

Systolic and Diastolic, Before and After Doing Deep Breathing Exercise

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Abstract— Deep breathing is one of the non-pharmacological therapists that can increase sensitivity of baro reflex and reduce sympathetic and chemical reflex activity which shows a potentially beneficial effect in reducing systolic and diastolic in hypertensive patients at the Kahuripan Community Health Center Tasikmalaya. The goal of this research to knowing them before and after slow deep breathing. This is a descriptive research method with survey approach. The number of samples is 44 respondents. Data collection using observation sheets. Data analysis using univariate analysis. Percentage of Characteristics based on the age of patients with Hypertension, at the age of 46-55 years 31.8%, based on female sex as much as 86.4%, based on a comparison of the compressive value of systole after doing Slow Deep Breathing as much as 79.5%, and based on comparison diastolic after doing Slow Deep Breathing as much as 70.5%. There was a change in systolic, blood pressure as much as 79.5% and diastolic as much as 70.5%, after doing Slow deep breathing in patients with Hypertension at Kahuripan Health Center, Tasikmalaya City.

Keywords: *hypertension, blood pressure, systolic, diastolic, slow deep breathing*

I. INTRODUCTION

Patients with hypertension in Indonesia are about 15 million but only 4% are controlled. Their who suffer from hypertension and they know they are seeking treatment for it. Conversely, 50% of patients do not realize them selves as hypertension sufferers, so they tend to suffer from more severe hypertension. While Indonesia has a fairly high number, which is 15% of Indonesia's 230 million population, nearly 35 million people suffer from hypertension [9]. Non-pharmacological therapy that must be carried out by Hypertensive patients is controlling food intake and sodium, losing weight, limiting alcohol and tobacco consumption, and doing exercise and relaxation. One of it, that can be done to

the primary hypertension patient is deep breathing exercise. It include exercise and relaxation and as modality therapy that can increase baro reflex sensitivity and reduce sympathetic and chemo reflex activation, which shows potentially beneficial effects in hypertension [10]. Slow Deep Breathing stimulates the secretion of endorphin neurotransmitter autonomic nervous system which has an effect on decreasing the work of sympathetic nerves and increasing parasympathetic nerves whose effects can affect the heart rate to be slower and the occurrence of vasodilation in the autonomic nervous system [3]. Slow Deep Breathing is also significant to decreasing MAP and increasing Heart Rate Variability [4-6].

II MATERIAL AND METHOD

A. Procedure

This is quantitative research and using descriptive methods. The aims of it is to illustrate the comparison between blood pressure values before and after doing Slow Deep Breathing.

B. Data Analysis

Respondents in this research were 44 persons, which is taken by random sampling technique. They were in the Kahuripan Health Center Tasikmalaya from who regularly visit that place from January to December 2018.

III. RESULTS

Descriptive statistics related to the results of research are:

1. The value of systole blood pressure before performing Slow Deep Breathing in patients with hypertension, the majority at 160 mmHg, is as many as 30 respondents (68.2%), <160 mmHg is as many as 14 respondents (32%).
2. Diastole blood pressure values before performing Slow Deep Breathing in hypertension sufferers, the majority at ≥ 90 mmHg, as many as 22 respondents (50.0%), 22 at 90 mmHg (50.0%).

3. The value of systole blood pressure after doing Slow Deep Breathing in patients with hypertension, the systolic at ≥ 160 mmHg, which is 21 respondents (48%), the systolic < 160 mmHg there are 23 respondents (52%).
4. Diastole blood pressure values after performing Slow Deep Breathing in hypertensive patients, the majority at 90 mmHg, as many as 28 respondents (63.6%).
5. Comparison of systole blood pressure values after performing Slow Deep Breathing 35 respondents (79.5%) are change, 9 respondents (20.5%) are unchanged.
6. Comparison of diastolic blood pressure values after performing Slow Deep Breathing, 28 respondents (63.6%) are change, 16 respondents (36.4%) are unchanged.
7. Comparison of diastolic blood pressure values before and after performing Slow Deep Breathing, there were differences in 29 respondents (65.9%), and there were no differences in 15 respondents (34.1%). It is showed in table 1

TABLE 1: SYSTOLIC AND DIASTOLIC BEFORE AND AFTER SLOW DEEP BREATHING EXERCISE

Descriptions	Frequency	Percentage (%)
There are Differences	29	65.9
No Differences	15	34.1
Total	44	100

IV. DISCUSSION

Based on research conducted on 44 respondents show the results that there was a change in systolic blood pressure 79.5%, and diastole 65.9%, after slow deep breathing. Anderson research, said that there were differences in blood pressure from each respondent because there were several factors that affected the amount of blood pressure of each person [1]. This is equals with has been found by researchers, there are the difference values of systolic and diastolic after doing Slow Deep Breathing exercises. It is a conscious activity to control breathing slowly and deeply that has an effect on the occurrence of relaxation. When the body is relaxed the impulses sent to the brain will decrease followed by decreased brain activity and other physical activities. The effects of this relaxed state are decreased heart rate, respiration and decrease blood pressure [2,5]. During do this exercise, the respondent regulates his breathing to breathe slowly and deeply. Breathing that is done slowly and deeply will increase oxygen consumption and improve oxygen saturation in the body. It can increased oxygen levels by stimulate the merge of nitrite oxidation. Nitrite oxidation will enter the lungs and brain which will make the body relax [4].

V. CONCLUSION

The conclusion in this study, we provide information about the correlation between motor ability and long jump ability. The

correlation between motor ability and success in sports has received much attention in recent years. The question of which characteristics determine athletes to achieve peak performance has been proven is motor ability at an early age has an important performance from several basic movement skills. Besides, the importance of motor skills is useful for everyday life. These findings add to the literature which shows that motor skills are an important element of long jump skills

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