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## Different Effect of Citrus (Orange) and Lavender Aromatherapy towards Anxiety Level



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### Abstract

Anxiety that occurs continuously, irrationally and increasing in intensity, can interfere with daily activities and become an anxiety disorder. The purpose of the study was to identify differences in the effectiveness of citrus aromatherapy (orange) compared to lavender aromatherapy on anxiety levels in nursing students in dealing with thesis at Tribhuwana Tunggadewi University, Malang. The design of the study used a quasi-experimental design using a two group pre-test-post-test design approach. Respondents in this study were nursing students who were undergoing thesis as many as 66 people, from a population of 83 people with simple random sampling technique. The instrument in this study used experimental intervention. Analysis using Wilcoxon and Mann Whitney test. The result of this analysis was that citrus aromatherapy (orange) with p-value 0.000 and lavender aromatherapy with p-value 0.000, meant that cytus (orange) aromatherapy and lavender aromatherapy both significantly reduce anxiety levels. However, there was a significant difference between citrus aromatherapy (orange) and lavender aromatherapy on the level of anxiety in students who were working on their thesis at Tribhuwana Tunggadewi University, Malang, which was shown with a p-value of 0.000. It is hoped that further researchers can see or measure which is the most effective between citrus aromatherapy (orange) compared to lavender aromatherapy.

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## INTRODUCTION

Anxiety is a normal thing experienced by everyone in his life, as a sign of danger that will befall. However, when anxiety occurs continuously, irrationally and its intensity increases, then anxiety can interfere with daily activities and is referred to as an anxiety disorder (ADAA, 2014). Anxiety can also be experienced by anyone, including experienced by students who are completing their thesis assignments for no apparent reason. Students in the world of education, many experiences various kinds of events that might cause anxiety.

Severe anxiety experienced by students felt unable to do the final task because they felt it was difficult. Students find it difficult to understand how to conceptualize and create backgrounds. Students prefer to be explained in detail and directed a lot about the final project so that they can focus (Khoirunnisa, 2021). Anxiety is a manifestation of various mixed emotional processes, which will occur when a person is experiencing various pressures or tensions (stress) such as feelings of frustration and inner conflict (Vivi, 2019). Anxiety can occur due to the perceived pressures related to the process of working on the thesis. One of the very basic pressures is that the thesis that is being worked on will eventually be tested in front of the examiner lecturer, besides that other factors that can affect student anxiety are due to the time limit in the lecture period (Widiarti, 2015).

In the process of writing a thesis, many students experience various kinds of obstacles and different psychological responses, anxiety and stress are the most common psychological disorders experienced by students in completing their thesis. A lot of anxiety experienced by students occurs continuously every day. Academic pressures and competencies, higher career and educational goals, peer pressure, expectations from parents, and conflicts between parents and children often require the handling of anxiety, stress and adaptive disorders by students (Omizo & Hutagalung, 2008). Thesis is often taken seriously by students for that they prepare themselves both physically and non-physically so that they avoid failure in the thesis. If they experience failure in the thesis, then they will carry a moral burden such as shame, awkwardness, inferiority and avoid socialization which in the end they will lose their confidence. The feeling of fear of failure can be a burden that causes students to have anxiety in dealing with thesis (Lasri & Partiw, 2014).

The thesis itself according to the Great Indonesian Language Dictionary (2005) is a scientific essay that must be written by students as part of the final requirements for academic education. Anxiety can be a warning for individuals so that they can prepare themselves for threats or dangers that will occur. If individuals respond well then anxiety does not interfere with their health, but some people perceive it unnaturally so that it can worsen their condition. The impact that occurs from anxiety is that people usually feel excessive fear of their illness, and an uncertain mood.

The prevalence of emotional mental disorders such as anxiety disorders and depression in Indonesia was 9.8% of the population aged > 15 years. Riskesdas in 2018. Based on research conducted by Perdana (2011) in the Department of Nursing, Faculty of Medicine, Universitas Brawijaya (FKUB) class In 2007 it was found that of the 62 students who became respondents, 48.3% (30 people) had mild anxiety levels, 43.5% (27 people) moderate anxiety levels and 8.1% (5 people) severe anxiety levels. Based on research conducted by Widiarti in 2015 obtained data on the level of anxiety in final students in the Physiotherapy Department at the Surakarta Health Polytechnic (0%) with mild anxiety levels, 80% moderate anxiety levels and 20% severe anxiety. And another study by Lasri and Partiw in 2014 showed data on anxiety levels that respondents who experienced moderate anxiety were 17 people (56.7%), who experienced mild anxiety levels were 8 people (26.7%) and who did not experience anxiety were 5 people (16.7%).

According to Kliat & et al (2011) anxiety is a feeling of worry as if something bad will happen and feel uncomfortable as if there is a threat accompanied by physical symptoms such as heart palpitations, cold sweats, shaking hands and sleep disturbances. According to Lazarus (in Maisaroh, 2011) Anxiety is a manifestation of various mixed emotional processes, which occur when people are experiencing pressure from feelings of unclear object, inner pressures or mental tension that causes individuals to lose their ability to adjust. Anxiety that occurs can be overcome by medical therapy measures used, namely treatment therapy which is usually given to people with anxiety. One of the nursing actions that can be given in order to reduce the level of anxiety is through complementary therapy. Complementary therapies are carried out such as deep breathing relaxation therapy,

progressive muscle therapy, music therapy, recreational therapy and aromatherapy.

The results of research conducted by Nova Winda Setiati, Siti Sugih and Hidayat Wijayanegara, in 2019 said that lavender aromatherapy was effective in reducing the anxiety of third trimester pregnant women in preparation for childbirth in the independent practice midwife nurussyifa, buniseuri ciamis district and research conducted by Putri & Widarti, 2017 said that Citrus Orange aromatherapy was able to reduce anxiety in preoperative patients. Some types of aromatherapy that have proven beneficial with various side effects are lavender, rosemary, and citrus orange. Everyone has different preferences for aromatherapy. The types of aromatherapy that are very diverse make more and more variations in the effects given to each of these types of aromatherapy. Some aromatherapy that has been proven to be effective in reducing anxiety is aromatherapy and the most frequently used are lavender, citrus (orange), rose mary, and papermint aromatherapy. One way to reduce anxiety levels is aromatherapy, which means treatment using fragrances that use essential oils in holistic healing to improve health and emotional comfort (Dila, Putra and Arifin, 2017).

Aromatherapy citrus (orange) aromatherapy derived from natural ingredients that can make a relaxed state, calm the mind, so that it can help reduce insomnia, insomnia is one of the disorders caused by anxiety (Putri & Widarti, 2017). Citrus (orange) aromatherapy works to stimulate the olfactory nerve cells and affect the limbic system. The limbic system is the center of emotions, feelings, fear, depression, anxiety and other emotions. This aromatherapy then causes various reactions to our feelings that affect our emotions and physical conditions. Scientifically, the reaction occurs because the fragrance sends certain signals to the part of the brain that regulates our emotions (Hutasoit, 2002). Lavender aromatherapy is an alternative plant as a healer, the flowers of this plant produce high-class perfumes of European nobility (Jaelani 2009). The benefits of lavender help ease sleep, relieve anxiety, overcome depression, and reduce feelings of tension, Muchtar di & Moelyono 2015. Lavender aromatherapy works by stimulating olfactory nerve cells and influencing the work of the limbic system by increasing positive and relaxed feelings (Style, 2006)

Based on the results of a preliminary study on June 12, 2020 on nursing students at the Faculty of

Health Sciences, Tribhuwana Tungadewi University, Malang, there are 7 out of 10 students who feel anxious about the thesis preparation process and the final target, difficulties in writing thesis, 2 people with severe anxiety levels, 4 people with moderate anxiety level and 1 person with mild anxiety level. With symptoms of anxiety, worrying about the final target, difficulty in contacting the supervisor, lack of mastery of research methodology, restlessness, doubt and indecision, sweating a lot, sweaty palms, trembling voice. Dizziness, cold and hard to concentrate. From the description of the background above, the researchers are interested in conducting research on the differences in the effectiveness of citrus aromatherapy (orange) with lavender aromatherapy on the anxiety level of nursing students in dealing with theses.

## **METHOD**

The design of the study used a two group pre-test-post-test design. The population in this study were all nursing students who faced thesis at Tribhuwana Tungadewi University, totaling 83 people from February 2019 to July 2020 who met the inclusion criteria. The sampling technique used simple random sampling so that the sample of the study was 66 respondents consisting of 33 respondents treated by citrus aromatherapy (orange) and 33 respondents treated by lavender aromatherapy. Aromatherapy was given in the form of liquids or essential oils. Citrus and lavender aromatherapy were given in one dose, which is 3 to 7 drops or 0.15-0.35 ml. The equipment used an aromatherapy furnace, candles, clean water, citrus and lavender essential oils, matches, and gloves. Aromatherapy was given for 15-15 minutes by waiting to be turned on about less than 1 meter from the respondent's body position. Before giving therapy, the researcher asked about the patient's allergy history in anticipation.. The inclusion criteria applied were respondents who worked on the thesis of the nursing study program at Tribhuwana Tungadewi University, Malang. (research time 3 days giving citrus aromatherapy (orange) and 3 days giving lavender aromatherapy), respondents who experienced anxiety, respondents who were adults (21-26 years old) and respondents were students of class 2016. The data collection technique used a HARS scale questionnaire sheet. The data analysis method used the Wilcoxon and Man Witney test.

## RESULT

**Table 1:** Frequency Distribution Based on the Characteristics of Respondents in the Citrus (Orange) Aromatherapy Group and the Lavender Aromatherapy Group.

Respondent characteristics	<i>cytrus (orange)</i>		<i>lavender</i>	
	f	%	f	%
Gender				
Female	24	72,2	19	57,6
Male	9	27,3	14	42,4
Age				
21-23 year	24	72,7	18	54,5
24-26 year	9	27,3	15	45,5
Total	33	100	33	100

Table 1 shows that most of the respondents in the citrus aromatherapy (orange) and lavender aromatherapy groups were female. Most of the respondents in the citrus aromatherapy (orange) and lavender aromatherapy groups were 21-23 years old.

**Table 2:** Distribution of Anxiety Levels Before and After Giving Citrus (Orange) Aromatherapy to Nursing Students' Anxiety Levels in Facing Thesis.

Aromatherapy <i>Cytrus (Orange)</i>	Pre		Post	
	f	%	f	%
No Worry	0	0	1	3,0
Light	9	27,3	15	45,5
Currently	7	21,2	9	27,3
Heavy	17	51,5	8	24,2
So heavy	0	0	0	0
Total	33	100	33	100

Based on Table 2 shows that most of the respondents had severe anxiety levels before being given citrus aromatherapy (orange) as many as 17 people, and almost half of the respondents after being given citrus aromatherapy (orange), as many as 15 respondents were in the category of mild anxiety.

**Table 3:** Distribution of Anxiety Level Data Before and After Giving Lavender Aromatherapy to Nursing Students Anxiety Levels in Facing Thesis

Aromatherapy <i>lavender</i>	Pre		Post	
	f	%	f	%
No Worry	0	0	7	21,2
Light	2	6,1	12	36,4
Currently	6	18,2	8	24,2
Heavy	25	75,8	6	18,2
So heavy	0	0	0	0
Total	33	100	33	100

Based on Table 3 shows that most of the respondents (75.8%) experienced severe anxiety before being given lavender aromatherapy as many as 25 people, and almost half of the respondents (36.4%) experienced mild anxiety after being given lavender aromatherapy as many as 12 respondents.

**Table 4:** Differences in the Effectiveness of Citrus (Orange) Aromatherapy on Anxiety Levels in Nursing Students Facing Thesis at Tribhuwana Tunggaladewi University.

	N	Median	p value
		(Min-Max)	
Anxiety level <i>pre test</i>	33	30 (17-40)	0,000
Anxiety level <i>post test</i>	33	21 (13-36)	

Based on table 4 above, it shows that the p-value is 0.000. Because the p-value is smaller than 0.05, it can be concluded that there is a difference between the level of anxiety in nursing students in dealing with theses before and after citrus aromatherapy (orange), so it can be concluded that there is an effectiveness of citrus aromatherapy (orange) on anxiety levels. to students in facing the thesis. While the median value at the pre-test was 30 and the median value at the post-test was 21. This means that this indicates a decrease in the value of the anxiety level of students from before giving citrus aromatherapy (orange) to the value of the anxiety level of students after giving citrus aromatherapy (orange).

**Table 5:** Differences in the Effectiveness of Lavender Aromatherapy on Anxiety Levels in Nursing Students in Facing Thesis

	N	Median	p value
		(Min-Max)	
Anxiety level <i>pre test</i>	33	31 (20-40)	0,000
Anxiety level <i>post test</i>	33	19 (10-34)	

Based on table 5 above, it shows that the p-value is 0.000. Because the p-value is smaller than 0.05, it can be concluded that there is a difference between the level of anxiety in nursing students in dealing with theses before and after lavender aromatherapy is carried out, so it can be concluded that there is an effectiveness of lavender aromatherapy on the level of anxiety in students in dealing with theses. While the median value at the pre-test was 31 and the median value at the post-test was 19. This means that this indicates a decrease in the value of students' anxiety levels from before giving lavender aromatherapy to the value of students' anxiety levels after giving lavender aromatherapy.

The test results for differences in the effectiveness of citrus aromatherapy (orange) with lavender aromatherapy on anxiety levels in nursing students in dealing with thesis at Tribhuwana Tunggaladewi University are as presented in the following table.

**Table 6:** Differences in the Effectiveness of Citrus (Orange) Aromatherapy and Lavender Aromatherapy on Anxiety Levels in Nursing Students in Facing Thesis

Group	n	Average	Asymp. Sig. (2-tailed)
<i>Cytrus group</i>	33	36,30	0,000
<i>Lavender group</i>	33	30,70	
Total	66		

The results of the analysis presented in the table above prove that the test data obtained a p-value of 0.000. The results of this analysis mean that there is a significant difference between the administration of citrus aromatherapy experiments (orange) and lavender aromatherapy on the level of anxiety in nursing students in dealing with thesis at Tribhuwana Tunggaladewi University. As evidenced by the average value of 36.30 in citrus aromatherapy (orange) and an average value of 30.70 in lavender aromatherapy, this average value means that lavender aromatherapy has a high level of effectiveness in reducing anxiety levels compared to citrus aromatherapy (orange).

## DISCUSSION

### 1. Anxiety Levels Before and After Giving Aromatherapy Citrus (orange)

Based on the results of the study, it was found that most of the respondents before being given citrus aromatherapy (orange) had a category of

severe anxiety with symptoms of feelings of anxiety, feeling tense, fearful, experiencing sleep disturbances, intelligence disorders, feelings of depression, digestive (gastrointestinal) symptoms, autonomic and behavioral symptoms. (attitude) at the time of the interview, while almost half of the

respondents after being given citrus aromatherapy (orange) had a mild anxiety category. Aromatherapy odor factors are one of the keys that make changes in anxiety levels, aromatherapy works to stimulate olfactory nerve cells and affect the limbic system. The limbic system is the center of pain, pleasure, anger, fear, depression and various other emotions (Fatmawati, 2016).

This study is in accordance with research conducted by Rujito Dwi Julianto, Siti Romadoni, Windy Astuti CN (2014) with the results of the statistical test of this study showing that there was a significant effect of the use of citrus aromatherapy on anxiety in patients with preoperative major surgery at Muhammadiyah Hospital Palembang in 2014 with P value 0.001 at the 95% significance level. This study is also relevant to research according to Mega Arianti Putri, Ayu Tri Widarti (2017) with the results of the statistical test of this study obtained a p-value of 0.000 at the level of significance = 0.05 so that it can be interpreted that there is an effect of citrus (orange) aromatherapy on reducing anxiety in preoperative patients.

Respondents' responses when given the treatment respondents felt worried, sweaty, restless, and nervous. Respondents feel unable to work on and complete the thesis in the near future. The advantages of giving citrus aromatherapy (orange) respondents feel comfortable and calm when getting aromatherapy, citrus aromatherapy (orange) has a positive impact on what level of anxiety when given by inhalation (inhaled) because the nose or smell has direct contact with the parts of the brain in charge of stimulating the formation of the effects of aromatherapy. Giving citrus aromatherapy (orange) is given within 15 minutes from 9-12 hours, for 3 days.

Based on general data, it is known that the group of respondents who were given citrus aromatherapy (orange/orange) had age characteristics, mostly aged 21-23 years (late adolescence), as many as 24 people (72.7%) and aged 24-26 years as many as 9 people (27.3) at this age the olfactory organs are already working well. According to sustainable in 2015 someone who has an easier age, more easily suffer from stress than adults. Older age, will tend to have more experience in dealing with anxiety problems

The results of the general data show that the characteristics of respondents based on gender in nursing students at Tribhuwana Tungadewi University are mostly female, as many as 24 people

(72.7%) and male respondents as many as 9 people (27.3%). From the results of observations where female respondents show more worry, anxiety, nervousness which causes anxiety.

Sadock in 2009 explained that women experience more severe anxiety due to the role of hormones that can affect emotions so that they are young, anxious and suspicious. Some neuroscientists have also found that genes, hormones and phenomena and brain biology affect anxiety in women (Zukarnain & Novliadi, 2009 in Anisa & kk, 2018).

Citrus (orange) aromatherapy can reduce anxiety levels, this is evidenced by almost most of the respondents having mild anxiety levels after being given citrus (orange) aromatherapy. post-test, which is 21, which means that this indicates a decrease in the value of the student's anxiety level from before giving citrus aromatherapy (orange) to the value of the student's anxiety level after giving cyturs aromatherapy (orange).

## **2. Anxiety Levels Before and After Giving Lavender Aromatherapy.**

Based on the results of the study, it was found that most of the respondents before being given lavender aromatherapy had a category of severe anxiety with symptoms of feelings of anxiety, feeling tense, fearful, experiencing sleep disorders, intelligence disorders, feelings of depression, digestive (gastrointestinal) symptoms, autonomic symptoms and behavior (attitudes). at the time of the interview, while almost half of the respondents after being given lavender aromatherapy had a mild anxiety category. Factors that cause the emergence of severe anxiety can be caused by the process of writing a thesis, time limits in college, pressure from peers, expectations from parents and academic pressure. Lavender aromatherapy is given directly (Inhalation). The mechanism through smell is much faster than other routes in dealing with problems such as stress and anxiety (Koensoemardiyah, 2009).

This is in accordance with research according to Arwani, Lis Sriningsih, Rodhi Hartono (2013) with the results showing that most respondents before giving lavender aromatherapy experienced severe anxiety (40%), and after giving aromatherapy the most experienced moderate anxiety (42.5%). It was concluded that there was an effect of giving aromatherapy on the patient's anxiety level before

surgery with spinal anesthesia at Tugu Hospital Semarang.

This study is also relevant to the research according to Dewi Ratna Dila, Farhandika Putra, Rani Fitriani Arifin (2017) with the results of the study using the Wilcoxon signed rank test there is a difference in the pretest value of maternal anxiety preoperative heavy caesarean section as many as 20 (100%) respondents and the postoperative value. Anxiety test for preoperative caesarean section mothers with moderate anxiety as many as 16 (80%) respondents, the results obtained P value 0.000 (<0.05). The conclusion of this study is that there is an effect of lavender aromatherapy on reducing anxiety for preoperative caesarean section mothers at the paradise maternity hospital, Simpang Empat district in 2017.

Respondents showed anxiety behaviors such as worrying, not calm, nervous and sweating when researchers conducted study, respondents said they had difficulty in doing thesis and were afraid if the target time for graduation was not achieved. The advantages of giving lavender aromatherapy can provide a calming effect and feel comfortable when the respondent inhales aromatherapy. Through inhalation of lavender aromatherapy will enter through the nose and provide stimulation to the brain.

The results of the study in general data showed that the characteristics of respondents based on age at Tribhuwana Tunggadewi University nursing students were almost 21-23 years old (late adolescence) before and after giving lavender aromatherapy as many as 18 people (54.5%) and those aged 24-26 as many as 15 people (45.5%). Anxiety disorders are more easily experienced by someone who is younger than someone who is older. Age is more susceptible to psychological stress and anxiety, due to immature mental and mental readiness and lack of experience (Sadock BJ & Sadock VA, 2009). According to Satria & kk in 2017 said anxiety is easy for students because students have several demands that they have to fulfill such as graduating on time, lecture assignments that must be completed and the exams they will face at this time experience a high level of anxiety. It can be ascertained that the age ranges between 18-25 years (Kartono, 1985, p.133 in satria & kk, 2017).

The results of the study in general data are known that the characteristics of respondents based on gender are mostly female as many as 19 people

(57.6%) and male respondents as many as 14 people (42.4%). From the observations of researchers, female respondents showed more anxiety, anxiety, nervousness that caused anxiety. This result is in line with research conducted by Erawan & kk in 2013 explaining that women experience higher levels of anxiety than men.

So it is clear that the role of lavender aromatherapy can reduce anxiety levels, this is evidenced by the majority of respondents having mild anxiety levels after being given lavender aromatherapy, which previously most respondents had severe anxiety levels. The median value at the pre-test was 31 and the median value at the post-test was 19. This means that this indicates a decrease in the value of students' anxiety levels from before giving lavender aromatherapy to the value of students' anxiety levels after giving lavender aromatherapy.

### **3. Differences in the Effectiveness of Citrus (Orange) Aromatherapy and Lavender Aromatherapy on Anxiety Levels in Nursing Students Facing Thesis At Tribhuwana Tunggadewi University.**

The results of the analysis presented in the table above prove that the data test gets a P-value of 0.000. The results of this analysis mean that there is a significant difference between the administration of citrus aromatherapy experiments (orange) and lavender aromatherapy on the level of anxiety in nursing students in dealing with thesis at Tribhuwana Tunggadewi University. It is proven by the average value of the citrus aromatherapy experimental group (orange) which has an average value of 36.30 while the lavender aromatherapy experimental group has an average value of 30.70. ).

Aromatherapy is given to improve the health and well-being of the body, mind and soul (Dewi Ratna Dila, Farhandika Putra and Rani Fitriani Arifin, 2017). Aromatherapy has a positive effect because a fresh and fragrant aroma will stimulate sensory and receptors which in turn affect other organs so that it can have a strong effect on emotions and be able to react to stress (Primidiati 2003, in Arwani, Sriningsi & Hartono, 2013). While lavender aromatherapy affects the body by stimulating the olfactory nerve cells and affects the limbic system by increasing positive and relaxed feelings. So it can be concluded that from the results of research and existing theories, that there is a difference in the effectiveness of citrus

aromatherapy (orange) with lavender aromatherapy on anxiety levels in nursing students in dealing with thesis at Tribhuwana Tunggadewi University.

Aromatherapy Citrus (orange / orange) is one of the anxiolytic or ingredients used to reduce anxiety. This is because aromatherapy citrus (orange) contains linalool. Linalool functions as an anxiolytic or a substance that can reduce anxiety. Linalool is one of the aromatherapy that is widely used by inhalation (inhaled) because the nose / smell is in direct contact with the part of the brain that is in charge of stimulating the formation of the effects caused by aromatherapy. Aromatherapy Citrus (orange) works to stimulate the olfactory nerves and affect the limbic system. The limbic system is the center of pain, pleasure, anger, fear, depression and many other emotions. The hypothalamus, which acts as a relay and regulator, sends messages to the brain and other body parts. The message received is then converted into action in the form of the release of serotonin and melatonin hormones that cause euphoria, relaxation or sedatives (Fatmawati, 2016).

The feeling of relaxation produced by citrus (orange) is due to the positive effects of linalool used by inhalation. Inhalation is a method introduced in the use of the simplest and fastest aromatherapy method (Muchtari & Moelyono, 2015) inhalation is a method of giving aromatherapy that is inserted from outside the body, and enters the body. Inhalation is the same as the olfactory method, which easily stimulates the olfactory during breathing and does not interfere with normal respiratory processes due to inhalation of essential oils. The smell that can be smelled will give you a sense of physical and psychological comfort.

Lavender aromatherapy is an alternative plant as a healer, the flowers of this plant produce high-class perfumes of European nobility (Jaelani, 2009). Lavender oil contains linalool to be one of the widely used aromatherapy, by inhalation (inhaled). The main content of lavender flowers is linalool where linalool is the main active ingredient that plays a role in reducing anxiety (Dewi, 2013). Aromatherapy works gradually to whiten the human senses to smell. This can make emotions and feelings more stable, make thoughts and feelings calmer, and make inhalation able to deal with anxious situations calmly (Kasanah, 2005). In this way, it can affect not only the physical but also the emotional level. When you inhale, the scent is captured by receptors in the nose and then provides further information to the area of the brain that

controls emotion and memory, which can provide information to the hypothalamus. The limbic system in the brain also produces all instinctive responses and is closely related to the brain that pays attention to the sense of smell (Balkam, 2001).

## CONCLUSION

Most of the respondents before being given citrus aromatherapy (orange) had a severe category of anxiety, while most of the respondents after being given citrus aromatherapy (orange) had a mild category of anxiety. Most of the respondents before being given lavender aromatherapy had a severe category of anxiety, while most of the respondents after being given lavender aromatherapy had a mild category of anxiety. Citrus (orange) aromatherapy and lavender aromatherapy both significantly reduced anxiety levels with a P-value of 0.000 for citrus aromatherapy (orange) and lavender aromatherapy with a P-value of 0.000, respectively. However, there is a significant difference between citrus aromatherapy (orange) and lavender aromatherapy on the level of anxiety in students who are working on a thesis at Tribhuwana Tunggadewi University, Malang, indicated by a P-value of 0.000.

## SUGGESTION

The results of this study can be used as additional nursing knowledge in the nursing student learning process in identifying, knowing and analyzing the effectiveness of citrus aromatherapy (orange) with lavender aromatherapy on the anxiety level of nursing students in dealing with thesis and families in particular in helping to overcome the problem of anxiety levels by giving citrus aromatherapy (orange) with lavender aromatherapy to nursing students in dealing with thesis. In addition, it is applied by health workers to provide services to students and their families in an effort to measure the difference in the effectiveness of citrus aromatherapy (orange) with lavender aromatherapy on the anxiety level of nursing students in dealing with thesis. The results can be used as information material for the development of further research on complementary aromatherapy, especially citrus aromatherapy (orange) with lavender aromatherapy on anxiety levels in nursing students in dealing with thesis, it is hoped that further researchers can see or measure which is the most effective between citrus aromatherapy (orange) compared to lavender aromatherapy.



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## FUNDING

Most of the study finance comes from the researcher's personal funds, then some get assistance with article publication from a grant program held by the Nurse Professional Education Study Program, Faculty of Health Sciences, Tribhuwana Tungadewi University. The preparation was carried out by researchers (lecturers) as a team, videlicet two persons who were then assisted by a research assistant. In the research process also with permission from the Head of the Nursing Study Program, Faculty of Health Sciences, Tribhuwana Tungadewi University as the location of the study and the respondents.

## CONFLICTS OF INTEREST

The process of the study were assisted by a research assistant to avoid conflicts of interest between researchers and study participants so that researchers do not have direct contact with study participants when collecting anxiety level data. Before starting the researcher's activities, they also consolidated with the location of the study, the interest in the topic and the existing phenomenon prompted the researcher to raise the study according to that title. So it can be concluded that every party involved in the study already knows and agrees with this study activity. Most financial sources are issued by researchers, while for publication, they receive assistance based on a research publication grant program organized by the Nurse Professional Education Study Program, Faculty of Health Sciences, Tribhuwana Tungadewi University. This

study received financial and moral support from the institution so that it is hoped that it can overcome the anxiety experienced by students when completing their final assignment.

## AUTHOR CONTRIBUTION

The main author verifies critical thinking based on the phenomena that occur which are the gap between the spatial ideal and the real events that occur. Then the main author starts designing and compiling the research concept framework, determining the theoretical concepts and research hypotheses, compiling articles, conducting analysis, displaying data, carrying out critical revisions of manuscript writing, making final approval of the version to be published is also part of the main author. The co-author criticizes the research design and analysis tests using data processing software, performs data retention, data interpretation and examines the relevance of the theoretical concepts used, provides instruments and examines the suitability of implementation according to standard procedures and research frameworks. The lead author supervised the implementation of the research and conducted explanatory discussions with the co-authors. Based on the existing directional hypothesis, the researcher examines the research results to deepen the research discussion.

The next accompanying researcher who is a research assistant is more focused on the technical implementation of the research and ensures that each stage of the experiment is in accordance with the established concept. This co-researcher collects data and observes the responses of research participants. In addition to collecting data, he ensures the accuracy of the samples and the validity of the data collected. Through the results of this study the research has implications for students to overcome anxiety, contribute to learning and complementary practices in the campus environment as well as to families and even the general public where by giving citrus (orange) aromatherapy with lavender aromatherapy can control the anxiety experienced, especially lavender aromatherapy it turns out that known to provide more significant effectiveness than citrus aromatherapy even though both of them provide benefits for reducing anxiety.

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