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EFFECTIVENESS OF AROMATHERAPY IN INSOMNIA

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Abstract

In today's busy and competitive life, individuals in high risk to mental health problems, which mainly include anxiety, depression, stress and insomnia. Good quality of sleep helps to regulate our hormones and improve immunity level. It helps to protect us from infection and disease. Unhealthy sleep habits negatively affects work performance, decrease immunity level, impairs decision-making, emotional vulnerability, decreased resilience, loss of memory and it worsen the quality of life if the lack of sleep continues. Having insomnia can shorten your life span by eight to ten years, and the lack of sleep lead to harmful effects on various systems it include changes in metabolic, endocrine and immune pathways. Aromatherapy seeks to unify physiological and spiritual processes to enhance and individual's innate healing process. Aromatherapy is the therapeutic use of plant oils, named by the French chemist Rene-Maurice Gattefosse in 1910. The smell of essential oil transmit signal to brain, as it can interfere with the capable of releasing neurotransmitters stimulus and helpful to generate analgesic effect and it can influence our physical, emotional, mental health, sense of wellness and relaxation. Before using aromatherapy one should follow the safety guidelines strictly this will help to reduce the adverse effects and helpful for better outcomes. Health professionals should have a basic knowledge about the constituents and properties present in essential oils of aromatherapy.

Keywords: Aromatherapy, Insomnia, Essential oils, Good sleep.

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INTRODUCTION

Everyone knows the normal sleep is essential for good physical and mental health [1]. Good quality of sleep gives mind to break from our daily life pressures and stresses, and it helps the cells and tissues to repair and recharge our energy levels [2]. But in today's busy and competitive life, individuals in high risk to mental health problems, which mainly includes anxiety, depression, stress and insomnia. These problems not only affect the mental and emotional status of the human being but also it affects the physical health by affecting things like sleep and general wellbeing [3].

Unhealthy sleep habits negatively affects work performance, decrease immunity level, impairs decision-making, emotional vulnerability, decreased resilience, loss of memory and it worsen the quality of life if the lack of sleep continues [4,5]. Cappuccio et al (2011) showed short sleeper's are at great risk of heart disease and stroke than persons who sleep eight hours a day and the lack of sleep lead to harmful effects on various systems it include changes in metabolic, endocrine and immune pathways [6].

Approximately 30% -50% of general population are affected by insomnia, it affects all age groups, and mostly women, older adults, people under stress, people have certain medical and mental health problems [5,7]. There are many interventions to treat insomnia, a unique one among this is aromatherapy [8]. In aromatherapy it uses essential oils as the major therapeutic agents in treating several disease conditions [9]. In recent years Aromatherapy is gained attention with the resurgence of a holistic approach to health [10]. This therapy was welcomed and practiced by nursing professionals in hospital, hospice and community settings [11]. So this review was done to assess the importance and uses of aromatherapy in insomnia.

INSOMNIA AND ITS EFFECTS:

Insomnia is defined as difficulty falling asleep or staying asleep, even when a person has the chance to do so [12]. Good quality of sleep helps to regulate our hormones and improve immunity level and it help to protect us from infection and disease. So, the insomnia can devastate our health.²Some of the effects of insomnia are mentioned below:

The effects of insomnia associated with the increased risk of medical conditions like hypertension, diabetes, weak immune system, inflammation, sensitivity to pain, obesity, cardiovascular diseases, respiratory diseases, stroke and osteoporosis [6, 13-17].

The insomnia leads to increase the risk of mental health problems like mood disorders such as anxiety, depression, reduced psychomotor performance and memory consolidation and also it leads to confusion and frustrations, worry, anger and resentment. Sometimes it may lead to mental excitement and overstimulation [17-20].

Having insomnia can shorten your life span by eight to ten years [21]. Parthasarathy et al (2015) showed that the persistent insomnia will increase the mortality rate [22].

AROMATHERAPY

As per the National Association for Holistic Aromatherapy it is defined as “The art and science of utilizing naturally extracted aromatic essences from plants to balance, harmonize and promote the health of body, mind and spirit. It seeks to unify physiological, psychological and spiritual processes to enhance an individual’s innate healing process.” [23].

Aromatherapy is the therapeutic use of plant oils, named by the French chemist Rene-Maurice Gattefosse in 1910, the lavender oil spilled on his burned hand accidentally and he noticed the burn was healed quickly with little scar. From there he began to study the essential oils and its effectiveness among soldiers of First World War in the military hospitals” [10,24].

THE MECHANISM OF ACTION

The mechanism of action involves when we inhale the smell of essential oil molecules the receptors which located in our nose transmit signal to our brain through olfactory bulb (the amygdale and hippocampus) that serve as storehouse of emotions, mood and memories. Through this it influence our physical, emotional, and mental health [25].

The essential oils and aromatherapy is can interfere with the capable of releasing neurotransmitters stimulus and helpful to generate analgesic effect and sense of wellness and relaxation [26]. So, this study describes about essential oils used in aromatherapy that helpful for relax and promote good sleep.

METHODS OF ADMINISTRATION [27]

- Direct application of essential oils in skin will be very strong, so it can be diluted with sweet almond oil and apply the mixture over temples, forehead and wrists before bed time.
- A cotton ball wetted with essential oil can be used inside pillowcase.
- Before sleep take a warm bath with water evenly mixed with essential oil.
- Adding essential oil drops in bedroom humidifier or steam vaporizer.
- Inhalation of essential oil directly from the bottle, before going to sleep.

- A cloth moistened with essential oil drops can use over forehead or neck.
- Spray bottle mixed with distilled water and few drops of essential oil can be sprayed over pillowcase and bed sheets before sleep.

SOME OF THE ESSENTIAL OILS WHICH INDUCE SOUND SLEEP:

LAVENDER (*Lavender Augustifolia*): This belongs to the family of *Lamiaceae*, the constituents are camphor, terpinen-4-ol, linalool, linalyl acetate, betaocimene and 1,8-cineole [9]. Koulivand et al (2013) showed lavender is excellent to treat insomnia and improve the sleep quality, and he explained Linalool has sedative effects where as the linalyl acetate has narcotic actions. In anxiety patients with unhealthy sleeping habits these two actions helpful in lavender pillow to improving the feeling of wellbeing, supporting mental alertness and suppress the aggression and anxiety [28]. Moeini et al (2010) showed the use of lavender oil decrease the sleep disorder and improve the quality of sleep among hospitalized ischemic heart disease patients [29]. Lytle et al (2014) conducted a pilot study among patients in an intermediate care unit and found lavender aromatherapy is effective in lower blood pressure and improve the quality of sleep [30]. Afshar et al (2015) found a significant improvement in postpartum mothers sleep quality after 8 week of intervention with lavender essential oil [31]. Kamalifard et al (2017) reported that effects of bitter orange and lavender in postmenopausal will improve sleep quality [32]. Vrishabhendraiah et al (2016) mentioned the use of lavender oil will reduce depression, stress, headache, muscle spasm and insomnia [33].

CHAMOMILE: It belongs to the member of *Asteraceae/Compositae* family and it represented by two common varieties namely German Chamomile (*Chamomilla recutita*) and Roman Chamomile (*Chamaemelum nobile*). Srivastaava et al (2010) showed the chamomile tea and essential oils widely used to treat insomnia and to induce sedation and it was mild tranquilizer and sleep-inducer [34]. The Chamomile constituents Esters of angelic and tiglic acids with pinene, farnesol, chamazulene, nerolidol, cineol and pinocarvone. The therapeutic properties include anti-inflammatory, antiseptic, it helpful for digestion and soothes nervous tension and promotes sleep [35]. A study by Orav et al (2010) shows the chamomile tea used in relieving muscle spasms and inflammatory conditions and also it used as a gentle sleep aid for children [36]. Zick et al (2011) mentioned in adults with chronic primary insomnia the chamomile provide a good benefits on sleep diary measures compared to placebo [37]. Ghorat et al (2017) stated that chamomile oil application increase the infants sleep duration and decrease infants crying, this lead

to highly satisfied with the treatment procedure among parents of infants [38]. Vrishabhendraiah et al (2016) mentioned the use of chamomile oil relieves depression, insomnia and stress [33]. Moss et al (2016) showed use of chamomile jelly among adults reported no sleep problems and increase the rate of relaxation, lower night time wakefulness and sleep onset latency and increase morning sleep [9].

YLANG YLANG (*Cananga odorata*): This belongs to the family of *Annonaceae*. It has the principal constituents of linalool, caryophyllene, germacrene D, geranyl acetate, benzyl acetate, benzyl benzoate. The principal properties and indications include antidepressant, euphoric, soothing and it relieves insomnia [40]. Vrishabhendraiah et al (2016) described the use of ylang ylang oil relieves the depression, insomnia, tension and it relaxes the nervous system.³³ Shaaban et al (2012) and Wheatley (2005) mentioned that use of lavender, chamomile and ylang ylang oils improve sleep [41,42]. Quezada (2010) showed ylang ylang oils help to relax and improve the quality of sleep. By adding blend 15 drops of oil into 1 oz of carrier oil and massage the feet and hands before bed [43].

JASMINE (*Jasminum grandiflorum*): It belongs to the family of *Oleaceae*. The constituents are benzyl, indole, jasminiflorin, jasmolin, hasmone, linalool, linalyl acetate, methyl anthranilate, monosaccharides and volatile oil and the properties include antispasmodic, aromatic and parasiticide [44]. According to Dr. Bryan Raudenbush the jasmine oil has a positive effect for those individuals needing a restful night sleep. It helps to decrease anxiety and improve their attitude after good sleep [45]. The jasmine smell not makes you to sleep more, but they helps to increase the duration of sleep [46]. Hoffmann (2002) described jasmine oil helps to reduce anxiety and bring relaxation and sleep [47]. Sayowan et al (2013) mentioned inhalation of jasmine oil will affect the brain wave activities and changes the mood [48]. Dave V and Yadav S (2013) showed jasmine oil is very calming and soothing [49].

MARJORAM (*Origanum majorana*): It belongs to the family of Labiatae/Lamiaceae. The main constituents are erpinen-4-ol, cis-sabinene hydrate, Y-terpinene and gamma-terpinene, gamma terpineol [50]. The main properties are analgesic, antiseptic, anti-spasmodic, strong sedative, menstrual stimulant, and vasodilator. The marjoram oil is warm, comforting and calming this help to promote sleep and peace. This oil is helpful for insomnia, anxiety, stress and unhappiness whether it may applied topically or diffused [51]. A study by Koulivand et al (2013) showed the marjoramis reduce sleep disturbance [28]. Chang et al (2017) mentioned the sweet marjoram contains several constituents which aid sleep the linalyl acetate which calms the emotion and the

linalool helps to stabilize the cardiovascular system and relax the body [52]. Ju et al (2013) described the marjoram activates the parasympathetic nervous system and relaxes the sympathetic nervous system to induce sleep [53]. Afifi et al (2014) showed the traditional use of marjoram oil helps to relieve spasms, calming and promoting restful sleep, headache, lower increased blood pressure and helpful in assisting breathing [54].

BERGAMOT (*Citrus bergamia*): It belongs to the family of *Rutaceae* [55]. Its constituents are limonene, linalyl acetate, linalool, γ -terpinene and β -pinene [56]. Therapeutic properties include the analgesic, antidepressant, antibiotic, antispasmodic, antiseptic, disinfectant [57]. Ju et al (2013) found mixture of lavender, bergamot, clary sage in the ratio of 3:2:1 among hemiplegic patients shows reduction in their sleep disturbance and improve the sleep quality [53]. Hwang et al (2015) reported that commonest aroma oils used for sleep intervention are lavender and bergamot [58]. Leggio et al (2017) stated the bergamot oil is used as an antidepressant to reduce anxiety and stress by facilitating sleep [59].

SAFETY PRECAUTIONS AND GUIDELINE:

Wash your hand before and after using the oils and keep it away from children's. Avoid essential oils applying directly or near to eyes. Always use diluted essential oils on skin and avoid prolonged use. Before applying it to patient, collect the any known history of allergies or sensitivities, if you suspect the patient may be sensitive, better do a skin patch test. The treatment room should be well ventilated. Keep the essential oils away from direct contact with flames because it is highly flammable [60].

CONCLUSION

Aromatherapy is a good adjuvant in the treatment of Insomnia. Before using aromatherapy one should follow the safety guidelines strictly this will help to reduce the adverse effects. The use of aromatherapy not only aid in insomnia it also helps one to rejuvenate the whole body. Aromatherapy is one of the traditional Indian practices more than 3000 years, but only few institutions providing this therapy. So every health professionals should have a basic knowledge about the constituents and properties present in essential oils of aromatherapy.

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