

Case Report Paper

## Effectiveness of Slow Stroke Back Massage Using Ylang Essential Oil on Reducing Blood Pressure Hypertension Patients

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### Article History

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**Abstract:** Hypertension is a chronic condition when the blood pressure on the increase the blood vessels. Hypertension cases in Banjar Regency in 2021 were 15,083 cases. One of the non-pharmacological therapies that can reduce blood pressure is slow stroke back massage using ylang essential oil. Slow stroke back massage using ylang essential oil can have an effect on relaxation, blood circulation and is also useful as a lowering of blood pressure. The purpose of this study was to determine the effectiveness of slow stroke back massage using ylang essential oil on reducing blood pressure in patients with hypertension in Paku Alam village. This research method uses a one group pretest posttest design. The population in this study were patients with hypertension in the village of Paku Alam RT.03. The number of samples in this study were 10 people taken by purposive sampling technique. Data were analyzed using paired t-test. The research instrument uses Standard Operating Procedures (SOP) and observation sheets. The results of this study found that blood pressure decreased after giving slow stroke back massage using ylang essential oil. The results of the analysis test obtained that the systolic p value =  $0.00 < (0.05)$  and the diastolic p value =  $0.004 < (0.05)$ . So it can be concluded that there is an effectiveness of slow stroke back massage using ylang ylang essential oil on reducing blood pressure in patients with hypertension in Paku Alam Village.

**Keywords:** Blood Pressure, Hypertension, Slow Stroke Back Massage.



## 1. Introduction

Hypertension is a chronic condition when the blood pressure on the walls of the arteries (blood vessels) increases. Hypertension is a disease that always increases every year in various countries in the world [1]. Where 1.13 billion people with hypertension worldwide, mostly (two thirds) in low- and middle-income countries [2]. Based on data from the Basic Health Research, the prevalence of hypertension at the age of 18 years is 34.1%. The estimated number of hypertension cases in Indonesia in 2018 was 63,309,620 people [3]. Data from the Banjar District Health Office in 2021 recorded 15,083 hypertension cases [4]. Based on data from the Sungai Tabuk 2 Health Center, in 2021 there were 868 cases of hypertension sufferers [5]. Based on a study conducted by researchers in December 2021, according to data obtained at RT.03 Paku Alam Village, Banjar Regency, there were 33 people with hypertension.

Blood pressure control is basically divided into 2 types, namely non-pharmacological treatment and pharmacological treatment [6]. Massage therapy is one of the non-pharmacological therapies to lower blood pressure [7].

Slow stroke back massage is a movement that touches the back that causes relaxation in the muscles, tendons and ligaments that increases parasympathetic nerve activity and stimulates the release of the neurotransmitter acetylcholine which inhibits sympathetic nerve activity, causes systemic vasodilation and reduces myocardial contractility causing a decrease in cardiac output, heart rate, and heart rate; stroke volume which causes a decrease in blood pressure [8].

Essential oils are useful for improving emotional health and well-being, restoring balance to the body, and having no side effects that are harmful to the body [9]. "Ylang Essential oils" contains flavonoids which are antidepressant, anti-inflammatory, analgesic, and antioxidant. Using ylang ylang essential oil will increase alpha waves in the brain, and these waves relax, can reduce blood vessel vasoconstriction activity, and regulate blood flow smoothly, so that it can lower blood pressure [10].

Interviews that were conducted directly with 5 people with hypertension revealed that they did not know that massage therapy with ylang ylang essential oil could be beneficial, one of which was lowering blood pressure.

## 2. Literature Review

Hypertension is systolic blood pressure  $> 140$  mmHg and diastolic blood pressure  $> 90$  mmHg [11]. High blood pressure can be called arterial hypertension. Hypertension is an increase in blood pressure on the arterial walls caused by two factors, the heart pumps blood harder and the arteries narrow [12].

Hypertension if not controlled for a long time will cause various kinds of complications. The risk factors that can cause it are divided into modifiable and non-modifiable factors. Modifiable factors such as obesity, stress, smoking, drinking excessive alcohol, lack of physical activity and consuming excessive salt. Risk factors that cannot be changed include age, genetics and gender [13].

One of the non-pharmacological therapies to reduce blood pressure is massage therapy [7]. Slow stroke back massage (SSBM) is a massage therapy that has the benefit of lowering blood pressure. SSBM is a touch movement on the back that provides a relaxing effect on the muscles, tendons and ligaments thereby increasing parasympathetic nerve activity and stimulating the release of the neurotransmitter acetylcholine and inhibiting sympathetic nerve activity, causing systemic vasodilation and reducing myocardial contractility causing a decrease in cardiac output, heart rate causing a decrease blood pressure [8].

Ylang contains flavonoids which are anti-inflammatory, analgesic, antioxidant and antidepressant [10]. Ylang essential oil has the benefit of increasing alpha waves in the brain and these waves will relax, can reduce vasoconstriction activity of blood vessels, and regulate blood flow, so that it can lower blood pressure.

## 3. Methodology

This study uses a pre-experimental method with a one group pretest posttest design. The research population is hypertension sufferers in Paku Alam Village RT.03. The sampling technique used in this study was purposive sampling, the sample obtained 10 people with the inclusion criteria of hypertension sufferers who live in Paku Alam Village RT.03, hypertensive patients aged  $> 26$ -65 years and have never received slow stroke back massage therapy using ylang essential oil. The exclusion criteria in this study were hypertension sufferers who did not want to be respondents, pregnant women and chronic disease sufferers. Data were analyzed using paired t-test. The research

instrument uses standard operating procedures and observation sheets. Research ethics was obtained from the Research Ethics Committee of the University of Muhammadiyah Banjarmasin on July 22, 2022 with No.256/UMB/KE/VII/2022.

The implementation stage of the study was to carry out blood pressure testing (pretest) to clients who were used as research respondents based on inclusion criteria, after that they did slow stroke back massage therapy using ylang ylang essential oil (treatment) then repeated blood pressure measurements (posttest). The study was conducted for 3 consecutive days for 10 minutes on each respondent.

#### 4. Finding and Discussion

##### 4.1. Characteristics of Respondents

Table 1 shows that the majority of respondents aged between 45-54 years were 4 people (40%). Based on gender shows that the majority of respondents are women 9 people (90.0%). The educational background of the majority of Primary school as many as 6 people (60%). Most of the respondents in this study did not work (IRT) as many as 7 people (70%).

Table 1 Frequency Distribution of Respondents Characteristics in Paku Alam Village RT 03

Characteristics	Frequence (n)	Percentage (%)
<b>Age (Years Old)</b>		
35-44	3	30
45-54	4	40
55-65	3	30
<b>Gender</b>		
Man	1	10
Woman	9	90
<b>Work</b>		
Not Working (IRT)	7	70
Farmer	3	30
<b>Education</b>		
Primary school	6	60
Junior High School	4	40
Total	10	100

Table 1 shows that the age most suffering from hypertension is 45-54 years old as much as 40%. Individuals who are approaching old age are at risk for high blood pressure because blood vessels have a decreased ability to carry blood throughout the body, especially the heart which causes hypertension [14]. The gender of the respondents was 90% female. Women over 45 years of age have a higher risk of developing hypertension because old age can cause menopause so that low estrogen levels, low estrogen causes High Density Lipoprotein (HDL) levels to decrease, this cause causes the female sex to suffer more hypertension compared to men [15].

Respondents who do not work (IRT) in this study as many as 70%. According to Guyton [16] work can affect physical activity, the heart pumps blood faster to meet needs. A person with less muscle activity is at risk of developing hypertension. The most recent education of respondents is 60% elementary school, 40% junior high school. Low education has a high risk of non-adherence in treatment due to lack of knowledge [4].

##### 4.2. Univariate Analysis

Table 2 shows the average systolic blood pressure before the slow stroke back massage intervention using ylang essential oil was 166.90 mmHg and diastolic blood pressure was 101.90 mmHg.

Table 2. Blood Pressure Results before Intervention

Variable	N	Mean	SD	Min – Max
Systolic Blood Pressure Before Intervention	10	166.90	17.729	148-207
Diastolic Blood Pressure Before Intervention	10	101.90	5.043	95-111

Before performing a slow stroke back massage using ylang ylang essential oil, researchers assessed blood pressure using a sphygmomanometer. The average blood pressure in 10 respondents was 166.90 mmHg for systolic blood pressure and 101.90 mmHg for diastolic blood pressure.

Uncontrolled hypertension in the long term can cause various diseases and other complications. Risk factors that can cause hypertension are divided into two factors, namely modifiable and non-modifiable factors [17]. Modifiable factors include stress, obesity, smoking, excessive alcohol consumption, lack of exercise and excess salt intake. Risk factors for hypertension that cannot be changed such as age, heredity and gender [13].

The results of the study in table 1 show that 70% of respondents are 45-65 years old. The results of the study in table 2 show that most of the respondents are women as much as 90%. Women aged over 45 years are at risk of experiencing hypertension due to menopause so that low estrogen levels, low estrogen causes the level of High Density Lipoprotein (HDL) to decrease, this is what causes women to suffer from hypertension more than men [15].

In accordance with the results of the study, respondents who have entered pre-elderly with age over 45 years, where body functions begin to decline, including the cardiovascular system, in regulating blood pressure, so that both men and women are more at risk of developing hypertension [18].

Several factors that can be changed can be prevented by adopting a healthy lifestyle, exercising, reducing salt consumption, routine health control and non-pharmacological therapies such as slow stroke back massage using ylang essential oil, because this therapy can have a relaxing effect and improve blood circulation so it is useful for lowering blood pressure. In accordance with research Kusumoningtyas [19] said that slow stroke back massage therapy can lower blood pressure.

#### 4.3. Blood Pressure Results After Slow Stroke Back Massage Using Ylang Essential Oil

Table 3 shows that the average systolic blood pressure after slow stroke back massage using ylang essential oil is 155.30 mmHg and diastolic 95.10 mmHg.

Table 3 Results of Blood Pressure after Giving Intervention

Variable	N	Mean	SD	Min – Max
Systolic Blood Pressure after Intervention	10	155.30	17.308	135-196
Diastolic blood pressure after intervention	10	95.10	4.332	89-101

The average results after a slow stroke back massage using ylang essential oil for 10 respondents experienced a decrease in blood pressure of 11.6 mmHg in systolic and 6.8 mmHg in diastolic. Slow stroke back massage using ylang essential oil was carried out for 3 days and there was a decrease in blood pressure every day. The results of this study are in line with [20] which states that slow stroke back massage can reduce hypertension due to a decrease in systolic and diastolic blood pressure after 3 consecutive days.

Slow stroke back massage (SSBM) is a form of relaxation massage therapy that is useful in lowering blood pressure. SSBM is a movement that touches the back that causes relaxation in the muscles, tendons and ligaments that increases parasympathetic nerve activity and stimulates the release of the neurotransmitter acetylcholine which inhibits sympathetic nerve activity, causes

systemic vasodilation and reduces myocardial contractility causing a decrease in cardiac output, heart rate, and stroke volume causes a decrease in blood pressure [8].

Ylang contains flavonoids which are antidepressant, anti-inflammatory, analgesic and antioxidant. The use of ylang essential oil increases alpha waves in the brain and these waves help us relax, can reduce blood vessel vasoconstriction activity, smooth blood flow, thereby lowering blood pressure [10].

Based on the results of the research, 10 respondents experienced a decrease in systolic and diastolic blood pressure after giving the slow stroke back massage intervention using ylang essential oil for 3 consecutive days for 10 minutes, namely after the intervention, the average respondent's blood pressure became 155.30 mmHg and a diastolic pressure of 95.10 mmHg.

#### 4.4. Bivariate Analysis

Table 4 shows the results of statistical tests for systolic and diastolic blood pressure, p-value = 0.000 for systolic and 0.004 for diastolic ( $<0.05$ ) so it can be concluded that there is an effectiveness of slow stroke back massage using ylang essential oil on reducing blood pressure in patients with hypertension in Paku Alam Village, Kab. Banjar.

Table 4 Statistical Test Paired Sample T Test

Blood Pressure	Mean Pre Test	Mean Post Test	N	Mean Difference	SD	SE	p-value
Sistole	166.90	155.30	10	11.6	3.2	1.0	0.000
Diastole	101.90	95.10	10	6.8	2.9	0.9	0.004

The results of statistical tests using Paired t Test which were carried out on the effectiveness of Slow Stroke Back Massage Using Ylang Essential Oil on reducing blood pressure in patients with hypertension showed p value 0.000 for systolic blood pressure and p value 0.004 for diastolic blood pressure (p value  $< 0.05$ ) so that it can be concluded that there is an Effectiveness of Slow Stroke Back Massage Using Ylang Essential Oil on Hypertension Patients in Paku Alam RT.03 Village.

The results of this study are in line with various other studies such as that conducted on 15 respondents who had been given SBBM therapy using ylang essential oil [20]. The results of his study showed changes in blood pressure after being given the intervention with a significance value of 0.00 ( $\leq 0.05$ ). The study conducted by Wibowo [21] also stated that there was an effect of SSBM on blood pressure with p value 0.05. This means that there is an effect of SSBM on decreasing blood pressure.

According to Hartati [22] Slow Stroke Back Massage stimulates the network, a complex neurohormonal response to the hypothalamic axis (HPA), which travels through the spinal cord to the hypothalamus and is interpreted as a relaxation response. Touching or applying pressure to the skin relaxes muscles, tendons, and ligaments thereby increasing parasympathetic nerve activity, releasing the neurotransmitter acetylcholine to inhibit sympathetic nerve activity in the heart muscle which has an impact on lowering blood pressure.

Several other studies found that ylang ylang oil contains saponins, flavonoids, polyphenols, essential oils, linalool, geraniol and eugenol, so that ylang oil is mainly used in the production of various aroma products and is suitable for therapy (aromatherapy) [23].

#### 5. Conclusion

Ylang oil contains saponins, flavonoids, polyphenols, essential oils, linalool, geraniol and eugenol, so that ylang oil is mainly used in the production of various aroma products and is suitable for therapy. Regulates the flow of glands and regulates adrenaline in the nervous system, brings joy and calm, relieves anxiety, anger and panic. The linalool content in ylang has given significant results showing that the active ingredients can play a role in anti-anxiety (relaxation) effects and can facilitate blood flow.

This study found that blood pressure decreased after giving slow stroke back massage using ylang essential oil are the systolic p value = 0.00  $< (0.05)$  and the diastolic p value = 0.004  $< (0.05)$ . So it

can be concluded that there is an effectiveness of slow stroke back massage using ylang ylang essential oil on reducing blood pressure in patients with hypertension in Paku Alam Village.

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