

The Impact of Effleurage Technique Massage on Blood Pressure toward Elderly Hypertension in Peguyangan Village

Ni Luh Seri Astuti¹, I Nyoman Dharma Wisnawa², I Gede Satria Astawa³

^{1,2}S1 Keperawatan Ners, STIKES Advaita Medika Tabanan, Indonesia; luhseriastuti12@gmail.com (Corresponding Author)

³Keperawatan, ITEKES Bali, Indonesia

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ABSTRACT

The elderly is one of the vulnerable categories. The elderly would experience less physiological dysfunction as they age, which could lead to the emergence of various non-communicable disorders like hypertension. An answer to the hypertension problem is required in this dire circumstance. Effleurage massage is one of the non-pharmacological treatments for hypertension. The purpose of this study is to ascertain the impact of massage using the effleurage technique on senior hypertension in Peguyangan Village. This study employed a quantitative methodology and a quasi-experimental design, which is a pre-post-test control design for research. For this study, there were 15 respondents in each group, making up the sample. For 20 minutes, this massage therapy employs the effleurage technique.

Keywords: blood pressure; effleurage massage; elderly

INTRODUCTION

The elderly are a group at high risk of being infected with Covid 19 because they have a decreased immune system which makes it easier for the virus to attack the respiratory system (Venugopal et al., 2020). In addition, the elderly also have an increased risk of getting Covid 19 because they have comorbidities (Viro et al., 2021), for example, disorders of the cardiovascular system such as hypertension (Koudelka & Sovová, 2021). The prevalence of hypertension increases with age which affects more than 50% of the elderly aged 60 years (Pan et al., 2020). Data states that more than 1 million deaths are due to being infected with Covid 19 (Lippi et al., 2020). The main factor with the highest mortality is the elderly who have cardiovascular disorders such as hypertension, which reaches 2.5 times (Zhang et al., 2021; Wahyuni et al., 2020; Bela Aprilia Nuraini et al., 2021).

Hypertension in the elderly is a condition that describes that systolic blood pressure is 140 mmHg and diastolic is 90 mmHg (Potter & Perry, 2006). According to Benetos et al (2019), there are 972 million people with hypertension in the world and it will increase by 29.2% in 2025. As many as 333 million people with hypertension in developed countries and 639 in developing countries, one of which is Indonesia. The case of hypertension is still a very big challenge in Indonesia (Prihartono et al., 2022).

The incidence of hypertension in Indonesia in 2021 is 63.2% (Nuraisyah & Kusumo, 2021) and it is explained that the majority of hypertension sufferers are over 60 years old (Putri, 2016). The prevalence of the elderly suffering from hypertension in Bali increased from 2013 to 2018 which was 34.1% and the highest number occurred in the 55-64 year age group (Damayanti et al., 2020). One of the districts in Bali that has hypertension sufferers in the elderly is Denpasar. Denpasar City was ranked Number The 7th with a prevalence of hypertension of 44, 172 cases experienced hypertension.

Denpasar city has various village. One of them is Peguyangan Village and it is provides services to the elderly through the Prolanis system (Chronic Disease Management Program). Peguyangan village consist of many regions and one of them is Blusung region and have 50 elderlies, who routinely and actively carry out examinations. The majority of the elderly suffer from hypertension, and there are also those who suffer from hypertension accompanied by diabetes. However, since COVID 19, the elderly have experienced a decline in taking prolanis so that currently only 30 people are active.

Hypertension must be handled properly in the elderly to prevent the risk of morbidity and mortality during the COVID-19 period. There are two treatments, namely pharmacological and non-pharmacological, namely by relaxation

techniques (Pati et al., 2014; Kurdi et al., 2021). Relaxation therapy is needed in hypertensive patients to make blood vessels relax (Savitri & Ratnawati, 2022), causing vasodilation causes blood pressure to return to normal (Kurdi et al., 2021). To make a body being relaxed can be done in several ways such as music therapy classical, yoga, deep breathing techniques, and massage therapy (Muttaqin, 2009). A number of studies have shown that massage/massage therapy regularly can lower systolic and diastolic blood pressure levels of the stress hormone cortisol, reduce anxiety so that blood pressure will decrease and body functions will improve (Wahyuni et al., 2020). In massage there are many manipulations/techniques that can be done, one of which is The most common and easy technique is the effleurage technique.

The results of observations in March 2021 carried out by the author in The Blusung Regional Prolanis programs include the following: the following: (1) the awareness of the elderly in the bBusung area about hypertension is still lacking, This can be seen from the lack of enthusiasm of residents who come for routine checks blood pressure in prolanis activities (2) not many residents have know non-pharmacological hypertension therapy such as using massage therapy and many are still dependent on drugs, (4) not yet knowing the effect of massage effleurage technique on blood pressure in hypertensive patients in the blusung area.

From the results of observations as disclosed above and references from sources that support the existing problems, the researcher want to research more deeply about "The Effect of Massage Effleurage Technique" Against Blood Pressure in Hypertensive Patients in the Blusung area, Peguyangan Village".

METHOD

The research design used was a quasi-experimental design using a pre-post-test control design. The sample in this study was the elderly who suffered from hypertension who participated in the Prolanis program in the Blusung area. The study was conducted in March-April 2021. The sampling technique in this study was purposive sampling using inclusion criteria, namely the elderly who suffer from hypertension without complications, are not physically disabled, are not sick, have good hearing and are able to follow instructions well and the criteria The exclusion was the elderly who had a hypertensive emergency at the time of the study. The sample calculation uses a formula so that the total sample used and includes those who were dropped out because they did not participate in the activity until the end was 30 with each group consisting of 15 elderly people. Both groups were tested for blood pressure before the action (pre-test) both control and intervention groups using a blood pressure meter. The intervention group was given an explanation to the elderly about massage effleurage includes the definition, method, benefits, and timing of therapy. After measuring the respondent's blood pressure, they were given massage therapy once a day for 20 minutes. The dose of massage effleurage during the study was 3 times a week. Blood pressure measurement was carried out after 5 minutes of treatment (post-test). In the control group, after measuring blood pressure pre-test, the elderly will rest for 20 minutes. After that, the blood pressure was measured again (post-test). The data that has been collected was analyzed using SPSS. The data were analyzed descriptively to obtain a description of the distribution of each variable. The data was continued with normality test using Shapiro Wilk to determine the appropriate bivariate analysis to compare the average blood pressure. It is considered significant if the p value < 0.05. Furthermore, measurement of effect size with Cohen's d is also carried out to find out how much influence yoga has on reducing blood pressure in the elderly.

RESULT

Table 1. Characteristics of Respondents by Age, Systole Blood Pressure, and Diastole Blood Pressure

Variables	Mean	Min-Max	SD	f (%)
Age				
Massage effleurage group	63.0	56-68	3.7	
Control group	63.2	56-69	4.7	
Sex				
Male				10 (33.3)
Female				20 (66.7)
Systole				
Effleurage group	153.5	140-170	10.6	
Control group	156.4	140-180	12.2	
Diastole				
Massage effleurage group	92.9	90-100	4.7	
Control group	92.9	90-100	4.7	

The basic characteristics of respondents based on age, systolic blood pressure, diastolic blood pressure, and gender. Number of respondents by gender is that there are more female respondents than man.

Table 2. Systolic Blood Pressure, Diastolic Blood Pressure in Massage Effleurage and Control Group Before and After Intervention

Parameter	Mean	Min-Max	SD	p-value ^a	Effect Size ^b
Systole before intervention					
Massage effleurage group	153.5	140-170	10.6	0.54	0.8
Control group	156.4	140-180	12.1		
Systole after intervention					
Massage effleurage group	131.1	110-150	12.1	0.001*	
Control group	152.9	130-170	11.6		
Diastole before intervention					
Massage effleurage group	92.9	90-100	4.5	0.91	
Control group	92.9	90-100	4.5		
Diastole after intervention					
Massage effleurage group	81.8	70-90	8.09	0.002*	
Control group	90.0	80-100	6.1		

*Significant

Bivariate analysis was used to determine the effect of massage effleurage on blood pressure. Subjects in the massage effleurage group had a lower mean value for systolic blood pressure (massage effleurage vs control: 153.4 ± 12.1 mmHg vs 156.4 ± 11.6 ; $p=0.001$) compared to control at the end of the intervention. Mean value diastolic blood pressure was also significantly lower in the effleurage massage group than in the control group (massage effleurage vs control: 81.8 ± 8.09 mmHg vs 90.00 ± 6.1 mmHg; $p=0.002$). The results showed that both massage effleurage and the control group had lower blood pressure after massage effleurage, but a higher magnitude was observed in effleurage group massage in systolic and diastolic blood pressure. A large effect size (>0.8) was observed in mean systolic blood pressure and diastolic blood pressure when comparing effleurage massage group and control group. These discoveries indicates that the differences observed in this study important and may be useful for targeted population.

DISCUSSION

Systolic and diastolic blood pressure before the effleurage massage was given was more than the normal limit or above 130 mmHg in the elderly. There is an increase in blood pressure in the elderly because it is caused by one of the factors, namely a decrease in the elasticity of the aortic wall. The subsequent decrease in elasticity causes peripheral blood vessels to be ineffective in the oxygenation process (Brunner & Suddarth, 2022). In this condition, the heart valves also experience thickening and stiffness so that the pumping ability of the heart decreases by 1%, resulting in decreased contraction and volume. This decline in function is also caused by age (Potter & Perry, 2006). Based on the age of the respondents in the study, it was found that the average age of the respondents was 63 years. The aging process in the elderly cause changes in various aspects. One of them is physical changes in the cardiovascular system. The decrease in elasticity in the arteries (Sierra, 2017) causes an increase in blood pressure (Istivan, 2019) This process causes the majority of the elderly to experience hypertension (Oliveros et al., 2020).

Based on gender in the results of the study, women were more likely to have hypertension. These results are in line with those obtained by (Supa'At et al., 2013) women tend to experience a higher risk of developing hypertension because they have lower physical activity compared to men. Lack of activity provides an opportunity for left ventricular hypertrophy, diastolic dysfunction, increased arterial stiffness so that they are more likely to have hypertension (Ghozi, 2020).

The results showed that there was a significant decrease in blood pressure both statistically and clinically, which was more than 10 mmHg after being given an effleurage massage. According to Potter & Perry (2006) blood pressure changes clinically significant if there is a difference of 10 mmHg. Based on the result show that the elderly has a lower blood pressure after getting a massage effleurage and it's more than 10 mmHg. It means that effleurage massage could a decrease significantly blood pressure closes to normal range.

Based on the results of the evaluation conducted on the respondents, it was found that the effleurage massage movement carried out during the training was able to provide a relaxing effect and reduce psychological stress. According to (Setiyowati et al., 2020) psychological stress is a risk factor for hypertension so that by being given

effleurage massage, it will increase the sensitivity of blood vessel baroreceptors that control blood pressure to be effective.

The results of interviews with the elderly also found that the time given during the effleurage massage was quite effective so that it was able to relax all muscles. These results are in line with research conducted by (Wahyuni et al., 2020) that the dose of effleurage massage given is quite effective within 20 minutes at each meeting so that it is able to induce all body adaptation processes, strengthen the respiratory and cardiovascular systems, increase parasympathetic activity so that (Mohebbi et al., 2014) reduces systolic and diastolic blood pressure. This result is also supported by the research of Kusumarini et al. (2015) which found that effleurage massage which consists of several movements and repetitions in a certain time will be able to effectively reduce systolic and diastolic blood pressure (Sani et al., 2020).

The effect of massage effleurage is very strong on decreasing systolic and diastolic blood pressure, as evidenced by the results of the Cohen's d test, the value is 0.8. These results are in line with research conducted by Yuliyanto (2021) that effleurage massage is a very effective solution in improving stress and anxiety for strengthening immune function during the Covid 19 pandemic. In addition, effleurage massage movements for the elderly can be done at home. and These results are also in line with research that effleurage massage has proven to be an effective, safe, and less expensive adjunct therapy for hypertension management (Sapto Pramono & Khomatul Masita, 2021).

Massage effleurage during the pandemic that is carried out regularly by the elderly will be able to reduce and prevent complications due to hypertension. According to previous research from Harris & Richards (2010) combined isotonic and isometric resistance exercise effectively modifies endothelial function in hypertensive patients and increases endothelium vasodilation so as to prevent arteriosclerosis (Ulya et al., 2017) and can improve the quality of life of the elderly (Putra et al., 2021).

According to information gathered from studies on the delivery of massage, effleurage can lower blood pressure by causing changes in blood pressure following massage. Therefore, it can be said that effleurage massage had an impact in lowering blood pressure in the elderly.

CONCLUSION

What can be concluded from the study is that effleurage massage is very effective in reducing systolic and diastolic blood pressure, so it is recommended to be continued and given to the elderly who suffer from hypertension. In addition, effleurage massage also has a very strong influence on reducing blood pressure because it is easy, cheap, and safe for the elderly during the Covid 19 pandemic.

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