[JKP] Editor Decision

Kotak Masuk

Kusman Ibrahim <jkp.fkep@unpad.ac.id> 20 Mar 2019 10.49

kepada saya

Assalamualaikum arif setyo upoyo:

We have reached a decision regarding your submission to Jurnal Keperawatan Padjadjaran, "THE EFFECTIVENESS DIFFERENCES OF FINGER HANDHELD AND DEEP
BREATHING RELAXATION TECHNIQUES IN REDUCING HEART RATE AND STRESS LEVELS IN
PRIMARY HYPERTENSION PATIENTS".

Our decision is: Resubmit for Review
Due Date: 27 - 3 - 2019

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[JKP] Editor Decision

Kotak Masuk

J

Suryani Suryani <jkp.fkep@unpad.ac.id> Sel, 19 Nov 2019 11.47

kepada saya, akhyarulanam, agis.taufik27

Inggris
Indonesia

Terjemahkan pesan

Nonaktifkan untuk: Inggris

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PRIMARY HYPERTENSION PATIENTS".

Our decision is: Revisions Required
Due date: 26/11/2019

Note: Please send back your revised soon as possible. Your article will publish in December 2019 (Vol 7 Issue 3).
Thank you

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suryani@unpad.ac.id

Satu lampiran • Dipindai dengan Gmail

Saran reviewr 1 dalam lampiran

THE EFFECTIVENESS DIFFERENCES OF FINGER HANDHELD AND DEEP BREATHING RELAXATION TECHNIQUES IN REDUCING HEART RATE AND STRESS LEVELS IN PRIMARY HYPERTENSION PATIENTS

Abstract

Stress and hypertension have a reciprocal relationship where hypertension can increase stress, and stress will also increase blood pressure. Therefore, we need an effort to control stress in patients with hypertension to prevent hypertension that can cause complications such as congestive heart failure, myocardial infarction, and stroke. The study aimed to determine the effectiveness differences of finger handheld and deep breathing relaxation techniques to decrease heart rate and stress levels of primary hypertension. The research design used quasy-experimental. The research was conducted in Kembaran and East Purwokerto District, Banyumas, Indonesia. The sampling technique used a simple random sampling approach, with a total sample of 50 respondents, 25 respondents got finger handheld relaxation intervention and, 25 respondents got intervention deep breathing relaxation. Heart rate and stress level were measured before and after treatment using heart rate (HR) recordings on digital tensimeter and Subjective Units of Distress Scale (SUDS). Data analysis used paired-t test and independent-t test. The results showed there were significant differences in HR and stress levels before and after finger handheld relaxation (p = 0,000). There was significant differences in HR (p = 0.010) and significant levels of stress (p = 0.000) before and after deep breathing relaxation. There was significant difference in HR (p = 0.02), and there was no significant difference in stress levels (p = 0.23) after treatment (post-test) between those who received finger handheld and deep breathing relaxation techniques. Conclusion: finger handheld and deep breathing relaxation techniques are equally effective in reducing stress levels in primary hypertension patients. Finger handheld relaxation technique is more effective in reducing HR than deep breathing relaxation technique.

Keywords: Relaxation, finger handheld, heart rate, stress, hypertension

INTRODUCTION

Hypertension still become one major health problem in the World. The World Health Organization (WHO) and The International Society of Hypertension (ISH) record the number of people suffering from hypertension already reached 600 million people throughout the world and 3 million of them die yearly. Hypertension is classified into a non-contagious disease (In Indonesia known with the term *PTM/Penyakit Tidak Menular*) with its highest prevalence of 57.87% in

Central Java in 2015 (The Health Profile of Central Java Province, 2015). Meanwhile, Banyumas Regency ranks the fourth with prevalence 39.52%. Based on data obtained from the Health Office of Banyumas Regency, the hypertension sufferers annually increase. In 2016, there were 81,862 people suffering from hypertension at age of ≥ 18 years old. Kembaran and East Purwokerto are two districts with those suffering from hypertension. The preliminary research conducted at Kembaran Community Health Center II in 2016 showed that the number of primary hypertension patients has reached 1,352 people with the majority age of > 60 years old. Meanwhile, the data obtained from January to September 2017 show that there are 687 people suffering from hypertension with the highest number in Ledug Village with 104 people at the age of ≥ 45 years old.

Blood pressure increase may be influenced by several factors, such as age, sex, genetic, smoking habits, obesity, stress, exercising habits, coffee consumption, high sodium diet and alcohol consumption (Andria, 2013; Wahyuningsih and Astuti, 2013; Rahmawati and Daniyati, 2016). The research conducted by Mucci, N. *et al.* (2016) states that the psychological stress significantly influences the systolic blood pressure. An individual with a strong stress response has 21% higher risk to experience hypertension than those with lower stress response (Gasperin, D., *et al.*, 2009). If the stress increases, the hypertension risk will also increase (Jadhav, S.B., 2014; Liu, M.Y, *et al.*, 2017). So what is your interpretation?

Chronic stress and mal-adaptive ability to respond stress may strongly influence the hypertension (Sparrenberger, F., *et al.*, 2009). When experiencing stress, the arteries which supply the organ functions will be narrower that the blood pressure may increase (Yulianto *et al.*, 2017). So what?

The research conducted by Erris and Rahman (2016) shows that people suffering from hypertension will experience stress because when facing the problems, they are unable to control their emotion and anger. They also do not have an awareness to find information to deal with their stress. In addition, the respondents are also less active to do self-relaxation to reduce their own stress.

Stress stimulates the sympathetic nervous system to increase the cardiac output and arteriolar vasoconstriction, which eventually increases the blood pressure. Stress also stimulates the adrenal gland to release adrenal hormones and stimulate the heart to beat faster and stronger that the blood pressure may increase (Haryono *et al.*, 2016). Thus, an effort to control stress in

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patients suffering from hypertension is greatly required to prevent from the increasing blood pressure which may cause complications, such as congestive heart failure, myocardial infarction, and stroke.

One technique to reduce stress is relaxation. This technique may reduce tension and anxiety by training the patients to intentionally make their body muscles relax (Sulistyarini, 2013). Relaxation therapy effectively reduces depression, anxiety and stress (Kashani, F., *et al.*, 2012).

The finger-holding relaxation is a part of the *Jin Shin Jyutsu* (Japanese acupressure) which is very simple and easy to do for anyone because it deals with the fingers and the flow of energy in our body (Pinandita *et al.*, 2012; Idris and Astarani, 2017). This technique uses a simple hand touch which involves breathing to balance the energy in our body to control emotion that our body may become relax (Sari, 2016; Idris and Astarani, 2017). This relax feeling may decrease the muscle tension and reduce anxiety (Yuliastuti, 2015).

This research aims at examining the effectiveness differences of finger-holding and deep breathing relaxation techniques in reducing the heart rate and stress levels in patients suffering from hypertension. It is expected that this research may obtain simple stress control methods or techniques which can be independently performed by the patients suffering from hypertension. By controlling the stress, the blood pressure of patients suffering from hypertension may be well controlled to prevent from the hypertension complications, such as stroke and other cardiovascular diseases.

RESEARCH METHOD

This was a quasi-experimental research compares two treatment groups (……..and……) as independent variables with heart rate and stress level as dependent variables among primary hypertension patients. This research is conducted in Kembaran and East Purwokerto district which have a high prevalence of patients suffering from high hypertension in Banyumas. The resampling techniques was a simple random sampling approach. The inclusion criteria in this research are patients suffering from the primary hypertension with the blood pressure of ≥ 140/90 mmHg and willing to become the research respondents. Meanwhile, the exclusion criteria in this research are patients who do not participate in the therapy, with hearing problems, and experience complications with the other diseases (kidney disease, heart disease, diabetes mellitus, and stroke). We obtained 50 participants, (25

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participants receiving finger-holding relaxation techniques) and (25 participants receiving deep-breathing relaxation techniques).

The demographic questionnaire is used to identify the respondents' characteristics, including;…….. The Subjective Units of Distress Scale (SUDS) is employed to measure the stress level. The inconvenience feeling measured with SUDS greatly depends on the "current" situation that it is quite sensitive to measure the occurring stress level changes (Astri, 2012). This scale is also commonly used to measure the anxiety level due to the implementation of relaxation techniques (Goldfried and Davison, 1976 in Asrori, 2015). SUDS consist of 11 multilevel answer points of Likert scales, starting from 0 point(no stress at all or relax) to 10 points (the highest stress level). In order to measure the heart rate (HR), a record on the Medel digital tension-meter licensed by the European hypertension association is performed by……when…...

Data analyzed using univariate and bivariate analysis. Univariate analysis is conducted on each research variable to explain the characteristics of age, sex, systolic blood pressure and diastolic blood pressure. The data are then presented in the form of distribution, frequency and percentage.

Bivariate analysis is conducted to determine the heart rate and stress level differences of the control and intervention group before and after treated with finger-holding and deep-breathing relaxation techniques. Before determining the hypothetical testing type, the researcher first conducts the data normality test using the Shapiro-Wilk since the number of samples is <50. If the data is normally distributed, the parametric statistical test used is the paired (dependent) t test to see the stress level difference of the control and intervention group before and after treated with finger-holding and deep-breathing relaxation techniques. The unpaired (independent) t-test is used to determine the stress level decrease difference between the control and intervention group. However, if the normality test is not normally distributed, the non-parametric statistical tests may then use Wilcoxon and Mann-Whitney test.

This research is conducted after obtaining the approval from the board of health research ethics, Faculty of Medicine, Sebelas Maret University, Surakarta (No:…….).

Result and Discussion

A. Respondents' Characteristics

The respondents' characteristics in this research are shown in Table 1. The respondents are mostly female at the age of more than 60 years old.

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Table 1. Respondents' characteristics based on age and sex

Characteristics	Finger-holding group (n=25)		Deep-breathing group (n=25)		*P*
	F	%	F	%	
Age (Year)					
45-59 (midle age)	5	10.00	0	0	
60-74 (elderly)	20	40.00	24	48.00	0.013
75-90 (old)	0	0	1	2.00	
Sex					
Male	6	12.00	2	4.00	0.247
Female	19	38.00	23	46.00	

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Table 2. Respondents' characteristics based on sistole dan diastole blood pressure

Characteristics Blood Presusure	Finger-holding group (n=25)		Deep-breathing group (n=25)		*P*
	Mean	SD	Mean	SD	
Sistole	164.08	12,93	168.28	21.94	0.415
Diastole	101.64	9,37	98.52	14.94	0.381

After the age of 60 years old (elderly), the prevalence of hypertension increases due to the vascular changes resulted from the plaque accumulation at the vascular endothelium which may increase the peripheral resistance and resulted is in blood pressure increase. Age factor greatly influences the presence of hypertension. The increasing age also increase the risk of experiencing hypertension due to physiological changes resulted from the body degenerative processes.

The hypertension experienced by the women is higher than that experienced by men after reaching the age of 60 years old as women experience menopause (Smeltzer & Bare, 2002). After menopause, the women usually experience hormonal changes which may increase the fat accumulation in vascular endothelium that the hypertension risk continuously increases. Based on the statistical data, there is a significant relationship between mental stress and hypertension in men (Jadhav, S.B., 2014).

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The respondents' characteristics illustrated in table 2 show that most respondents have the blood pressure of > 160 mmHg. Based on the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC), those respondents are classified into hypertension stage 2. There is no systolic and diastolic blood pressure significant difference in the

group treated with finger-holding relaxation technique and the group treated with and deep-breathing relaxation technique that eventually reduces the blood pressure influence on the heart rate and anxiety level measurement result.

B. The Heart Rate and stress level difference before and after the intervention.

The result of analysis shows that there is significant heart rate and stress level difference before and after the intervention. After the intervention, both groups show the decreasing heart rate and stress level (see Table 3).

The heart rate decrease experienced by both groups is due to the finger-holding and deep-breathing intervention to result in the relaxation response. The relaxation response may influence the limbic system in synchronizing the brain waves to the wave α to create a relaxing feeling responded by hypothalamus by reducing the secretion of Corticotropin Releasing Hormone (CRH), which may also stimulate the anterior pituitary gland to reduce the secretion of Adrenocorticotropic Hormone (ACTH). The sympathetic stimulation decrease may reduce the heart rate frequency. The result of this research is in line with that conducted by Perciavalle, V, *et al.* (2017) stating that the relaxation techniques may improve mood and reduce the heart rate and cortisol salivary level.

Table 3. The Heart Rate of patients suffering from primary hypertension before and after treatment

Relaxation Group	Before		After		*p*
	Mean	SD	Mean	SD	
Finger-holding					
Heart Rate	84.80	9.40	80.40	9.08	0.000
Stress level	4.16	2.34	3.12	2.11	0.000
Deep-breathing					
Heart Rate	90.16	12.09	87.84	12.53	0.010
Stress level	4.96	2.49	3.84	2.29	0.000

The stress level measurement in both groups with SUDS shows that the average stress level is categorized into moderate before treatment but changed into mild after the treatment. It shows

that there is a significant stress level decrease experienced by both groups. This result is in accordance with that conducted by Kashani, F., *et al*. (2012) revealing that relaxation therapy may decrease the depression, anxiety and stress level.

C. The Heart rate and stress level difference between the groups treated with finger-holding and deep-breathing relaxation intervention.

The heart rate measurements before treatment in both groups shows that there is no significant difference, yet after the measurement, there is a heart rate significant difference (see table 4). The average decreasing heart rate in the group treated with finger-holding relaxation intervention is better than that treated with deep-breathing relaxation intervention, in which the heart rate decrease in the group treated with finger-holding relaxation intervention is 4.4 times/minute, while that in the group treated with deep-breathing relaxation intervention is 2.32 times/minute. The finger-holding relaxation technique is more effective to reduce the heart rate because this technique combines the finger-holding x and deep-breathing heart rate technique to control emotion and stress (National Center on Domestic Violence, Trauma & Mental Health, 2014). The controlled stress may result in the decreasing cortisol hormone and sympathetic response that eventually reduce the heart rate. Deep-breathing may activate the baroreceptors which stimulate the parasympathetic nerves to reduce the heart rate (Mason, *et al.*, 2013).

Table 4. The pre and post test difference between the patients' heart rate treated with finger-holding and those with deep-breathing intervention

Variable	Finger-holding		Deep-breathing		*p*
	Mean	SD	Mean	SD	
Heart Rate					
Pre Test	84.80	9.40	90.16	12.09	0.09
Post test	80.40	9.08	87.84	12.52	0.02
Decrease	4.40	3.90	2.32	4.15	0.07
Stress level					
Pre Test	4.16	2.34	4.96	2.49	0.28
Post test	3.12	2.11	3.84	2.29	0.23
Decrease	1.04	1.02	1.12	0.78	0.08

The result of analysis on stress level shows that there is no significant difference in both groups' pretest and posttest result. However, the average stress level decrease experienced by the

group treated with deep-breathing relaxation intervention is better than the group treated with finger-holding relaxation intervention. The stress level experienced by the group treated with finger-holding relaxation intervention decreases by 1.04, while the group treated with deep-breathing relaxation intervention decreases by 1.12.

Both interventions are effective to reduce the stress level. Finger-holding relaxation intervention may relieve the stressful feelings, reduce tension, increase comfort, and help deal with the uncontrolled situations due to the stress without changing the underlying stress causes (National Center on Domestic Violence, Trauma & Mental Health, 2014). Meanwhile, deep-breathing relaxation may effectively induce the development of mood and control the stress (Perciavalle, V, et al, 2017).

The decreasing stress level and heart rate positive influence the patients suffering from hypertension. The combination of the increased mental and physical stress may significantly increase the systolic blood pressure (Trapp, M., et al, 2014), while the decreasing stress level may increase the telomerase gene expression and reduce the blood pressure (Duraimani S, *et al.*, 2015).

Conclusion and suggestion

Most patients suffering from hypertension are female with the age more than 60 years old. There are significant differences in heart rate and stress levels before and after the intervention of finger-holding and deep-breathing relaxation techniques. There is no significant stress level difference after the treatment (post test) given to the groups who received the intervention of finger-holding and deep-breathing relaxation techniques. However, there is a significant Heart Rate difference after treatment (post test) given to the groups who received the intervention of finger-holding and deep-breathing relaxation techniques. Both finger-holding and deep-breathing relaxation techniques are equally effective to reduce the stress level experienced by the patients suffering from the primary hypertension. Finger-holding relaxation technique is more effective in reducing the heart rate than the deep-breathing relaxation technique. Finger-holding and deep-breathing relaxation techniques are recommended to control the heart rate and stress level experienced by the patients suffering from the primary hypertension.

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Acknowledgement

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Saran reviewr 2 dalam lampiran

THE DIFFERENT OF FINGER HANDHELD AND DEEP BREATHING RELAXATION TECHNIQUES EFFECT ON REDUCING HEART RATE AND STRESS LEVELS IN PRIMARY HYPERTENSION PATIENTS

Abstract

Stress and hypertension have a reciprocal relationship where hypertension can increase stress, and stress will also increase blood pressure. Therefore we need an effort to control stress in patients with hypertension to prevent increasing blood pressure that can cause complications such as congestive heart failure, myocardial infarction, and stroke. The aim of the study was to determine the different of finger handheld and deep breathing relaxation techniques to decrease heart rate and stress levels of primary hypertension patients. The research used quasi experimentaldesign conducted in Kembaran and East Purwokerto District, Banyumas, Indonesia. There were 50 respondents (25 respondens finger handheld group, and 25 respondents in deep breathing relaxation group). Heart rate and stress level were measured before and after treatment using heart rate (HR) recordings on digital tensimeter and Subjective Units of Distress Scale (SUDS). Data analyzed using paired t-test and independent t-test. The results showed there were significant differences in HR and stress levels before and after finger handheld relaxation (p = 0,000). There were significant differences in HR (p = 0.010) and significant levels of stress (p = 0.000) before and after deep breathing relaxation. There was significant difference in HR (p = 0.02), butthere was no significant difference in stress levels (p = 0.23) after treatment (post test) between both group. Conclusion: finger handheld and deep breathing relaxation techniques are equally effective in reducing stress levels in primary hypertension patients. Finger handheld relaxation technique is more effective in reducing HR than deep breathing relaxation technique.

Keywords: Relaxation, finger handheld, heart rate, stress, hypertension

INTRODUCTION

Hypertension still become one major health problem in the World. The World Health Organization (WHO) and The International Society of Hypertension (ISH) record the number of people suffering from hypertension who have already reached 600 million people throughout the world and 3 million people suffering from hypertension die each year. Hypertension is classified into a non-contagious disease with its highest number of 57.87% in Central Java in 2015 (The Health Profile of Central Java Province, 2015). Meanwhile, Banyumas Regency ranks the fourth

Commented [A26]: The main question is why you apply this strategy, not the other one?
Explain the main reason, why should you conduct this study….!!!

Why you search the "different" what is the significance? If both effective in managing stress and HR why don't just apply… no need to conduct further research…or what reason therefore this study is important..

Commented [A27]: Any inclusion criteria? How to assigned into two groups? What method?...

Commented [A28]: Give more detail result, mean HR and stress scores… not only p value.

How about both group characteristics, including the pre test score? Is t homogenous?

Commented [A29]: So, why should this research is conducted… for what reason… Even though it is no different so what?
And oppositely, when it come up with significant different the question also the same.. so what?

Commented [A30]: Arrange in alphabetic order….!!!

Commented [A31]: When? In which year?

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1.Data why hypertension is important and become major health problem worldwide (incidences, complications, death rate – related hypertension)
2.Hypertension management in general (self-management, medication, and stress management)
3.Compared with other strategy, stress management is important… what reasons….????
4.Stress incidence among hypertension patients? How serious it is? What happen when it is unmanageable? How much success patient manage this problem?
5.Heart rate? It is important outcomes? in what senses and reason it is important to be measured
6.Stress management techniques…. Relaxation techniques….. explain what advantages and disadvantages among those technique.. ➔ give the reasons finger holding and deep breathing important compared with other techniques ➔ and why it is important to compare between both techniques…!!!!
7.Phenomena in Kembaran and purwokerto that make these both relaxation technique is important to be applied…

with 39.52%. Based on data obtained from the Health Office of Banyumas Regency, patients with hypertension annually increase. In 2016, there were 81,862 people with hypertension at age of ≥ 18 years old. Kembaran and East Purwokerto are two districts with those suffering from hypertension. The preliminary research conducted at Kembaran Community Health Center II in 2016 showed that the number of primary hypertension patients has reached 1,352 people with the majority age of > 60 years old. Meanwhile, the data obtained from January to September 2017 show that there are 687 people suffering from hypertension with the highest number in Ledug Village with 104 people at the age of ≥ 45 years old.

Blood pressure increase may be influenced by several factors, such as age, sex, genetic, smoking habits, obesity, stress, exercising habits, coffee consumption, high sodium diet and alcohol consumption (Andria, 2013; Wahyuningsih and Astuti, 2013; Rahmawati and Daniyati, 2016). Mucci, *et al*. (2016) stated that the psychological stress significantly influences the systolic blood pressure. An individual with a high stress level has 21% higher risk to experience high blood pressure than those with lower stress level (Gasperin, D., *et al*., 2009). If the stress increases, the hypertension risk will also increase (Jadhav, S.B., 2014; Liu, M.Y, *et al*., 2017).

Chronic stress and mal-adaptive ability to respond stress may strongly influence the blood pressure increase (Sparrenberger, F., *et al*., 2009). When experiencing stress, the arteries which supply the organ functions will be narrower that the blood pressure may increase (Yulianto *et al.*, 2017).

The research conducted by Erris and Rahman (2016) shows that people suffering from hypertension will experience stress because when facing the problems, they are unable to control their emotion and anger. They also do not have an awareness to find information to deal with their stress. In addition, the respondents are also less active to do self-relaxation to reduce their own stress.

Stress stimulates the sympathetic nervous system to increase the cardiac output and arteriolar vasoconstriction, which eventually increases the blood pressure. Stress also stimulates the adrenal gland to release adrenal hormones and stimulate the heart to beat faster and stronger that the blood pressure may increase (Haryono *et al*., 2016). Thus, an effort to control stress in patients suffering from hypertension is greatly required to prevent from the increasing blood pressure which may cause complications, such as congestive heart failure, myocardial infarction, and stroke.

Commented [A33]: Too detail ➔ move to the last part of the introduction part

Commented [A34]: ??????? what do you mean

Commented [A35]: Check the citation and reference guideline…>!!!!!

One technique to reduce stress is relaxation. This technique may reduce tension and anxiety by training the patients to intentionally make their body muscles relax (Sulistyarini, 2013). Relaxation therapy effectively reduces depression, anxiety and stress (Kashani, F., *et al.*, 2012).

The finger-holding relaxation is a part of the *Jin Shin Jyutsu* (Japanese acupressure) which is very simple and easy to do for anyone because it deals with the fingers and the flow of energy in our body (Pinandita *et al.*, 2012; Idris and Astarani, 2017). This technique uses a simple hand touch which involves breathing to balance the energy in our body to control emotion that our body may become relax (Sari, 2016; Idris and Astarani, 2017). This relax feeling may decrease the muscle tension and reduce anxiety (Yuliastuti, 2015).

Other relaxation strategies…… what is advantages and disadvantages….. and why it is important comparing both strategies? If different, so what? Oppositely if no different, so what?

**** put the setting data (Kembaran and Purwokerto) ➔ what phenomena, why it is important apply the relaxation strategy among patients in this area? Un-controlled blood pressure? In effective therapy? Or what….. And whether any setting-related reason for selecting the relaxation selected..?????

This research aims at examining the effectiveness differences of finger-holding and deep breathing relaxation techniques in reducing the heart rate and stress levels in patients suffering from hypertension. It is expected that this research may obtain simple stress control methods or techniques which can be independently performed by the patients suffering from hypertension. By controlling the stress, the blood pressure of patients suffering from hypertension may be well controlled to prevent from the hypertension complications, such as stroke and other cardiovascular diseases.

RESEARCH METHODS

This quasi experimental research compares two treatment groups with the variables measuring the heart rate and stress level experienced by the patients suffering from the primary hypertension. This research is conducted in Kembaran and East Purwokerto district which have a high prevalence of patients suffering from high hypertension in Banyumas. The research samples are recruited using a simple random sampling approach. The obtained research samples are 50 patients, consisting of 25 patients receiving finger-holding relaxation techniques and 25 patients

Commented [A36]: Anxiety is similar with stress???

How about other relaxation methods that also claimed as effective strategy in managing stress and anxiety? Why you directly select finger holding and deep breating… why not other techniques?

And again…. WHAT is/are the significance comparing both technique…. Either have or have no different it is still OK…? So what is the reason.. why this study is IMPORTANT.

Commented [A37]: From how many available respondents ?

Commented [A38]: How to assign into two group?

receiving deep-breathing relaxation techniques. The inclusion criteria in this research are patients suffering from the primary hypertension with the blood pressure of ≥ 140/90 mmHg and willing to become the research respondents. Meanwhile, the exclusion criteria in this research are patients who do not participate in the therapy, with hearing problems, and experience complications with the other diseases (kidney disease, heart disease, diabetes mellitus, and stroke).

The demographic questionnaire is used to identify the respondents' characteristics. The Subjective Units of Distress Scale (SUDS) is employed to measure the stress level. The inconvenience feeling measured with SUDS greatly depends on the "current" situation that it is quite sensitive to measure the occurring stress level changes (Astri, 2012). This scale is also commonly used to measure the anxiety level due to the implementation of relaxation techniques (Goldfried and Davison, 1976 in Asrori, 2015). SUDS consists of 11 multilevel answer points of Likert scales, starting from 0 point, in which there is no stress at all or relax up to 10 points (the highest stress level). To measure the heart rate (HR), a record on the Medel digital tension-meter licensed by the European hypertension association is performed.

The research data are analyzed using univariate and bivariate analysis. Univariate analysis is conducted on each research variable to explain the characteristics of age, sex, systolic blood pressure and diastolic blood pressure. The data are then presented in the form of distribution, frequency and percentage.

Bivariate analysis is conducted to determine the heart rate and stress level differences of the control and intervention group before and after treated with finger-holding and deep-breathing relaxation techniques. Before determining the hypothetical testing type, the researcher first conducts the data normality test using the Shapiro-Wilk since the number of samples is <50. If the data is normally distributed, the parametric statistical test used is the paired (dependent) t test to see the stress level difference of the control and intervention group before and after treated with finger-holding and deep-breathing relaxation techniques. The unpaired (independent) t-test is used to determine the stress level decrease difference between the control and intervention group. However, if the normality test is not normally distributed, the non-parametric statistical tests may then use Wilcoxon and Mann-Whitney test.

This research is conducted after obtaining the approval from the board of health research ethics, Faculty of Medicine, Sebelas Maret University, Surakarta.

Commented [A39]: Please explain in detail both intervention… (Intervention fidelity)….part of intervention validity

1.What activity in Finger holding group? Dosage; Frequency (how many times/day), duration, how many days, who teach the patient to do the relaxation? How to assure that patients performed the technique as expected?
2.Deep breathing.. which technique applied, Dosage; Frequency (how many times/day), duration, how many days, who teach the patient to do the relaxation? How to assure that patients performed the technique as expected?

Commented [A40]: Why you measure the anxiety not stress?
Both terms is similar??? Be careful…!!!!

Commented [A41]: Validity and reliability?? Translation process?

Commented [A42]: It is proposal sentences… PLAN… now you are finish the research and analysed the data already.. so just report the normality value, normal or not and what decision you made …. Using parametric or non parametric test….!!

Commented [A43]: write the number of the ethical clearance letter..

Result and Discussion Respondents' Characteristics

The respondents' characteristics in this research are shown in Table 1. The respondents are mostly female at the age of more than 60 years old.

Table 1. Respondents' characteristics based on age and sex

Characteristics	Finger-holding group (n=25)		Deep-breathing group (n=25)		*p*
	f	%	f	%	
Age (Year)					
45-59 (midle age)	5	10.00	0	0	
60-74 (elderly)	20	40.00	24	48.00	0.013
75-90 (old)	0	0	1	2.00	
Sex					
Male	6	12.00	2	4.00	0.247
Female	19	38.00	23	46.00	

Commented [A44]: .....???? so what?

Table 2. Respondents' characteristics based on sistole dan diastole blood pressure

Characteristics Blood Presusure	Finger-holding group (n=25)		Deep-breathing group (n=25)		*p*
	Mean	SD	Mean	SD	
Sistole	164.08	12,93	168.28	21.94	0.415
Diastole	101.64	9,37	98.52	14.94	0.381

In this part you only need to inform the reader what interpretation from the table… no more..!!

After the age of 60 years old (elderly), the prevalence of hypertension increases due to the vascular changes resulted from the plaque accumulation at the vascular endothelium which may increase the peripheral resistance and resulted is in blood pressure increase. Age factor greatly influences the presence of hypertension. The increasing age also increase the risk of experiencing hypertension due to physiological changes resulted from the body degenerative processes.

The hypertension experienced by the women is higher than that experienced by men after reaching the age of 60 years old as women experience menopause (Smeltzer & Bare, 2002). After menopause, the women usually experience hormonal changes which may increase the fat accumulation in vascular endothelium that the hypertension risk continuously increases. Based on

the statistical data, there is a significant relationship between mental stress and hypertension in men (Jadhav, S.B., 2014).

The respondents' characteristics illustrated in table 2 show that most respondents have the blood pressure of > 160 mmHg. Based on the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC), those respondents are classified into hypertension stage 2. There is no systolic and diastolic blood pressure significant difference in the group treated with finger-holding relaxation technique and the group treated with and deep-breathing relaxation technique that eventually reduces the blood pressure influence on the heart rate and anxiety level measurement result.

Commented [A45]: DON'T Discuss in this way… your study not talking about the caharacteristics of hypertension patients…

This characteristic is important information for you in order to determine the different between group later… if the result is different since the participant between group is different significantly in terms of age… SO you should consider.. the different of "outcomes (stress and HR) … can be caused by the different of age not because of intervention you provided… if yes mean that your study validity is questionable… so, for characteristic just inform the general info and whether or not between groups have any different statistically

D. The Heart Rate and stress level difference before and after the intervention.

The result of analysis shows that there is significant heart rate and stress level difference before and after the intervention. After the intervention, both groups show the decreasing heart rate and stress level (see Table 3).

The heart rate decrease experienced by both groups is due to the finger-holding and deep-breathing intervention to result in the relaxation response. The relaxation response may influence the limbic system in synchronizing the brain waves to the wave α to create a relaxing feeling responded by hypothalamus by reducing the secretion of Corticotropin Releasing Hormone (CRH), which may also stimulate the anterior pituitary gland to reduce the secretion of Adrenocorticotropic Hormone (ACTH). The sympathetic stimulation decrease may reduce the heart rate frequency. The result of this research is in line with that conducted by Perciavalle, V, *et al.* (2017) stating that the relaxation techniques may improve mood and reduce the heart rate and cortisol salivary level.

Commented [A46]: Move to discussion part

Table 3. The Heart Rate of patients suffering from primary hypertension before and after treatment

Relaxation Group	Before		After		*p*
	Mean	SD	Mean	SD	
Finger-holding					

Heart Rate	84.80	9.40	80.40	9.08	0.000
Stress level	4.16	2.34	3.12	2.11	0.000
Deep-breathing					
Heart Rate	90.16	12.09	87.84	12.53	0.010
Stress level	4.96	2.49	3.84	2.29	0.000

The table showed that……..

Commented [A47]: In this part you only need to inform the reader what interpretation from the table… no more..!!

The stress level measurement in both groups with SUDS shows that the average stress level is categorized into moderate before treatment but changed into mild after the treatment. It shows that there is a significant stress level decrease experienced by both groups. This result is in accordance with that conducted by Kashani, F., *et al*. (2012) revealing that relaxation therapy may decrease the depression, anxiety and stress level.

Commented [A48]: Move to the discussion part.

E. The Heart rate and stress level difference between the groups treated with finger-holding and deep-breathing relaxation intervention.

The heart rate measurements before treatment in both groups shows that there is no significant difference, yet after the measurement, there is a heart rate significant difference (see table 4). The average decreasing heart rate in the group treated with finger-holding relaxation intervention is better than that treated with deep-breathing relaxation intervention, in which the heart rate decrease in the group treated with finger-holding relaxation intervention is 4.4 times/minute, while that in the group treated with deep-breathing relaxation intervention is 2.32 times/minute. The finger-holding relaxation technique is more effective to reduce the heart rate because this technique combines the finger-holding x and deep-breathing heart rate technique to control emotion and stress (National Center on Domestic Violence, Trauma & Mental Health, 2014). The controlled stress may result in the decreasing cortisol hormone and sympathetic response that eventually reduce the heart rate. Deep-breathing may activate the baroreceptors which stimulate the parasympathetic nerves to reduce the heart rate (Mason, *et al.*, 2013).

Table 4. The pre and post test difference between the patients' heart rate treated with finger-holding and those with deep-breathing intervention

Variable	Finger-holding		Deep-breathing		*p*
	Mean	SD	Mean	SD	

Heart Rate					
Pre Test	84.80	9.40	90.16	12.09	0.09
Post test	80.40	9.08	87.84	12.52	0.02
Decrease	4.40	3.90	2.32	4.15	0.07
Stress level					
Pre Test	4.16	2.34	4.96	2.49	0.28
Post test	3.12	2.11	3.84	2.29	0.23
Decrease	1.04	1.02	1.12	0.78	0.08

In this part you only need to inform the reader what interpretation from the table… no more..!!

The result of analysis on stress level shows that there is no significant difference in both groups' pretest and posttest result. However, the average stress level decrease experienced by the group treated with deep-breathing relaxation intervention is better than the group treated with finger-holding relaxation intervention. The stress level experienced by the group treated with finger-holding relaxation intervention decreases by 1.04, while the group treated with deep-breathing relaxation intervention decreases by 1.12.

Both interventions are effective to reduce the stress level. Finger-holding relaxation intervention may relieve the stressful feelings, reduce tension, increase comfort, and help deal with the uncontrolled situations due to the stress without changing the underlying stress causes (National Center on Domestic Violence, Trauma & Mental Health, 2014). Meanwhile, deep-breathing relaxation may effectively induce the development of mood and control the stress (Perciavalle, V, et al, 2017).

The decreasing stress level and heart rate positive influence the patients suffering from hypertension. The combination of the increased mental and physical stress may significantly increase the systolic blood pressure (Trapp, M., et al, 2014), while the decreasing stress level may increase the telomerase gene expression and reduce the blood pressure (Duraimani S, *et al.*, 2015).

Commented [A49]: Move to discussin part

Discussion

Explain why your study come up with those kinds of result. Why different, why not different…. What mechanisms to explain those changes….!!!!

Conclusion and suggestion

There are significant differences in heart rate and stress levels before and after the intervention of finger-holding and deep-breathing relaxation techniques. There is no significant stress level difference after the treatment (post test) given to the groups who received the intervention of finger-holding and deep-breathing relaxation techniques. However, there is a significant Heart Rate difference after treatment (post test) given to the groups who received the intervention of finger-holding and deep-breathing relaxation techniques. Both finger-holding and deep-breathing relaxation techniques are equally effective to reduce the stress level experienced by the patients suffering from the primary hypertension. Finger-holding relaxation technique is more effective in reducing the heart rate than the deep-breathing relaxation technique. Finger-holding and deep-breathing relaxation techniques are recommended to control the heart rate and stress level experienced by the patients suffering from the primary hypertension.

Commented [A50]: Seem the results is not important....

Acknowledgement

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[JKP] Editor Decision

Kotak Masuk

J

Kusman Ibrahim <jkp.fkep@unpad.ac.id> Rab, 27 Nov 2019 09.52

kepada saya, agis.taufik27

Inggris
Indonesia

Terjemahkan pesan

Nonaktifkan untuk: Inggris

Assalamualaikum arif setyo upoyo:

We have reached a decision regarding your submission to Jurnal Keperawatan Padjadjaran, "THE EFFECTIVENESS DIFFERENCES OF FINGER HANDHELD AND DEEP
BREATHING RELAXATION TECHNIQUES IN REDUCING HEART RATE AND STRESS LEVELS IN
PRIMARY HYPERTENSION PATIENTS".

Our decision is to: Accept Submission

Note: Your article will publish in December 2019 (Vol. 7 Issue 3). Thankyou

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