EFFECT OF SLOW DEEP BREATHING AND AROMATHERAPY OF LAVENDER (LAVANDULA ANGUSTIFOLIA) ON BLOOD PRESSURE IN HYPERTENSION PATIENTS IN PANTI WERDHA ILOMATA OF GORONTALO CITY

Yusrin Aswad[1)] and Suwarni Loleh[2)]
Email: yusrinaswad@gmail.com

ABSTRACT

Increased blood pressure that lasts for a long time (persistent) can cause damage to the kidneys (kidney failure), heart (coronary disease) and brain (causing stroke) if not detected early. Do deep breathing and slow, will provide an opportunity for the body to perform and direct diaphragmatic breathing can change lives to activate the physiology centers in the brain relaxation. Whereas Steam and smoke This essential oil can also affect a person's psychological state through stimuli received by the nerve endings of the olfaction found in the lining of the nasal lenders, or the area of nerve response in other organs through which the essential oil vapor drops.

The purpose of this study: determine the effect of slow deep breathing and lavender aromatherapy on blood pressure in patients with hypertension. Quasi experiment with the design "group pre and post test design ". In this study there is one group, the intervention group is the group that gets the treatment of slow deep breathing and lavender aromatherapy.

There are significant differences scores before and after slow deep breathing and aromatherapy lavender. Statistical test results (vital signs) respiration shows the value of p = 0.0 00 <0.05 so that Ho is rejected, then it shows the value of p = 0,000 <0.05 so that Ho is rejected. and mean arterial pressure (MAP) p = 0,00 0 <0 , 05 so that Ho refused. Slow deep breathing and lavender aromatherapy can be used as non pharmacological interventions, especially in hypertensive patients.

Keywords: *Slow Deep Breathing, Lavender Aromatherapy, Hypertension*

INTRODUCTION

As we age, physiological changes occur in the elderly accompanied by various health problems that cause high degenerative diseases. At the advanced age will be a process of disappearance of the network's ability to repair itself or to replace and maintain normal functions slowly and so cannot withstand the infection and repair the damage. Therefore, in the body will accumulate more and more metabolic and structural distortions called degenerative diseases (Sunaryo, 2015). One of the denerative diseases that often attack the elderly is hypertension. Hypertension is a form of cerebral vascular disorders in the form of narrowing of blood vessels that cause cerebral blood supply and oxygen to brain tissue to experience a decrease or blockage. According to The Seven Joint National Committee (JNC-VII) a person's blood pressure limit is said to be hypertensive when systolic pressure> 140 mmHg and diastolic pressure> 90 mmHg [3].

The American Heart Association (AHA) reports that Americans over the age of 20 who suffer from hypertension have reached 74.5 million, nearly 90-95

percent of cases of unknown causes. Hypertension is a silent killer where the symptoms are generally sufferers do not feel symptoms when blood pressure rises (Ministry of Health Republic of Indonesia, 2014). Global Data Report on Non communicable Diseases 2016 data-from WHO sufferers of hypertension as much as 40 percent of developing economies including Indonesia, while developed countries only 35 percent. Africa has as much as 46 percent, while Americans 35 percent and Southeast Asia 36 percent of adults suffer from hypertension (WHO, 2013).

Based on data from the Basic Health Research (RISKESDAS) of hypertension in Indonesia is a health problem with a high prevalence of 25.8%, the prevalence of hypertension in Indonesia obtained through measurements in the age group ≥ 18 years. The highest prevalence of hypertension in Indonesia is in the Bangka Belitung Province (30, 9 %), followed by South Kalimantan (30.8%), East Kalimantan (29.6%), West Java (29.4%), and Gorontalo (29, 4%).

According to data from the Gorontalo Province Office, hypertension in the elderly is the highest non-communicable disease in all regions of Gorontalo, with a total of 140,140 cases in 2018.

According to Price and Wilson (2006) Head blood pressure caused by vascular damage resulting from hypertension is evident throughout the periphery [11]. Structural changes in the small arteries and arterioles cause blood vessel blockage. When blood vessels constrict then the blood flow will be disrupted and impact on causing negative effects on the body so that care and treatment must be done.

In general, the treatment of hypertension is divided into two, namely the pharmacological and non-pharmacological approaches, the pharmacolytic approach can be carried out with anti-hypertensive administration. Although Anti-hypertension is very effective in lowering blood pressure, this will have a drug addiction effect and will have adverse drug side effects for the patient. One of the side effects of antihypertensive use for a long time is cough. One of the actions in nursing care to reduce blood pressure with a non-pharmacological approach is a nurse's independent action to reduce hypertension, for example with *Biofeedback* techniques, family medicinal plants, guided imagination, *distraction*, *acupressure, application of* hot / cold *deep breath relaxation* and music therapy [9]. Deep breathing relaxation technique is one of the relaxation therapies that is able to make the body become more calm and harmonious, and is able to empower the body to overcome the disorders that attack it.

Deepbreathing relaxation technique is a technique for deep breathing, slow breathing (holding inspiration to the maximum) and how to exhale slowly. In this technique stimulating the brain through imagination can have a direct influence on *the nervous system, endocrine, neuromodulator, endorphins* by means of able to reduce the frequency of the hart rate so that the cardiac out put will be in accordance with normal rhythm. In accordance with the results of research from Dian Wisnu that there is a relationship between deep breathing with a decrease in Blood Pressure with the results (p = 0.001). Lavender oil is one of aromatherapy which is known to have sedative, hypnotic, and anti-neuro depressive effects both in animals and in humans. Because lavender oil can provide a sense of calm, so it can be used as stress management. The main content in lavender oil is linalool acetate which is able to relax and relax the working system of nerves and tense muscles. Linalool also shows the hypnotic

and anticonvulsive effects, because of the efficacy of this lavender flower is very well used as aromatherapy. In addition, a few drops of lavender oil can help overcome insomnia, improve one's mood, reduce anxiety, increase alertness, and of course can provide a relaxing effect (Yamada, 2005).

Lavender aromatherapy has advantages compared to other types of aromatherapy that is economical, easy to obtain, safe to use, does not require a long time and is practical because it does not require complicated equipment. The combination of lavender therapy with medical treatment will improve the client's condition (Zelner, 2005). Lavender oil smells sweet, floral, very herbal and has an additional odor like balm. Lavender oil is one of the safest oils. Therefore, often used to treat infections of the lungs, sinuses, vagina, and skin, also relieve headaches, muscle aches and lower blood pressure (Koensoemardiyah, 2009). This is in accordance with the results of Maya's research that the effect of lavender aromatherapy on blood pressure with an average result of a decrease in systolic blood pressure after inhaling lavender aromatherapy was 19.75mmHg and the average decrease in diastolic blood pressure was 9.75mmHg.

Based on the explanation above, the researcher wants to combine the two relaxation techniques in order to see the effects as well as the implementation of the two interventions simultaneously.

RESEARCH METHODS

Research Design

In this a quasy experiment design was used to determine whether SDB therapy and lavender aromatherapy had an influence on blood pressure in people with hypertension.

Place and Time of the Study

The research was carried out at the Gorontalo City Ilomata Orphanage. This research was conducted in June - August 2019.

Population and Sample

The population in this study are all residents of the Werda Ilomata orphanage who suffer from hypertension. Samples are part of the population that can be used as research subjects (Nursalam, 2008). Sampling is done by using *purposive sampling*, which is sampling based on a particular consideration made by the researchers themselves, based on the characteristics or characteristics of the population that have been known before [7]. The sample inclusion criteria are as follows: Elderly, Hypertension without complications, willing to be a respondent.

Data Analysis

Univariate Analysis

Data were analyzed univariately to see the average age, sex, ethnicity, and administration of blood pressure - reducing drugs, pulse and breathing. to produce a frequency distribution and percentage of variables.

Bivariate Analysis

Data were analyzed by bivariate to see the effect of SDB and Aromatherapy Lavender therapy on blood pressure. The data in the analysis were tested using Paired Sample t Test, the confidence level of 5% ($\alpha = 0.05$). Paired Sample Test t Test is used to see changes in TD, pulse and RR intensity pre and post. If in the intervention group the value of P <0.05, it can be concluded that music therapy is effective for reducing Td, Nadi, RR.

RESEARCH RESULTS AND DISCUSSION

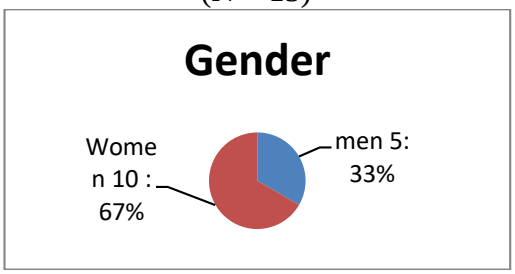
Results

The results of the study and consideration of the effect of SDB and Aromatherapy lavender against pressure blood

on Client Patients with Hypertension in Panti Werda Ilomata Gorontalo City.

1. Characteristics of Respondents

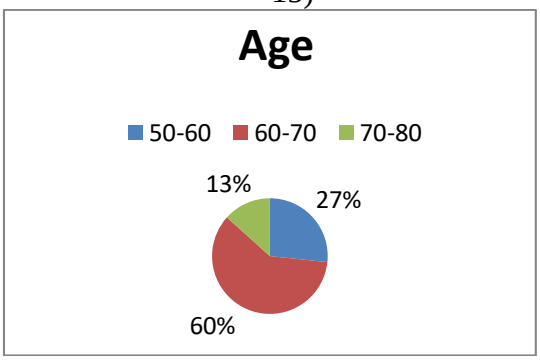
Diagram 1
Distribution of frequency based on age, gender, Werda Ilomata orphanage, (N = 15)



Based on Diagram 1, it can be seen hat the majority of respondents are female sex with 67%.

2. Characteristics of Respondents by Age

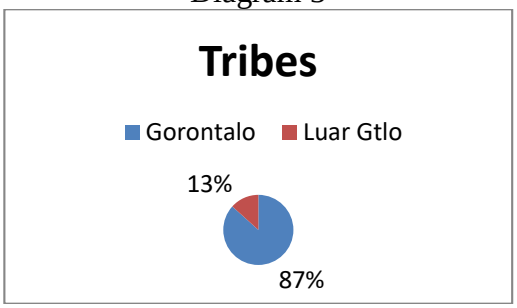
Diagram 2
Distri plugs frequency by age in Panti Werda Ilomata, (N = 15)



Based on Diagram 2 it can be seen that the average respondent is aged 60-70 years with a presentation of 60%.

3. Characteristics of Respondents by Tribe

Diagram 3



Based on Diagram 3 it can be seen that the average respondent is Gorontalo

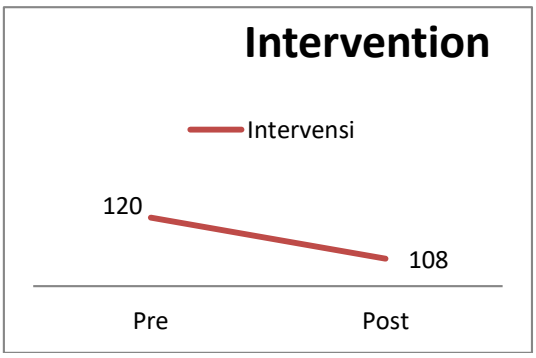
4. Pre and post results

Arterial Preasure (MAP)

Group	Pre	Post
Intervention	120	108

Based on table 2 shows that in the intervention group SDB and lavender aroma therapy showed an average decrease in MAP, in the initial measurement of MAP an average of 120 mmhg while in post measurements the results obtained were 108 mmhg MAP.

Programmed Intervention



Based on Diagram 3, it can be seen that the average decrease occurred with a difference of 12 mmHg.

Frequency distribution of therapeutic effect of slow breathing deeb and aromatherapy Lavender against blood pressure in Patients with Hypertension in Panti Werda Gorontalo

Statistic test

Variable	BeforeAfter Mean ± SD		P.Value
Systole blood pressure	120.10± 7.554	108.83± 7.931	0,000

**Test T test*

DISCUSSION

Based on the results of statistical analysis shows that the value of asymp.sig T test for MAP is 0,000 so that the hypothesis states that slow relaxation therapy and lavender aromatherapy can reduce blood pressure in hy-

pertensive patients in Pan tida Ilomata Gorontalo City.

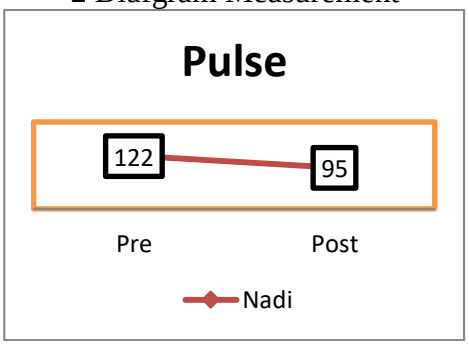
Slow deep breathing is one of the relaxation methods. When relaxation prolongs muscle fibers, decreases the delivery of nerve implants to the brain, decreases brain activity, and other bodily functions, the characteristic of the relaxation response is marked by decreased pulse rate, respiratory rate and decreased blood pressure [9]. Deep and slow breathing will increase oxygen levels in the body and stimulate the body's chemoreceptors. Inhibition of body chemoreceptors will result in vasodilation response of blood vessels and decreased vascular pressure so that blood pressure drops (Fatimah & Setiawan, 2009).

Research on slow deep breathing conducted by Critchley, et al. In 2015 found that slow deep breathing can affect cerebral cortex and the medulla which is positively related to nervous system relaxation that can influence the mechanism of reducing blood pressure. Breathing exercises that are used as breathing habits can improve both physical and mental health (Potter & Perry, 2006).

Slow deep breathing affects the modulation of the cardiovascular system which will increase fluctuations in the respiratory frequency interval and have an impact on increasing the effectiveness of baroreflex and can contribute to a decrease in blood pressure (Sepdianto, Nurachmah, & Gayatri, 2010). Mason et al in 2013 in a research article on slow deep breathing stated that slow deep breathing had an effect on increasing baroreflex sensitivity response, decreasing blood pressure, reducing anxiety, and increasing oxygen saturation. The response of baroreflex sensitivity increases the effect of slow deep breathing on the reduction in blood pressure within 24 hours of measurement. Barorefleks will activate the parasympathetic system which resulted in vasodilation of blood vessels, a decrease in cardiac output and will lead to decreased blood pressure (Fatima, 2010) jal is also in line with lavender aromatherapy which gives a feel fresh and comfortable so that when the body relaxation and coupled with inhaling aromatherapy calming resulting in an easier and faster client relaxation so that by itself blood pressure will decrease. When water vapor containing chemical components is inhaled, the body will be absorbed through the nose and lungs which then enter the bloodstream. Aromatherapy vapors are inhaled, the vapor molecules will affect the limbic system of the brain which is responsible for the system of integration and expression of feelings, learning, memory, emotions, physical stimulation, and providing relaxed feelings so as to provide a comfortable sleeping environment (Taylor, 2005)

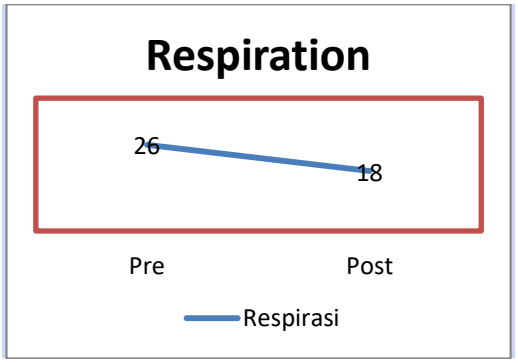
Therefore, slow deep breathing and aromatherapy exercises can be used as nonpharmacolgis therapy in hypertensive patients who are taking drugs or not taking drugs.

2 Diafgram Measurement



Based on 2 it can be seen that the average decrease occurs with a difference of 27 times/ minute.

3 Diafgram measurement of respiration



Based on Diagram 4.3 it can be seen that the average breathing frequency occurswith a difference of 8 times / minute.

CONCLUSIONS & SUGGESTIONS

Conclusion

From the results of research on the effect of SDB and lavender aromatherapy on blood pressure can be concluded as follows:

1. There was a significant difference in pre and post blood pressure p = 0,000
2. There is a significant difference in pre and post pulse p = 0,000
3. There is a significant difference between RR pre and Post p = 0,000

Suggestion

For the Werda Ilomata orphanage. It is expected to be used as companion therapy or as an alternative therapy.

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