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The effect of light massage and Spiritual Emotional Freedom Technique interventions on blood pressure among hypertension patients in Indonesia

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Abstract

Hypertension remains a significant global public health concern. Non-pharmacological interventions such as light massage and the Spiritual Emotional Freedom Technique (SEFT) offer potential avenues to mitigate sustained increases in blood pressure among patients with hypertension. However, research exploring these methods as alternative

therapies, particularly in Indonesia, is limited. This study aimed to investigate the effects of light massage and SEFT on the blood pressure of hypertensive individuals. Employing a quasi-experimental design with a time series approach, the study utilized purposive sampling to select 27 participants. Light massage and SEFT were considered independent variables, while blood pressure served as the dependent variable. Data analysis involved repeated measures ANOVA and one-way ANOVA tests. The results revealed significant differences in mean blood pressure before and after the light massage intervention (p-values: 0.002, <0.001, <0.001). The intervention sessions yielded the most significant results (p-values: <0.001, 0.002, <0.001), whereas no differences were observed in the control group (systolic and Mean Arterial Pressure, MAP, p-values: 0.012 and 0.017, respectively). Notably, there were discrepancies in mean blood pressure before and after interventions in both the light massage and SEFT groups, indicating a potential benefit of these interventions. Conversely, no such differences were noted in the control group. These results highlight the potential benefits of integrating light massage and SEFT into holistic approaches for managing hypertension, potentially improving outcomes and quality of life for affected individuals.

Introduction

Hypertension is classified as a Noncommunicable Disease (NCD).^{1,2} It refers to a condition characterized by abnormally high blood pressure in the arteries, persisting over time.³ The term "hypertension" stems from the combination of "hyper," meaning excessive, and "tension," referring to pressure, denoting an elevation in blood pressure beyond the normal range due to circulatory system disorders.⁴⁻⁶ According to data collected by the World Health Organization (WHO) in 2015, approximately 1.13 billion people worldwide, or one

in three individuals globally, are diagnosed with hypertension. With the escalating number of hypertension cases annually, it is projected that by 2025, there will be 1.5 billion individuals living with hypertension. Moreover, hypertension and its complications contribute to an estimated 9.4 million deaths annually.¹

In Indonesia, based on the National Health Survey, the prevalence of hypertension among individuals aged 18 years and above is 34.1%. The highest prevalence is observed in South Kalimantan, while the lowest is in Papua. The estimated number of hypertension cases in Indonesia is 63,309,620, with 427,218 deaths attributed to hypertension. In East Borneo Province, specifically, the number of hypertension cases among individuals aged 18 years and above was 8,957 in 2018, reflecting a 39.30% increase compared to 2017.¹ Recent estimations from the Samarinda City Health Office in 2022 reported approximately 9,936 hypertension cases in Samarinda, with 897 cases recorded at the Bengkuring Samarinda Public Health Center.

Various factors contribute to the development of hypertension, including internal factors such as gender, age, and genetics, as well as external factors like smoking, alcohol consumption, physical inactivity, and obesity.^{7,8} If left unaddressed, hypertension can lead to organ damage and heart disease.⁹⁻¹² Non-pharmacological therapies, such as light massage and the Spiritual Emotional Freedom Technique (SEFT), can be administered to hypertension patients to prevent sustained increases in blood pressure. These therapies induce relaxation, alleviate muscle stiffness, and dilate blood vessels, resulting in a gradual decrease in blood pressure.^{4,13} SEFT combines energy medicine and spiritual therapy, involving tapping techniques on specific points along the body's energy meridians to stimulate key points and promote relaxation.⁵

Research conducted by Wijaya demonstrated the efficacy of SEFT therapy in reducing blood pressure, establishing it as a viable alternative for managing hypertension.¹⁴

Similarly, studies by Maswarni¹⁰ and Permatasari¹⁵ concluded that SEFT therapy effectively lowers blood pressure in hypertensive patients. Given the preliminary study's indication of a high prevalence of hypertension in Samarinda City, particularly at the Bengkuring Community Health Center where 897 cases were recorded. The objective of this study was to assess the effects of light massage and SEFT on the blood pressure of hypertensive patients and to compare their efficacy in reducing blood pressure.

Materials and Methods

Research design

This research was conducted in the working area of Bengkuring Public Health Center in Samarinda from February to April 2023. The study employed a quasi-experimental design with a time-series approach, utilizing a pre- and post-test design with a control group.

Study participants

The study population consisted of hypertension patients at the Bengkuring Health Center in Samarinda, comprising a total of 27 individuals divided into three groups, with 9 participants in each group: a control group, a light massage group, and an SEFT group. The sampling method utilized was purposive sampling to select the total sample, which was then randomized into the two groups. Inclusion criteria included patients diagnosed with hypertension by a physician, absence of other complicating diseases, ability to communicate effectively, and no hearing impairments.

Study procedure

Data collection involved pre-test blood pressure measurements, followed by either intervention of light massage or SEFT. Light massage, characterized by gentle movements

on soft tissues, including wiping and rubbing, aims to induce comfort, release muscle tension, and enhance blood circulation.¹⁶ SEFT, a complementary therapy targeting physical, emotional, and spiritual responses, employs gentle tapping on 18 meridian points to promote relaxation. This method integrates energy medicine and spiritual therapy, incorporating client affirmations or prayers at the beginning and end of sessions.^{17,18} Both light massage and SEFT were administered once daily for three consecutive days, each session lasting 15-20 minutes in the morning. Similar interventions were repeated on the second and third day, followed by post-test measurements. The control group did not receive any intervention.

Variable and instrument

The independent variables consist of light massage and the SEFT method, while the dependent variable is blood pressure, which is measured in terms of systolic, diastolic, and Mean Arterial Pressure (MAP). MAP is calculated by adding one-third of the pulse pressure to the diastolic pressure. The research instruments utilized include a digital sphygmomanometer, olive oil, Standard Operating Procedures (SOPs) for light massage and SEFT, as well as research observation sheets.

Data analysis

Each group will undergo testing using repeated ANOVA. To compare means between groups, researchers will employ one-way ANOVA with a significance level of 5% or a p-value of 0.05.

Ethical clearance

The research has received ethical approval from the Health Research Ethics Commission at

the East Kalimantan Ministry of Health Polytechnic, based on Ethical Certificate 07742-KEPK. Throughout the research process, the researcher has adhered to ethical principles including informed consent, respect for human rights, beneficence, and non-maleficence.

Results

Table 1 compares the blood pressure measurements before and after interventions in three groups: light massage, SEFT, and a control group. In the light massage group, pre-test systolic blood pressure ranged from 137 mmHg to 179 mmHg, and diastolic blood pressure from 83 mmHg to 103 mmHg, with mean values of 153.83 mmHg and 95.00 mmHg, respectively. Post-test measurements showed a decrease in both systolic and diastolic blood pressure. For the SEFT group, pre-test systolic blood pressure ranged from 131 mmHg to 202 mmHg, and diastolic blood pressure from 89 mmHg to 113 mmHg, with mean values of 163.00 mmHg and 99.00 mmHg, respectively. Post-test measurements indicated a decrease in both systolic and diastolic blood pressure. In the control group, pre-test systolic blood pressure ranged from 129 mmHg to 176 mmHg, and diastolic blood pressure from 80 mmHg to 116 mmHg, with mean values of 150.11 mmHg and 99.11 mmHg, respectively. Overall, there were differences in mean blood pressure values before and after interventions in both the light massage and SEFT groups, while the control group showed less change.

Table 2 presents the results of mean blood pressure differences before and after interventions in the light massage, SEFT, and control groups. In the light massage group, significant differences were observed in systolic, diastolic, and MAP measurements on day 3 post-intervention (p -value <0.05). Conversely, the SEFT group showed significant differences only in systolic and diastolic measurements on the same day (p -value <0.05). No significant differences were observed in the control group's blood pressure values.

Table 3 presents the significance values of the post-test systolic blood pressure, diastolic

blood pressure, and MAP for both the intervention light massage group, SEFT group, and the control group, with p-values of 0.004, 0.003, and 0.001, respectively, all of which are less than 0.05. Based on these values, it can be concluded that there is a significant difference in blood pressure among the three groups.

Table 4 presents the results of a one-way ANOVA test comparing mean blood pressure differences between the intervention group (light massage and SEFT) and the control group among hypertensive patients in the Bengkuring Community Health Center's working area. The results indicate significant differences in blood pressure among the three groups. Specifically, the light massage intervention group exhibited more significant differences compared to the SEFT group, with mean systolic, diastolic, and MAP differences of -24.6, -11.7, and -16, respectively, with p-values of 0.012, 0.097, and 0.017.

Discussion

The study results in the light massage intervention group revealed a significant difference between the average pre-test and post-test systolic and diastolic blood pressure, indicating that light massage effectively lowers blood pressure in patients with primary hypertension. This process involves inducing relaxation in the smooth muscles of arteries, veins, and other muscles throughout the body, leading to reduced levels of norepinephrine in the blood.¹⁹ Sihotang's study,²⁰ which utilized paired sample t-tests, found significant data with a p-value of 0.000 for post-reflexology foot massage systolic blood pressure and 0.037 for post-reflexology foot massage diastolic blood pressure. This suggests a tangible difference in blood pressure before and after reflexology massage, highlighting its potential to reduce hypertension.¹³ However, it's worth noting that four respondents experienced an increase in blood pressure on the second day of the three-day intervention, as per the researchers' observations.

The study results within the SEFT intervention group revealed a notable disparity between the mean pre-test and post-test systolic and diastolic blood pressure. Huda's study,²¹ showcased a significant reduction in both systolic and diastolic blood pressure among participants undergoing SEFT therapy, indicating its efficacy in mitigating hypertension. SEFT therapy fosters a sense of comfort and relaxation, alleviating physical complaints such as dizziness, muscle pain, neck pain, and lower back pain. Huda's findings,²¹ employing paired t-tests for data analysis in the intervention group, yielded a calculated t-value of 8.699 for systolic blood pressure with a p-value of 0.000. Consequently, it is evident that SEFT therapy brings about a significant difference between pre and post-SEFT therapy measurements.

The researchers hypothesized that blood pressure would significantly decrease in the treatment group following SEFT therapy. This expectation stems from the combined effect of tapping stimuli on the body's meridian points and the inclusion of spiritual elements such as prayer, which may induce a calming effect known to lower blood pressure. However, during the three-day intervention, on the second day, three respondents experienced an increase in blood pressure compared to the previous day. One respondent attributed this to overwhelming thoughts causing dizziness and stress, while another mentioned it was due to post-work activities.

The results from the control group indicated no significant difference between the average pre-test and post-test systolic and diastolic blood pressure. However, a noteworthy finding emerged regarding MAP in the control group, showing a significant difference between pre-test and post-test averages. Thus, it can be inferred that there's no substantial variance in blood pressure levels within the control group before and after testing. Additionally, Arwani's study,⁸ focusing on the control group receiving standard pharmacological therapy without additional interventions, observed that six respondents experienced a decrease in blood

pressure compared to the previous day during the three-day research period. Reasons cited included respondents just waking up and engaging in minimal activity, such as watching television or using mobile phones.

The researchers attributed this to the noticeable relaxation experienced by respondents during the light massage intervention, with some even falling asleep. The technique involved gentle pressing, rubbing, and massaging various body parts. Notably, the majority of respondents in the light massage group were housewives who reported feeling fatigued and stressed due to their daily routines. Consequently, the light massage intervention induced feelings of reduced fatigue, enhanced relaxation, and calmness, leading to a significant decrease in blood pressure. In contrast, the SEFT interventions primarily involved tapping at specific points, which may not have elicited the same level of relaxation and subsequent blood pressure reduction.

Conclusions

Based on the results of the repeated ANOVA mean difference test, significant differences in blood pressure were observed between pre-test and post-test measurements in both the light massage and SEFT intervention groups. The most notable discrepancies were noted in systolic, diastolic, and MAP values on the third day for both interventions. Conversely, the control group exhibited no significant changes in blood pressure. Hence, it can be inferred that both light massage and SEFT interventions affect blood pressure in the working area of Bengkuring 3 Public Health Center.

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Table 1. Frequency distribution of blood pressure across groups (N=27).

Group	Mean	±SD	Min-Max
Light massage			
Pre-test systolic	153.83	14.44	137-179
Post-test systolic 1	137.11	13.98	116-159
Post-test systolic 2	135.22	16.58	115-169
Post-test systolic 3	128.67	9.93	118-151
Pre-test diastolic	95	6.91	83-103
Post-test diastolic 1	84	5.45	75-91
Post-test diastolic 2	88.11	8.08	78-103
Post-test diastolic 3	80.33	7.79	71-95
MAP pre-test	114.67	8.67	101-126
MAP post-test 1	101.78	7.64	91-114
MAP post-test 2	103.67	10.29	92-125
MAP post-test 3	96.44	7.97	89-109
SEFT			
Pre-test systolic	163	24,28	131-202
Post-test systolic 1	159.22	23.73	128-198
Post-test systolic 2	158.44	21.73	133-194
Post-test systolic 3	153.22	24.18	121-189
Pre-test diastolic	99	8.95	89-113
Post-test diastolic 1	98	8.41	86-112
Post-test diastolic 2	97	6.89	89-108
Post-test diastolic 3	92	9.43	81-107
MAP pre-test	120.33	10.87	104-135
MAP post-test 1	119.22	10.87	100-132
MAP post-test 2	116.67	9.79	104-131
MAP post-test 3	112.44	11.9	98-129

Group	Mean	±SD	Min-Max
Control			
Pre-test systolic	150.11	17.23	129-176
Post-test systolic 1	149.89	18.23	126-179
Post-test systolic 2	144	16.52	118-174
Post-test systolic 3	155.56	12.3	136-169
Pre-test diastolic	99.11	14.78	80-116
Post-test diastolic 1	100.56	14.95	82-118
Post-test diastolic 2	96.11	14.12	72-113
Post-test diastolic 3	101	15.52	78-119
MAP pre-test	116.11	14.27	97-138
MAP post-test 1	116.78	15.02	98-138
MAP post-test 2	112.11	14.34	87-133
MAP post-test 3	119.11	13.43	98-134

MAP, Mean Arterial Pressure; SEFT, Spiritual Emotional Freedom Technique

Table 2. Blood pressure changes before and after interventions in light massage, SEFT, and control groups.

Blood pressure	Repeated ANOVA Test		
	Mean difference	CI 95%	p-value
Light massage group			
Pre-test systolic vs post-test 1	16.8	7.5-26	0.001
Pre-test vs post-test 2	18.7	1.6-35.7	0.031
Pre-test vs post-test 3	25.2	10.4-40	0.002
Post-test 1 vs post-test 2	1.9	16-19.8	1
Post-test 1 vs post-test 3	8.4	-6.9-23.8	0.552
Post-test 2 vs post-test 3	6.6	-3.3-16.4	0.298
Pre-test diastolic vs post-test 1	11	5.8-16.2	0.000
Pre-test vs post-test 2	6.9	-1.9-15.7	0.158
Pre-test vs post-test 3	14.7	9.3-20	0.000
Post-test 1 vs post-test 2	-4.1	-13.9-5.7	1
Post-test 1 vs post-test 3	3.7	-2.1-9.4	0.348
Post-test 2 vs post-test 3	7.8	0.9-14.7	0.026
MAP pre-test vs post-test 1	12.9	7.1-18.7	0.000
Pre-test vs post-test 2	11	0.1-21.9	0.048
Pre-test vs post-test 3	18.2	10.3-21.9	0
Post-test 1 vs post-test 2	-1.9	-14-10.3	1
Post-test 1 vs post-test 3	5.3	-3.2-13.9	0.370
Pre-test vs post-test 3	14.7	9.3-20	0.000
Post-test 1 vs post-test 2	-4.1	-13.9-5.7	1
SEFT group			
Pre-test systolic vs post-test 1	3.8	2.5-5	0.000
Pre-test vs post-test 2	4.6	-1-9.7	0.094
Pre-test vs post-test 3	9.8	6.5-13.1	0.000
Post-test 1 vs post-test 2	0.8	-3.6-5.2	1
Post-test 1 vs post-test 3	6	2.3-9.7	0.003
Post-test 2 vs post-test 3	5.2	-0.1-10.5	0.054
Pre-test diastolic vs post-test 1	0.1	-8.8-9	1
Pre-test vs post-test 2	2	-12	1
Pre-test vs post-test 3	7	2.9-11.1	0.002
Post-test 1 vs post-test 2	1.9	2.4-6.2	0.979
Post-test 1 vs post-test 3	6.9	2.4-16.2	0.194
Post-test 2 vs post-test 3	5	-0.7-10.7	0.093
Pre-test MAP vs post-test 1	1.1	-4.8-7	1

Pre-test vs post-test 2	3.7	-1.9-9.2	0.306
Pre-test vs post-test 3	7.9	-1.9-9.2	0.000
Post-test 1 vs post-test 2	2.6	-2.7-7.8	0.774
Post-test 1 vs post-test 3	6.8	0.4-13.1	0.035
Control group			
Pre-test systolic vs post-test 1	0.2	-2.8-3.2	1
Pre-test vs post-test 2	6.1	-7.1-19.3	0.872
Pre-test vs post-test 3	-5.4	-15.6-4.7	0.590
Post-test 1 vs post-test 2	-5.9	-8.5-20.3	1
Post-test 1 vs post-test 3	-5.7	-17.9-6.6	0.874
Post-test 2 vs post-test 3	-11.6	-25.8-2.7	0.136
Pre-test diastolic vs post-test 1	-1.4	-5.6-2.7	1
Pre-test vs post-test 2	3	-8.1-14.1	1
Pre-test vs post-test 3	-1.9	-11.3-7.5	1
Post-test 1 vs post-test 2	4.4	-5.2-14.1	0.887
Post-test 1 vs post-test 3	-0.4	-9.2-8.4	0.1
Post-test 2 vs post-test 3	-4.9	-10.7-0.9	0.115
Pre-test MAP vs post-test 1	-0.7	-3.8-2.5	1
Pre-test vs post-test 2	4	-22	1
Pre-test vs post-test 3	-3	-10.6-4.6	1
Post-test 1 vs post-test 2	4.7	-6-15.4	1
Post-test 1 vs post-test 3	-2.3	-11.1-6.5	1
Post-test 2 vs post-test 3	-7	-14.7-0.7	0.080

MAP, Mean Arterial Pressure; SEFT, Spiritual Emotional Freedom Technique

Table 3. Comparing blood pressure changes between intervention and control groups (N=27).

Blood pressure	One-way ANOVA	
	Average	p-value
Systolic		
Light massage	128.7 (9.9)	0.004
SEFT	153.2 (24.2)	
Control	155.6 (12.3)	
Diastolic		
Light massage	80.3 (7.8)	0.003
SEFT	92 (9.4)	
Control	101 (15.5)	
MAP		
Light massage	96.4 (2.7)	0.001
SEFT	112.4 (4)	
Control	119.1 (4.5)	

MAP, Mean Arterial Pressure; SEFT, Spiritual Emotional Freedom Technique

Table 4. One-way ANOVA comparing blood pressure changes post-test between intervention and control groups (N=27).

Blood pressure	One-way ANOVA			p-value
	Average difference	Min	Max	
Systolic				
Light massage vs SEFT	-24.6	-44.2	-4.9	0.012
Light massage vs control	-26.9	-46.5	-7.3	0.006
SEFT control vs	-2.3	-22	17.3	0.953
Diastolic				
Light massage vs SEFT	-11.7	-25.1	1.8	0.097
Light massage vs control	-20.7	-34.1	-7.2	0.002
SEFT control vs	-1.4	-22.4	4.4	0.236
MAP				
Light massage vs SEFT	-16	-29.3	-2.7	0.017
Light massage vs control	-22.7	-36	-9.3	0.001
SEFT control vs	-6.7	-20	6.7	0.438

MAP, Mean Arterial Pressure; SEFT, Spiritual Emotional Freedom Technique