The Effect of Progressive Muscle Relaxation Techniques to Decrease Blood Pressure for Patients with Hypertension in Mataram

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Abstract

Introduction: Hypertension is one of the leading causes of mortality in Indonesia. Hypertension is one of the most common diseases in NTB (Nusa Tenggara Barat), the prevalence of hypertension measured based on blood pressure in NTB is 1,523,574 (32.4%), it is higher than the national rate (1,255,537 (26.7%) of 4,702,389 people). The highest prevalence of hypertension in Mataram City is in Cakranegara Primary Care, there are 724 people with hypertension in this primary care working area. The purpose of this study is to determine the average number of patient’s hypertension rate at Cakranegara Primary Care before and after given muscle relaxation techniques.

Method: This study uses "Quasi Experiment Design" with control group as comparison. The population in this study are 724 hypertension patients and 27 patients as sample based on inclusion and exclusion criteria.

Results: The results of this study indicates that the T-test calculation using Quasi Experiment Design shows the difference of average of hypertension rate before and after given progressive muscle relaxation technique. It is 10,306 mmHg in intervention group and 1,425 mmHg in control group. The p-value in the intervention group is 0.000 that is smaller than α=0.05 and the p-value of control group is 0.431 that is greater than α=0.05.

Conclusion: From this study, we can conclude that there is a difference of hypertension rate between intervention and control group. We hope this progressive muscle relaxation technique can be used as an appropriate alternative or complementing treatment to control Hypertension rate.

Keywords: Hypertension; Progressive muscle relaxation technique

Introduction

Hypertension or high blood pressure is an abnormal blood pressure in the arteries continuously for more than one period. This occurs due to arterioles construction. Arteriole construction makes blood difficult to flow and increases pressure against the arterial wall. Hypertension adds more workload for the heart and arteries, which might be continued and causes heart and blood vessels damage [1].

Based on the causes, hypertension is divided into 2 kind of types, primary hypertension and secondary hypertension, primary hypertension which is also called idiopathic hypertension might be caused by genetic or hereditary, environment, hypertensive renin sympathetic nervous system, angiotensin and the increasing of intracellular Na+, Ca, obesity, smoking, excessive salt consumption and lifestyle. While secondary hypertension might be caused by estrogen use, kidney disease, Cushing's syndrome and pregnancy-related hypertension [2].

According to WHO, the blood pressure limit that is still considered normal is 140/90 mmHg, while blood pressure >160/95 mmHg is stated as hypertension. Blood pressure between normal tension and hypertension is called borderline hypertension. The WHO limit does not differentiate age and sex [1].

Hypertension classification is divided based on blood pressure values (Table 1) [3].

Hypertension is a global health problem that requires attention because it can lead to death in both developed and developing countries. According to the World Health Organization (WHO) in 2012, the prevalence of hypertension cases was 839 million and it is expected to increase in 2025 to 1.5 billion (29%) of the total world population, with more sufferers in women (30%) than men (29%). About 80% of hypertension cases occur mainly in developing countries, including Indonesia [4].

Based on Riskesdas data [5], the tendency of hypertension prevalence diagnosis by health workers based on interviews in 2007 amounted to 79,250,000 people (31.7%) and decreased in 2013 to 65,048,100 people (25.8%) from 252,125. 458 people of the Indonesian population and the prevalence of hypertension in NTB based on the results of blood pressure measuring 1,523,574 people (32.4%) which is higher than the national figure which is 1,255,537 (26.7%) of 4,702,389 inhabitants NTB and the data of hypertension patients in Mataram city in 2015 were 3532 people with hypertension and presented in the form of the table below, which shows the data of the hypertension patients in the existing primary care in the area of Mataram City.

Based on the background above, the formulation of the problem of this study is "How big is the effect of progressive muscle relaxation techniques on blood pressure reduction in hypertension patients at Primary care in Mataram".

The aim of this study is to find out the effect of progressive muscle relaxation techniques on blood pressure reduction in hypertension patients at Primary care in Mataram (Figure 1) [4,6,7].

Methods

This study uses a "Quasi Experiment Design" using a control group as the comparison. The research used twice observation, before and after
being given progressive muscle relaxation techniques. The observation conducted by measuring respondent’s blood pressure before being given progressive muscle relaxation techniques in the intervention group and the control group and after being given progressive muscle relaxation techniques. The population in this study were 724 people with hypertension and a sample of 27 people who were withdrawn based on inclusion and exclusion criterias (Table 2).

**Result**

**Univariate analysis**

- **Before being given intervention (Table 3)**
- **After being given an intervention (Table 4)**

**Bivariate analysis**

Statistical tests using SPSS 16 software showed the average value of blood pressure in the control group before giving progressive muscle relaxation techniques was 159.00 mmHg and the average blood pressure value after giving progressive muscle relaxation technique therapy was 157.58 mmHg. The average blood pressure level shows a decrease in blood pressure after being given progressive muscle relaxation techniques. The blood pressure drop averaged 1.425. P-value obtained 0.431 greater than α=0.05 means that there is no significant effect on the provision of progressive muscle relaxation techniques to decrease blood pressure in the intervention group at primary care in Mataram (Table 5).

While the results of the analysis in the intervention group before being given progressive muscle relaxation technique was 152.44 mmHg and the average value after the progressive muscle relaxation techniques was 142.14 mmHg. The average blood pressure level showed a decrease in blood pressure after being given a progressive muscle relaxation technique, each of which decreased the average blood pressure, each blood pressure decreased by an average of 10.306 mmHg. The value of p value obtained 0.000, which is smaller than α=0.02 and it means that there is a significant effect on the provision of progressive muscle relaxation techniques to decrease blood pressure in the intervention group at Primary care in Mataram.

**Discussion**

**Blood pressure identification before progressive muscle relaxation techniques are performed**

Based on the results of the study it can be known that before therapy
According to Evelyn journal in a book entitled "Book of Anatomy"
Technique on Decreasing Blood Pressure on Hypertension Patients in Mojo Hamlet RT: 03 RW: 01 Mojo Village, Mojo District, Kediri Regency and in line with Sulistyarni research which states that relaxation can lower blood pressure both systolic and diastolic in patients with hypertension [12-16].

From the results of the study, it can be concluded that there is an effect between progressive relaxation on the level of systolic and diastolic blood pressure, progressive muscle relaxation techniques affect the reduction of blood pressure in hypertension patients, so that hypertension sufferers can apply and carry out progressive muscle relaxation techniques regularly as one of the complementary therapies in blood pressure reduction [17-22].

Conclusion

The conclusion in this study indicate that there is an effect of progressive muscle relaxation techniques on decreasing blood pressure in hypertension patients and it is hoped that the results of this study can be used as a reference for researchers and health workers in overcoming hypertension.

References