impact of Music Tempo and Preference on Anaerobic Resistance Exercise Among Males (Doctoral dissertation, Ohio Dominican University). http://rave.ohiolink.edu/etdc/view?acc_num=oduhonors1639064048049492

Mustika, I. W., & Sudiantara, K. (2019). Effects of health promotion with family approaches on blood pressure and headache toward elderly. In International Journal of Health Sciences. Universidad Tecnica de Manabi. https://doi.org/10.29332/ijhs.v3n3.344

Rifka, A. R. (2019). Asuhan Keperawatan Pada Ny. R Dengan Ansietas Dan Manajemen Kasus: Pendidikan Kesehatan Teknik Relaksasi Napas Dalam Dan Hipnotis Lima Jari Untuk Menurunkan Kecemasan Ibu Hamil Di RW VIII Kelurahan Parak Gadang Timur Kota Padang. Skripsi. Universitas Andalas. http://scholar.unand.ac.id/54619/

Riskesdas. (2018). Riset Kesehatan Dasar 2018. Kementrian Kesehatan Republik Indonesia. https://layanandata.kemkes.go.id/katalog-data/riskesdas/ketersediaan-data/riskesdas-2018

Rochman, M. I., Kurdi, F., & Kholis, A. H. (2024). Effect of Brisk Walking Exercise on Blood Sugar Levels in Prolanis Members at Community Health Center. Jurnal Kegawatdaruratan Medis Indonesia, 3(1), 104–122. https://doi.org/10.58545/jkmi.v3i1.235

Sari, M., & Sari, N. P. (2022). Implementasi Brisk Walking Exercise Terhadap Penurunan Tekanan Darah dan Nyeri Kronis Pasien Hipertensi Implementation of Brisk Walking

Exercise on Lowering Blood Pressure and Chronic Pain in Hypertension Patients. Riset Media Keperawatan, 5(2), 84–88. https://doi.org/10.51851/jrmk.v5i2.364

Schiffrin, E. L. (2020). How structure, mechanics, and function of the vasculature contribute to blood pressure elevation in hypertension. Canadian Journal of Cardiology, 36(5), 648-658. https://doi.org/10.1016/j.cjca.2020.02.003

Schutte, A. E., Jafar, T. H., Poulter, N. R., Damasceno, A., Khan, N. A., Nilsson, P. M., Alsaid, J., Neupane, D., Kario, K., Beheiry, H., Brouwers, S., Burger, D., Charchar, F. J., Cho, M.-C., Guzik, T. J., Haji Al-Saedi, G. F., Ishaq, M., Itoh, H., Jones, E. S. W., … Tomaszewski, M. (2022). Addressing global disparities in blood pressure control: perspectives of the International Society of Hypertension. In Cardiovascular Research (Vol. 119, Issue 2, pp. 381–409). Oxford University Press (OUP). https://doi.org/10.1093/cvr/cvac130