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Review Article

## A Complete Review on Aromatherapy: A Complementary Alternative Medication Therapy with Recent Trend

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### Abstract

Aromatherapy is one of the most actively growing forms of alternative medicines that use essential oils and aromatic plant compounds combining massage together with counselling and nice odour. Aromatherapy using essential oils can help to relieve stress and anxiety symptoms, which may help improve sleep indirectly. A study found aromatherapy improved both depression and anxiety in a group of post-partum women. Aromatherapy can do more than soothe your mind. Scientific studies show that aromatherapy- inhaling or absorbing aromatic plants extracts also may help soothe your body and relieve pain. Studies have shown that essential oils have an effect on brainwaves and also alter behaviour. It is possible that most of the effect of the oils is probably transmitted through the brain via the olfactory system. Used professionally and safely, aromatherapy can be of great benefit as an adjunct to conventional medicine or used simply as an alternative.

**Keywords:** Aromatherapy, Essential oils, Alternative medicines

## Introduction

Aromatherapy is a branch of the alternative system of medicine which deals with the utilization of naturally extracted aromatic essences from plants to harmonize, balance and promotes the overall health of mind, body and spirit. It unifies the physiological, psychological and spiritual processes to enhance the innate healing process of an individual<sup>1</sup>.

The aromatherapy tends to heal the body by stimulating its natural powers. The awakening of these forces results in returning to the body from a diseased state to a healthy state. Aromatherapy differs from allopathy in its manner to treat the disease. Instead of treating the disease, aromatherapy tends to treat the entire person. Aromatherapy raises the levels of resistance and immunity of our body and prevents the disease<sup>1</sup>. Aromatherapy has established itself for the treatment of various arrays of complications and conditions. Aromatherapy uses essential oils, as the main therapeutic agents, which are said to be highly concentrated substances extracted from flowers, leaves, stalks, fruits and roots and also distilled from resins. Essential oils are amixture of saturated and unsaturated hydrocarbons, alcohol, aldehydes, esters, ethers, ketones, oxides phenols and terpenes, which may produce characteristic odours. They are colourless pleasant-smelling liquids with high refractive index. These oils are so potent and concentrated that they work on pressure points and rejuvenate<sup>2</sup>. The controlled use of essential oils from named botanical sources using a variety of application

(external) or administration (internal) methods to suit the individual's needs to promote and support health and wellbeing using an evidence-based quality use of medicines approach<sup>3</sup>. Aromatherapy is the holistic approach to treat the body. The essential oils are found to be more beneficial when other aspects of life and diet are given due consideration. Aromatherapy is founded to be very effective in case of pain management and treatment. Inhalation, local application and baths are the major methods used in aromatherapy that utilize these essential oils to penetrate the human skin surface<sup>5,6</sup>.

## History

The word "Aromatherapy" was not much used before 1928. The well-known herbal text De Materia Medica written by a Greek physician and surgeon Pedanius Dioscorides which includes detailed information about medicinal uses of plant and contains an entire section on aromatics<sup>1</sup>.

- Egypt 4500 BC-

A compound named "Kyphi" was formulated by Egyptian perfumes which were used as a perfume as well as an incense and medicine.

- India 3000BC-

"Ayurveda" is the traditional medicinal system of India which uses essential oils, massage and pressure point to recover the body and to improve the health.

The "Snehan" therapy is a part of "Panchakarma" in Ayurveda which is used to treat the body by means of applying essential oils to the body and massaging.

- China 3000 BC-

The ancient medical text in China was the Emperor Shen Nung's herbal book. Another Emperor Huang Ti wrote "The Yellow Emperors Classic of Internal Medicines." Which emphasized on the use of massage, aromatic medicines and acupuncture.

- Greece 400-500 BC-

The effects of 300 plants and the day to day use of aromatic baths and medicines were recommended by the Greek physician Hippocrates.

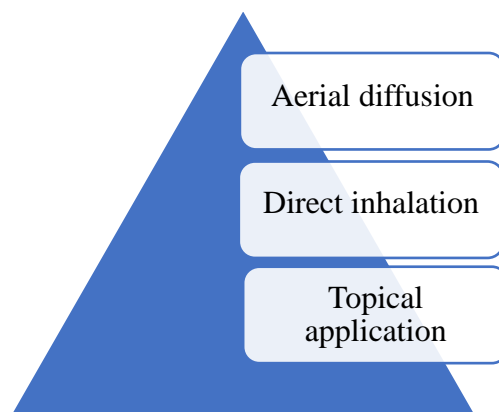
- Arabia 900 AD-

The well-known text "Canon of Medicine" was written by the great Arab physician Avicenna. He played an important part in the development of aromatherapy by inventing the steam-distillation process. The use of white and red roses was emphasized in his research.

- The herbal text "Complete Herbal" was written by an English botanist and herbalist Nicolas Culpepper in 1653. The eighteenth century is known particularly for the use of essential oils by herbalists as well as by doctors. The Nineteenth century led to the identification of the active constituents of essential oil as well as to the progressive production of synthetic oils which resulted in the natural medicines.
- **The term "aromatherapy" was coined by a French chemist and perfumer, Rene- Maurice Gattefosse in 1937.** His hand was burnt accidentally during his research and unknowingly he immersed his hand in the nearest container of oil which contained lavender oil. He observed that the oil mitigated the pain and cured the burns quickly without any scars. He treated the wounds of soldiers with essential oils during the first world war.

"Practice of Aromatherapy" a renowned text was written by Dr. Jean Valnet many people considered it as the "Bible of Aromatherapy". It was published in 1964<sup>1</sup>.

## Modes of application

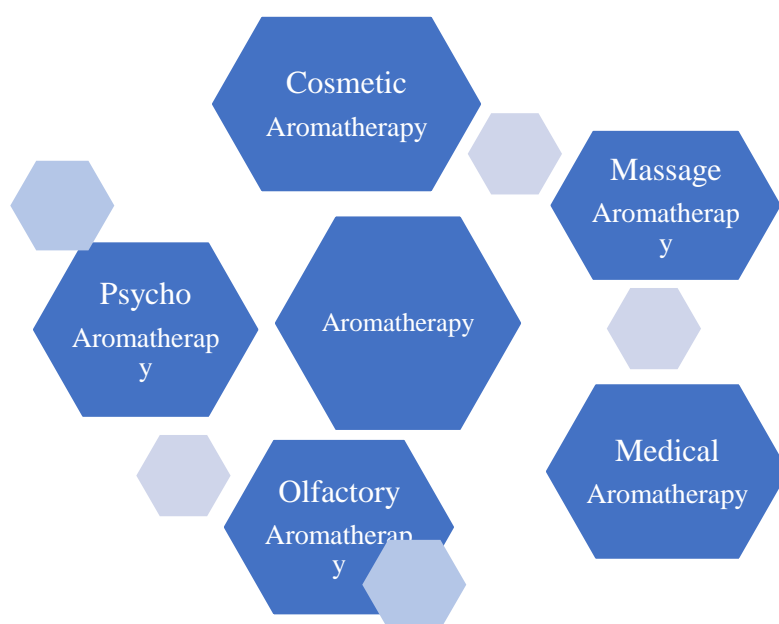


## Model for aromatherapy practice

- 1) Medical aromatherapy-** Medical aromatherapy, sometimes known as aromatic medicine and aromatology, includes internal administration of Essential oils via oral, rectal and vaginal routes as well as in ointments applied in wound dressings and fumigation procedures. Only steam distilled and expressed essential oils are used internally. Internal administration is associated with more serious adverse events compared with topical and inhaled application.
- 2) Subtle aromatherapy-** Subtle aromatherapy is also referred as aromacology where Essential oils are predominantly administered via inhalation to influence psychological and spiritual states.
- 3) Traditional aromatherapy-** traditional aromatherapy often encompasses touch. Essential oils are applied topically in massage and in gels, creams and lotions and via inhalation for physical, psychological and spiritual effects. There are two practice subgroups: therapeutic, which is used in health care, and cosmetic or beauty therapy.

All three models use Essential oil as the main medicinal substance. Essential oils are rarely used undiluted form they are incorporated into various carrier substances depending on the application/administration route <sup>3</sup>.

## Classification of aromatherapy<sup>2</sup>

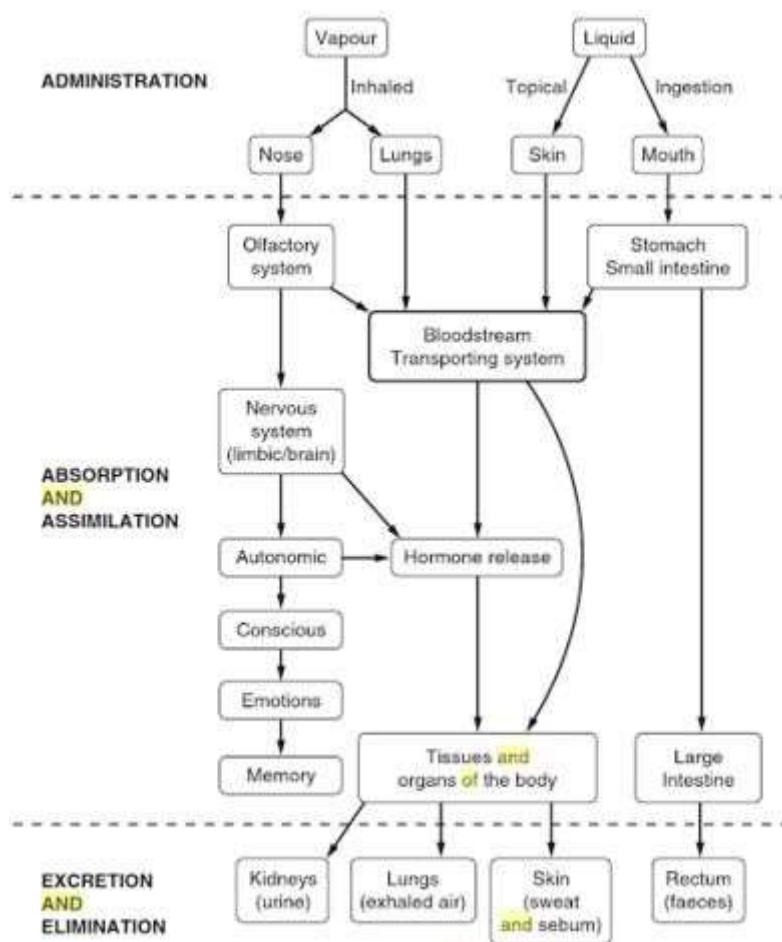


- 1) **Cosmetic aromatherapy**- This therapy utilizes certain essential oils for skin, body, face and hair cosmetic products. These products are used for their various effects as cleansing, moisturizing, drying and toning. cosmetic aromatherapy of full-body or foot bath will be a simple and an effective way to have an experience. few drops of appropriate oil give a rejuvenating and revitalizing experience.
- 2) **Massage aromatherapy**- The significant study shown that the use of grape seed, almond, orjojobaoilin pure vegetable oil during massage has wonderful effects. This is also known as healing touch of massage therapy.
- 3) **Medical aromatherapy**- This therapy is recognized during world war and the founder uses this for wound healing, and for surgery thus utilizing the medical aromatherapy knowledge of the effect of essential oils on promoting and treating clinically diagnosed medical ailments.
- 4) **Olfactory aromatherapy**- Inhalation of essential oils has given rise to olfactory aromatherapy, where simple inhalation has resulted in enhanced emotional wellness, calmness, relaxation or rejuvenation of the human body.
- 5) **Psycho aromatherapy**- certain states of moods and emotions can be obtained by these oils giving the pleasure

of relaxation, or a pleasant memory. The inhalation of the oils in this therapy are direct though the infusion in the room of a patient. Psycho-aromatherapy and aromacology both deal with the study and effects of aroma be it natural or synthetic.

### Mechanism of action (how aromatherapy works)

Aromatherapy uses some kinds of essential oils obtained from various plants species, and from different parts of plants. These essential oils used as medicinal agents and they shows therapeutic effects. The stimulation properties of these oils lay in their structures which are closely in resemblance with actual hormones. The mechanism of their action involves integration of essential oils into a biological signal of the receptor cells in the nose when inhaled. The signal is transmitted to limbic and hypothalamus parts of the brain via olfactory bulb. These signals cause brain to release neuro messengers like serotonin, endorphin *etc.*, to link our nervous and other body systems assuring a desired change and to provide a feeling of relief. Serotonin, endorphin and noradrenalin are released from calming oil, euphoric, and stimulating oil respectively to give expected effect on mind and body <sup>1, 2, 7-9</sup>.



### Mechanism of aromatherapy

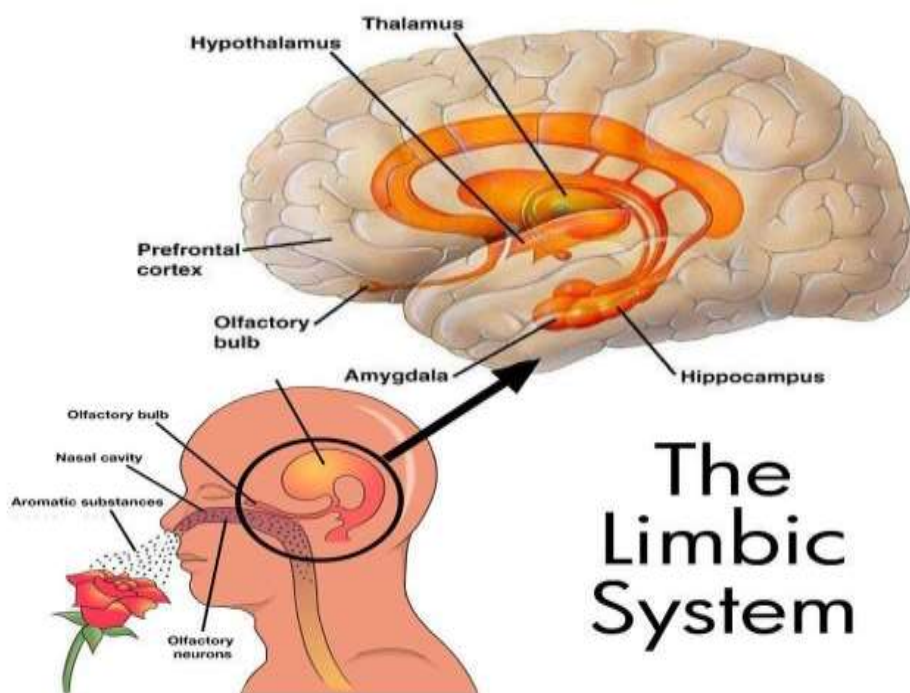
Mechanism is based on administration of essential oils and mainly four routes are possible for administration of essential oil, these are as follows;

- 1) Olfactory- via sense of smell or inhalation
- 2) Topical- via external part of body like skin massages and

bath

- 3) Internal- via internal part of body like mouthwashes, gargles, douches and suppositories (different body cavities are used for internal administration)
- 4) Oral- gelatin capsules or diluted honey and alcohol

## Inhalation



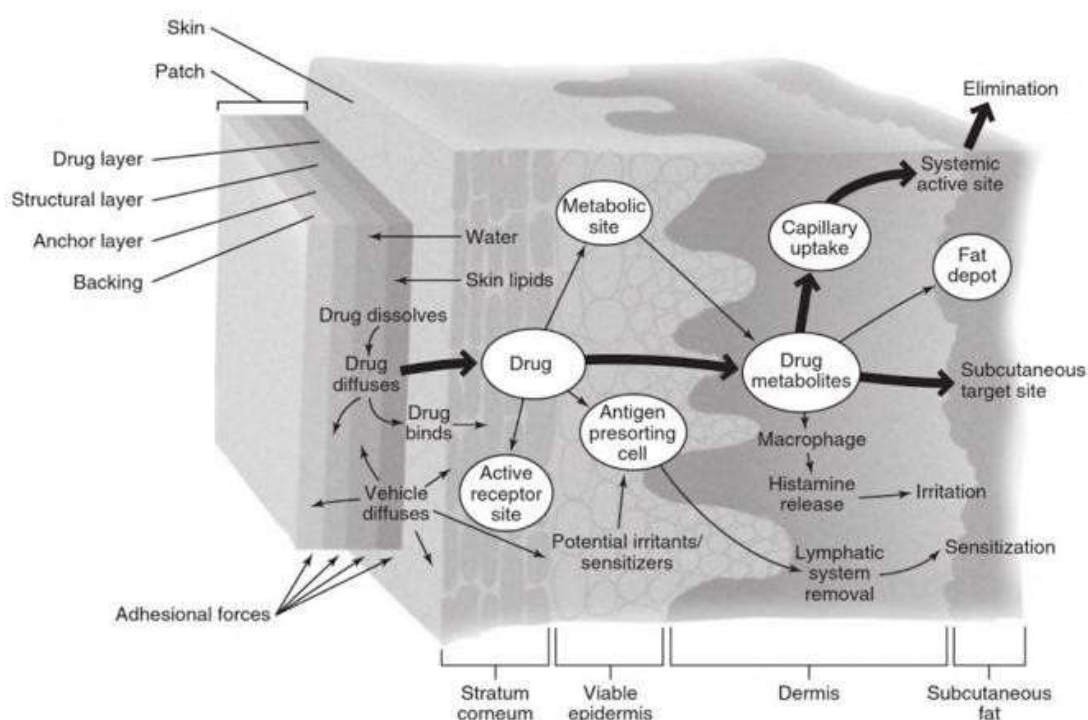
**Absorption of essential oils from nose**

There are parts of the brain that control heart rate, memory, hormonal balance, and breathing. The limbic system is directly connected to those parts. The brain reacts positively with essential oils inhaled. Those molecules of oil can trigger reactions in the brain. Our emotions are affected by reactions in brain. The implication is anytime the limbic system reacts based on impulses sent by the olfactory bulb, hormonal balance, heart rate and memory of a person can be altered. One way to stimulate amygdala is through the aroma coming

from essential oils. This can revive good memories from our childhood and bring a sense of well-being.

### Topical

There are two processes involved in topical absorption: penetration and permeation through skin. Scientists found that molecules from essential oils may interact in blood hormones and enzymes.



**Absorption of essential oils through skin**



## Phytochemistry

Essential oils are extracted from the leaves, flowers, stems, fruit, seeds, bark and roots of a range of aromatic plants. They contain a range of phytochemicals with their specific chemical composition. Essential oils are stored in secretory structures in various parts of plants, often with resins and gum in oil cells, sacs, resin canals, ducts and hairs. These are extracted using several processes depending on the part of the plant, which are as follows <sup>3</sup>:

- Steam distillation
- expression
- enfleurage
- solvent extraction

- maceration
- fermentation
- supercritical carbon dioxide extraction

More than 3000 phytochemicals have been identified in essential oils. Phytochemicals are generally aromatic, derived from the shikimate pathway or terpenoid, derived via the deoxy-xylulose phosphate pathway. Common phytochemicals present in essential oils are terpenes, sesquiterpenes, alcohols, phenols, aldehydes, ketones, esters, acids, phenolic, ethers, oxides, lactones and coumarins. Some important plant species used for aromatherapy are as follows; Clary sage, Eucalyptus, Geranium, Lavender, Lemon, Peppermint, Roman chamomile, Rosemary, Tea tree, Ylang Ylang, Bergamot, Jasmine, Patchouli, Nutmeg, Valerian, Niaouli, Clove, Fennel, Coriander<sup>10,11</sup>.

**Table 1 Essential oils or plant used for maintaining different emotional condition**

S.NO.	EMOTIONAL STATE	ESSENTIAL OIL/ PLANT USED
1	Anger	Bergamot, Jasmine, Neroli, Orange
2	Fear	Bergamot, Clary sage Grapefruit oil
3	Grief	Geranium, Helichrysum, Lavender
4	Anxiety	Clary sage, Patchouli, Bergamot
5	Confidence	Bay laurel oil, Cypress oil, Rosemary oil
6	Memory and concentration	Basil, Cypress, Peppermint

**Table 2 plants used for management of different condition**

S.NO.	CONDITION	ESSENTIAL OILS/ PLANT USED
1	Anxiety, agitation, stress	Palmarosa, Lavender, Basil, Geranium, Valerian, Patchouli
2	End of life agitation	Lavender, Sandalwood
3	Fatigue	Neroli, Coriander, Citronella, Black peppermint, Spearmint, Geranium, Rosemary, Ginger, Grapefruit oil
4	Insomnia	Ylang ylang, Roman chamomile, Neroli, Bergamot, Orange, Lavender, Lemon balm, Basil, Valerian
5	Mental exhaustion, burnout	Peppermint, Basil, Helichrysum
6	Memory loss	Peppermint, Rosemary
7	Pain management	Ginger, Rosemary, Lavender, German chamomile

## Pharmacological actions of essential oils in aromatherapy <sup>12-14</sup>

- antibacterial
- antifungal
- antiviral
- anti-inflammatory
- anti-lice
- anti-dandruff
- anti tumor
- anti-oxidant
- insect/mosquito repellent
- spasmodic action
- hormonal action

- antidepressant
- sedative
- healing of cuts, wounds <sup>2</sup>.
- Aromatherapy is used as the complementary and alternative system of medication.
- Complementary and alternative medicine (CAM) is a group of medicines/medicinal practices used for prevention, diagnosis, mitigation, treatment (of disease) and which assists the conventional system of treatment and enhances the recovery process <sup>1</sup>.

## Advantages of aromatherapy over the conventional system of medication

- 1. Simplicity-** It is easy and inexpensive method of treatment. It is simple and no special professional supervision is needed.

2. **Natural and non-toxic-** Essential oils are safe and not toxic to humans when either inhaled or applied topically on the skin. But some essential oils are exception because they are toxic in nature. If essential oils are applied parentally or ingested orally, they may create toxicity and hence they are generally inhaled or topically applied to skin.
3. **Availability-** Essential oils product used for aromatherapy are readily available because use of this therapy increasingly day by day though its effectiveness is miraculous.
4. **Affordability-** This therapy is affordable to everyone and most economic type of treatment as compared to other conventional therapies.
5. **Effectivity-** Pharmacological effectiveness of this therapy is really wonderful and though it is having miraculous effect on physical as well as mental health. It is an emerging therapy <sup>1</sup>.

### Disadvantages of aromatherapy

- Some people are sensitive to these essential oils hence this can cause allergy related problems in some peoples.
- Some essential oils are toxic in nature and hence they may cause toxicity to skin, if they are applied to skin like they increase the sensitivity of skin towards UV rays and hence cause sunburns like problems
- In some condition like in asthma and pregnancy they are contraindicated and hence in some allergic or pathophysiologic condition they should never be used because they can cause harmful effect <sup>1, 15</sup>.

### Recent trend or recent ongoing study on aromatherapy for its pharmacological or therapeutic effect:

Aromatherapy used for relaxing mind, as antidepressant, as sedative, anxiolytic, and to reduce different type of chronic pains.

Aromatherapy and its effectivity with clinical trials are on going for reducing different kind of pains like<sup>4</sup>;

- Chronic pain in older adults
- Chronic back pain
- Chronic neck pain
- Chronic knee pain
- Menstrual pain
- Pain related to labour and childbirth
- Post caesarean section pain
- Episiotomy pain
- Postoperative pain
- Hemiplegic shoulder pain
- Paediatric pain
- Cancer pain
- Haemodialysis pain
- Renal colic pain
- Guillain barre syndrome
- Multiple sclerosis pain

In these typical pains the clinical trials are ongoing and the conventional pain killers like acetaminophen are reference for their effectively measurements. Aromatherapy with acupressure therapy both are used for reducing pain while single pain killer is the reference. Lavender oil, rosemary oil is some essential oils are having significant effect to reduce pain this is proven but the exact mechanism of working is unknown. And alone use of aromatherapy is also less used for clinical trials <sup>4, 16</sup>.

### Future prospectus

Aromatherapy and its effectively for lethal harmful disorders will be analysing. Effect of aromatherapy in cancer, cardiovascular diseases, mental disorders are to be measured. With the help of aromatherapy lethal disorders will be cured this is the main objective of study. Aromatherapy will be used as the conventional system of medication in future. As allopathy is used now days just like that aromatherapy will be used.

### References

1. Khandke AN, Bhandari MD, Lale SA. Aromatherapy on mental health. *International Journal of Research Methodology*, 2017; 1(1):23-39.
2. Ali B, Al-Wabel NA, Shams S, Ahamad A, Khan SA, Anwar F. Essential oils used in aromatherapy: A systemic review. *Asian Pacific Journal of Tropical Biomedicine*, 2015; 5(8):601-11. <https://doi.org/10.1016/j.apjtb.2015.05.007>
3. Dunning T. Aromatherapy: overview, safety and quality issues. *OA Alternative Medicine*, 2013; 1(1):6. <https://doi.org/10.13172/2052-7845-1-1-518>
4. Lakhan SE, Sheaffer H, Tepper D. The effectiveness of aromatherapy in reducing pain: a systematic review and meta-analysis. *Pain Research and Treatment*. 2016. <https://doi.org/10.1155/2016/8158693>
5. Shah YR, Sen DJ, Patel RN, Patel JS, Patel AD, Prajapati PM. Aromatherapy: The doctor of natural harmony of body & mind. *International Journal of Drug Development & Research*. 2011; 3(1):286-94.
6. Ziosi P, Manfredini S, Vertuani S, Ruscetta V, Radice M, Sacchetti G. Evaluating essential oils in cosmetics: antioxidant capacity and functionality. *Cosmet Toilet*, 2010; 125:32-40.
7. Soden K, Vincent K, Craske S, Lucas C, Ashley S. A randomized controlled trial of aromatherapy massage in a hospice setting. *Palliat Medicine*, 2004; 18:87-92. <https://doi.org/10.1191/0269216304pm8740a>
8. Maeda K, Shioda S. Medical aromatherapy practice in Japan. *Essence*, 2012; 10:14-6.
9. Price S, Price L. Aromatherapy for health professionals. 4th ed. New York: Elsevier Churchill Livingstone; 2011.
10. Varney E, Buckle J. Effect of inhaled essential oils on mental exhaustion and moderate burnout: a small pilot study. *Journal of Alternative and Complementary Medicine*, 2013; 19:69-71. <https://doi.org/10.1089/acm.2012.0089>
11. Guba R. The modern alchemy of carbon dioxide extraction. *Int J Aromather*. 2002; 12(3):120-126. [https://doi.org/10.1016/S0962-4562\(02\)00043-7](https://doi.org/10.1016/S0962-4562(02)00043-7)
12. Cino K, Aromatherapy hand massage for older adults with chronic pain living in long-term care. *Journal of Holistic Nursing*, 2014; 32(4): 304-313. <https://doi.org/10.1177/0898010114528378>
13. Sritoomma N, Moyle W, Cooke M, Dwyer SO. The effectiveness of Swedish massage with aromatic ginger oil in treating chronic low back pain in older adults: randomized controlled trial. *Complementary Therapies in Medicine*, 2014; 22(1):26-33. <https://doi.org/10.1016/j.ctim.2013.11.002>
14. Yipand YB, Tse SHM. The effectiveness of relaxation acupoint stimulation and acupressure with aromatic lavender essential oil

- for non-specific low back pain in Hong Kong: a randomised controlled trial. *Complementary Therapies in Medicine*, 2004; 12(1):28-37. <https://doi.org/10.1016/j.ctim.2003.12.003>
15. Yip YB, Ying Tam AC. An experimental study on the effectiveness of massage with aromatic ginger and orange essential oil for moderate-to-severe knee pain among the elderly in Hong Kong. *Complementary Therapies in Medicine*, 2008; 16(3):131-138. <https://doi.org/10.1016/j.ctim.2007.12.003>
16. Kaviani M, Azima S, Alavi N, Tobei MH. The effect of lavender aromatherapy on pain perception and intrapartum outcome in primiparous women. *British Journal of Midwifery*, 2014; 22(2):125-128. <https://doi.org/10.12968/bjom.2014.22.2.125>