

Aromatherapy as a treatment to reduce anxiety



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According to Fontaine, “ Aromatherapy is the therapeutic use of essential oils of plants to heal the body, mind, and spirit” (Fontaine, 2011). These essential oils originate from a diversity of plants and herbs such as cypress, lavender, peppermint and rosemary. Essential oils also come from different places around the world. For instance, lavender comes from France, peppermint from the United States, jasmine from India etc. (Fontaine, 2011). Some of the substances that these oils have seem to be a magical remedy to treat different conditions. Ancient Egyptians were the first ones to embalm essential oils and use them for different purposes such as protection for their skin against dry climate. Subsequently, scientists have learned about the ability that some scents have of inducing physical and emotional reactions, however, they hardly ever use their knowledge in traditional medicine. According to Fontaine, humans have the capacity of smelling 10, 000 diverse odors ranging from the deep scent of jasmine to the putrid unpleasant smell of manure, and that these smells can have a great impact in someone’s everyday live (Fontaine, 2011).

Although, aromatherapy has been disregarded for many years, it is currently “ one of the fastest growing alternative therapies in Europe and the United States” (Fontaine, 2011). That is due to the positive effects that it seems to have to treat several conditions such as anxiety for a small cost and a minor risk. Thus, it is not surprising that the use of essential oils such as Bergamot, Chamomile and Lavender are becoming popular to use as complementary alternative medicine (CAM) treatment to decrease stress and anxiety (Barati, Nasiri, Akbari & Sharifzadeh, 2016). Anxiety is very common everywhere around the world and can be caused as a result of major events in life

ranging from experiencing a break up, going through a medical procedure, to having to take an important exam. Anxiety can be described as “ unpleasant mental feelings, worry, and ambiguous tension along with physical symptoms such as perspiration, headache, restlessness, and heart palpitations” (Barati, Nasiri, Akbari & Sharifzadeh, 2016). This paper will focus on the different type of anxieties in which aromatherapy has demonstrated positive effects. The type of anxieties that will be discussed are the following: test anxiety, general anxiety, pre-labor anxiety, and preoperative anxiety. This essay will also demonstrate the positive outcomes of using aromatherapy in conjunction with other alternative practices such as mindfulness reduce stress and anxiety related symptoms.

One of the most common type of anxiety that is experienced by many students from time to time is test anxiety. This is a type of occasional anxiety which should not last for so long. According to the Anxiety and Depression Association of America (ADAA), students facing test anxiety may present symptoms such as shortness of breath, headache, excessive sweating and rapid hearth-bit which can be reduced with aromatherapy (Test Anxiety, 2018). There has been studies that have demonstrated positive effects of using aromatherapy to decrease test anxiety. One of these studies was an experimental study conducted by Ataturk University in India which intended to demonstrate the efficiency of aromatherapy in decreasing test anxiety among nursing students. The sample in the study consisted of a group of 91 nursing students in their second year at Ataturk University who voluntarily participated and who had no health problems (Kavurmci, Küçükoğlu, & Tan, 2015).

In this study, the subjects were students who were randomly separated to be part of the control and the experimental group based on their number in the class list (Kavurmci, Küçüköğlü, & Tan, 2015). If they were an even number they were assigned to the control group and if they were an odd number they had to join the experimental group. Before the study, the students were asked what class they considered the most difficult and 64.2% of the students agreed it was "Internal Medicine Nursing" course (Kavurmci, Küçüköğlü, & Tan, 2015). Consequently, the study was conducted during an examination for Internal Medicine Nursing class. To collect relevant data and identify the anxiety levels, the State-Trait Anxiety Inventory was used (Kavurmci, Küçüköğlü, & Tan, 2015). In the study, the experimental group was applied aromatherapy that was delivered to them by the inhalation of lavender oil. The results from this study showed that the "State-Trait Anxiety Inventory mean scores of the students in the experimental group (39.45 ± 3.88) was lower than the mean scores of the students in the control group (41.44 ± 4.69), and the difference between the groups was statistically significant" (Kavurmci, Küçüköğlü, & Tan, 2015). Therefore, it was concluded that lavender inhalation before an exam does have a positive effect in reducing test taking anxiety.

Another study was conducted by Marilú Roxana Soto-Vásquez and Paúl Alan Arkin Alvarado-García in Peru. Their study was a randomized experimental trial that aimed to validate if the association of aromatherapy with essential oils such as *Satureja brevicalyx* or *Satureja boliviana* in conjunction with mindfulness meditation is able to decrease general anxiety levels in people (Soto & Alvarado, 2017). The participants consisted of 108 individuals that

were randomly divided into groups of six and who had scored greater than 20 in the State-Trait Inventory evaluation that was required to take in order to participate. One group was the control group and the other five were experimental groups. The way they delivered aromatherapy to the experimental groups was through inhalation of essential oils in combination with a mindfulness intervention program focused on the flow of meditation. The anxiety levels were evaluated twice, at the beginning of the study and after the study using the State-Trait Anxiety Inventory (STAI). The results from the State and Anxiety test index presented a significant decline of anxiety levels on the experimental groups ($p < 0.005$) that used aromatherapy in conjunction with mindfulness (Soto & Alvarado, 2017). As a result, we can conclude that essential oils such as *Satureja brevicalyx* or *Satureja boliviana* in conjunction with mindfulness proved to be effective as treatment to reduce general anxiety levels. However, the study also suggested that further research is necessary to better comprehend synergy effect of aromatherapy and mindfulness (Soto & Alvarado, 2017).

Another type of anxiety in which aromatherapy seems to have a positive effect is in pre-labor anxiety. This type of anxiety is very common among women who are about to give birth. In fact, 80% of women suffer from labor anxiety due to their fear of pain that they may experience (Namazi et al., 2014). A randomized clinical trial was conducted to determine such effectiveness of aromatherapy to reduce labor anxiety of women in their first stage of labor. This study involved two groups of 63 pregnant women that were referred to the Vali-Asr Hospital in Tuysekan, Iran. In order for this women to be able to participate in the study they were asked several

questions such as if they had allergies to herbal medication or pregnancy complications to make sure the baby was not going to put at risk. In addition, there were a lot of limitations in order to participate in the study. For instance, only women that had spontaneous contractions, that were pregnant for the first time, and whose ages ranged from 18-35 years old were able to participate. The way that aromatherapy was delivered to the experimental group was via gauzes infused with 4ml of Citrus aurantium oil, also known as bitter orange, that were replaced every 30 minutes (Namazi et al., 2014). Before that intervention, the levels of anxiety were measured with the Spielbereger state-trait anxiety questionnaire and the levels of anxiety showed to be the same in both groups. The participants continued to be checked upon until delivery. Then, when dilations were 3-4 and 6-8 cm, level of anxiety were taken again and the women were intervened with the impregnated gauzes of C. urantium showed lower levels of anxiety compared to the other group that did not receive any intervention (Namazi et al., 2014). The data collected from this study was analyzed by Mann-Whitney evaluation, independent-t test, and chi-square test that demonstrated less than .005 of significant value. For that reason, we can conclude the aromatherapy once again showed to have an effect reducing anxiety, in this case, labor anxiety which is very common (Namazi et al., 2014).

In addition to test anxiety, general anxiety, and pre-labor anxiety; aromatherapy has also revealed positive effects in preoperative anxiety. Preoperative anxiety is another common type of anxiety that is experienced by patients due to the fear of complications, pain, or unsatisfactory outcomes despite the severity of the operating procedure (Wotman et al,

2017). A prospective and controlled pilot study was conducted in the United States to assess the effectiveness of lavender aromatherapy in lessening preoperative anxiety in patients that have to go through a general otolaryngology surgical procedure. This study consisted of 100 participants whom were randomly distributed into two groups of 50. These patients had been admitted at the New York-Presbyterian/Weill Cornell Medical Center to undergo surgical procedures like tonsillectomy, septoplasty, and functional endoscopic sinus surgery. (Wotman et al, 2017). The lavender aromatherapy was delivered through inhalation to the experimental group. The control group did not received any type of aromatherapy, instead, they received regular care. Prior to walking to the operating room, both groups received an additional survey with visual analog scale. In this survey, they answer three question in regards to how they felt, whether they enjoyed the scent of lavender or not, and about their previous experience using aromatherapy. The levels of anxiety were recorded in both groups as they arrive to the preoperative waiting area. The levels of anxiety for the control group upon their arrival had a mean of 3. 79 and the experimental group had a mean of 4. 74. The mean taken after the intervention before the patients walked to the operating room were the following: 3. 78 in the control group, and 3. 67 in the experimental group (Wotman et al, 2017). As result, the anxiety levels decreased in average by 0. 01 in the control group. In the other hand, the average decreased in anxiety levels of the experimental group was 1. 07 which is statistically greater in comparison to the control group. Once again, this study also proved that lavender essential oils do have a positive effect in reducing preoperative anxiety. However, studies with larger and random

sampling should be conducted for additional investigation (Wotman et al, 2017).

Another randomized clinical study involving patients with myocardial infarction was conducted in Iran. The purpose of this study was to verify the effectiveness of inhalation aromatherapy to reduce anxiety in a group of 68 patients that suffered from myocardial infarction and whom were hospitalized in coronary care units. In order to participate in the study, the patients had to meet an extensive criteria (Najafi et al, 2014). Then, the 68 participants were divided into two groups, one being the control group and the other the experimental group. The participants in the experimental group received lavender inhalation scent twice a day, once in the morning around 10am-11: 00am, and once in the afternoon at 6: 00pm- 7: 00pm for two consecutive days (Najafi et al, 2014). The control group only received a regular care with aromatherapy intervention. This study also used the Spiel Berger's State Anxiety Inventory as instrument to reveal the patient's anxiety levels. To analyze the data obtain, the researchers used e Statistical Package for Social Sciences as well as " Chi-square, Fisher's exact, independent-samples T-test and repeated measures analysis of variance" (Najafi et al, 2014). However, in this study the levels of significant difference were set under 0. 05. Thus, in this study the use of aromatherapy showed no statistically significant difference.

In conclusion, Aromatherapy is becoming a popular alternative medicine to help reduce different type of anxieties including test anxiety, general anxiety and preoperational anxiety. These type of anxieties can be treated with conventional medicine that has significant results; however, conventional

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medicine presents various side effects including restlessness, fatigue and confusion (Najafi et al, 2014). In the other hand, aromatherapy does not have those side effects and it has a low-cost to use. The effectiveness of aromatherapy in reducing anxiety has been verified in many of the studies analyzed in this paper. However, most of them need to be further studied using larger samples. Many of them also showed many limitations such as not having a blinded group, having convenience sampling, and having small size sample. It is also important to keep in mind that some of the substances found in some the essential oils are absorbed by the body either through inhalation or direct application, and in instead of being beneficial, they could be toxic (Najafi et al, 2014). If further study is done in aromatherapy, it could become one of the most popular alternative medicine since is very easy to access at low price and it has a low risk of use.

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