

# The Effect of Lavender Therapeutic Scent Toward Sleep Quality for Elderly at Nursing Home

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## The Effect of Lavender Therapeutic Scent Toward Sleep Quality for Elderly at Nursing Home

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### Abstract

**Background:** Poor sleep quality in elderly can bring fatigue, poor concentration, and frequently sleep in the afternoon. There were 26 elderly that experiencing poor sleep quality at Nursing home. This condition can be countered by non-pharmacology which is using lavender therapeutic scent. **Purpose:** To find out the effect of lavender therapeutic scent toward sleep quality of elderly at Nursing home. **Method:** The type of this study was quantitative with quasi-experimental and two group pretest-posttest design, and T-test dependent as testing instrument. Sampling technique in this study was purposive sampling which was 26 respondents that divided into 13 respondents in intervention group and 13 respondents in control group. The study was conducted on January to July 2016. Data collection was conducted on 18<sup>th</sup> to 31<sup>st</sup> May. **Results:** Study finding was average score of elderly sleep quality before lavender therapeutic scent application was 15.23 and after application of lavender therapeutic scent was 5.54. Statistical testing result found  $p = 0.000$  where it showed that there was an effect of lavender therapeutic scent toward improvement of elderly sleep quality. **Conclusion:** It was suggested to Nursing home to apply lavender therapeutic scent twice a week before sleep time in order to improve sleep quality of elderly.

**Keywords:** Sleep quality, Elderly, Lavender therapeutic scent

### INTRODUCTION

One of health development indicator in Indonesia is the improvement of life expectancy (UHH) of Indonesian citizen. According to article 1 section (2), (3), (4) of Medicare legislation number 13 of 1998 stated that elderly is someone who is above 60 years old (Maryam et.al, 2008). Elderly is marked by someone failure to maintain his/her balance toward physiology stress condition. This failure is related to the declining of life ability and individual sensitivity (Hawari in Effendi, 2009).

Based on World Health Organization data (WHO, 2012) stated that citizen with ages above 60 years old in 11 countries in South East Asia was amounted to 142 millions people and it was expected to increase three times on 2050, while in Indonesia in 2014 there were 18,781 elderly people and it was expected that 36 million

people would be elderly on 2025. Moreover, US Census Bureau expected that Indonesia would get the biggest upsurge in elderly citizen in the world, from 1990 to 2025, which was 41% (Maryam et.al, 2008).

Health problems that frequently occur in elderly are different from adult in general, which is based on Kane and Ouslander (in Burian, 2009), it is called 14 I that are immobility, instability, incontinence, intellectual impairment, infection, impairment of vision and hearing, isolation, inanition, insomnia, and immune deficiency.

Based on Aemilianus (2012), sleep disorder was frequently found every year in adult or elderly where around 20%-50% adults and 17% elderly were reported to get serious sleep disorder. Prevalence of sleep disorder in elderly is high around 67% that require them to improve their sleep quality to comply their basic need of resting.

Sleep is one of human basic needs (KDM) that included in physiology based on Maslow's hierarchy of needs. Sleep and resting is important same as nutrition and exercise to maintain health and fitness. Based on Hodgson (1991) in Potter and Perry (2009), the advantage of sleep is not clearly determined, but it is believed that sleep can maintain the balance of mind, emotional and health.

Many factors can influence sleep quantity and quality that are disease, environment, fatigue, lifestyle, emotional stress, stimulant and alcohol, diet, smoking, medication, and motivation (Ambarwati, 2014). Sleep quality of individual is good if he/she didn't shows a sign of sleep deficiency and no sleeping difficulty and sleep quality can be seen when individual is fit after he/she wakes up from sleep. Sleep quality is individual satisfaction in sleeping; therefore he/she is not showing fatigue, anxiety, tired, eyestrain and red eye, red in conjunctive, not focused, headache, frequently yawning or feeling sleepy (Hidayat, 2006). Everyone has different needs of sleep that is different sleep time, total hours of sleep, nap or deep sleep. Sleeping hours for elderly normally six hours per day with rapid eye movement (REM) as much as 20%-25% and non-rapid eye movement (NREM) is less and sometimes almost nothing; first time REM is longer, frequently awaken in midnight, and longer time to go back to sleep (Kozier, 2004).

Recently, there are studies about the relationship between sleep and high blood pressure, one of them is studi in University of Florida Health Center. Study finding from 25 respondents show that poor sleep quality is related to high blood pressure (Smith, 2010).

Besides, also there are studies that conducted to find the effect of high blood pressure with different groups of age. A study by Robblord et.al, in 2011 shows that sleep

disorder is related to hypertension in age of 60 to 90 years old.

Based on Lanywati (2007) to treat sleep disorder there are two ways that are pharmacologically and non-pharmacologically; pharmacologically treatment is prescribing sleeping pills from Benzodiazepine, Chloralhidrate, and Prometazin (Phenergen) agents.

These hypnotic medicines are effective to accelerate sleeping time, extending sleeping period and lessen rising in the middle of sleep. But, these medicines have negative effect, such as chemical residual, nausea and feeling sleepy in the afternoon and also individual can be dependence with these medicines so that good quality of sleep is not achieved.

Beside pharmacologically, there is a non-pharmacologically treatment that is applying therapeutic from floral, fruit and allspice scents. Application of herbal tea and therapeutic scents can be sedative and trigger sleepiness. This treatment has no side effect and elderly also can independently use this treatment to maintain their health (Lanywati, 2007).

Based on study by Khotimah (2013) at Dr. Wahidin Sudiro Husodo hospital in Mojokerto, sleep quality for 16 elderly before application of lavender therapeutic scent was poor (100%); after application of lavender therapeutic scent six elderly had excellent sleep quality (37.5%), seven elderly had good sleep quality (43.75%), and three elderly had poor sleep quality (18.75%).

Based on Sharma (2009) therapeutic scent is therapy with perfumery. This term is subjected to essential oil in holistically healing to improve emotional comfort and bring back body balance. Scent has direct effect on brain same as medicine, for example smelling lavender scent can increase alpha facet frequency toward dorsal of head and this condition is subjected to relaxation.

The purpose of therapeutic scent is to improve body fitness and healthiness, mind and soul relaxation and also for health and beauty care and healing (Jim, 2013).

Some of essential oils that generally used in aromatherapy because of its versatile significance are Langan Kleri (*Salvia Scarea*), Eucalyptus (*Eucalyptus Globulus*), Geranium (*Pelargonium Graveolens*), Lavender (*Lavendula Vera Officianals*), Lemon (*Citrus Limonem*), Peppermint (*Mentha Piperita*), Petit grain (*Citrus Aurantium*), and Rosemary (*Rosmarimus Officinalis*), and also tea tree (*Melaluesia Alternifolia*). From these essential oils, lavender is the most popular use (Koensoemardiyah, 2009).

One of the benefits of lavender oil is to heal insomnia (sleep disorder) where it can worsen or cause health problems, and brings fatigue and unexciting; lavender therapeutic scent can improve sleep quality. Some of essential oils that can be used to treat insomnia are lavender, metali, primrose, Cendana/ sandalwood (Yuli, 2014).

Based on data that was collected at Tresna Werdha Kasih Sayang Ibu Batu Sangkar, there were 56 elderly, consisted of 24 male and 32 female, lived in seven annexes and one intensive care room. From interview and questionnaire results with Pittsburg Sleep Quality Index (PSQI), it was

obtained that 26 elderly had poor sleep quality; 26 elderly said that they often awoken in midnight, could not rested their eyes 30 minutes after went to bed, frequently awoken in midnight to go to bathroom and felt sleepy in the afternoon.

Based on some studies, to treat sleep disorder non-pharmacologically is by using lavender therapeutic scent; so that writer has enthusiasm to study the effect of lavender therapeutic scent toward sleep quality of elderly at Tresna Werdha Kasih Sayang Ibu nursing home in BatuSangkar on 2016.

## 5 METHOD

This study was quantitative study with quasi experimental design. Respondents were divided into intervention group then writer performed pretest and post test after treatment. This study had been conducted at At PTSW Kasih Sayang Ibu Batu Sangkar on 2016. Population in this study was all patient At PTSW Kasih Sayang Ibu Batu Sangkar; sampling technique was accidental sampling where 30 respondents were participated. Data collection was conducted by direct observation. Dependent variable in this study was lavender therapeutic and independent variable was sleep quality of elderly. Data analysis was conducted by univariate and bivariate with parametric test, which was paired T-test.

## RESULTS

**Table 3.1.**  
**Distribution of Mean Sleep Quality before application (pre-test) of lavender therapeutic scent In Intervention Group and Control group at PSTW Kasih Sayang Ibu Batu Sangkar on 2016**

Variable	Group	N	Mean	SD	Min-Max
Sleep Quality	Intervention	13	15,23	2,315	11-18
	Control	13	16,22	2,633	13-21

In table 3.1 it can be seen that the mean of sleep quality of elderly in pre intervention group is 15.23 with standard deviation of 2.315; the lowest score is 11 and the highest score is 18, that the mean of elderly sleep quality in intervention post group is 5.54 with standard deviation of 1.713; the lowest score is 3 and the highest score is 8.

**Table 3.2**

**Table 3.2 Distribution of Mean Sleep Quality after lavender therapeutic scent was given In Intervention Group and Control group at PSTW Kasih Sayang Ibu Batu Sangkar on 2016**

Variable	Group	N	Mean	SD	Min-Max
Sleep Quality	Intervention	13	5,54	1.713	3-8
	Control	13	15,85	1,864	13-19

In table 3.2 it can be seen that the mean of elderly sleep quality in intervention group is 5.54 with standard deviation of 1.713; the lowest score is 3 and the highest score is 8, while the mean of elderly sleep quality in control group is 15.85 with standard deviation of 1.864; the lowest score is 13 and the highest score is 19.

**Table 3.3.**

**The differences between sleep quality before and after lavender therapeutic treatments At PTSD Kasih Sayang Ibu Batu Sangkar on 2017.**

Group	Variable	N	Mean	Min-Max	t	p-value
Intervention	PreTest	13	15.23	11-18	1.594	0,000
	Post Test	13	5.54	3-8		
Control	PreTest	13	16.62	13-21	19.442	0,137
	Post Test	13	15.85	13-19		

Based on table 3.3 , it is showed that mean score of pre-test in intervention group is 15.23 and post test 5.54. Result of statistical test with t-independent test is  $p = 0.000$  ( $p > 0.05$ ), meaning that there is significant difference between sleep quality before treatment both in intervention group.

## DISCUSSION

Based on study finding, it is known that sleep quality of respondents before lavender therapeutic scent application is poor with an average score of 15.23. The results of this study are in line with study by Wardhani & Rusca (2009) about the effect of lavender therapeutic scent toward elderly sleep quality at Panti Werdha Griya Asih Lawang and Usia Tresno Mukti Turen Malang where before lavender therapeutic scent application, mean score is 9.33 meaning that elderly experiencing poor sleep quality.

According to Hidayat (2006) sleep quality is individual feeling of satisfaction in their sleep, so that he/she does not show signs of sleep deficiency. Elderly experiencing poor sleep quality is due to physical, mental and psychosocial disorders (Anwar 2010). The difficulty to sleep is illustrated by circumstances when a person has fallen asleep and suddenly wakes up and finds it difficult to start to sleep out (Silber 2005).

According to writer's assumption of poor elderly sleep quality at PSTW Kasih Sayang Ibu Batu Sangkar is caused by physical disorders such as diseases for examples aches, dizziness, itching, and hypertension. Mental disorders that occur in the elderly include suspicious, irritable and selfish. Psychosocial disorders based on elderly statements are loss of friends, away from family, and feeling lonely. Factors that mentioned above can affect the quality of sleep in the elderly.

Results of questionnaires showed that 13 respondents had poor sleep quality where (82%) respondents filled in difficulties to start sleeping, (84.6%) respondents only sleep for 3-5 hours, (87.1%) stated that they woke up in midnight and (87.2%) respondents felt sleepy during daily activities.

From elderly statement before application of lavender therapeutic scent, other

factor that caused sleep disorder in PSTW Kasih Sayang Ibu Batu Sangkar was environmental conditions also affected elderly sleep quality where some elderly complain that before they starting to sleep their roommate was noisy and room temperature distortion as in rain season it caused elderly often woke up at night to urinate.

Based on study finding after lavender therapeutic scent application, it was obtained that elderly experienced good sleep quality with an average score of 5.54.

The result of this study is in line with the study that conducted by Wardhani & Rusca (2009) about the effect of lavender therapeutic scent toward elderly sleep quality at Panti Werdha Griya Asih Lawang and Age Tresno Mukti Turen Malang where after application of lavender therapeutic scent, the mean score is 5.44 meaning that elderly experiencing good sleep quality.

Lavender therapeutic scent is useful to overcome poor sleep quality because lavender therapeutic scent has a calming chemical content of linalyl ester and gives relaxing effect to central nervous system by stimulating olfactory nerves (Stanley 2007). All impulses that passing through the olfactory nerves are arrive in limbic system. The limbic system is part of the brain that dealing with moods, emotions, memories and learning. All the odors that reach the limbic system have a direct chemical effect on our mood (Sharma, 2009).

Lavender therapeutic scent is a non-pharmacological therapy that can improve the quality of sleep and included in relaxation therapy. This relaxation therapy technique trains the muscles and the mind to relax in a fairly simple way; this therapy can be done with meditation, muscle relaxation and lower light illumination (Adesla, 2009).

Good lifestyle for elderly such as regular exercise also affect the quality of sleep where the body will feel more fresh, not limp and not

easy to get fatigue due to good physical condition, while continuous drugs consumption will disrupt elderly health who have been vulnerable to alter both physically and psychologically, and more priority on the need for nutrition or healthy food so that they do not need to consume certain drugs to help them sleep (Siregar 2011). This is in accordance with the statement of the elderly in PSTW Kasih Sayang Ibu Batu Sangkar where 100% (13 people) of respondents never use drugs to help them sleep.

Based on writer's assumption after lavender therapeutic scent application in 13 elderly who experienced poor sleep quality, 7 respondents experienced good sleep quality. This study used lavender therapeutic scent as a way to overcome sleep quality disorders. The lavender therapeutic scent application in this study was administered using a heating oven for 7 days. Given lavender therapeutic scent could bring calmness in mind and comfort in sleep and tranquility to elderly so they could have a good sleep quality.

Based on study finding, it is known that there is improvement in elderly sleep quality before and after the application of lavender therapeutic scent. The average score of sleep quality in pre-test was 15.23, while the mean score of posttest sleep quality was 5.54. T-test score was 0.000 with  $p \leq 0.05$  which mean that hypothesis significantly accepted and there was a significant improvement in elderly sleeps quality after application of lavender therapeutic scent for 7 days in a row.

In control group, it was found that there was no significant improvement in elderly sleeps quality before and after application. The mean score of sleep quality in pretest was 16.62, while the mean score on posttest was 15.85. T-test score was 0.137 with  $p \geq 0.05$  which mean there was no significant difference before and after application.

The result of this study is in line with study by Wardhani & Rusca (2009) about the

effect of lavender therapeutic scent application toward elderly sleep quality at Panti Werdhya Griya Asih Lawang and Usia Tresno Mukti Turen Malang where data showed very little improvement in sleep quality score for control group before and after lavender therapeutic scent application for one week ( $p = 0,317$ ). In contrast, the intervention group showed a significant improvement with  $p = 0.007$ .

Lavender therapeutic scent is part of the relaxation therapy used to overcome sleep quality disorder. Lavender therapeutic scent has sedative properties; this lavender therapeutic scent mechanism starts from a lavender therapeutic scent flower that is inhaled into the nose and receipt by cilia, fine hairs in the inner lining of the nose. The recipients in the cilia are connected with an inhaler located at the end of the odor channel. The end of this channel is then connected to the brain itself. It will further increase the alpha waves in the brain and it helps us to relax (Sharma, 2009).

This relaxed position reducing the stimulus to the reticular activation system (SAR), where (SAR) is located on the top of the brain stem that can maintain alertness and awake. Thus it will be taken over by another part of the brain called BSR (bulbar synchronizing region) whose function is the opposite of SAR, so it is expected to improve sleep quality (Potter and Perry, 2006). Lavender therapeutic scent is useful to help elderly fulfilling their needs of sleep both in quantity and quality. In this study, the writer focused on the quality of sleep where many people consider that the duration of sleep will make a person to rest well, however too much sleep will not be beneficial to the body without the quality of good sleep (Siregar, 2011).

Based on the assumption that the quality of an individual's sleep is influenced by internal and external factors where internal factors, which are physical and psychological

conditions in a person, are different from each other, so that if there is physical and psychological changes in the form of disease and mood disorders, it can affect the sleep quality of an individual.

Similarly, external factors experienced by a person in the form of changes in the environment and bed room temperature can cause a person more easily to wake up in the midnight and will be difficult to go back to sleep. If the quality of sleep is fulfilled, it can increase physiological and psychological health. Physiological health is indicated by not feeling dizzy and not feeling tired after awakening and psychological health is indicated by no mood disorder such as irritability, so that symptoms that indicate poor sleep quality become reduced or did not happen.

The lavender therapeutic scent provides stimulation to the olfactory cortex that stimulates the brain and the impulses that reach the limbic system that affecting the mood (Sharma, 2011). This therapy can make a person become relaxed and affect the mood so that elderly can be easy to fall asleep with a good sleep quality.

According to the writer's assumption, if elderly get therapeutic scent technique two times a week with the help of pants officer, it will improve the quality of sleep, and also can make the atmosphere become calm and comfortable.

## CONCLUSION

In conclusion there is an effect of lavender therapeutic scent on improving elderly sleep quality. It is expected that this study can be applied by medical team in providing sleep quality in elderly with application of lavender therapeutic scent at least twice a week.

## REFERENCES

- Adiyati. (2010). Pengaruh Aroma Terapi Terhadap Insomnia Pada Lansia Di Pstwunit Budi Luhur Kasongan Bantul Yogyakarta. Accessed on December 5th, 2013 from <http://journal.akbideub.ac.id/index.php/jkeb/article/view/79/78>
- Aemilianus. (2012). Pengaruh penerapan teknik relaksasi benson terhadap gangguan tidur pada lansia di PSTW Budi Agung Kupang
- Ambarwati, F.R. (2014). Konsep kebutuhan dasar manusia. Yogyakarta: Dua Satria Offset.
- Buysse, D. J., Reynold III, C.F., Monk, T.H., Berman, S.R., & Kupfer, D.J. (1998). *Pittsburg Sleep Quality Index (PSQI)*.
- Hidayat, A. Aziz. Alimul, (2007). *Riset keperawatan dan teknik penulisan ilmiah*, Jakarta: Salemba Medika
- Koensoemardiyah. (2010). Minyak atsiri untuk industri makanan, kosmetik, dan aromaterapi. Jakarta: Andi Publisher.
- Kozier. (2004). *Fundamental of nursing: concepts, process and practice*. New Jersey: Pearson prentice hall.
- Lanywati, E. (2007). *Insomnia gangguan sulit tidur*. Yogyakarta: Kanisius.
- Lumbantobing. (2004). *Gangguan tidur*. Jakarta: FKUI.
- Potter, PA & Perry AG. (2006). *Buku ajar fundamental keperawatan: Konsep, proses dan praktik*, Ed. 4, Vol 2. Jakarta: EGC.
- Stanley, M & Beare, PG. (2007). *Buku ajar keperawatan gerontik*, Edisi 2. Jakarta: EGC.
- Widya. (2010). *Mengatasi Insomnia*. Jogjakarta: Kata Hati.

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