

PalArch's Journal of Archaeology of Egypt / Egyptology

EFFECT OF LAVENDER OIL ON SLEEP APNOEA

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KandhalYazhini P, Gayatri Devi R*, Jothi priya.A. EFFECT OF LAVENDER OIL ON SLEEP APNOEA--Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(7), 1997-2002. ISSN 1567-214x

Keywords: Lavender oil, sleep apnoea, aromatherapy, inhalation

ABSTRACT

Poor quality sleep affects a large proportion of the Indian population. Surveys of health-seeking behaviour suggest a preference for self-care remedies while essential oil aroma inhalation may be a popular aromatherapy application. Lavender oil has sedative or sleep enhancing properties and is believed to cause few side effects. The main aim of this study is to determine the effect of lavender oil among sleep apnea populations. Patients who suffer from sleeplessness/ Sleep Apnoea were randomly selected and kept under self-observation. They were instructed to note down their sleeping time and the time of their intermittent disturbances in sleep during night before and after using lavender oil. They were also asked the number of times their sleep was disturbed in a complete night's sleep. They were then asked to go for lavender oil inhalation (Aroma therapy) for 30 days and then data was collected and analysed. From this study, 75% of the population had a good effect on sleeping patterns. Remaining 25% of the population suggested that, maybe continuous usage of lavender oil for another 1 more month could be effective. Sleeping hours have been increased and there was a reduction in sleeping disturbance after the usage of lavender oil. From this study, it is revealed that the use of lavender oil has shown a positive effect on the majority of

the population. Inhalation of lavender oil reduces the stress level and helps to maintain a regular sleep cycle.

INTRODUCTION:

Lavender (*lavender angustifolia*) belongs to the *lamiaceae* family, native to the mountainous region of the Mediterranean [1]. Lavender is divided into four categories: *lavender angustifolia*, *lavender stone*, *lavender latifolia*, *lavender Intermedia* [2]. Lavender is vastly used in various aromatherapy methods [3]. Lavender oil has been used to help depression, anxiety, and insomnia, pain as a therapy for painful and inflammatory conditions [4]. Sleep is essential, and is vital in supporting physiological and psychological assistance of people. Patients in the coronary intensive care unit experience sleep disorders due to many factors including Pain [5]. Sleep disturbance may be due to psychological and physical factors like loneliness, anxiety, pain, hunger, and Incontinence etc[6]. Sleep apnoea is considered as a sleeping disorder in which an individual has pauses in breathing[7]. Aromatherapy is the use of essential oil to balance the mind, body and spirit [8]. Lavender oil has been used in aromatherapy techniques and they have sedative effects [9]. Lavender interacts with the neurotransmitter GABA to help quit to help the brain and nervous system activity, it reduces anger, restlessness and aggression and increases relaxation and comes to induce sleep [10].

In previous study by malcolm said that essential oil of lavender (LEO; *Lavandulaangustifolia*) is alleged to be antidepressant, antibacterial, anxiolytic, analgesic, antifungal, carminative (smooth-muscle relaxant), also on have beneficial immunomodulatory effects on wound healing [11]. A survey was done by Abdelhakim et al., 2020 and found that aromatherapy using lavender oil has a significant role in reducing anxiety, stress, pain and it also reduces heart rate in patients who performed cardiac surgery [12]. Huang et al in his study confessed that lavender oil aromatherapy may also help in relieving post arthroscopy pain [13]. Topical application of lavender oil promotes collagen synthesis and differentiation of fibroblasts, up-regulation of TGF- β [14]. Lavender oil inhalation has an effect on emotional states, autonomic nervous system and brain electrical activity [7].

Previous studies were focused on various effects of lavender oil in pain, depressing, stress and anger whereas current study is focused on the effect of lavender oil in sleep apnoea. The aim of the present study is to examine the evidence on lavender (*lavender sp.*) aroma inhalation as a therapy on sleep apnoea.

MATERIALS AND METHOD:

Patients who suffer from sleeplessness/ sleep apnoea were randomly selected and kept under self observation. They were instructed to note down their sleeping time and the time of their intermittent disturbances in sleep during night before and after using lavender oil. They were also asked about the number of times they were disturbed during the complete night's sleep. They were then asked to go for lavender oil inhalation (aromatherapy) during night time for 30 days. After 30days, all the signs were noted. The data was collected and analysed statistically.

RESULTS AND DISCUSSION:

In the present study, Mean and standard deviation of sleeping hours before the usage of lavender oil is 6.37 ± 0.85 and it has been increased to 6.66 ± 1.05 after the usage of lavender oil (Table 1). Mean and standard deviation of wake during sleep before using lavender oil is 2.16 ± 1.11 and it has been decreased to 0.83 ± 1.02 after the lavender oil usage. From the previously mentioned graph, it is evident that sleeping hours have increased after the usage of lavender oil (figure 1) and there was a reduction in sleeping disturbance after lavender oil usage (figure 2). From this study, it is evident that 75 percent of the population had a good effect on sleeping patterns. And 25 percent of the population suggested that, maybe continuous usage of lavender oil for another 1 month could be effective. Inhalation of lavender oil reduces the stress level and helps to maintain a regular sleep cycle [15].

In angular smith lilleher study, they took a population of college students around 21 yrs of age, whereas in my study I took age limit from 40 to 50 yrs of age. This study concluded that there is an improved sleep quality for college students [16]. A study in Taiwan veterans general hospital indicated that aromatherapy improves the sleep quality of nurses on monthly rotating night shifts. It also reduced their dysfunctionality in the workplace (i.e) hospital. The study also suggested that the medication is not the solution for insomnia and the alternative therapies like lavender oil inhalation is a better option [17]. The use of aromatherapy with lavender oil inhalation also produced significant reduction in pain during medical procedures. Combined with pharmacological methods and medication the aromatherapy can be more effective. The lavender oil inhalation could also decrease blood pressure heart rate in patients undergoing open heart surgeries [18]. Aromatherapy using lavender oil can help in reducing somatic symptoms of anxiety like autonomy arousal. Lavender oil also appears to have a common effect without producing sedation [19].

The study was done on a small scale population. It can also be done on a large scale population with more information about this topic. Currently, we are yet to discover enough evidence for the relationship between lavender oil aromatherapy and its effect in sleep apnoea. More detailed research in a large scale population on this topic is required.

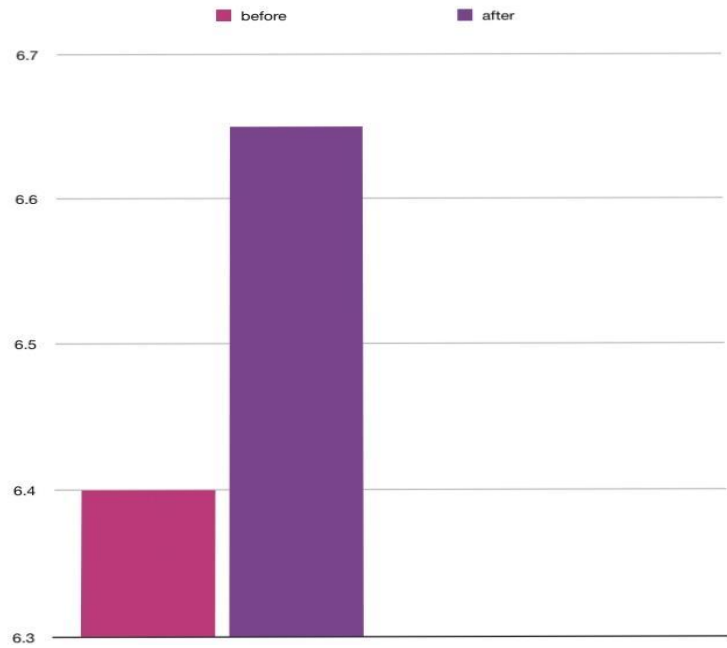


Figure 1: The bar graph represents the association between duration of sleeping hours before and after use of lavender oil. X axis represents oil used and Y axis represents duration of sleeping hours before (pink) and after use of lavender oil (violet). Hence, sleeping hours before the usage of lavender oil is 6.37 ± 0.85 and it has been increased to 6.66 ± 1.05 after the usage of lavender oil.

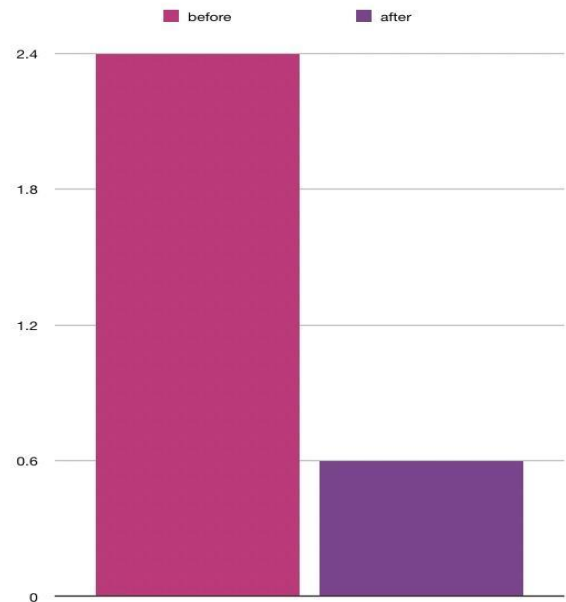


Figure 2 : The bar graph represents the association between sleep disturbance before and after use of lavender oil. X axis represents oil used and Y axis represents wake during sleep before (pink) and after use of lavender oil (violet). Hence, wake during sleep before using lavender oil is 2.16 ± 1.11 and it has been decreased to 0.83 ± 1.02 after the lavender oil usage

Table 1: Mean, SD before and after using lavender oil

	Sleeping hours	Wake during sleep
Before	6.37 ±0.85	2.16 ±1.11
After	6.66 ± 1.05	0.83 ± 1.02

CONCLUSION:

From this study, it is evident that the use of lavender oil has shown a positive effect on the majority of the sleep apnea population. Inhalation of lavender oil reduces the stress level and helps to maintain a regular sleep cycle.

ACKNOWLEDGMENT :

The author would like to thank the study participants for their participation and kind cooperation.

CONFLICT OF INTEREST:

The author declares that there is no conflict of interest in the present study.

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