The comparison of the effectiveness between cananga aromatherapy and dzikr therapy on reducing anxiety in the elderly with hypertension at posyandu Tawarsari Wonosari Gunungkidul

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ABSTRACT

Introduction: The process of degenerative aging was natural and experienced by every human being. One of the psychological problems experienced by the elderly was anxiety. Anxiety is defined as an emotional response that is influenced by the subconsciousness in a person associated with feelings of restlessness, worry, uncertainty, and other specific causes. One of the therapies to reduce the level of anxiety was by giving Cananga aromatherapy and practicing Dhikr. This study aims to determine the effectiveness of giving Cananga aromatherapy and Dhikr to reduce anxiety in older people with hypertension at Posyandu Tawarsari Wonosari Gunungkidul.

Method: This study used a quantitative method with a pre-experimental with the pre-post test without a control group. The participants were 30 older people using a total sampling technique that was divided into two intervention groups. This study used paired sample t-test and an independent sample t-test to analyze the data. The anxiety response in the elderly was measured by using the HARS scale (Hamilton Anxiety Rating Scale). This study obtained a p-value = 0.000 (p <0.05), indicating a significant difference in anxiety after the intervention of giving Cananga aromatherapy and Dhikr.

Result: The comparison test results between the two intervention groups obtained a significant value, namely p = 0.876. It means that “HA” was accepted, namely the provision of Cananga aromatherapy and Dhikr, which effectively changed the anxiety levels.

Conclusions: However, there was no significant difference between giving Cananga aromatherapy and Dhikr.

Keywords: Anxiety, Cananga aromatherapy, dhikr, hypertensive elderly

Cite This Article: Binoriang, D.P., Pramesti, S.W. 2021. The comparison of the effectiveness between cananga aromatherapy and dzikr therapy on reducing anxiety in the elderly with hypertension at posyandu Tawarsari Wonosari Gunungkidul. Bali Medical Journal 10(3) Special Issue ICONURS: 1263-1267. DOI: 10.15562/bmj.v10i3.2871

INTRODUCTION

Indonesia is the country with an aging population since the number of people over 60 years old has exceeded 7% so that the population has increased annually. The aging population phenomenon indirectly will positively impact the life expectancy of the Indonesian population if older people can live on their own, become qualified active elderly, and not burden society. The high number of older people can cause a person to experience decreased body immune and risk of developing hypertension.1 The percentage of hypertension in 55 to 64-year-old people is 45.9%, people over 65 years old are 57.6%, and people of ≥ 75 years old are 63.8%.2

Data from the Health Department Gunungkidul in 2019 showed that the incidence of hypertension in Gunungkidul reached 53,076 cases, consisting of hypertensive men and women aged≥ 15 years. Patients who received health services reached over 45.92% of the entire sub-district in Gunungkidul.3 Hypertension is included in 10 major non-communicable diseases causing mortality in the province in 2019. 45% of hypertension leads to cardiovascular disease, and 51% causes mortality in patients with stroke.4 Hypertension is influenced by several factors such as gender, age, genetic factors, sleep disturbance, and anxiety. The other study has showed a significantly higher level of anxiety in the elderly with mild systolic hypertension than in the normotensive elderly or those with normal blood pressure.5

The incidence of hypertension experienced by the elderly makes them feel anxious and worried about the severity of the disease. Such feelings can cause emotional disturbances frequently shown through anxiety disorders. Psychological decline experienced by the elderly in anxiety is often caused by their physical problems (chronic diseases), mindful of death, and loneliness that may lead to anxiety. Anxiety is the manifestation of emotions that occur when a person experiences conflict, pressure, and frustration. It is a subjective feeling with reactions such as fear, worry, restlessness,
Treatment of anxiety can generally be done in pharmacological and non-pharmacological management. Pharmacological interventions used to reduce anxiety include diazepam, lorazepam, klor diazepoksid, and other anti-anxiety drugs. The continuous use of anti-anxiety can cause physical symptoms such as chest pain, dizziness, nausea, palpitations, shortness of breath, tachycardia, and trembling. Management of this anxiety leads more to a major cause of anxiety in patients, which needs an intensive approach to identify the cause of the anxiety. The approach can be carried out through therapeutic communication with the elderly.

Non-pharmacological treatment has fewer side effects than pharmacological treatment. The non-pharmacological intervention can be carried out through recreation therapy, music therapy, psycho religious therapy or dhikr, and relaxation therapy with aromatherapy. An intervention with Cananga aromatherapy is a healing method using essential oils to build emotional comfort and health improvement. The common aromatherapy used is eucalyptus oil as an antiseptic and anti-inflammation, rose as an anti-depressant and sedative, and Cananga, which is hypotensive aromatherapy containing anti-anxiety.

Cananga essential oil is a type of aromatherapy that has a relaxing effect, relieves tension, stress, fast pulse pressure, and lowers high blood pressure due to its anti-depressants and hypotensive content. The combination of Cananga aromatherapy and dhikr practice can lower blood pressure in the elderly with hypertension without the side effects.

In relation to it, dhikr therapy is a relaxation technique conducted with elements of belief in God to calm the mind and reduce tension. Dhikr relaxation therapy can improve sleep quality, psychological health, calm the soul, and make it relaxed. The dhikr recitation contains the meaning of peace of mind and reduces tension/ anxiety. Allah SWT stated in QS Ar-Ra’ d verse 28:

"(Namely) Those who believe and their hearts become calm in the remembrance of Allah. Remember, only by remembering Allah, the heart becomes calm.”

Based on the surah, it can be denoted that dhikr can control the mind that creates stress and makes the feeling more at ease and focused; thus, it can prevent turbulence. Dhikr practiced along with aromatherapy will make the elderly more relaxed so that the anxiety level of the elderly can be reduced.

The Cananga aromatherapy and aims to reduce the level of anxiety in the elderly with hypertension. The lesser the anxiety felt by the elderly is, the lower their blood pressure will be.

Based on this background, the authors are interested in researching the effect of Cananga aromatherapy and dhikr to decrease anxiety in the elderly with hypertension.

**METHOD**

This research is quantitative research with a quasi-experimental and pre-test-post-test design. This study involved the treatment group, which began with a pretest. The intervention ended with a post-test or re-measurement, which allowed testing changes after the treatment or intervention. The population in this study was 30 hypertensive older people in the Tawarsari Wonosari selected by using the total sampling technique. The samples included hypertensive older people with anxiety divided into two groups; the intervention group with Cananga aromatherapy and the intervention group with dhikr relaxation. Besides, the respondents were older people over > 60 years old, diagnosed with hypertension by a health care practitioner, experienced anxiety (low-moderate-severe-panic), and were willing to be a respondent.

This research was conducted in the elderly community health center (Posyandu) in Tawarsari Wonosari Gunung Kidul from January 2021-February 2021. The instrument in this study used the HARS questionnaire tested by experts to validate the instrument. The tools and materials used in this research were an aromatherapy diffuser, aromatherapy oil, and prayer beads. The data in this study were obtained through interventions carried out door to door six times for two weeks and were carried out for 15 minutes in each intervention. Cananga aromatherapy was used by inhalation technique with an intermediary tool of air diffuser of 3-4 drops and 20 ml of water. Pujiati et al. revealed that in terms of inhalation therapy in aromatherapy solutions, a 1-2.5% dilution concentration can be used, namely, in the 1% dilution, 5-6 drops can be dissolved in 100 ml. It can be done 3-4 drops into 20 ml of solvent. The mixture can be used for therapeutic treatment, assisted by using aromatherapy equipment.

The dhikr intervention group was carried out for 15 minutes. The dhikr included the utterance of Tasbih “Subhanallah”, Tahmid “Alhamdulillah”. Tahli “Allahu Akbar”, Talqin “Laillaha illallah”, and Istigfar “Astagfirullahaladzim”, each of which was mentioned 33 times. Dhikr, for the purposes of remembering Allah by saying tasbih, tahmid, takbir, talqin, and istigfar can encourage the elderly to continue practicing the dhikr. It was practiced not only when they were anxious but also after prayer. Dhikr can have an adaptive effect so that the body feels more relaxed and benefits someone who experiences weakness.

**RESULT**

The respondents in this study were 27 females (90%), most of whom were in the range of 60-75 years old (53.3%).

The result of the bivariate analysis to identify the difference or influence of Cananga aromatherapy and dhikr (independent variable) on the anxiety level (dependent variable) can be shown with a p-value <0.05. In this case, paired sample t-test was used to identify whether the data were normally distributed at pre and post-intervention of Cananga aromatherapy and dhikr. Meanwhile, the comparison test of anxiety level at pre and post-intervention on the treatment group used the Shapiro Wilk test since the data in the study were normally distributed, and the sample was less than 50.

Table 2 shows that the frequency distribution of anxiety scores in the elderly at pre-intervention of Cananga aromatherapy are; 3 respondents experienced mild anxiety (20%), 8
respondents had moderate anxiety (53%), and 4 respondents experienced severe anxiety (26.7%). Upon the intervention of Cananga aromatherapy, 8 respondents did not experience anxiety (53.3%), 4 respondents had mild anxiety (26.7%), and 3 respondents experienced moderate anxiety (20%).

Table 3 shows that the frequency distribution of anxiety scores in the elderly before the dhikr therapy is; 3 respondents experienced mild anxiety (20%), 7 respondents experienced moderate anxiety (46.7%), and 5 respondents experienced severe anxiety (33.3%). After practicing dhikr therapy, 8 respondents did not experience anxiety (53.3%), 6 respondents had mild anxiety (40%), and 1 respondent experienced moderate anxiety (6.7%).

The analysis on Table 4 showed a significance of a p-value of 0.000 (p<0.05) and an r-value of 0.923. The result indicated a highly strong influence between pre and post-intervention of Cananga aromatherapy. The analysis result showed a significance of a p-value of 0.000 (p<0.05) and an r-value of 0.920, indicating the highly strong influence between pre and post-intervention of dhikr therapy (Table 5).

The statistical test result using an Independent Sample t-test on the Cananga aromatherapy and dhikr therapy intervention group showed a p-value (>0.05). It indicated no significant comparison in terms of the effectiveness of Cananga aromatherapy and dhikr therapy intervention to the anxiety level changes.

DISCUSSION

The anxiety of the Elderly at pre and post-intervention of Cananga Aromatherapy

This study indicated significant differences in the anxiety level at pre-test and post-test intervention of Cananga aromatherapy. The benefits of Cananga aromatherapy included building a relaxed feeling to the spiritual and physical body, mind and creating a peaceful, comfortable atmosphere to reduce stress. It is that the Cananga contains linalool compound from the monoterpenes category as an anti-depressant. Cananga aromatherapy also reduces tension, stress, and anger, balances relaxation, slows down pulse and respiration, and decreases high blood pressure.12

Furthermore, the analysis showed that before the intervention of Cananga aromatherapy, most older people experienced moderate to severe anxiety. Some stated that they began to feel anxious
when they separated from their children and grandchildren, rarely being looked after, and hampered communication with the family as they did not have mobile phones. Besides, they experienced anxiety due to economic problems and other issues. The result of the HARS score indicated that some older people previously felt emotions and irritability, anxiety, loss of interest and hobbies, lethargy, exhaustion, and sleep disturbance. Later, after the Cananga aromatherapy intervention poured into a diffuser, it showed that most respondents stated their emotion was reduced. They could easily control their anxiety, feel fresher and more comfortable, and improve their sleep quality. In this case, Cananga contains benzoate, linalool, eugenol, safrole, and substances similar to the content of lavender, wherein the compound has a calming, sedative, relaxant effect on the blood vessels.13

The elderly anxiety level at pre and post-intervention of dhikr therapy
This study showed differences in the anxiety levels between pre and post-test intervention of dhikr therapy. Before the dhikr therapy, 7 elderly experienced moderate anxiety, and 5 others had severe anxiety. Upon the dhikr therapy, those who previously had moderate anxiety turned to get reduced into mild or even no anxiety. It was evidenced by the 8 people not experiencing anxiety and 6 others experiencing mild anxiety. It can be said that anxiety in the elderly decreased significantly. Besides, it revealed a significant relationship between sleep quality and the incidence of hypertension. Poor sleep quality can affect the state of anxiety in a person. Sleep can help heal from wounds and other attacks on the body’s systems, including emotional stress and strengthen the body's immune system as a protector from disease. Moreover, good quality of sleep can add to the length of lifespan.14

In the case of this study, dhikr is a spiritual therapy that is easily carried out anytime and anywhere by presenting God in the heart and reciting God's utterance, focusing only upon God in the hope of outer and inner tranquility. Rahma and Astuti revealed that a calm soul could increase the reaction of the endorphin hormone, better known as the hormone of happiness, which will be released and captured by the limbic system and hypothalamus, playing a role in controlling emotions. Some respondents said that upon practicing dhikr, their minds became calmer, and emotions could be controlled. Spiritual activities such as dhikr, praying, and listening to the Quran murottal can positively affect one's peace of mind.15

### Table 6. The result of a comparison test of anxiety level in both Cananga aromatherapy and dhikr therapy group.

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<thead>
<tr>
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<th>Post-test</th>
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<th>Mean</th>
<th>*p</th>
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<tbody>
<tr>
<td>Cananga Aromatherapy</td>
<td>15</td>
<td>14.20</td>
<td>0.876</td>
<td></td>
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<tr>
<td>Dhikr Therapy</td>
<td>15</td>
<td>13.93</td>
<td>0.876</td>
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The difference in the effectiveness of Cananga aromatherapy and Dhikr therapy in the decrease of hypertensive elderly’s anxiety in Posyandu Tawarsari Wonosari Gunungkidul
The data management process on both the Cananga aromatherapy and dhikr therapy intervention groups using a quantitative method with independent sample t-test showed the significant value of (p=0.876) or p>0.05 at post-intervention. It can be stated that no significant difference between the two interventions. Furthermore, the results of the analysis of the paired sample t-test at pre and post-test in Cananga aromatherapy and dhikr therapy groups can be stated that there was an effect in both groups on reducing anxiety levels in elderly with hypertension in Posyandu Tawarsari Wonosari Gunungkidul. However, based on the mean score of the comparison test, Cananga aromatherapy is more effective in reducing anxiety levels in the elderly.

The other revealed that when a person experiences tension, the working nerve system is the sympathetic nerve. Meanwhile, when a person is relaxed, the parasympathetic nervous system works. Someone who experiences anxiety and is given relaxation therapy through the inhalation process will slowly stimulate the lungs’ stretch receptors due to inflammation in the lungs. This situation causes a signal to be sent to the medulla, which provides information about increased blood flow and then is transmitted to the brain stem so that the parasympathetic nerves experience increased activity. In contrast, the sympathetic nerves experience decreased activity. Therefore, the acute response of this lung inflammation will decrease the pulse frequency in which vasodilation occurs in the blood vessels.16

Furthermore, anxiety in the elderly can be caused by physiological diseases such as hypertension, loss of a life partner, children’s rare visit, excessive response to life’s problems, loss of social support, and thoughts of impending fatality. The form of expressing disappointment and loneliness towards what happened to every hypertensive elderly at the Posyandu Tawarsari Wonosari Gunungkidul was entirely adaptive. It indicated that no one took a maladaptive response to the consequences of the anxiety that they experienced. Older people have been given Cananga aromatherapy, and dhikr intervention expressed a sense of calm, comfort, and relaxation. The aromatherapy contained a relaxing effect, while dhikr therapy was one of the relaxation therapies that could reduce heart tension and increase mental energy in a person.16

Previous study has revealed that Cananga aromatherapy was proved to decrease anxiety and stress level identified in comparison average score at pre and post-intervention, namely moderate to mild. The consistent application of the Cananga aromatherapy and dhikr intervention within two weeks regularly proved to have a significant effect on reducing anxiety in hypertensive elderly. Dhikr relaxation therapy influenced the decrease in anxiety levels, which could calm the soul so that the elderly feel more relaxed in carrying out their daily activities.17

Moreover, the result of the statistical test of this study indicated that the intervention of Cananga aromatherapy and dhikr provided a relaxing
or calming effect; thus, there was a significant difference in reducing anxiety at pre and post-intervention. Meanwhile, the result of the comparative analysis in this study indicated that the intervention of Cananga aromatherapy and dhikr both affected decreasing anxiety levels in elderly with hypertension in the Posyandu Tawarsari Wonosari Gunungkidul. In this case, based on the result of $p = 0.876$ ($p > 0.05$), it indicated no significant difference between Cananga aromatherapy and dhikr intervention.

The limitation of this research is uses kenanga aromatherapy that is given for 15-20 minutes each therapy, can be done before going to bed or at rest and relax. This research requires a greater number of respondents to prove whether there really is a significant difference between giving kenanga aromatherapy and dhikr on the results of the study.

**CONCLUSION**

This study found there is a significant effect at pre and post-intervention of Cananga aromatherapy and dhikr therapy on reducing the elderly's anxiety level. Furthermore, the comparison test result between Cananga aromatherapy and dhikr has not significant difference between Cananga aromatherapy intervention and dhikr intervention. In other words, they both affect anxiety but do not have much difference.

**CONFLICT OF INTEREST**

There is no conflict of interest, according to the authors.

**FUNDING**

The author received financial support for the publication of this article by School of Nursing, Universitas Muhammadiyah Yogyakarta.

**ETHICS APPROVAL**

This study has been approved by The Universitas Muhammadiyah Yogyakarta ethics committee (ethical approval No: 007/EC-KEPK FKIK UMY/1/2021).

**AUTHOR CONTRIBUTION**

All authors contributed equally to the study, including data collection, analysis, and publication of the findings.

**REFERENCES**