Insight: Vol. 2, No. 6 December 2024
E-ISSN: 3032-453X

Effectiveness of Swedish Massage on Reducing Blood Pressure In The Elderly: Literature Review

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Abstract
Hypertension is a condition where systolic blood pressure increases > 140 mmHg and diastolic blood pressure > 90 mmHg. Swedish massage therapy is a complementary therapy that is believed to be able to provide a relaxation response. This study aims to determine whether there is an effect of Swedish Massage therapy on the blood pressure of the elderly. Literature review research was carried out using PICO searches in several databases such as Google Scholar, Gaster, Hindawi, Macro, and Pubmed. It was found that 5 journals met the criteria and showed the results that Swedish Massage was carried out 5 times a week for 5 weeks, with a duration of 1 hour and a p-value of P < 0/005 showing a significant effect. The effects of Swedish Massage have an influence on smooth blood circulation, stimulate parasympathetic activity and increase the release of endorphins so that this process is useful in stabilizing blood pressure. Swedish Massage Therapy can be recommended as a treatment for improving blood pressure in people with hypertension.

Keywords: massage, swedish massage, blood pressure

INTRODUCTION

High blood pressure or hypertension is a condition in which a person experiences an increase in blood pressure above normal which shows systolic and diastolic numbers on blood pressure checks using a blood pressure measuring device. Increased blood pressure can lead to various complications such as stroke, kidney failure, and right ventricular hypertrophy (Rahmadhani, 2021).

Hypertension is a condition in which systolic blood pressure > 140 mmHg and diastolic pressure > 90 mmHg at rest or after re-examination (Ministry of Health of the Republic of Indonesia, 2019). The World Health Organization (WHO) in 2015 showed that about 1.13 billion people in the world suffer from hypertension, meaning that 1 in 3 people in the world is diagnosed with hypertension. The number of people with hypertension continues to increase every year, it is estimated that by 2025 there will be 1.5 billion people affected by hypertension, and it is estimated that 9.4 million people die every year due to hypertension and its complications.

The high prevalence of hypertension does not only occur in developed countries but also in developing countries such as Indonesia. Based on the results of Basic Health Research

(RISKESDAS) in 2018, the prevalence rate of hypertension was measured at 34.1%, a sharp increase from 25.8% in 2013, with the highest prevalence rate in South Kalimantan Province at 44.1% and the lowest in Papua Province at 22.2%. (Ministry of Health of the Republic of Indonesia, n.d.)

Actions can be taken to reduce the worsening of the condition that may occur by prevention and treatment in an effort to control blood pressure with pharmacological therapy such as the administration of captopril drugs and non-pharmacological therapy with herbal consumption, healthy lifestyle changes, stress management and relaxation therapy. Relaxation is an action that must be carried out in every anti-hypertensive therapy. If blood pressure is too high, relaxed blood vessels will have vasodilation of the blood vessels so that it will cause blood pressure to drop and return to normal. To make the body relaxed, it can be done in several ways such as classical music therapy, yoga, deep breathing techniques, and masase therapy (massage therapy). One of the massage therapies that can be done is Swedish Massage therapy. Swedish massage therapy is one of the complementary therapies that is believed to be able to provide a relaxation response, in addition to being able to lower blood pressure (Adawiyah et al., 2023).

Massage therapy can facilitate the communication process between therapists and elderly patients because there is a process of touching which is nonverbal communication that has a therapeutic impact. In addition, according to the Traditional Chinese Medicine (TCM) Theory, massage movements can improve the circulation of qi, blood, and fluids throughout the body, as well as erode meridians and collaterals to relieve pain, and regulate yin and yang energy (Reissland & Burghart, 1987)).

The progressive muscle relaxation technique is a therapeutic technique that focuses on stiff muscles and does not relax so that the hypertension experienced by patients decreases with a value (p value < 0.05). Another technique that can affect the blood pressure of hypertensive patients is the Swedish Massage technique.

The Swedish message technique is part of the message that has a classic form. This is part of the massage technique carried out in Western countries by manipulating soft tissues through 5 movements, including petrisage, eflurage, friction, vibration and tapotement (Widyaningrum, 2020). Swedish massage is effective in lowering blood pressure, where systolic and diastolic values drop by 10.00 mmHg and 5.00 mmHg, respectively, in the fourth week of giving Swedish masase. (Ratih, 2018). This study was conducted to find out whether there is an effect of Swedish Massage therapy on the blood pressure of the elderly.

The increasing prevalence of hypertension, especially among the elderly, highlights the urgency of addressing this issue with effective and accessible interventions. Hypertension is a major contributor to cardiovascular diseases, kidney failure, and strokes, which are leading causes of morbidity and mortality globally. Pharmacological treatments, although effective, can cause adverse effects such as dizziness, fatigue, and dependency, which are often poorly tolerated by elderly patients. Therefore, non-pharmacological therapies like Swedish Massage offer a promising solution that is both safe and cost-effective. Given the high burden of hypertension in both developed and developing countries, implementing complementary therapies can improve hypertension management and overall quality of life.

Supa'at et al. (2013) conducted a randomized controlled trial to examine the effects of Swedish Massage therapy on hypertensive women aged 35–60. The results demonstrated a significant reduction in systolic and diastolic blood pressure (p = 0.01) after administering Swedish

Massage three times a week for four weeks. The study concluded that Swedish Massage can serve as an effective relaxation therapy to improve blood circulation and lower blood pressure levels, particularly in non-complicated hypertension cases.

Although previous studies have demonstrated the benefits of Swedish Massage for reducing blood pressure, there remains a lack of consensus regarding the optimal duration, frequency, and techniques for elderly populations. Additionally, many studies fail to compare Swedish Massage with other relaxation therapies or investigate its long-term effects on blood pressure stability. This gap creates uncertainty in determining standardized protocols for Swedish Massage as an intervention for hypertension management in elderly individuals.

This study integrates findings from multiple sources to comprehensively evaluate the effectiveness of Swedish Massage therapy in reducing blood pressure among the elderly. Unlike previous research, this review focuses specifically on elderly populations, synthesizes the impact of massage frequency and duration, and highlights the physiological mechanisms contributing to blood pressure reduction. The novelty lies in providing evidence-based insights to establish Swedish Massage as a standardized, safe, and practical complementary therapy for elderly hypertensive patients.

This study aims to determine the overall effectiveness of Swedish Massage therapy in reducing systolic and diastolic blood pressure among elderly individuals with hypertension. The findings will provide healthcare professionals with evidence-based recommendations for incorporating Swedish Massage into hypertension management protocols. The benefits include offering a safe, non-pharmacological alternative to traditional treatments, improving blood circulation, promoting relaxation, and enhancing the quality of life for elderly individuals. Ultimately, this research advocates for integrating complementary therapies into routine care to reduce the burden of hypertension and associated complications.

METHODS

This research uses a literature review approach. *Literature review* is a systematic method that summarizes and evaluates knowledge or practice on a particular subject (Knopf, 2006). The research questions followed the PICO format: (P=Population) Elderly, (I=Intervention) Swedish Massage, (C=Comparison) no comparison, (O=Outcome) Effectiveness of Swedish massage on lowering blood pressure in the elderly. The research journal articles reviewed are limited by inclusion and exclusion criteria, with journal collection having a span of time for the last 10 years, namely 2013-2023.

Articles will be reviewed if they have met the following inclusion criteria: (i) the study subjects are adults who have constipation or other conditions related to constipation with the late elderly age range from 56-65 years old. Research articles will be rejected if they have the following exclusion criteria: (i) research with a systematic review method, (ii) research journals under 2012, (iii) subjects refuse to participate. The author obtained information based on journal databases such as Google Scholar, Gaster, Hindawi, Macro, and Pubmed. To overcome the bias of the research, the author will accept every influence of intervention from each article, whether or not there is an influence on the research sample. For data synthesis, the authors summarized articles based on the research subject, age and gender of participants, type of intervention given (both from frequency, duration and tools to measure the effectiveness of the intervention), effectiveness of the intervention, and conclusions.

This research instrument uses:

Levane Test: the Levene test with *a mean* as an estimate of the data center is sensitive to normality while the Levene test using *the median* value has better test strength but the problem arises in determining the homogeneity of the variant using absolute values instead of using relative variant values, the Levene test uses *a mean* even though normally distributed data requires a large sample to minimize type 1 errors, while the Levene test uses a conservative median to sample size.

Paired sample t-Test: Paired sample t-Test is a differential test of two paired samples. Paired samples were the same subjects, but underwent different treatments. This differential test model is used to analyze the before and after research model. According to Widiyanto (2013:35), paired sample t-test is one of the testing methods used to assess the effectiveness of treatment, marked by a difference in the average before and after the treatment.

Shapiro – Wilk: a test conducted to determine the random distribution of data of a small sample using a data simulation of no more than 50 samples.

Pre-Test/ Post-Test: PreTest is a test given before teaching begins which aims to find out to what extent students have mastered the teaching material to be taught. Meanwhile, according to (da Costa Nunes et al., 2022)Pre-Test/Post-Test is one of the three assessment tools that are highly recommended to use because it is a concise and effective direct evaluation that can be used to improve student learning outcomes. In addition, the Pre-Test is also useful to encourage students to be more active in learning, as well as providing an overview of the important material that will later be tested in the course.

Swedish Massage: Swedish massage is a masse technique that is currently more commonly used by athletes before, during, and after a match or training. After carrying out exercises or after competitions, athletes feel the benefits of this massage to overcome fatigue and restore fitness.

Figure 1. Swedish Massage

RESULTS AND DISCUSSION

Reviewer	Participant	Intervention	Measurement	Results	Design Study
	Intervention group	Experimental group			
(Oktianingsih et al., 2022)	n= 36 36 - 65 years old	Swedish Massage	SBP & DBP	$\rho = 0.000$	Quasy Experimental
(Supa'at et al., 2013)	n= 8 35 - 60 years old	Swedish Massage	SBP & DBP	$\rho = 0.01$	RCT
Sadeghi Kaji, et al (2014)	n= 18 25 - 60 years old	Swedish Massage	SBP & DBP	$P<0.05$	Clinical Trial Study

Eska Dwi Prajayanti, et al (2022)	n= 8 45 - 60 years old	Swedish Massage	SBP & DBP	*p = 0.000*	Quasy Experimental
Muzaroah Ermawati Ulkhasanah, et al (2023)	n= 21 60-74 years old	Swedish Massage	SBP & DBP	p= 0.004	Quasy Experimental

Reviewer	Type of Intervention	Therapeutic Dosage				Duration Therapy
		F	I	T	T	
Teti Oktianingsih, et al (2022)	Swedish Massage	-	-	Swedish Massage	-	4 weeks
Izreen Supa'at, et al (2013)	Swedish Massage	3x/week	-	Swedish Massage	1 hour	4 weeks
Sadeghi Kaji, et al (2014)	Swedish Massage	5x/week	-	Swedish Massage	1 hour	5 weeks
Eska Dwi Prajayanti, et al (2022)	Swedish Massage	5x/week	-	Swedish Massage	20 – 30 minutes	5 weeks
Muzaroah Ermawati Ulkhasanah, et al (2023)	Swedish Massage	3x/day	-	Swedish Massage	1 hour	1 day

Reviewer	Measurement	Experiment Group		Significant
		Pre	Post	
Teti Oktianingsih, et al (2022)	SBP & DBP	SBP : 157.7 DBP : 90.3	SBP : 154.8 DBP : 84.9	ρ = 0.000
Izreen Supa'at, et al (2013)	SBP & DBP	SBP : 143.00 (9.00) mmHg DBP : 81.50 (8.75) mmHg	SBP : 138.00 (16.75) mmHg DBP : 80.00 (5.25) mmHg	*ρ* = 0.01
Sadeghi Kaji, et al (2014)	SBP & DBP	SBP : 144/2 ± 16/2 DBP : 72/1 ± 4/2	SBP : 126/2 ± 2/2 DBP : 66/4 ± 3/4	P< 0/005
Eska Dwi Prajayanti, et al (2022)	SBP & DBP	SBP : 143.91 DBP : 95.41	SBP : 124.45 DBP : 82.80	*p = 0.000*
Muzaroah Ermawati Ulkhasanah, et al (2023)	SBP & DBP	SBP : 124.45 DBP :	SBP : 124.45 DBP :	P< 0.05

Discussion

Changes that occur in the elderly usually experience disorders in the cardiovascular system which is the main disease that takes its toll because it will have an impact on other diseases such as Hypertension which contributes the most morbidity and mortality (Adam, 2019). The male sex has the highest incidence of cardiovascular cases in all age levels, while hypertension is more common in older women (Pitriani et al., 2017)

One part of relaxation therapy is progressive muscle relaxation techniques that can relieve stress, insomnia and hypertension, this is in accordance with research conducted at the Muliorejo Health Center that progressive muscle relaxation technique therapy can reduce hypertension in the elderly (Megawati, 2020).

Massage techniques are useful as a manipulative of muscle soft tissues, exert an influence on the smoothness of blood circulation, stimulate parasympathetic activity and increase the release of endhorpin hormone. This process is useful as a decrease in heart rate, blood pressure, respiratory rate and reduce stress (Widyarani, 2020). The management of Swedish Massage is

carried out in a lying position and massage starting from the legs, thighs, waist, back, hands, shoulders, neck, head and face

Swedish massage is one of the massages with the aim of relaxing the body. Massage can be used as one of the therapies to lower systemic blood pressure, therefore Swedish Massage can be used in non-pharmacological management in hypertensive patients which aims to have a relaxing effect that can provide an influence on the improvement of blood pressure. The Swedish massage technique is a massage technique originating from Sweden by manipulating soft tissues throughout the body through 5 movements, including petrisage, eflurage, friction, vibration and tapotement (Agustina & Raharjo, 2015). Each mass movement in Swedish Massage provides the benefits of effleurage which is useful for relaxing the nervous system, friction is useful for restoring the position of muscle fibers, improving blood circulation and lymph, Petrissage is useful for making muscles more relaxed, vibration is useful for decomposing clumped cell cells and Tapotement is useful for relieving muscle pain while deep effleurage movements which can result in increased blood flow in the extremities veins which causes a decrease in venous blood pressure and can increase arterial circulation and kneading movements provide assistance in venous backflow while compression can increase the circulation of local blood vessels and capillaries which can facilitate blood circulation, stimulate parasympathetic nerves, lower heart rate so that blood pressure decreases (Fahriyah et al., 2021).

CONCLUSION

Cases of hypertension generally occur in elderly residents, but it is possible that residents with adolescence to adulthood can experience hypertension, this is due to unhealthy lifestyles such as smoking, alcohol consumption and stress. The effect of Swedish Massage is better than Conventional Massage On the reduction of systole and diastole in hypertensive patients, Each massage is done 5 times a week for 5 weeks, with a duration of 1 hour.

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