



## THE EFFECT OF LAVENDER AROMATHERAPY TO ANXIETY LEVELS PATIENT PREOPERATIVE ORIF ANTEBRACHII FRACTURE

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ABSTRACT	Keywords
<p>Surgery is a potential or actual threat to a person's integrity and can subsequently cause a psychological reaction, namely anxiety. One alternative in overcoming anxiety is with lavender aromatherapy. Lavender aromatherapy has advantages compared to other types of aromatherapy, namely it is economical, easy to obtain, safe to use, does not take long and is practical because it does not require complicated equipment). Lavender has a chemical content, namely Linalyl acetate and linalool. These molecules have sedative and antidepressant effects that can affect a person's feelings and emotions. The purpose of this study was to determine the effect of lavender aromatherapy on the anxiety level of preoperative ORIF antebachii Fracture patients. The study used a pre-experimental design with a One-group pre-post test design which was carried out on March 9 - April 9 2023. The population in this study were all preoperative ORIF Antebrachial Fracture patients for 1 month as many as 14 people in the bougenville room at Kertosono Hospital. A sample of 14 respondents with total sampling sampling technique. Measurement of anxiety levels before and after being given lavender aromatherapy with Hamilton Rating Scale for Anxiety (HARS). Provision of lavender aromatherapy for 15 minutes. Data analysis used the Wilcoxon sign rank statistical test. The results of the Wilcoxon sign rank statistical test showed P value = 0.001 &lt;math&gt;\alpha = 0.05&lt;/math&gt; so that there was an effect of lavender aromatherapy on the anxiety level of preoperative ORIF Antebrachii Fracture patients. Lavender aromatherapy can be applied as an alternative solution in overcoming the anxiety of preoperative ORIF Antebrachii Fracture patients.</p>	<p><i>Lavender Aromatherapy, Anxiety, Preoperative, ORIF, Antebrachii Fracture</i></p>

### INTRODUCTION

The World Health Organization (WHO) states that traffic accidents are the number 8 cause of death and are the top cause of death in people aged 15-29 years in the world and if not taken seriously by 2030 traffic accidents will increase to become the fifth cause of death in the world. In 2011-2012 there were 5.6 million people died and 1.3 million people suffered fractures due to traffic accident (Desiartama & Aryana, 2017). According to data compiled by Wrong Diagnosis, Indonesia is the largest

country in Southeast Asia with the highest incidence of upper extremity fractures of 1.3 million annually out of a population of around 238 million (Ropyanto, Sitorus, & Eryando, 2018). In East Java the incidence of fracture 2 is 6.0% (Riskasdas, 2018). The incidence of accidents is one of the basic health problems besides nutrition and consumption, environmental sanitation, dental and oral diseases, as well as aspects of morality and behavior (Einhorn & Gerstenfeld, 2015). One of the impacts of accident incidents is the occurrence of

broken bones or fractures (Andersen, et al., 2016). Upper extremity fractures such as antebrachial fractures are the most common fracture sites. Differentiation is an alternative that is most often performed by patients with fractures by installing Open Reduction Internal Fixatie (ORIF), a type of internal fixation in the form of plates and screws (Syah, Budi P, & Khodijah, 2018). Operations are a potential or actual threat to a person's integrity and can subsequently cause physiological and psychological stress reactions (Maryunani, 2014).

Mental preparation is no less important in the process of preparing for surgery, because mentally unprepared or unstable can affect his physical condition. Anxiety or fear can result in physiological changes in patients before undergoing surgery (Majid & Mohamad, 2011). A survey by the Indonesian Ministry of Health team, fifteen percent of fracture patients experience psychological stress due to anxiety and depression. Patients feel anxious about surgery and its implications and feel that they have less control over their own situation. Anxiety is confusion, worry about something that will happen with unclear causes and can be associated with feelings of uncertainty and helplessness (Fatmawati & Arina, 2016). Anxiety usually arises preoperatively when the patient is anticipating surgery and postoperatively because of pain or discomfort, changes in body image and body function, dependence on others, loss of control, changes in lifestyle, and financial problems (Baradero, Mary, & Wilfrid, 2008). If anxiety does not receive adequate treatment from doctors, nurses, or family, it is possible that anxiety will get worse which will impact on the patient's unpreparedness for surgery (Einhorn & Gerstenfeld, 2015).

Strategies in reducing preoperative patient anxiety include providing education, music therapy, relaxation techniques, aromatherapy. The fragrance therapy known as aromatherapy is a useful therapeutic action to improve physiological and psychological conditions. Oils used in aromatherapy include essential oils, lavender flowers, chamomile, oranges, ylang-ylang oil, and jasmine oil (Setyoadi &

Kusharyadi, 2011). Lavender aromatherapy has advantages compared to other types of the aromatherapy, namely economical, easy to obtain, safe to use, does not require a long time and is practical because it does not require complicated equipment). Lavender has a chemical content, namely Linalyl acetate and linalool. These molecules have sedative and antidepressant effects that can affect a person's feelings and emotions (Wolfgang & Michaela, 2008). Aromatherapy is a way of healing by using highly aromatic concentrations of essential oils extracted from plants. Aromatherapy works gradually covering the human senses of smell. Smell can have a strong effect on emotions and in the end can cause further effects. When you inhale, the tiny oil molecules seep into the lungs where some of the molecules are transported via the bloodstream to the alveoli. Aromas are captured by receptors in the nose and then provide further information to areas in the brain that control emotion and memory (Setyoadi & Kusharyadi, 2011). Its use, aromatherapy can be given in several ways, including inhalation, soaking, massage, and compresses. The inhalation method is considered the most direct and fast way of healing, because the volatile essential oil molecules act directly on the olfactory organs and are directly perceived by the brain (Godes & Lotus, 2000).

## **MATERIALS AND METHOD**

This research was carried out on 9<sup>th</sup> March – 9<sup>th</sup> April 2023 in the bougenvile room of Kertosono Hospital. The population in this study were all preoperative ORIF Antebrachii Fracture patients for 1 month as many as 14 people in the bougenvile room at RSUD Kertosono. A sample of 14 respondents with total sampling sampling technique.

This study used a pre-experimental design with a one-group pre-post test design. Respondents were given lavender aromatherapy one day preoperatively. Lavender aromatherapy is given as much as 5 drops for 15 minutes using a mask. Monitoring is done every 5 minutes in the treatment room.

Measurement of anxiety levels with a questionnaire. The research instrument for measuring anxiety used the Hamilton Rating Scale for Anxiety (HARS) questionnaire. Hamilton Rating Scale for Anxiety (HARS) was given before and after 5 minutes of giving lavender aromatherapy. The Hamilton Rating Scale for Anxiety (HARS) has high validity and reliability for measuring anxiety in trial clinic studies, namely 0.93 and 0.97. Data analysis using SPSS 21 with Wilcoxon sign rank.

This study ethics uses informed consent, autonomy, confidentiality, beneficent, non-maleficent, justice and fidelity

## RESULTS

Characteristics of respondents included age, gender and education. Based on table 1, the patient pre operation ranging from 17-25 years are 5 respondent (35,7%). A half respondent man are 7 respondent (50%) and most sufferers education elementary school are 5 respondent (35,8%). Table 1. Characteristics of respondents (n=14)

Variable	n	%
<b>Age</b>		
17-25 Years	5	35,7
26-35 Years	2	14,3
36-45 Years	0	0
46-55 Years	3	21,4
56-65 Years	1	7,2
>65 Years	3	21,4
<b>Gender</b>		
Man	7	50,0
Woman	7	50,0
<b>Education</b>		
No school	3	21,4
Elementary School	5	35,8
Middle School	3	21,4
High School	3	21,4

Table 2. The Anxiety Pre and Post lavender aromatherapy (n=14)

Anxiety	Pre		Post		P value
	n	%	n	%	
No anxiety	0	0	8	57,1	0,001
Mild anxiety	7	50	6	42,9	
Moderate anxiety	7	50	0	0	
Heavy anxiety	0	0	0	0	
Very Serious anxiety	0	0	0	0	

Based on table 2, The statistical test result shows that there is the anxiety before and after lavender aromatherapy in 15 minutes. The result of Wilcoxon sign rank p-value 0,001.

## DISCUSSION

Anxiety disorders are more common in women than men because women are more sensitive to their emotions, which in turn are also sensitive to their feelings of anxiety. There is a role for hormones that affect emotional conditions so that they are easily anxious. In addition to gender which can affect anxiety, other factors such as the presence of a family companion as one of the support groups may greatly affect the state of feeling and the level of anxiety in patients who are about to undergo surgery. The role of a support group or family is as a guide in overcoming disturbing life problems related to diagnosis and treatment. The involvement of companions can help them adjust to the consequences of illness and treatment so that it will reduce their anxiety level about any actions that will be taken against them (Salsabilla, 2020).

Men's way of thinking tends to be global or not detailed compared to women. Individuals who see more detail will also easily experience anxiety because they have more information and can finally suppress feelings. Men are more active, explorative, while women are more sensitive. Hormonal levels possessed, men have the hormone testosterone which has the opposite effect to the hormone estrogen in women. The hormone testosterone inhibits the work of RORA (retinoic acid related orphan receptor

alpha). ROR- $\alpha$  functions as brain and lymph node development, lipid metabolism, immune response, and bone maintenance. RORA  $\alpha$  and  $\gamma$  also affect the immune response and development of lymphoid nodes. The immune system is also regulated by gonadal steroid estrogens, androgens and progesterone (Anderson & A, 2019). Lavender aromatherapy works gradually covering the human senses of smell. Essential oils can be absorbed into the body through the skin, thereby affecting the physical and emotional levels. Scents can have a strong effect on emotions and can eventually have further effects.

Giving Lavender Aromatherapy is believed to be beneficial for calming and can balance emotions, improve memory, relieve tension and anxiety. Aromatherapy has several advantages as a supportive action such as relaxing and stimulating effects, calming anxiety and reducing depression (Anderson & A, 2019). Lavender aromatherapy has benefits for relaxation, anxiety, mood and there is an increase in the strength of alpha and beta waves which indicates relaxation. Lavender is analgesic and sedative. Lavender has an impact on reducing anxiety in preoperative kurtase patients, with the process when aromatherapy is inhaled it will stimulate olfactory cells then the message is conveyed to the limbic system in the brain, can release encephalin, endorphins and serotonin in response to stressors so as to bring Calm the body and reduce anxiety. The content of lavender, one of which is Linalyl which is acidic, functions as a sedative. The effect of giving lavender aromatherapy by inhalation to the anxiety of patients with myocardial infarction (Najafi, Taghadosi, Sharifi, Farrokhian, & Tagharrobi, 2014). Giving aromatherapy can significantly reduce the level of anxiety and depression in women giving birth at high risk. Linalool is the main active ingredient that plays a role in lavender's anti-anxiety (relaxing) effects. These molecules have sedative and antidepressant effects that can affect a person's feelings and emotions. The positive impact of aromatherapy on reducing anxiety levels is due to lavender aromatherapy being given directly, namely inhalation. The

inhalation method is considered the most direct and fast way of healing, because the volatile essential oil molecules act directly on the olfactory organs and are directly perceived by the brain. When aromatherapy is inhaled, the volatile molecules of the oil are carried by the air to the nose where delicate cilia emerge from the receptor cells. When the molecules attach to the hairs, an electro chemical message will be transmitted through the ball and olfactory into the limbic system. This will stimulate memory and emotional response. The hypothalamus acts as a relay and regulator, bringing up messages to the brain and other parts of the body. The message received is then converted into action in the form of releasing electrochemical compounds that cause euphoria, relaxation or sedation. The limbic system is mainly used for emotional expression systems (Fatmawati & Arina, 2016).

## CONCLUSIONS

Lavender aromatherapy can reduce anxiety in preoperative patients so that lavender aromatherapy can be applied as an alternative solution in overcoming anxiety in preoperative ORIF Antebrachii Fracture patients.

## REFERENCES

- Andersen, D. J., Blair, W. F., Stevers Jr, C. M., Adams, B. D., El-Khouri, G. Y., & Brandser, E. A. (2016). Classification of distal radius Fractures: an analysis of interobserver reliability and intraobserver reproducibility. *The Journal of Hand Surgery*, 21(4), 574-582.
- Anderson, E., & A, J. (2019). Aromaterapi Lavender terhadap Kecemasan Pasien Pra Operasi Katarak. *Nurtix Jurnal*, 3(1), 8-12.
- Baradero, M., Mary, & Wilfrid, D. (2008). *Prinsip dan Praktik Keperawatan Perioperatif*. Jakarta: EGC.
- Desiartama, A., & Aryana, W. (2017). Gambaran Karakteristik Pasien Fraktur Femur Akibat Kecelakaan Lalu Lintas pada Organ Dewasa di Rumah Sakit Umum Pusat Sanglah

- DEnpasar. *E-Jurnal Medika*, 6 (5), 1-4.
- Einhorn, T. A., & Gerstenfeld, L. C. (2015). Fracture healing: mechanisms and interventions. *Nat Rev Rheumatol*, 11(1), 45–54.
- Fatmawati, D. P., & Arina, M. (2016). Pengaruh Relaksasi Progresif dan Aromaterapi Lavender Terhadap Penurunan Kecemasan Pasien Pre Operasi Dengan Spinal Anastesi. *UMS Library*, 30-50.
- Godes, & Lotus, G. (.t. (2000). *Terapi-Terapi Alternatif*. Yogyakarta: Lotus.
- Majid, A., & Mohamad, J. (2011). *Keperawatan Perioperatif*. Yogyakarta: Gosyen Publishing.
- Maryunani, A. (2014). *Asuhan Keperawatan Perioperatif Pre Operasi*. Jakarta: Cv. Trans Info Media.
- Najafi, Z., Taghadosi, M., Sharifi, K., Farrokhian, A., & Tagharrobi, Z. (2014). The Effects of Inhalation Aromatherapy on Anxiety in Patients with Myocardial Infarction: A Randomized Clinical Trial. *IRCMJ*, 16(8), 67-71.
- Riskesdas. (2018). *Riset Kesehatan Dasar Kementerian Kesehatan Badan Penelitian dan Pengembangan Kesehatan*. Jakarta: In Kementrian Kesehatan Republik Indonesia.
- Ropyanto, Sitorus, & Eryando. (2018). Analisis Faktor-Faktor Yang Berhubungan Dengan Status Fungsional Paska Open Reduction Internal Fixation ( Orif ) Fraktur Ekstremitas. *Jurnal Keperawatan Medikal Bedah*, 1(2), 81-90.
- Salsabilla, A. R. (2020). Lavender Aromatherapy for Reducing Anxiety Level of Labor. *Jurnal Ilmiah Kesehatan Sandi Husada*, 9(2), 761-766.
- Setyoadi, & Kusharyadi. (2011). *Terapi Modalitas Psikogeriatik*. Jakarta: Salemba Medika.
- Syah, B. Y., Budi P, D., & Khodijah, K. (2018). Pengaruh Murotal Al Qur'an Terhadap Tingkat Nyeri Pada Pasien Post Orif Ekstremitas di RSUD Soesilo Slawi Kabupaten Tegal. *JIKO (Jurnal Ilmiah Keperawatan Orthopedi)*, 2(2), 26–30.
- Wolfgang, S., & Michaela. (2008). *Aromatherapy*. Spiner: Vienma.