



The Effect of Aromatherapy on Sleep Quality in the Elderly at Rindang Asih I Nursing Home in Semarang

Ragil Aidil Fitriasari Addini^{1*}, Mianti Nurrizky Sutejo², Dewa Rahma Bhagaskara³, Yessa Kristia Dhikta⁴

Departement of Physiotherapy, STIKES Telogorejo, Semarang, Indonesia¹

Departement of Physiotherapy, STIKES Telogorejo, Semarang, Indonesia²

Departement of Physiotherapy, STIKES Telogorejo, Semarang, Indonesia³

Departement of Physiotherapy, STIKES Telogorejo, Semarang, Indonesia⁴

Corresponding Email: ragil@stikestelogorejo.ac.id*

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Abstract

Sleep disorders or insomnia is one of the disorders that frequently occurs in the elderly. The treatment that can be given for sleep disorders that occur in the elderly is aromatherapy. Aromatherapy is a treatment technique using the aroma of essential oils resulting from the distillation process of various parts of plants, flowers and trees that contain therapeutic properties. Aromatherapy can provide stimulation to the olfactory cortex which stimulates the brain and impulses reach the limbic system, thereby affecting mood. This research is a quasi-experimental study with a pre-posttest design. The population in this study were all elderly people in the Rindang Asih I Nursing Home in Semarang. The results of the Friedman effect test in this study with a p-value = 0.000. The administration of aromatherapy had an effect on the sleep quality of the elderly in the Rindang Asih I Nursing Home in Semarang.

Keywords: Elderly, Sleep Quality, Aromatherapy

Introduction

The aging process is a natural process that humans face. A crucial stage in this process is the elderly stage (elderly) where there is a decline or natural change in physical, psychological and social conditions (Rhosma, 2014). Indonesia is categorized as a country with the largest elderly population in the world, which is 29.1 million people in 2020. The increase in the elderly population every year will certainly be followed by an increase in elderly problems, both physical and psychological (Lukmana et al., 2020). Psychosocial problems due to the aging process experienced by the elderly cause the elderly to experience various kinds of feelings. Various kinds of feelings are problems that exist in the mental health of the elderly

such as sadness, anxiety, loneliness, feeling easily offended and sleep quality (Maryam, et al., 2008).

Sleep disorders or insomnia is one of the disorders that often occurs in the elderly. Sleep disorders affect 50% of people aged 65 years or older who live at home and 65% of the elderly who live in long-term facilities (Adiyati, 2010). Meanwhile, the elderly need good sleep quality to improve their health and recover from illness. If the elderly have poor sleep quality, this will cause disturbances, among others, the elderly will be more susceptible to disease, become forgetful, confused, disoriented, and decreased ability to concentrate and make decisions. With poor sleep quality, the independence of the elderly will decrease, which is indicated by a decrease in participation in daily activities. Poor sleep quality in the elderly has an impact on the quality of life of the elderly (Stanley & Beare, 2006).

Treatment that can be given to sleep disorders that occur in the elderly is by doing physical exercise, one of which is elderly exercise (Saguem et al., 2022). Regular elderly exercise can increase energy consumption, endorphin secretion and body temperature which can facilitate sleep in the body's healing process. In addition, exercise for the elderly which is done regularly can increase the parasympathetic nerves during sleep, thereby lowering blood pressure and improving sleep quality (Anggarwati et al., 2016).

Another treatment that can be given to reduce the risk of insomnia is by using aromatherapy. This treatment is better than pharmacotherapy treatment which often causes side effects for insomnia sufferers. Aromatherapy is a treatment technique using the aroma of essential oils resulting from the distillation process of various parts of plants, flowers and trees that contain therapeutic properties. Aromatherapy can provide stimulation to the olfactory cortex which stimulates the brain and impulses reach the limbic system, thereby affecting mood. The administration of this therapy can make a person relax and affect mood, so that this effect makes the elderly easier to sleep soundly and have good sleep quality (Mindayani et al., 2021).

Literature Review

The elderly will need more time to sleep (lying longer in bed before falling asleep) and have less or shorter sleep time. Changes in sleep patterns can be part of the normal aging process. However, this disorder can occur due to a pathological process. Sleep disorders in the elderly are influenced by several factors such as age, medical conditions (hyperthyroidism, neurological diseases, lung diseases, hypertension, heart disease, diabetes mellitus, obesity), psychiatry (depression, stress, anxiety disorders), drug consumption and environment (Hasibuan & Hasna, 2021). One of the therapies performed for sleep disorders is by doing physical activity in the form of elderly exercise and providing aromatherapy.

Various studies have proven the benefits of aromatherapy. Kurnia's research (2009) on "lavender flower aromatherapy improves sleep quality in the elderly". It states that the results of the study show that there is an effect of giving aromatherapy on improving sleep quality in the elderly. Researcher Laura, (2015) "The effectiveness of lavender aromatherapy on

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postpartum maternal sleep quality". It states that the results of the study show that lavender aromatherapy is effective on the sleep quality of postpartum mothers.

Research Method

This research is a quasi-experimental study with a pre-posttest design. This research was conducted at the Rindang Asih I Nursing Home in Semarang. The population in this study were all elderly people living in the Rindang Asih I Nursing Home in Semarang with a population in 2022 of 359 people. The inclusion criteria for the sample in this study included: elderly living in the Rindang Asih I Nursing Home in Semarang, elderly who were willing to be respondents and elderly who had sleep quality problems. While the exclusion criteria in this study were elderly who refused to be respondents, elderly who had sensory impairments and elderly who did not use benzodiazepine drugs. The measuring instrument used to determine sleep quality was The Pittsburgh Sleep Quality Index (PSQI). Data analysis in this study used univariate analysis and bivariate analysis.

Result/Finding

1. Univariate Analysis
 - a. Respondent Characteristics Data

Table 1. Frequency Distribution of the Elderly at the Rindang Asih I Nursing Home Semarang

Respondent Characteristics	Jumlah	
	n	%
Gender		
Male	10	33,3%
Female	20	66,7%
Age		
Pra elderly	9	30%
Elderly	21	70%
Pendidikan		
SD	14	46,7%
SMP	13	43,3%
SMA	1	3,3%
College	2	6,7%

Based on table 1, it describes the characteristics of respondents based on gender, age, and education. It is known that in the gender variable, the majority of respondents were female, namely 20 respondents (66.7%). In the age/age variable, it is known that the largest number of respondents were in the elderly category, namely 21 respondents (70.0%). Meanwhile, in the education variable, 14 respondents (46.7%) had elementary school education.

- b. Description of the sleep quality of elderly respondents before and after being given aromatherapy

Table 2. Average based on Sleep Quality Score

Variabel	Mean	SD
Skor pre test	78,6	1,43
Skor post test	4,43	0,62

Based on table 2, it shows that the average score (mean) of respondents' sleep quality before being given aromatherapy was 78.6 after being given lavender aromatherapy was 4.43 before being given aromatherapy with a standard deviation of 1.43 while after being given aromatherapy with a standard deviation of 0.62

2. Bivariate Analysis

a. Normality Test

Table 3 Frequency Distribution of Respondents Based on Sleep Quality Scores

Variabel	Mean	SD	Sig
Skor pre test			0,005
Mean	7,866	0,261	
Skewness	0,099	0,427	
Skor post-test			0,000
Mean	4,433	0,114	
Skewness	-0,635	0,427	

Based on table 3, it shows that the normality test carried out by the researcher showed that the mean and skewness values at the pre-test were 7.866 and 0.99 with a standard error of 0.261 and 0.427, the mean and skewness values at the posttest were 4.433 and -0.635 with a standard error of 0.114 and 0.427. The normality test results for the pre-test significance value were obtained with a value of 0.005 ($p < 0.05$) while the posttest value was 0.000 ($p < 0.05$) with abnormal results.

b. Test the Effect of Aromatherapy on the Sleep Quality of the Elderly

Table 4 *Uji Friedman*

Distribution of Respondents Based on Sleep Quality Scores for the Elderly

Variabel	Mean	SD	P value
Skor pre test	7,866	1,431	0,000
Skor post test	4,433	0,626	

The table above shows an increase in the average pre-test and post-test, from the results of the Friedman test, p value = 0.000, so H_a is accepted, which means that aromatherapy has an effect on the quality of sleep for the elderly at the Rindang Asih I Nursing Home, Semarang.

Discussion

Pre-elderly patients tend to experience poor sleep quality because the elderly are less likely to withstand pain, and this disrupts the patient's sleep quality (Killgore et al., 2022). Based on larger data, female patients had poor sleep quality before being given lavender aromatherapy. Most patients had poor sleep quality and experienced stress. Stress itself can cause a decrease in sleep quality in the elderly at the Rindang Asih I Nursing Home in Semarang.

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Some factors that affect sleep in the elderly are the quality and quantity of sleep which refers to an individual's ability to stay asleep and get the right amount of REM and NREM sleep. Sleep quality is a person's total sleep time. Factors that influence sleep are illness, environmental influences, fatigue, lifestyle, emotional stress, eating patterns, smoking, medications, motivation, stimulants, and alcohol (Rhosma, 2014).

The elderly will experience sleep quality disorders due to several influencing factors such as environmental influences, fatigue, emotional stress, and disease (Li et al., 2022). This is supported by Fatimah's research (2010) which states that as age increases, the sleep period decreases. Sleep needs will decrease as a person ages because with increasing age, a person can experience physiological, psychological, and environmental functions that can change sleep quality and quantity. Sleep needs are 6.5 hours at age 60 and 6 hours at age 80. Based on research, those aged 60-90 years' experience sleep disorders in the form of stress and anxiety.

In addition, most of those who experienced poor sleep quality were women, and as they get older, their sleep needs do decrease. The researcher believes that if women tend to suppress what they feel, it will trigger stress in women, as well as the coping mechanisms in women which are so low compared to men in dealing with a problem, this can affect sleep quality in elderly women. In postmenopausal women, musculoskeletal changes experience massive bone density loss, which will lead to osteoporosis and is related to activity, inadequate calcium intake, and estrogen loss. This sometimes also affects the elderly when resting, such as pain felt during sleep at night (Sujito, 2014).

Aromatherapy is an ancient healing process that uses pure plant essences aimed at enhancing the health and well-being of the body, mind, and soul (Goli et al., 2022). Some oils that can be used in aromatherapy because they can be used for anything are clary sage, eucalyptus, geranium, lavender, lemon, peppermint, rosemary, and ylang-ylang. Aromatherapy has a sedative effect so that it can help relax the body and help facilitate sleep after inhaling for a while. Aromatherapy is a part of relaxation therapy used to overcome sleep quality disorders. Aromatherapy provides stimulation to the olfactory cortex which stimulates the brain and impulses reach the limbic system, thereby affecting mood. This effect makes it easier for the elderly to sleep soundly, and their sleep quality is good (Mindayani et al., 2021).

The mechanism of action of aromatherapy in the body occurs through two physiological systems, namely the body's circulatory system and the olfactory system. Essential oils will be absorbed by the body through the digestive process and skin absorption by blood vessels, then carried to the circulatory system, both blood circulation and lymphatic circulation, if ingested or applied. This is in line with Setyoadi's research (2011), there is a relationship between music therapy and improved sleep quality for insomnia sufferers in the elderly at the Pucang Gading Nursing Home in Semarang with a p-value of 0.000 ($P < 0.5$).

Conclusion

Based on the results of research and discussion regarding aromatherapy on the sleep quality of the elderly at the Rindang Asih I Nursing Home in Semarang, the results show that the sleep quality of the elderly after being given aromatherapy shows that the sleep quality of the elderly is in good condition, in the good category. The effect test on the results of lavender aromatherapy with a p-value = 0.000. So it can be concluded that aromatherapy affects the sleep quality of the elderly at the Rindang Asih I Nursing Home in Semarang.

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