

# EFFECTIVENESS OF LAVENDER AROMATHERAPY ON ANXIETY LEVEL: A LITERATURE REVIEW

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## ABSTRACT

**Introduction:** The aim of this review was to analyse the empirical studies that focus on effectiveness of lavender aromatherapy on anxiety level. Anxiety is a fear or worry in certain situations that cause anxiety. Anxiety is a normal thing experienced by every human being but if excessive can disrupt the physical and mental function. One alternative therapy that can be use to lower the level of anxiety is a aromatherapy. The lavender aromatherapy contains linalool and linalyl acetat to give relaxant effect, sedative, and mood improvement. **Method:** The literature search used Google Scholar, Ebsco, and ProQuest databases (in the range of 2013-2015) was conducted using the keywords: lavender aromatherapy and inhalation and anxiety level or stress level. After the process, 6 empirical articles were included in the review, with informants ranging from preoperative and postoperative patients, older people, and schizophrenia patients. Based on the analysis, the reviewed research seems to decrease of anxiety levels were measured with DASS-21 or HRS-A's instruments and decrease of vital signs (heart rate, SBP and DBP), but in others research which using randomized control trial method showed no significant differences in mental stress score and vital signs between the intervention group and the control group. **Result:** The lavender aromatherapy can reduce anxiety level by inhalation process starts from the olfactory to the central nervous system which influence the sympatic and parasympatic nerve until the resulting effect of relaxation and mood improvement.

**Keywords:** *Anxiety level, Vital Sign, Inhalation, Lavender Aromatherapy*

## INTRODUCTION

Anxiety is a fear or worry in certain situations which very threatening situation that causes anxiety because of the uncertainty in the future, the fear that something bad will happen. Anxiety symptoms appear may be agitated, panic, tremor, heart pounding, irritability, avoiding others, insomnia, and difficulty concentration. Anxiety comes from a feeling unconscious on their own personality and not associated with real objects or situation that actually exist (Singgih Gunarsa, 2008).

The prevalence of stress is increasing, both from the public in urban and rural areas. In this global period, stress tends to be more common in people with high levels of the economy than people with low levels of the economy, though there are differences than the stress levels experienced by each of the community groups (Pande, 2013). Basically, anxiety is a common thing experienced by every human being, accompanying the development, change, new experiences that have never been done. But when anxiety occurs excessively and continuously will disrupt the physical and mental function of a person in his

life. So far only anxiety can be reduced by pharmacologic therapy and psychotherapy, but many people choose to use alternative therapies because it is cheaper and safer, one of which is an aromatherapy (Suriyati et al, 2015). Aromatherapy is an alternative therapy treatment or using essential oil (pure oil extract) that can be administered by inhalation, massage, compress, or bath.

Appleton (2012) describes that lavender contains linalool and linalil acetate which have the effect of antidepressant and anxiolytic. Lavender aromatherapy was given by inhalation to stimulates olfactory nerves and the central nervous system responded and to reduce the secretion of cortisol and produce relaxant that can inhibit the activity of the sympathetic and the release of acetylcholine, and increases the parasympathetic system so as to provide a relaxing effect and positive feelings (Pande, 2013). Nevertheless, there are some articles that mention that the granting of lavender aromatherapy to reduce the anxiety level has a potential bias and the results are not reliable, therefore the authors are interested to study literature review to determine "effectiveness of

Lavender Aromatherapy on the level of anxiety" based on evidence based (study of the facts) with the critical appraisal stage

## RESEARCH AND METHODE

The aim of this study was to review and describe published empirical studies that focussed on effectiveness of lavender aromatherapy on anxiety level. This is a preliminary assessment of the potential size and scope of the available research literature and aims to identify the nature and extent of research evidence.

Start from a question "Is the lavender aromatherapy essential oil can reduce the level of anxiety?, Then continue doing search engine via Google Scholar with keywords "efectiveness of lavender aromatherapy", as well as through Ebscho and ProQuest with keyword "Lavender aromatherapy and inhalation or massage and anxiety level or stress level.". The search is limited to articles in 2013-2015 found 12 journals, then made a critical appraisal selected six relevant journals, the others journal as supporting articles.

## RESULT

This literature review examines six journals true experiment to identify the effect of lavender aromatherapy on anxiety level. Research conducted by Bikmoradi et al (2015), using a single-blinded randomized control trial on a sample of 60 post-CABG patients were divided into 2 groups (intervention and control) randomly. In the intervention group inhaled 2 drop 2% lavender essential oil was given through O2 mask for 20 minutes on days 2 and 3 post operation while the control group was given distilled water inhalation technique and the same duration in the intervention group. Observer and the interviewer does not know the treatment given to the patient and then the evaluation carried out by another researcher. The result was no significant difference in the average score decrease mental stress and vital signs in the second group. The advantages of this study to evaluate the use of the instrument DASS-21 and changes in vital signs such as heart rate, SBP and DBP, while shortcomings provide interventions are only given for 2 days

Reinforced by research Nategh et al (2015) using the method of a single-blinded, randomized control trial on a sample of 110 patients with ACS were divided into 2 groups (intervention and control) randomly. In group

intervention given 2 drop (40 mg) lavender essential oil on the towel to be placed in the collar of the patient then the patient is asked to breathe normally for 20 minutes, is done 2 times / day (morning and evening before bedtime) for 3 days in a row while the control group was given a drop of almond oil, and a period equal to the duration of the intervention group. The results obtained are contained decrease in SBP, DBP, and heart rate in both groups but no significant differences in changes in vital signs in either group. The advantages of this research involves a lot of samples, while shortcomings in the evaluation of vital signs and provide interventions for 3 days.

Subsequent research conducted by Suryati et al (2015) using the method quasi experimental without a control group, with the design of one group pretest posttest on sample 15 elderly by intervening inhaling lavender aromatherapy 15 minutes for 14 days. The results obtained are found significant reduction in anxiety levels. Disadvantages of this study using a small sample, the timing of the intervention is only 14 days, as well as an instrument to evaluate the level of anxiety just using HRS-A.

Furthermore, research by Shun Kwan Tang and Mimi Tse2 (2014) using the method of quasi-experimental pretest and posttest control group design study on a sample of 82 elderly people who were divided into 2 groups (control group 38 and 44 the intervention group). In the intervention group of respondents use the technique of "deep breath exercise" and breathe in botl aromatherapy spray that contains lavender essential oil: bergamot: lavender hydrolat with a concentration of 2: 1: 2.5 20 min / session, conducted one week for 4 weeks and continued at home, while the control group did not do any intervention. The results obtained are significant impairment to post DASS intervention in the intervention group and there are significant differences between the intervention group with the control group. Disadvantages of this study only used the instrument DASS-21 and did not explain the amount and duration of use of aromatherapy at home.

Subsequent research by NPM Yantini Pande et al (2013) using a pre-experimental one-group pretest and post-test on a sample of 30 people who were given the intervention lavender aromatherapy every day for 1 month. The results obtained are no significant effect on

anxiety Award lavender aromatherapy treatment of schizophrenia in Bali Province RSJ. Disadvantages of this study to the second division of the sample group is not the same in amount, not described pmerbian technique and duration of the intervention, and only evaluate the level of anxiety that are not described using any instruments.

Recent research by Arwani et al (2013) using the method of quasi-experimental one group without control group on a sample of 40 people were given the intervention by dripping 5 drops of aromatherapy (lavender oil) on the masks to be worn for 15 minutes. The results obtained are contained decreased levels of patient anxiety before surgery. Limitation of this study is not described using sampling techniques, it is not clear how long a period and the evaluation of interventions for anxiety levels using only instruments HRS-A.

The studies above are good and the author agrees with the results obtained, ie no effect of lavender aromatherapy to decrease the level of anxiety. But even so, the author will be more amenable if the studies conducted in a double-blinded randomized control, as well as to evaluate the level of anxiety by using an instrument DASS-21 or HRS-A, vital signs, and the levels of cortisol in the blood so that the results are valid and reliable for assessing the effectiveness of lavender aromatherapy against anxiety level. However, the six journals over a maximum of only evaluate the level of anxiety using the instrument DASS-21 or HRS-A and vital signs only when when the body is stressed, the anterior pituitary will menstimulai hormone ACTH which in turn will increase the response of the adrenal glands to secrete the hormone cortisol ( Anderson, 2009)

## **DISCUSSION**

This review demonstrated that empirical research on lavender aromatherapy has long been known as one of the complementary therapies that can cause a relaxing effect. The aromatherapy is one type of alternative therapy using liquid material plant volatile, known as essential oils to affect mood or the health of someone who has been there since 6000 years ago but only used on 1920 (<https://id.wikipedia.org>). Appleton (2012), describes lavender contains linalool and linalyl acetate which have the effect of antidepressant and anxiolytic (Pande, 2013). Lavender essential oil is given by inhalation will

stimulate neural olfactory and responded to by the hypothalamus of the brain which then stimulates the limbic system and anterior pituitary to decrease the secretion of the hormone ACTH and cortisol from the adrenal gland, inhibiting the activity of the sympathetic and the release of acetylcholine, and increases the parasympathetic system so as to provide a relaxing effect , sedatives, and improve mood (Anderson, 2009)

Aromatherapy consists of various shapes and scents. In research Nategh et al (2015), a control group given aromatherapy almond intervention. It should not be necessary. The control group was given distilled water only enough for almonds also contain many important nutrients to mitigate some diseases. One cause of concern is the presence of a physical disorder, if the cause is resolved with the almond aromatherapy granting the anxiety level would be decreased. This is supported by an online literature explain that almond contains lot of vitamins, minerals, protein, antioxidants effective for skin care, hair, digestion, lower cholesterol, and anti-pain ([www.amazine.co](http://www.amazine.co)). This literature review has implications on mental health nursing care, but these results are not fully generalizable because of anxiety may also be affected by physical condition, past experienced, and the environment (Singgih Gunarsa, 2008). The application of lavender aromatherapy has a high applicability value, because of according Jaelani (2009), the use of aromatherapy is simple, relatively inexpensive, can be done in many places and circumstances, practical and efficient, as well as the effects of substance caused quite safe for all ages. However, before using it must be ensured first had no history of hypersensitivity to certain odors (Suriyati, 2015). These articles used some of the terms that are common and anxiety levels evaluation instruments are already familiar and often carried out by nurses in caring for clients. Therefore, it is not required special time to intervene like this in the room. Clients are expected also not be difficult to do so because of this intervention would likely cause tranquility.

## **CONCLUSION**

Anxiety is a fear or worry in certain situations that cause anxiety. Anxiety is a normal thing experienced by every human being in the process of life. However, excessive

anxiety can cause physical and mental disorders due to cause some of the symptoms, such as anxiety, trembling, palpitations, irritability, avoiding others, insomnia, and difficulty concentrating. One alternative therapy to reduce anxiety levels that use lavender aromatherapy. Lavender contains linalool and linalyl acetate to give effect relaxant, sedative, and improve mood

The results of the analysis of some of the articles were found that aromatherapy can reduce the level of anxiety, heart rate, SBP and DBP significantly, but in studies using randomized controlled trials showed that there was no significant difference between the change in the intervention group with the control group. Based on these results it can be concluded that the lavender aromatherapy can reduce the level of anxiety through inhalation physiological process that starts from the olfactory to the central nervous system until the resulting effect of relaxation. However, further research is needed on the effectiveness of lavender aromatherapy against anxiety level by using the method of double-blinded randomized trial and the evaluation is intended to measure the level of anxiety, vital signs, and the levels of cortisol in the blood so that the results are valid and reliable.

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