



# Humidifier Inhalation of Lavender Flower to Reduce Anxiety of Pre-mastectomy Patients

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## Article Info

### Article history:

Received : 18-1, 2024

Revised : 22-3, 2024

Accepted : 30-4, 2024

### Keywords:

Anxiety;  
humedifier;  
inhalation;  
lavender;  
pre-mastectomy.

## ABSTRACT

**Introduction:** breast cancer is the cause of the highest fertility in women and continues to breast cancer has not existed until now. When faced with a couple breakup, it is common to experience disappointment. by using the Wilcoxon signed rank test. **Objective:** to analyze the influence of lavender flower aromatherapy; humidifier on the anxious scale of pre-mastectomy patients. **Method:** pre-experimental design with one group pre and post-test without control. Before the treatment, the patient's anxiety level is first controlled, then given inhalation of lavender flowers through a humedifier with 15 drops of lavender oil in 150 ml of water and evaporated for 15 minutes. Then the patient's anxiety level is measured again. The data were analyzed using the Wilcoxon signed range test. **Result:** using Wilcoxon signed range test analysis recorded with p-value 0.001 (<0.05). **Conclusion:** there is a significant effect of inhalation of lavender flower humidifier to reduce anxiety levels of pre-mastectomy patients. **Suggestions,** the results of this study can be done where all pre-mastectomy patients, first given inhalation of lavender flower humidifier and should be done research for other types of preoperative surgery.

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## INTRODUCTION

Breast cancer is one of the non-communicable diseases that tends to increase every year, so it can be said that the burden that must be borne by the world due to the disease is increasing. Breast

cancer is a group of abnormal cells in the breast that continue to grow multiply. Eventually these cells form a lump in the breast. The disease occurs almost entirely in women, but it can also occur in men. The cause of breast cancer until now can not be known with certainty, suspected cause of breast cancer is multifactorial (Suratri et al., 2023)

Breast cancer is a type of cancer that grows in breast tissue. This condition occurs when cells in the breast grow abnormally and uncontrollably. These cells divide and spread rapidly to surrounding tissues, and can even spread to other organs (Chen et al., 2015; Simanullang et al., 2020). In 2023, there are an estimated 297,790 new cases of invasive breast cancer diagnosed in U.S. women, along with 55,720 new cases of DCIS. By 2023, there are an estimated 2,800 new cases of invasive breast cancer diagnosed in men (Sitohang & Simanullang, 2023; Tarigan et al., 2022).

Globocan in 2020, noted that 68,858 cases in Indonesia with a total of 22,000 deaths were caused by breast cancer and this condition was high. It is known that cases of breast cancer are the highest cause of death in women in the World and in Indonesia also. Currently there is no cure for breast cancer. Cancer treatment with chemotherapy has side effects: nausea, vomiting, hyperpigmented skin and healthy cells will be damaged by radiation (Ferlay et al., 2018; Globocan, 2020). Treatment of breast cancer is one of the world's priorities in the field of health, including in Indonesia, so that several prevention and treatment strategies have been carried out to improve the degree of Public Health (Yulianti et al., 2016).

Mastectomy is a surgical option in breast cancer. The surgical process itself is a complex event that is stressful for patients who will undergo surgery, both elective and emergency surgery in patients who will undergo a mastectomy of all breast tissue and axillary lymph nodes removed. This can lead to anxiety as a potential complication of mastectomy. Preoperative nursing is the initial stage of successful surgery (Janitra et al., 2023). This is because this phase is the beginning that becomes the foundation for the success of the next stage. Surgery or surgery in general will provide a typical emotional reaction for the patient, such as fear, anger and anxiety and anxiety. Anxiety raised by patients can be driven by various conditions such as lack of information about the operation, which includes anesthesia, how the operation will take place until the circumstances that will occur after surgery. Proper and correct preoperative nursing care becomes the most important part that is very helpful to reduce or eliminate feelings of anxiety experienced by mastectomy patients (Antari et al., 2023; Radwan et al., 2016). The provision of aroma therapy is one way of treating diseases by using odors that generally come from plants and smell good, tasty, and delicious called essential oils. Aroma therapy is a way of body care and healing diseases with essential oils (essential oils), in this research showed that there was an effect of lavender flower aromatherapy with a decrease in anxiety of mothers pre caesarean section in maternity hospitals (Sitohang & Simanullang, 2023; Tarigan et al., 2022; Yamada, 2018).

Essential oils have a very important role for the development of Health, namely as a source of natural medicines that are safe and inexpensive, through aromatherapy methods. This is quite reasonable, because in essential oils there is a chemical content of active ingredients that have properties and a quick effect in helping to cure diseases. The active ingredients in this essential oil are also effective and practical cosmetic preparations. A study revealed that the benefits of using aromatherapy psychologically, among others, can reduce anxiety. Immunologically aromatherapy can increase lymphocytes in peripheral blood vessels, increasing CD8 and CD16 which play a role in immunity (Jassim et al., 2023; Zhu et al., 2023).

The purpose of this study was to see if the inhalation of lavender flower humidifier can reduce the anxiety level of pre-mastectomy patients in Murni Teguh Memorial Hospital, so it is very useful for pre-mastectomy patients in reducing their anxiety levels when facing surgery later. It is expected that the results of this study can be applied in any hospital or other health services in pre-mastectomy patients.

## RESEARCH METHOD

The design of this study is a pre-experimental research design with one group pre and post-test without control method, using quantitative methods, namely research based on positiveme philosophy, used to examine the population or a particular sample sampling techniques are generally carried out randomly, data collection using research instruments, statistical quantitative data analysis with the aim of testing the hypothesis that has been (Simanullang & Tambunan, 2023; Sugiono., 2020). The study was conducted in only one group with a sample of 12 people with inclusion criteri as: the patient is willing to be a responder, the patient has a mild and moderate level of anxiety and the first time a mastectomy will be performed. Samples were selected by purposive sampling technique in patients with mild to moderate anxiety and the first time a mastectomy was planned. Before giving inhalation humidifier (diffuser), first measured the level of anxiety, then given inhalation through a diffuser with 30 drops of lavender oil into 180 ml of water. Evaporation was carried out for 15 minutes in each patient's room and added musical instrumentalia, then the patient's anxiety level was measured again. The steps taken in this study are as follows:

- a. Patient consent, provide a consent sheet to the patient, to serve as a respondent in the study by putting a signature after the researcher explains the purpose of the study.
- b. Measurement aspects
  - Data collection methods, The data used in this study are as follows: Primary data, collected by way of direct interviews to respondents by using research instruments in the form of questionnaires. Secondary data: collected from Murni Teguh Medan hospital profile and mastectomy surgery report in Murni Teguh hospital surgery room (Devisi Onkologi Murni Teguh Memorial Hospital, 2018).
  - Data collection techniques: Data collection techniques used in this study using sheet obeservasi. An obeservation sheet is given to measure the patient's anxiety.
    1. Preparatory phase, including data collection procedures are :
      - Researcher requested the approval of a research license from STIKes Murni Teguh (now Murni Teguh of University).
      - Researcher asked permission to the room where the patient was treated
      - Researchers ask for approval to the respondent
    2. Research stage
      - a) Pre-test ;
        - Researcher will visit the room where the patient is treated, then the patient's vital signs will be measured and also the measurement of the patient's anxiety scale together with anesthesiologist visits or pre-medical visits.
        - The day on which the patient is scheduled for surgery, the patient's vital signs will be measured and then the patient's anxiety scale will be measured. The patient's have signed the informed concent for surgery.
      - b) intervention
        - The intervention stage the patient first measured level of anxiety pre-masctectomy patients, then after measuring the level of anxiety through HARS and then will be given a lavender aroma therapy diffuser in accordance with the method performed have combined (Sitohang & Simanullang, 2023; Tarigan et al., 2022).
        - After 15 minutes, the researcher will re-measure the patient's vital signs and measure the patient's anxiety level after the patient is brought into the surgery room. Researchers measured patients ' anxiety using the HARS scale. This was done until it met the number of respondents as many as 12 people during February – March 2019.

## RESULTS

This research was conducted at Murni Teguh Memorial Hospital surgery room in February to March 2019. The number of respondents in accordance with the inclusion criteria is as much as 12 people, with the distribution of the characteristics of the research respondents as in the table. 1.1 the following:

Table 1. Characteristics of respondents

Category	Frequency (f)	Percentage (%)
<b>Age</b>		
21-30	1	8,3
31-40	2	16,6
41-50	6	50
51-60	3	25
>60	-	
<b>Education</b>		
Elementary School	1	8,3
Junior High School	1	8,3
Senior High School	8	66,7
Collage	2	16,7
<b>Total</b>	<b>12</b>	<b>100</b>

Table 1. Showed that the most respondents in this study by age is 41-50 years old with a total of 6 people (50%), while based on the level of education the majority of high school educated 8 people (66.7%).

Table 2. Anxiety levels of respondents before and after administration of Lavender humidifier inhalation

Anxiety level	Frequency (f)	Percentage (%)
<b>Pre intervention</b>		
Mild anxiety	2	16,7
Moderate anxiety	10	83,3
Severe anxiety	-	
<b>Total</b>	<b>12</b>	<b>100</b>
<b>Post-intervention</b>		
Mild anxiety	11	91,66
Moderate anxiety	1	8,33
Severe anxiety	-	-
<b>Total</b>	<b>12</b>	<b>100</b>

Table 3. The Wilcoxon Signed Range Test

Effect of lavender flower	<i>Mean Rank</i>	<i>Positive Rank (n)</i>	<i>Negative Rank (n)</i>	<i>Ties</i>	<i>p-value</i>
Post humidifier inhalation	7,80	0	11	1	0,001
Pre humidifier inhalation	0,00	12	1		

## DISCUSSIONS

Based on the Table.1 that the majority of pre-mastectomy patient age is 50% in the age range of 46-55 years. Breast cancer is very rare under the age of 35 years (Sihombing & Sapardin, 2014). Previous research, states that the average age of patients is 48 years with the peak age of 44-46 years. More patients aged >40 years, with a total of 478 (83.10%) patients (Wangsa et al., 2018). Some studies report that the risk of breast cancer/tumor increases with age, the possibility of breast cancer is highest at the age of over 40 years. Increasing age is one of the risk factors for breast cancer, allegedly due to the influence of hormonal exposure for a long time, especially the hormone estrogen and there is also the influence of other risk factors that take time to induce cancer (Mirsyad et al., 2022). Based on the level of education it was found, that the majority of high school seniors had breast cancer. This study is different from research preview by (Yi & Qiang, 2020), higher education is associated with an increased risk of developing breast cancer, because the lifestyle of patients with alcohol use, age at menopause, and hormone therapy have a role in the incidence of breast cancer. Also the previous research by (Jiang et al., 2023) there is a relationship between the level of education with the risk of breast cancer in women, where the higher the level of education, the higher the risk of developing breast cancer, its do to the lifestyle of patients with alcohol use, age at menopause, and hormone therapy.

Based on Table 2. showed that the majority of pre-mastectomy patients experienced moderate anxiety before undergoing surgery, as many as 10 people or 83.33%. However, after being given inhalation intevensi humidifier aroma therapy lavender flowers, patients tend to decrease from anxiety to mild scale as many as 11 patients 91.66% with mild anxiety scale. Research results according to (Muchlis, 2015), anxiety arises because of something that is not clear or unknown so that feelings that are not calm, worry, or fear appear. Anxiety is a manifestation of psychological behaviors and various patterns of behavior that arise from feelings of subjective worry and tension (Lee & Wonshik, 2014).

In Murni Teguh Memorial Hospital surgery room patients who experience anxiety are often canceled or postponed surgery due to the many complications arising from both medical conditions and from the psychological condition of the patient. In patients before surgery anxiety that is raised can be driven by various conditions such as lack of information about the operation, which includes anesthesia, how the operation will take place until the circumstances that will occur after surgery (Devisi Onkologi Murni Teguh Memorial Hospital, 2018). Surgery or surgical procedures will generally provide a typical emotional reaction for the patient, such as fear, anger and anxiety and anxiety (Suliswati, 2014).

Based on the results of this study also it can be seen that the scale of anxiety experienced by pre-mastectomy patients after being given lavender flower humidifier inhalation is mild, where as many as 11 patients who experience mild pain, while 1 patient is on a moderate scale. The results of this study showed that there was a decrease in the scale of anxiety from moderate to mild.

aromatherapy provides a beneficial fragrance effect either through the inhalation or suction method or through the diffuser method (Yoo & Park, 2023). Inhalation of fragrant aromas can cause psychological and physiological changes in humans. Lavender aromatherapy can increase alpha waves in the brain and these waves help to create a relaxed state (Sitohang & Simanullang, 2023; Tarigan et al., 2022).

Based on Table 3. the results of the analysis of Wilcoxon Range Test Research obtained a Mean rank of 10 respondents, IE 7.50 which shows that the results of the study of lavender flowers inhaled by using a diffuser is very strong to affect the anxiety scale of mastectomy patients. The value of 0 in the Mean rank positive which means that there is a change between the value before being given lavender flowers and after being given lavender flowers. While the value of 11 on the Mean rank negative indicates that there are 11 patients who experience anxiety scale changes from moderate to mild scale. The value of ties 1 deposited in the test showed that there were 1 patient who remained on the anxiety scale before being given lavender flower humidifier inhalation and after being given. Based on the wilcoxon rang test, the p-value of 0.001 or <0.05 showed that lavender flower humidifier inhalation therapy had an effect on reducing the anxiety scale of pre-mastectomy patients. Based on the data of the patient anxiety scale study, it was found that the anxiety scale of patients who had been given lavender aromatherapy was predominantly a mild scale compared to before being given lavender aromatherapy. Based on the results of the Wilcoxon Rang test after inhalation of lavender flower humidifier, a p value of 0.001 was obtained, which was smaller than 0.05, thus inhalation of lavender flower humidifier effectively reduced the anxiety scale experienced by pre-mastectomy patients. Aromatherapy has several molecules that are released into the air as water vapor. When water vapor containing these chemical components is inhaled, it will be absorbed by the body through the nose and lungs which then enters the bloodstream. Simultaneously when inhaled, water vapor will travel immediately to the limbic system of the brain which is responsible for the integration and expression of feelings, learning, memory, emotions, and physical stimuli. Lavender essential oil is very effective and beneficial when inhaled or used on the outside, because the sense of smell is closely related to human emotions. When the aroma of lavender essential oil is inhaled, the body will give a psychological response (Adinda et al., 2023; Yoo & Park, 2023). Lavender essential oil can be beneficial in reducing anxiety and worry. Lavender has a calming effect, the scent of lavender can provide a sense of calm, balance, a sense of comfort, a sense of openness and confidence. The use of aromatherapy has a calming effect on the soul so that it can reduce stress (Maifirisco, 2019).

## CONCLUSION

This research can be concluded that there is a significant effect of inhalation humidifier to decrease anxiety levels of pre-mastectomy patients. This study can be applied in health care practice in patients who will undergo pre-mastectomy because the results can reduce the level of anxiety in patients. The results of this study still have limitations where it requires a smaller room and adjusted or compared to the needs of lavender oil flowers that are dripped in water so that it needs to be set and researched so that in the future the effects of inhalation by using a lavender flower humidifier can be stronger and longer time. For further research can be developed inhalation of lavender flower humidifier against several other types of surgery. So it is really known that the benefits of lavender flower humidifier inhalation can reduce anxiety levels in all types of pre-surgery.

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