

The Effect of Lavender Aromatherapy on Reducing Anxiety Levels in Students

Adinda Rahmawati, Annisa Nurida, Nova Primadina, Rony Subagyo

Faculty of Medicine, Universitas Muhammadiyah Surabaya, Indonesia

adindaadr05@gmail.com, annisanurida.m.d@gmail.com, novaprimadina@fk.um-surabaya.ac.id, subagyo_ronidr@yahoo.com

Article Information

Submitted: 10 June 2022

Accepted: 14 June 2022

Online Publish: 20 June 2022

Abstract

Introduction: Students have a lot of lecture activities; the pandemic requires all these activities to be done at home. This situation causes the stress and anxiety levels of students to increase. Lavender was chosen as one of the aromatherapy variants chosen to reduce anxiety levels. Lavender contains linalool which has anti-anxiety, relaxation, and drowsiness effects. One of the uses of lavender flower aromatherapy (*Lavandula angustifolia*) is inhalation to get benefits directly into the body. **Method:** The method used is a literature review, namely by reviewing several library sources through searching using the online databases of Google Scholar and PubMed. **Objective:** To determine the benefits of lavender aromatherapy on reducing anxiety levels in students. **Results and Discussion:** Based on the results of the study of several literature in 11 journals with student respondents, it was found that anxiety was grouped into behavioral, cognitive, and affective responses. Giving lavender aromatherapy to reduce anxiety levels can be done by inhalation, drops, evaporation, application of oxygen masks, and spray techniques. Lavender aromatherapy is effective for reducing anxiety in students. **Conclusion:** Lavender oil is well-known aromatherapy for its sedative, hypnotic, and antineuro depressive effects. Lavender aromatherapy can reduce anxiety levels in students

Keywords: Anxiety Level; College Students; Aromatherapy; Lavender;

Introduction

The emergence of the COVID-19 pandemic was the beginning of a change in life patterns, one of which was in the field of education, including in universities. Changes that occur in the world of education are learning activities from home or online learning. As a result, the pandemic greatly affected all students and the psychological disorder that students often experienced was anxiety.

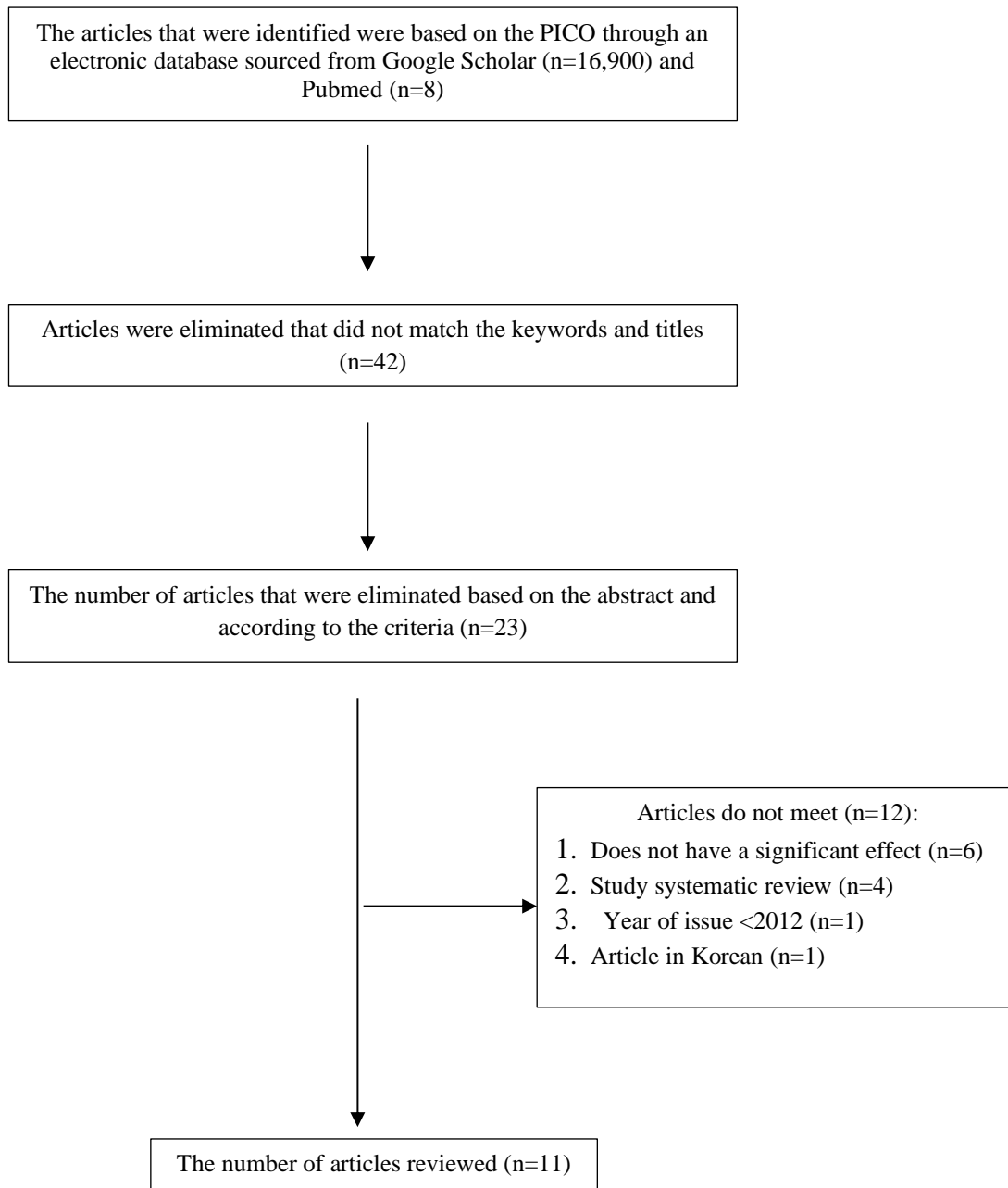
Factors that cause anxiety in students are online lectures because of their concerns regarding the ability of the devices they have to support online lectures, network fluency, acceptance of materials, implementation of online exams, and practice. In addition, each individual feels bored and stressed because they feel constrained and cannot carry out their usual activities. Another anxiety that occurs is related to the family economy and parents' work-related work and parental income decreases so that the economic condition and income of parents become worse than before the pandemic.

Non-pharmacological therapy is needed to reduce anxiety levels in students. There are several therapies that can be done, namely complementary therapies, including distraction, relaxation, spiritual therapy, and aromatherapy. One type of aromatherapy that can be used to reduce anxiety is lavender. Lavender oil has been used since ancient times as a type of treatment because of its strong properties against relaxation, sedation, stress relief, calming the mind, and other psychological effects (Setyawan & Oktavianto, 2020).

Based on the above background determine the benefits of lavender aromatherapy on reducing anxiety levels in students. Researchers conducted a study using literature reviews from various related journals about the effect of lavender aromatherapy on reducing anxiety levels in students.

Method

The method used in writing this article is a literature review. This method is a research conducted by searching various sources obtained through search. The literature review used is the Google Scholar database, Pubmed. In this study, the keywords searched using PICO analysis were Aromatherapy Lavenderstudent anxiety, and reducing anxiety. The literature collected was selected according to the inclusion criteria. There were 11 main journals that were used as references and thoroughly studied.



Research and Discussion

Table 1
Journal Analysis Results

Title	Author (Year)	Article Type	Method	Conclusion
<i>Efektivitas Relaksasi Nafas Dalam dan Aromaterapi Lavender Terhadap Kecemasan Mahasiswa Menghadapi Ujian Skill Laboratory</i> (The Effectiveness of Deep Breathing Relaxation and Lavender Aromatherapy on Student Anxiety Facing Laboratory Skills Exams)	Triwahyuni et al., 2021	Original Article	Quasi Experimental	The results showed that the average anxiety before being given the intervention was 50.06 and after being given the intervention was 31.18. It is proven that there is an effect of deep breath relaxation and lavender aromatherapy on reducing anxiety in students facing the laboratory skill test with a P value $(0.000) < (0.05)$.
Effects of blended aromatherapy using lavender and damask rose oils on the test anxiety of nursing students	Hashemi et al., 2021	Original Article	Randomized Clinical Trial	A mixture of lavender and damask rose aromatherapy can reduce anxiety levels in nursing students during exams. In this study, there was a significant decrease in anxiety after the intervention in the treatment group before and after the administration of aromatherapy compared to the control group. Aromatherapy is inhaled for 15 minutes with the inhalation technique.
Effectiveness of aromatherapy in reducing test anxiety among nursing students	Kavurmac et al., 2015	Research Article	Eksperimental	Giving lavender aromatherapy can reduce the anxiety level of nursing students when facing exams and can get better test scores.
The impacts of Inhalation Aromatherapy with lavender essential oil on students' test Anxiety	Jafarbegloo & Bakouei, 2020	Research Article	Quasi Experimental	The results of in-group comparisons showed that in the aromatherapy group the post-test anxiety scores were significantly lower than the pretest scores. Students in the group said that aromatherapy was fun for them. It is proven that lavender aromatherapy can reduce anxiety and improve one's mood.
The effect of L, Lavender aromatherapy to junior nursing students anxiety, concentration and memory retention	Fernandez et al., 2018	-	Quasi Experimental	The use of lavender aromatherapy has been shown to reduce anxiety, improve concentration and maintain memory in nursing students.
Efektifitas Aromaterapi Lavender terhadap Tingkat Kecemasan Menghadapi Osce pada Mahasiswa Keperawatan	Setyawan & Oktavianto, 2020	-	Quasi Experiment	The results showed that there was a decrease in the intervention group before giving aromatherapy from 57.75 to 51.31 with $p = 0.001 < 0.05$. Proving that lavender aromatherapy is effective in reducing anxiety facing OSCE in nursing students.

Effects of blended aromatherapy using lavender and damask rose oils on the hemodynamic status of nursing students	Hashemi & Faghih, 2018	Original Article	Randomized Clinical Trial	An aromatherapy mixture of lavender and rose resin is effective in reducing hemodynamic signs in nursing students, so that it can be applied as a non-pharmacological therapy that is cheaper and without side effects to reduce anxiety during exams.
Effect of Lavandula Angustifolia Extract to Prevent Test Anxiety (A Study on Students at Two Time Intervals)	Sanei & Chasmi, 2018	-	Clinical Trial	Giving Lavandula Angustifolia Extract was effective in reducing anxiety levels in students, whether given for 3 days or 20 days. The duration of the 2 types of the duration of administration did not affect the decrease in anxiety. Aromatherapy lavender and citrus Aurantium gave the effect of reducing anxiety in students during exams. These results can make lavender aromatherapy a therapy for reducing anxiety and has few side effects.
Comparison effect of Lavender and Citrus aurantium aroma on anxiety in female students at Golestan University of Medical Sciences	Bakhsha et al., 2016	Original Article	Clinical Trial	Aromatherapy lavender and citrus Aurantium give the effect of reducing anxiety in students during exams. These results can make lavender aromatherapy a therapy for reducing anxiety and has few side effects.
The Use of Aromatherapy to Reduce Test Anxiety Among Nursing Students	Lipschultz et al., 2016	-	Quasi-Experimental	Aromatherapy lavender and orange peppermint have the potential to significantly reduce anxiety in nursing students just before the exam.
The Effect of Relaxation Therapy with Aromatherapy on Community Anxiety during the Covid-19 Pandemic in Cikaret Village, West Java in 2020	Saputri et al., 2021	Original Artikel	Quasi-Experimental	The research was conducted in Cikaret Village, West Java, with respondents aged 18–22 years with an average level of education coming from high school and university. Giving aromatherapy with relaxation techniques can reduce the level of anxiety in respondents.

Discussion

Anxiety

Anxiety is an unpleasant state of something that is followed by the body's response. Anxiety is a normal thing experienced by all living things, but anxiety can become abnormal if it is too excessive and causes physical, psychological, and social disorders (Pardede et al., 2020). According to Spilberger in (Annisa & Ifdil, 2016), explains anxiety in two forms, namely: (1) Trait anxiety: namely the presence of worry that threatens a person against conditions that are actually harmless, caused by the personality of individuals who do have the potential for anxiety compared to other individuals. (2) State

anxiety: an emotional condition and temporary state in the individual with feelings of tension and worry that are felt consciously and subjectively.

Students or Students Vulnerable to Anxiety

Students and students often experience anxiety. There are several factors that are predicted to be the cause of anxiety in high school/high school students (AlAzzam et al., 2021) which include: mental history of family issues, age, student work status (only student/has another job), father's work status (full time/part-time/not working/student), gender, average grades of report cards, having difficulties in online learning, mother's education level, father's education level.

Non-pharmacological therapy to reduce anxiety levels

Aromatherapy is a form of alternative medicine using essential oils, from a positive point of view it can affect a person's mind, body health, mood, or cognitive function (York & Bestseller, 2006). Aromatherapy has a positive effect because it has a fresh, fragrant aroma that stimulates sensory receptors so that it ultimately affects other organs and can also have a strong effect on emotions.

Lavender aromatherapy for relaxation is included in the non-pharmacological therapy of anxiety which has many benefits, namely the use of it is safe, easy, inexpensive, and without bad side effects (Ziyaeifard et al., 2017). Lavender aromatherapy has several techniques of use, namely inhalation techniques and massage techniques (Handayani & Rahmayati, 2018). Lavender essential oil is dripped as much as five drops with 30 ml of water that is evaporated for 15 minutes to be inhaled by inhalation (Dila et al., 2017). A few drops of lavender oil can help reduce insomnia, improve one's mood, lower anxiety levels, and of course provide a relaxing effect (AP, 2013).

Lavender essential oil (*Lavandula angustifolia*) provides a sedative effect because it contains the main active ingredient, linalool (C₁₀H₁₈O). In addition, this compound has a mechanism of action in the form of inhibiting voltage-gated calcium channels, reducing 5HT_{1A} receptor activity, and increasing the parasympathetic effect so that it can be used as relaxing aromatherapy (Malcolm & Tallian, 2017). Specifically, linalool has a sedative effect and linalyl acetate has a narcotic effect (Ali et al., 2015).

The Effectiveness of Lavender Aromatherapy in Reducing Student Anxiety Levels

Based on the research of Triwahyuni et al. (2021), it was found that there was a significant difference between the average level of anxiety before and after the intervention of giving lavender aromatherapy in the treatment group, while in the control group there was no significant difference between the average level of anxiety (p-value <0.05). The research of Hashemi *et al.* (2021) administered lavender aromatherapy for 15 minutes in the classroom before the respondent entered. The results showed that giving lavender aromatherapy after the exam could reduce student anxiety. In addition, based on research by Kavurmaci *et al.* (2014) administered lavender aromatherapy for 15 minutes in the classroom before the respondent entered.

The results showed that giving lavender aromatherapy before the exam could reduce student anxiety, this was evidenced by the mean STAI score of the treatment group being significantly lower than the control group (*p-value* <0.05).

Research by Setyawan and Oktavianto (2020) showed that giving lavender aromatherapy before the OSCE exam was proven to reduce anxiety in respondents. It is statistically proven that the mean TA score of the treatment group is significantly lower than the control group (*p-value* < 0.05).

Conclusion

Based on a review of the data from the research that has been done, it is found that there is an effect of giving lavender aromatherapy to reducing anxiety levels after inhalation treatment. Lavender oil is a well-known aromatherapy for its sedative, hypnotic, and anti-neuro depressive effects. So that lavender aromatherapy can be an alternative therapy in the future to reduce anxiety levels and is expected to affect academic improvement for students..

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