

Lavender Oil: The New Sleep Aid

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Abstract

The purpose of this research paper is to discuss and evaluate the benefits of lavender oil within the general population and hospitalized patients. Specifically, this paper will look at aromatherapy use with lavender oil within the hospitalized population and its ability to better sleep quality within these patients. Sleep is a major factor in the body's ability to heal, and the hope of this research is to determine whether lavender oil would be an effective option for patients struggling with sleep disturbances during their hospital stay. In order to evaluate the effectiveness of lavender oil, previously conducted research articles and studies were used and review these potential benefits. After sixteen studies and articles were examined, it was determined that lavender oil shows statistical improvements in overall sleep quality and depth of sleep within the population. Because of these positive results, it is suggested that hospitals within the United States begin to offer lavender oil as an option for patients upon admission in order to better the overall patient experience.

Keywords: essential oils, lavender oil, lavender oil within the hospital setting

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Essential oils were discovered long ago, yet they were termed a variety of different names. In some instances, they are referred to as oils, herbs, or plant water, and therefore are sometimes not recognized. The first known reference to essential oils goes back as early as the biblical era. Christmas time is known for the story of the manger where three men brought frankincense and myrrh as gifts. Those two items are essential oils that are still used today for a variety of uses. The next big time frame that mentions essential oils and aromatherapy is the time of Cleopatra in Egypt. Egyptians are the biggest historical users of essential oils and aromatherapy for both healing and pleasure (Introduction: A Brief History of Aromatherapy, 2009, p. 25). Cleopatra historically used oils for a variety of things such as "...medicine, cosmetics, and other uses, including cooking" (Introduction: A Brief History of Aromatherapy, 2009, p. 26). From that point on, essential oils have been lightly used in previous years and now are more widely accepted. According to Meade (1998), "non-traditional therapies that once seemed unimaginable in modern medical care ... are now being looked at with as much interest as skepticism" (par. 9).

As much as essential oils have begun to gain popularity, there is a large lack of understanding as to what oils are actually considered therapeutic. To most, essential oils can be bought at drug stores, large chain stores, and online. The consumers idea to purchase these oils, while rooted in good intentions, is causing many people to end up spending money and putting hope into oils that are only useful for their scent instead of any therapeutic effects. While almost all manufacturers label their essential oils are therapeutic, it is important for the public to understand that there is no government funded organization that "grades" or checks the quality of oils that are on the market to guarantee that they are therapeutic. While this may be true and

certainly does make finding an essential oil of good quality much harder to find, there is some merit in the process of finding essential oils that are good. Even though the grading process is not regulated, the information itself is still important to understand. There are a few different grades for oils, and each grade depicts its abilities and uses. Grade A oils are "...pure therapeutic quality and are usually made from organically grown plants distilled at the proper temperatures using steam distillation" (Troth, 2012, p. 49). Grade B oils are oils that are considered "food grade" (Troth, 2012, p. 49) and could contain nasty components that are not necessarily safe to ingest. Grade C oils are simply used for their perfume scent and not intended for any attempted therapeutic uses. While this grading system seems to be a simple concept, most essential oil companies that manufacture and sell perfume grade oils do not boldly advertise that their oils are only meant to be used for their scent. These oils are cheaper than therapeutic grade oils as well, making them seemingly more appealing than the more expensive but actually therapeutic grade oils. Some essential oil bottles will state what grade of oil they are, but most do not. The best way to understand the type of oil that consumers are buying is to look at the ingredient list. The ingredients used should be natural, plant based items and not list items that are synthetic or artificial, such as chemicals or color additives. For instance, the Young Living® Essential oil bottles only have one ingredient listed on each of their bottles, and that ingredient is simply the plant of origin. In order to see or feel effects of these oils, consumers need to be aware of the difference between oils and make sure to purchase therapeutic grade oils.

In the production of therapeutic grade essential oils, there is a specific process in which the oils are extracted. In order to get the best end product, oils should be cultivated from the plants in their natural environment and in the country they were first grown in. When plants are not naturally grown, they do not produce the same type of oil at the same grade (Rowland, 2013,

p. 18). “Steam distillation is the oldest, purest, and best-suited method of extracting essential oils. Simple distillation converts the volatile liquids into vapor and then condenses the vapor back into oil” (Rowland, 2013, p. 18). These oils are described to have many therapeutic properties and are used around the world to help a variety of different ailments. Lavender oil, just one essential oil, is used often for its relaxing effects as well as its positive, clinically proven, effects on “muscle cramps, stiff neck, colic in infants, insomnia, stress, and anxiety. When applied locally as an anti-scarring agent, it heals burns, including sunburn, insect bites, minor cuts, and bruises” (Rowland, 2013, p. 19). With all of the supporting data that backs these positive qualities, why then are we not using this natural alternative to help patients in our hospital setting?

Even though lavender oil has grown in popularity over the last few years, there are still no effects that are recognized or utilized by the United States hospital system. According to Van der Watt & Janca (2008) “interest in aromatherapy in the wider community is growing and health professionals and consumers are demanding more accurate and scientifically based information about the effects and safety of essential oils” (p. 74). Before research is conducted concerning whether or not essential oils produce positive effects, we must investigate and explain the biological route that inhalation oils take through the body. After that is determined, the question should be asked and investigated as to whether lavender oil does, in fact, produce positive effects and whether it should be better utilized. Before any other questions can be formed, it is imperative to ask and determine whether there is sufficient evidence of lavender oils positive effects on sleep in general studies. This information will help to set the stage for any grander changes that could be proposed. In regards to lavender oil in a more specific sense, is there any research that states that lavender oil has been shown to be useful in patients within the

hospital setting in regards to their sleep patterns? This evidence could gateway into the thought and question of whether United States hospitals should begin to adopt lavender oil into their everyday options for patients.

In order to dig into this topic and determine the studied effects of lavender oil, previously published articles and studies will be used. Instead of attempting to conduct research now specifically for this topic, previously published studies will be used in an attempt to evaluate the previously mentioned research questions. Each source will be credible and found from a reliable source. There are personal accounts, statistical studies and reports, as well as general research that will be used. Using published information will help to ensure that the results have been reviewed and proven and will hopefully prevent conduction errors. Also, as a person who believes and uses essential oils in everyday life, conducting personal research could lead to biases and errors.

Attempting to validate more natural remedies for patient and human ailments is an approach that is both valuable and needed. As a society, we tend to be a more ‘cure’ based culture within the hospital setting and have strayed away from the ‘care’ approach to our patients. Systemic requirements and standards for hospitalized care have become drastically stricter in attempts to better quality of care with the rise in quantity of care needed. Finding and offering homeopathic options, such as Lavender oil use for improved sleep patterns in hospitalized patients, will further deepen the care team abilities to nurture and support the patients we care for.

In order to truly evaluate whether essential oils should be used in the hospital setting, first there needs to be proof that lavender oil has positive therapeutic effects in the general population. The hospitalized population is a unique group of people with very specific needs and a greater

risk for harm, therefore making it all the more important that there is proven benefit to the option. Before one decides to use essential oils, it is important to understand how to use these essential oils in a safe and healthy way. Consumers must realize that essential oils, in their purest forms, are extremely strong. That being said, using essential oils on the skin can be harmful if the consumer does not look into the safety of said essential oil. If planning to use essential oils on the skin or ingested, the user must always use the recommended dosage and make sure they do not have any allergy to the oil. The human body responds to therapeutic grade essential oils the same way that it would respond to a medication that it is allergic to. Another important aspect to look into is the safety of combining oils. There are many tested and proved combinations that are safe for use and some of those combinations are mentioned in Chapter 13 of the 101 Natural Body Care Recipes that was published in 2009 (p. 243-254). That being said, mixing oils without investigation into the safety of that combination could lead to harmful effects from these oils. Just because essential oils are natural, doesn't mean that they can't be harmful when not used appropriately. When used safely, essential oils can produce many helpful effects on the human body.

General Information

In an attempt to fundamentally understand how essential oils work in the body, it is important to look at how the body "digests" these oils into the body. In order to produce a therapeutic response, the body has to absorb the essential oil systemically. According to information provided by Leslie Thompson (2000), the port of entry for inhalation essential oils is the nose, where the oils are mixed and churned with the moisture from the nasal cavity. In the nose, the olfactory hairs in the nose receive the odor and process it. There are seven types of receptor sites that detect over ten thousand odors in the nose. There are also nerve endings that

receive and process the smell. After the olfactory hairs, the olfactory bulb receives the odor and from there it is absorbed into the blood stream, which systemically spreads the odor. The hypothalamus receives the scent and from there, the hypothalamus affects the heart rate, blood pressure, respirations, digestive activity, pituitary, and emotions. Lastly, the thalamus receives the scent and that affects the neocortex, sensory processing, olfactory discrimination, perception, and memory (p. 5).

The body suffers from many different ailments on a monthly, weekly, and sometimes daily occurrence. Any reader could identify at least one ache or pain that they have dealt with in the last month. With this being true, is there something simple that could help us in our general lives to better our overall health? Chapter 13 from *101 Natural Body Care Recipes* (2009) discusses that essential oils can be used for calming a stressful situation, a cleaning solution for the home, swollen legs, traveling ease, and other everyday uses (p. 243-254). These typical events that we go through can be eased and more positively responded to with the use of a variety of essential oils, not just simply one. Tea Tree oil can be used for its bacteria fighting properties and sage oil can be used for female issues such as period pains and factors that come along with menopause. Lemon oil has been shown to help with motion sickness and its ability to counteract and prevent the nausea that is associated and cinnamon has been shown to help with a variety of things spanning from diarrhea treatment to helping blood flow in the body (Rowland, 2013, p 19). With these studies, it is shown that essential oils do have positive effects on the body and can be used for a variety of uses. Lavender oil, as mentioned earlier, has been shown to decrease a variety of ailments, one of which being able to better sleeps quality. Is there sufficient evidence about this idea to prove this effect and support its use in the general population for sleep issues?

Clinical Support

To explore the general positive effects of essential oils in the population would be a simple investigation. The variety of oils and their uses is extensive, but in order to create a more conclusive and supported investigation, the effects of lavender oil on improved sleep quality in the general population is important to investigate. Within the research articles that were found, the study done by Lillehei, Halcón, Savik, & Reis (2015) showed that there is statistical evidence that inhaled lavender oil improves sleep quality in college aged students (p. 435). Within the study, the conductors used two groups of students. One group used lavender as well as sleep hygiene and one group did not use lavender but did use sleep hygiene. At the end of the study, the students who used lavender oil reported statistically improved sleep quality and duration of sleep (Lillehei, Halcon, Savik, & Reis, 2015, p. 436). This study supports that using lavender oil in general populations can improve sleep patterns and therefore overall health. Along with the above mentioned article, another study that was investigated looked at whether or not lavender oil inhalation is a safe option to help people with mild to moderate sleep issues. The article used a variety of studies that had a total of just over 400 participants. Of all the articles looked at, 10 of them used lavender oil as their essential oil. After the reports were analyzed, the study showed that “although results were mixed, most studies found a positive association between inhalation of essential oils and sleep. Statistically significant results for improved sleep quality were reported for lavender oil” (Lillehei & Halcon, 2014, p 448). These studies examined the use of lavender oil on improved sleep quality in the general population and each of them showed an overall improvement at the end of its conduction. Understanding that lavender oil has been shown to improve sleep quality in patients not within the hospital setting allows us to explore

whether or not essential oils are able to help the ill population that occupies hospital beds all around the world.

As a future nurse and currently going through school and clinical, I see sick patients who struggle getting used to the hustle and bustle of the hospital as well as learning how to sleep with their current illness. In some instances, I have actually had hospitalized patients state that they wish they could sleep better and that they wish there was something they could take or be offered the help them get better rest. Before one suggests that alternative therapies should be used on hospitalized patients it is important to understand that these patients are already immunocompromised and are much more susceptible to bodily harm. That fact, in and of itself, causes many medical professionals to be hesitant to dive into the realm of homeopathic and alternative therapies. While this is understandable and the intervention of lavender oil within hospitalized patients may not be safe for everyone, there is sufficient evidence that shows the benefits. For anyone who works within the medical field, there is a large understanding of the importance of vital signs. Vital signs includes a patient's blood pressure, heart rate, temperature, respiratory rate, and oxygenation saturation. A study conducted by Davis, Mwatha, & Lytle (2014) in the American Journal of Critical Care studied the issue of sleep disturbances in the hospitalized patient population. The study used 50 patients that were currently staying in the intermediate care unit at Johns Hopkins Hospital. The authors decided that the best way to assess the benefits and effects of lavender oil was to have a bottle of the oil sitting at the bedside of the patient during the night while they slept. The vital signs on the patients were taken before the lavender oil was placed at the bedside and then were taken throughout the night and again once the patients woke up. The patients were also required to fill out a questionnaire to assess their sleep that night. The results of the study showed that the group who was treated with the

lavender oil had both a decrease in overall blood pressure and reported a higher sleep quality score on the questionnaire than the group who was used as a control (p. 24). A study done by Bikmoradi, Seifi, Poorolajal, Araghchian, Safiaryan, & Oshvandi (2015) also looked at the effects of lavender oil on hospitalized patients in regards to their vital signs. This study looked at 60 patients who were currently hospitalized. These patients were given inhaled lavender oil at the bedside through an oxygen mask and the others were given a placebo in their oxygen mask to be a control group. Vital signs were looked at both before and during the treatment. After the study, the results showed that there was a significant decrease in the vital signs in the aromatherapy group on both the second and third days after the aromatherapy treatment was done (p. 335). Another study done by Dunn, Sleep, & Collett (1995) looked at the issue of sleep issues and lavender oil in their study of 122 patients on the intensive care unit of a hospital. The patients were evaluated both before and after their treatment. After the treatment with lavender oil was conducted, there were significant decreases in blood pressure and heart rate (p. 38). These studies support both the positive effect of lavender oil on sleep quality as well as its overall benefit on the hospitalized patient.

In a more focused investigation, there were specific articles that supported simply the aspect of sleep and did not go into studying the effect of lavender oil on other parts of the body. The study conducted by Fisser & Pilkington (2012) looked at hospitalized patients who had actually reported having sleep disturbances and studied whether their methods could improve these patients quality of life while in the hospital. The study looked at a variety of conducted evaluations in order to determine if there was sufficient evidence that supported lavender's sleep inducing qualities. After the study was conducted, the results "registered in favour of lavender oil inhalation, suggesting potential as an early intervention strategy for those with poor quality

sleep, and lending credence to the results of others” (p. 443). One area of hospitalized patients that hasn’t been addressed is the child population. One article, done by Field, Field, Cullen, Largie, Diego, Schanberg & Kuhn (2008), looked at the effects of lavender oil on the stress and sleep in infants. The study gave infants a lavender oil bath and looked at their crying time as well as sleeping time after the study was done. After the baths were given, the study showed that the babies “...cried less and spent more time in deep sleep after the bath” (p. 399). While this fact is impressive in and of itself, the results of the study also looked at the overall effects on the infants’ parents. After the study, the parents experienced a decrease in their heart rate as well as overall improvement in mood and relation. These responses in the parents of the infants could be related to the improvement in the infants’ state and not related to the lavender, but the positive effects of the lavender oil are still prominent. Troth (2010) did a report on the benefit of lavender oil on sleep patterns on patients admitted to the general hospital floor. The study looked at sleep patterns of hospitalized patients and instituted lavender oil drops onto patients’ bed sheets. When patients were asked about their sleep after the treatment there was an overwhelming 97% increase in the quality and instance of restful sleep (p. 76). Another study done in Germany looked at 133 patients who were currently inpatients with cancer. The study used warm compresses of lavender and looked at the length of sleep of the patients after this treatment. After the treatment was over, patients reported improved quality of sleep and a greater feeling of overall feelings of recovery (Godfrey, 2010, p. 6). These studies show how deeply rooted the positive effects of lavender oil go and how positively they are received by patients.

Implications

At this point in the research, it is important to assess the before given information and evaluate what this information could mean in the medical world today. Not only does the before

mentioned information support the idea that lavender oil has many positive effects on the general population as well as the hospitalized population, but it also provides a basis for a major systemic hospitalized change. Implementing essential oils in the hospitalized community could allow us to make huge strides in both our overall quality of care of patients but also the quickness as which they heal. Sleep and rest are integral parts of the human body process, and without appropriate energy, bodies struggle to heal and maintain a healthy status. If hospitals began offering lavender oil to patients upon their admission, like we offer anticoagulants to prevent blood clots, there is a large potential for an increase in quality of care. As before mentioned, shifting back to a “care” type of system instead of a “cure” focused system could open up a wide variety of opportunities to use lavender oil for its multitude of uses, specifically in improving the sleep quality in hospitalized patients. While this idea seems simple, there are implications for the hospital system that need to be addressed. Much like the administration of a prescribed medication, nurses would need to be trained about the effects and potential side effects of lavender oil. Even those these methods are technically contemporary therapies, as Van der Watt & Janca (2008) states that in regards to the comparison of current medications and alternative therapies “these assessments are reasonable expectations that we all have of professional nurses in performing their role. Such expectations are not any different with the use of complementary therapies” (p. 29). This being said, there would be extra training required in the hospital setting as well as a necessary willingness of the nurses to learn the new information and be positive and interested in using these methods to care for their patients. While there may be initial resistance, the institution of these methods into standards of care could, in the words of Lillehei & Halcon (2014), “use of essential oils could be a safe and cost-effective therapy or adjunct therapy for sleep disturbances and might decrease overuse of prescription medications

and short- and long-term health outcomes from sleep disturbances” (p. 449). As most health professionals know, polypharmacy, which is the use of many different drugs at one time, is a large issue in this country. If lavender oil were instituted to aid in sleep issues, it could potentially cut down on the amount of drugs we are prescribing to patients and decrease the amount of polypharmacy. Overall, there is overwhelming support in favor of lavender oil being used to improve patient sleep quality and therefore should begin to be instituted into the United States hospital system.

Summary

In the studies that were examined, support was given that showed that essential oils are absorbed into the body systemically by way of the nasal cavity. In the first study, students who used lavender oil reported statistically improved sleep quality and duration of sleep. The second study showed that the studies found that there was a positive result from inhalation of lavender and their reported improved sleep quality. The third study showed that the group who was treated with the lavender oil had both a decrease in overall blood pressure and reported a higher sleep quality score on the questionnaire than the group who was used as a control. The fourth study showed that after the study, there was a significant decrease in the vital signs in the aromatherapy group on both the second and third days after the aromatherapy treatment was done. The next study looked at the issue of sleep issues and lavender oil in their study of 122 patients on the intensive care unit of a hospital and after the treatment with lavender oil was conducted, there were significant decreases in blood pressure and heart rate. The next study looked at a variety of conducted evaluations in order to determine if there was sufficient evidence that supported lavender's sleep inducing qualities. After the study was conducted, the results registered that lavender oil inhalation is an appropriate intervention for people suffering

from poor sleep quality. The next study gave infants a lavender oil bath and looked at their crying time as well as sleeping time after the study was done. After the baths were given, the study showed that the babies cried less and slept longer after the bath. Another study looked at sleep patterns of hospitalized patients and instituted lavender oil drops onto patients bed sheets. When patients were asked about their sleep after the treatment there was an increase in the quality and instance of restful sleep. With cancer patients who were currently inpatients, the study used warm compresses of lavender and after the treatment was over, patients reported improved quality of sleep and a greater feeling of overall feelings of recovery. Overall, the effects of lavender oil on a variety of patients in a variety of situations proved to provide positive effects and offer therapeutic effects for an improved overall hospital experience.

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