

## EFFECT OF NUTMEG AND LAVENDER ESSENTIAL OIL ON BLOOD PRESSURE IN THE ELDERLY WITH HYPERTENSION

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**Agung Putri Harsa Satya Nugraha, Eka Deviany Widyawaty, Fauziah Fitri Hernanto, Vivin Indrianita, Hari Kristianto -- Effect Of Nutmeg And Lavender Essential Oil On Blood Pressure In The Elderly With Hypertension -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(6), ISSN 1567-214x**

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### ABSTRACT

Hypertension is still a health problem because it is the silent killer disease. Based on the results of Riskesdas in 2018, it was stated that the prevalence of hypertension was 34.1%. Hypertension mostly occurred in the 55-64 years age group, namely 55.2%. The purpose of this study was to determine the effect of essential oil of nutmeg and lavender on the blood pressure of the elderly with hypertension in the working area of Arjowinangun Public Health Center, Kedungkandang District, Malang City. This research is a quantitative research with Quasi Experiment. The number of samples that met the inclusion criteria was 35 people. Quasi-Experimental Research carried out two observations, namely observation of blood pressure before and after being given nutmeg and lavender essential oils. The statistical test used was the Paired Sample T-Test with the results of the analysis of the p value = 0.000 <from the value of  $\alpha$  (0.05), so H<sub>0</sub> was rejected, meaning that there was a significant difference between body weight before the treatment and body weight after treatment. This can also be seen from the value shown in the t-count value for a decrease in blood pressure in the elderly before and after the intervention for 7 days is 12.044 with a probability (Sig.) Of 0.000. Thus it can be stated that giving nutmeg essential oil can reduce blood pressure in elderly with hypertension.

### 1. INTRODUCTION

Hypertension is still a health problem because it is the silent killer disease because there are no signs or symptoms that can be seen from the outside, which will cause complications in the target organs. Hypertension is a circulatory system disorder that causes an increase in blood pressure

above normal so that it has a risk of heart disease, stroke and kidney failure. Hypertension is a circulatory system disorder that causes an increase in blood pressure above normal so that it has a risk of heart disease, stroke, and kidney failure.

Based on the results of Riskesdas in 2018, it was stated that the prevalence of hypertension was 34.1%. –Hypertension mostly occurs in the 55-64 years age group, namely 55.2%, and from the prevalence of hypertension of 34.1%, it is known that 8.8% who were diagnosed with hypertension and 13.3% of people diagnosed with hypertension did not take medication and 32.3% do not regularly take medication. This shows that most hypertension sufferers do not know that they are hypertensive so they do not get treatment or sufferers are reluctant to take medication. To overcome this, there are several non-pharmacological efforts, one of which is the provision of essential oils from the combination of nutmeg and lavender oil.

Essential Oil from the combination of nutmeg oil (*Myristica fragrans* Houtt) and aromatherapy from lavender flowers which has a relaxing effect that will activate the parasympathetic nervous system which makes the heart rate slowly decrease steadily. In addition, lavender aromatherapy also contains linalyl acetate components which play a role in muscle relaxation. When used as massage oil, this essential oil can help stimulate blood to flow more smoothly, so it is hoped that this essential oil can reduce blood pressure in elderly people with hypertension.

The specific objectives of this study are: 1). Knowing the Blood Pressure of the Elderly with Hypertension in the Work Area of the Arjowinangun Health Center, Malang City before being given essential oil from nutmeg and lavender seeds. 2) Knowing the Blood Pressure of the Elderly with Hypertension in the Arjowinangun Community Health Center Malang City after being given essential oils from nutmeg and lavender seeds. 3) Analyzing the Effect of Giving Essential Oil from Nutmeg and Lavender on Blood Pressure in Elderly People with Hypertension in the Work Area of Arjowinangun Health Center, Malang City.

The benefit of this research is as a form of scientifically proven traditional medicine development.

## 2. METHOD

The sample of this study was 35 elderly with hypertension. This study used a Quasi Experimental research design. In the quasi-experimental study, two observations were made, namely the observation of blood pressure before and after being given essential oils from nutmeg and lavender seeds. From these two measurements, two observations will be obtained, namely the results of initial observation (O1) of blood pressure before being given essential oils from nutmeg and lavender seeds, and the results of final observations (O2) of blood pressure after being given essential oils from nutmeg and lavender seeds. This essential oil was given to the sample for 7 days, 1 day the sample was given treatment for 30 minutes using a diffuse device. In this study we used a diffuse tool because it made it easier to calculate the timing of the treatment.

## 3. RESULTS AND DISCUSSION

- a. Distribution of Blood Pressure for the Elderly before and after being given Essential Oil of Nutmeg and Lavender Seeds in the Work Area of Arjowinangun Health Center, Kedungkandang District, Malang City

Table 1. Blood Pressure before being given Essential Oil Intervention of Nutmeg and Lavender in the Work Area of Arjowinangun Health Center, Kedungkandang District, Malang City

Blood Pressure before being given intervention	N	Hypertension Category
165/89	1	Hypertension grade 2
150/90	1	Hypertension grade 1
156/92	1	Hypertension grade 1
150/90	1	Hypertension grade 1
159/94	1	Hypertension grade 1
168/93	1	Hypertension grade 2
158/92	1	Hypertension grade 1
145/92	1	Hypertension grade 1
154/92	1	Hypertension grade 1
159/98	1	Hypertension grade 1
149/90	1	Hypertension grade 1
142/92	1	Hypertension grade 1
148/95	1	Hypertension grade 1
165/89	1	Hypertension grade 2
157/89	1	Hypertension grade 1
158/98	1	Hypertension grade 1
145/85	1	Hypertension grade 1
174/92	1	Hypertension grade 1
145/85	1	Hypertension grade 1
157/95	1	Hypertension grade 1
148/87	1	Hypertension grade 1
146/92	1	Hypertension grade 1
150/96	1	Hypertension grade 1
156/95	1	Hypertension grade 1
146/95	1	Hypertension grade 1
170/100	1	Hypertension grade 2
156/87	1	Hypertension grade 1
157/94	1	Hypertension grade 1
156/91	1	Hypertension grade 1
155/90	1	Hypertension grade 1
148/92	1	Hypertension grade 1
149/94	1	Hypertension grade 1
152/95	1	Hypertension grade 1
165/95	1	Hypertension grade 2
157/92	1	Hypertension grade 1
Average : 154/87	35	Hypertension grade 1

Based on table 1, it is known that the distribution of research subjects was 35 people. So it can be explained that the highest blood pressure before

the intervention was given, namely 170/100 mmHg with the category of grade 2 hypertension. Meanwhile, the lowest blood pressure before the intervention was 142/92 mmHg with the category of grade 1 hypertension.

Table 2. Blood Pressure after being given Essential Oil Intervention of Nutmeg and Lavender in the Work Area of Arjowinangun Health Center, Kedungkandang District, Malang City

Blood Pressure was given intervention	N	Hypertension Category
112/78	1	Normal
136/85	1	Pre Hypertension
118/82	1	Normal
115/75	1	Normal
120/85	1	Normal
138/82	1	Pre Hypertension
150/90	1	Hypertension grade 1
139/89	1	Pre Hypertension
138/85	1	Pre Hypertension
119/80	1	Normal
132/80	1	Pre Hypertension
135/82	1	Pre Hypertension
125/85	1	Pre Hypertension
115/80	1	Normal
125/80	1	Pre Hypertension
138/82	1	Pre Hypertension
112/80	1	Normal
122/85	1	Pre Hypertension
125/84	1	Pre Hypertension
135/84	1	Pre Hypertension
129/85	1	Pre Hypertension
115/80	1	Normal
134/84	1	Pre Hypertension
138/85	1	Pre Hypertension
140/90	1	Hypertension grade
120/85	1	Pre Hypertension
120/81	1	Pre Hypertension
125/84	1	Pre Hypertension
130/85	1	Pre Hypertension
118/84	1	Normal
127/89	1	Pre Hypertension
110/70	1	Normal
139/85	1	Pre Hypertension
140/85	1	Hypertension grade
135/82	1	Pre Hypertension
Rata-Rata : 127/82	35	Pre Hypertension

Based on table 2, it can be explained that the highest blood pressure after intervention is 150/90 mmHg with the category of grade 1

hypertension. Meanwhile, the lowest blood pressure after the intervention is 110/70 mmHg in the normal category.

**b. Analysis of the Effect of Giving Essential oil from Nutmeg and Levender on Blood Pressure of the Elderly with Hypertension in the Work Area of Arjowinangun Health Center, Kedungkandang District, Malang City**

Table 3. Paired T-Test Results Analysis of the Effect of Giving Essential Oil from Nutmeg and Levender on Blood Pressure of the Elderly with Hypertension in the Work Area of Arjowinangun Health Center, Kedungkandang District, Malang City

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	before being given intervention (O1) - after being given intervention (O2)	2.70286E1	13.27644	2.24413	22.46795	31.58919	12.044	34	.000

Based on the analysis of the table above, it can be seen that the t-count value for blood pressure before and after the intervention in the form of essential oils from nutmeg and lavender for 7 days is 12.044 with a probability (Sig.) Of 0.000. So it can be concluded that H<sub>0</sub> is rejected and H<sub>1</sub> is accepted, which means that there is a significant effect of giving essential oil from Nutmeg and Lavender on blood pressure in elderly people with hypertension in the Arjowinangun Health Center, Kedungkandang District, Malang City.

Essential Oil from the combination of nutmeg oil (*Myristica fragrans* Houtt) and aromatherapy from lavender flowers which has a relaxing effect that activates the nervous system parasympathetic which makes the heart rate slowly decrease steadily. Apart from that, aromatherapy lavender also contains linalyl acetate components which play a role in muscle relaxation.

The benefits of giving lavender aroma therapy can reduce anxiety, joint pain, high blood pressure, heart rate, metabolic rate and overcome sleep disorders (insomnia), stress and increase the production of the hormones melatonin and serotonin because it contains most esters (26-52%) (Walsh et al., 2011). Meanwhile, nutmeg can help lower blood pressure by stimulating sleep. There is a relationship between sleep quality and the incidence of hypertension. The increase in the incidence of hypertension is influenced by short sleep duration, poor sleep quality, prolonged sleep and sleep disturbances. Weiss E. stated that the aromatic myristicin and elimicin

compounds of 2 - 18% found in nutmeg (*Myristica fragrans* Houtt) stimulate sleep (Liu, 2016). Inhaling this essential oil is the most immediate way of healing in seconds. This is because the volatile essential oil molecules react directly to the olfactory organs and are immediately perceived by the brain (Setiyono, 2015).

#### 4. CLOSING

Based on research on the effect of giving lavender leaves on milk production in breastfeeding mothers of infants 0-6 months, it can be concluded that there is an effect of giving essential oils from nutmeg and lavender essential oils that are diffused 30 minutes for 7 days by seeing a significant reduction in hypertensive blood pressure to even normal pre-hypertension blood pressure. Suggestions from this study are expected to be one of the therapeutic options made from non-chemical ingredients for moderate hypertension in the elderly so that it can reduce the incidence of hypertension in the elderly.

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