Naturally Available Essential Oils for Aromatherapy

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ABSTRACT

Aromatherapy is an art of using essential oils for healing our mind and body. The meaning of aromatherapy is not so clear; the term 'aroma' means fragrance (sweet smell) and the term 'therapy' means to cure or to heal.Aroma and massage therapy are the practice of using essential oils for psychological and physical well-being via inhalation or massage.Essential oil is the volatile portion extracted from herbs, flowers, barks, stem, leaves, roots, fruits and other parts of the plantby the process of distillation, to treat various diseases. Essential oils are natural, complex, multi-component systems composed mainly of terpenes in addition to some other non-terpene components. The meaning of the word aromatherapy is misinterpreted as, onlymassaging the essential oils into the skin and curing the patients' disease, although volatility- the main property of a fragrance, is responsible for the treatment. Essential oil is indeed an extract but not the aroma present in it. This paper discusses the therapeutic property of aroma available in naturally available essential oils, its composition and how it heals our mind, body and uplifts our soul.

Keywords:Aromatherapy, Essential oil, Uplifts, Composition, Aroma, Fragrance

1. INTRODUCTION

1.1 The emotional brain responds only to smell

The sense of smell in humans is more accurate compared to any other sense and once registered can travel faster to the brain than sound or sight. The area of the brain known as the amygdale plays a major role in storing and releasing emotional trauma [1]. This gland is mainly stimulated by fragrance i.e. the sense of smell. The emotional part of the brain responds more accurately to smell than the words that are read, heard, or felt by brain. Our sense of smell links directly to emotional states and behaviors often stored since childhood.

Smell is the only one of the five physical senses that is directly linked to the limbic lobe of the brain- our emotional control center. Anxiety, depression, fear, anger, and joy - all physically originate from this region [1]. A certain fragrance can evoke memories and emotions before we are even consciously aware of it.Our brain responds to smells faster than any other senses. When smells are concerned, we react first and think later. All other physical senses are routed through the thalamus, which act as the switchboard for the brain, passing stimuli onto the cerebral cortex (the conscious thought center) and the other parts of the brain [1].

The aroma of essential oils releases the suppressed emotions, tension, stress and introduces positivity. The word "emotions" can translate as "energy-in-motion".Emotion is the experience of energy moving though our bodies. This emotional energy actually works at higher speed than thought. Thought and images can take seconds or minutes to evoke a memory while an aroma can evoke a memory in milliseconds.

The use of essential oil in aromatherapy to improve mood, mild symptoms of disorders such as depression, anxiety and pain is effective due to both, psychological and the physiological effect of the inhalation of the fragrance of oil [2]. Psychotherapy techniques or antidepressant drugs do not have a long term effect [3]. Essential oils by their aroma can help us surface and release the emotions wherever they are stored in the body or energy field.They give a relaxing effect when used synergistically with complementary healing methods including: massage therapy/ body work and bathing (mixing drops of essential oils in water used for bathing).

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1.2The effects of essential oils on body, mind and emotions

Essential oils are so potent and concentrated that they work on pressure points and rejuvenate.When we inhale the fragrance of an essential oil, the odor molecules travel up the nose where they are registered by the nerves of the olfactory membranes in the nose lining. The odor molecules stimulate this lining of nerve cells and trigger electrical impulses to the olfactory bulb in the brain. The olfactory bulb then transmits the impulses to the amygdale - where emotional memories are stored - and to other parts of the limbic system of the brain.

The limbic lobe is a group of brain structures situated directly below the cerebral cortex of the brain and includes the hippocampus and the amygdale which is capable of directly activating the hypothalamus - often referred to as the “master gland”. This gland is one of the most important parts of the brain and acts as the hormonal control center responsible for the production of growth hormones, sex hormones, thyroid hormones, and neurotransmitters such as serotonin. The fragrance and unique molecular structure of essential oils can directly stimulate the limbic lobe and the hypothalamus. Thus with the limbic system directly connected to those parts of the brain that control heart rate, blood pressure, breathing, memory, stress levels, and hormone balance, essential oils can have profound physiological and psychological effect by their aroma. Olfactory responses to odors induce the brain to stimulate the release of hormones and neurochemicals that in turn alter the body’s physiology and behavior [1].

The healing effects of essential oils can be subtle and profound. They can affect healing on all four realms of reality - physical, mental, emotional and spiritual [4]. However, the oils themselves are not the healing agents, rather they are bio spiritual agents which promote the action of the body’s own healing systems. The body’s healing systems comprise more than the immune system alone. Although important, the immune system is just one aspect of the body’s total healing system which includes the subtle body, the psyche and nervous system, the endocrine glands, and others. All work together to heal and maintain health.Essential oils are adaptogens. This means they have the ability to provide therapy in unanticipated or unexpected ways; they seem to understand – and the body understands – instinctively where their influence is needed and how it is best used [5].

Dr. Penoel considers the following eight realms in which the healing effects of essential oils can have an influence [5].

The Congenital Realm – refers to issues of heredity or as a result of complications during pregnancy. What Penoel refers to as “aromatic treatment” focuses here on alleviating the consequences of damaged DNA replication or from events occurring during conception or foetus development.

The Organic Realm – refers to the organic systems of the body including the liver, kidneys, lungs, spleen, cardiovascular system, digestive system, etc. Aromatic molecules provide properties that promote improved functioning of the organs.

The Bioelectronics Realm – refers to the biochemical and the electromagnetic systems of the body. Essential oils have an uncanny capacity to balance the pH, increase the electrical resistance, and reduce the oxidation within body fluids. Added to this biochemical action is their electromagnetic action - which can create an inhospitable environment for pathogens.

The Microbial Realm - This refers to the flora and fauna co-existing within our bodies including pathogens as well as the friendly allies. Within the digestive tract alone, we harbour more bacteria than there are cells in our body. Certain essential oils have the ability to eliminate the unwanted inhabitants while preserving those that are helpful.

The Immunity Realm - refers to the immune functions of the body. Effects of essential oils treatment are known to stimulate, regulate, or modulate immune system response.

The Structural Realm – refers to bone, joint, and muscle systems of the body, especially the spine. Aromatherapy can play a support role to corrective, energy, or structure techniques that is extremely valuable.

The Glandular Realm - refers to the system of glands in the body which produce a vast and interrelated group of hormones to regulate most body functions and many psychological mechanisms. Like essential oil molecules, these hormones are highly complex and have a tremendous influence on the growth, healing, health, and regulation of body systems [5]. Either by direct action or by more subtle biochemical processes (molecules which are precursors to hormone structures), essential oils can be used here also to stimulate, moderate, or regulate glandular performance.

The Neuro-Psychic Realm - refers to the functions related directly to and controlled by the brain - or "human central computer". This includes pain response, controlling the sympathetic and parasympathetic nervous systems, production of endorphins, the functions of the subconscious and the memory, and the libido, among others. The effects of essential oils can stimulate, moderate, or regulate these functions with this realm providing one of the highest response levels to aromatic molecules.

2. HEALING POWER OF AROMA IN NATURALLY AVAILABLE ESSENTIAL OIL

There exists a relationship between humans and the plants from which essential oils originate. The essential oils play an important role to protect plant from stresses of all kinds – pesky visitors, bacteria, fungi and other microbes; heal the plant's wounds, prevent dehydration and survive under difficult growing conditions. In the same way, essential oils help to change our energy frequency thus protecting and healing us. A plant absorbs and stores immense energies gathered from its environment - through sunlight, soil and water. When we consume a plant, this energy is released and circulated throughout our own physical body and into our auric field. The plant energy adds something of its own nature and helps release our blocked energy, stimulating self-healing [6].

Inhaling the aroma of such plants, skin contact or even simply being in close proximity are many times more potent than injesting the plant itself. Every type of botanical specie crystallizes a particular virtue such as fertility, peace, vigour, protection, longevity, courage, happiness, good fortune, and glory and may also drive away illness, negativity, misery and noxious fluids [6].

3. HEALING POWER OF AROMA IN NATURALLY AVAILABLE ESSENTIAL OIL

Most plants (and animals) use enzymes to break down molecular components during their life processes. And each of these enzymes has a unique crystalline form with a specific vibratory frequency [6].The vibration frequency of oil reflects the integrity of these elements and enzymes embodied within its substance –its bio-energy or life force and its original intent. These factors add into oil's potential therapeutic value [7]. The frequencies of substances found in our environment affect our personal frequency. If we could eliminate certain outside frequencies that interfered in our bodies, we would have greater resistance toward disease.

Pathogens, pollutants - both particulate and radiation (EMF), processed and canned food items have low health frequency and can greatly diminish a person's own frequency. Even negative thoughts and feelings can lower a person's frequency by 10-12 MHz [7]. Likewise, a substance or influencing factor - such as thoughts, emotions and frequency devices - in our internal and external environments can also serve to raise our frequencies.

However, different types of frequencies can have a chaotic or a harmonizing effect on our own systems. When something vibrates at many dissonant frequencies, it produces disrupted or incoherent frequencies. Therapeutic grade essential oils produce coherent frequencies that are naturally tuned to the health of our bodies whereas, pharmaceuticals and synthetic oils do not[7].

The intention of this healing process is to provide the correct frequency that will bring the body back to a state of coherence, to a state of equilibrium.Each type of essential oil has its own frequency which works for a particular emotion. By using an essential oil with a particular frequency to the human body – through the principle of entrainment - the oil's higher frequency will raise the vibratory quality of thatindividual capable of healing or rebalancing the body/mind/soul/spirit. When several oils are blended together, each having a different MHz frequency, a frequency will emerge that may be higher or lower than the various components.

Essential oils in the higher frequency ranges tend to influence the emotions. Essential oils in the lower frequencies have more effect on structural and physical changes, including cells, hormones, and bones, as well as viruses, bacteria, and fungi [7].Essential oils don't resonate with the toxins and negative emotions in our bodies. So they can help dislodge forgotten traumas by surfacing them in our consciousness where we can deal with them and let them go.

4. COMPOSITION OF ESSENTIAL OILS

Essential oils are made up primarily of the elements - Carbon, Hydrogen and Oxygen.Essential oil chemistry is quite complex and oil contain an amazing array of aromatic molecules [8]. However, these functional families of harmonious molecules manifest coherency rather than chaos. Although one or two chemical groups may predominate in given oil, all of the compounds together create interplay of dazzling complexity perhaps resulting in an entirely different 'net' effect [8].

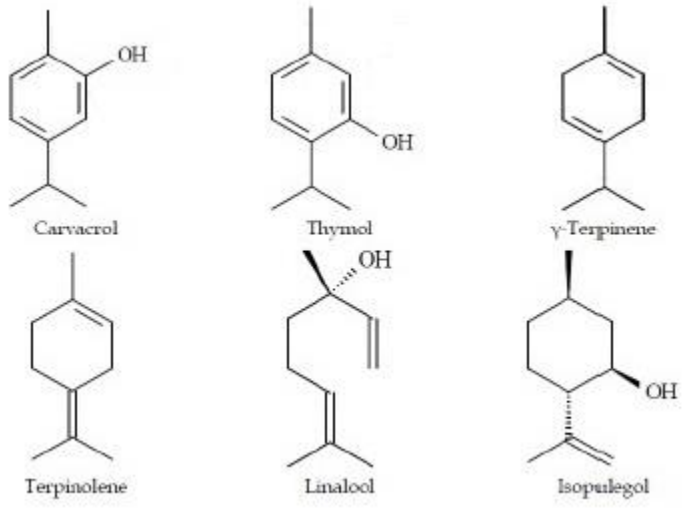

Fig. 1. Various types of Monoterpenes

Terpenes are large group of volatile unsaturated hydrocarbons found in the essential oils of plants [9]. Terpenoids form a large and structurally diverse family of natural products derived from isoprenoid units C5 [9]. These compounds have carbon skeletons being multiples of n (C5), and are classified as hemiterpenes (C5), monoterpenes (C10), sesquiterpenes (C15), diterpenes (C20), sesterpenes (C25), triterpenes (C30) and tetraterpenes (C40) [9]. Monoterpenes are primary components of essential oils, and the effects of many medicinal herbs have been attributed to them. Among various monoterpenes that have antioxidant activity are carvacrol, thymol, γ-terpinene and terpinolene, linalool, and isopulegol, among others [9].

5. PRACTICAL APPLICATION OF AROMATHERAPY

5.1 Pain relief

As massage helps stimulate group of hormones secreted within the brain and nervous system having a number of physiological functions for people who are in pain it as value as a pain relieving tool in chronic and muscular pain [1]0. Oxides which are present in many essential oils are found to have an anaesthetic effect [10].

5.2 Cancer treatment

Aromatherapy is found to be a supportive treatmentalong with the conventional treatment to treat cancer [11]. It helps sufferer to cope up with emotional effects of high doses of medicines. Aromatherapy can therefore be incorporated after consulting the doctors which can help the patient to deal emotional effects of conventional therapy.Essential oils could be utilized to protect body organs

against carcinogenesis; for instance, nutmeg, (Myristicafragrans), showed a potent hepatoprotective activity against liver damage caused by certain chemicals [12]. Patients may experience uncomfortable side effects of cancer therapy and various essential oils have been explored as possible alternatives in treating the side effects but have had mixed effects [13]. For example, a blend of tea tree and bergamot oil was just as effective as a conventional mouth wash for mucositis; it had higher patient compliance due to the pleasant taste and aroma. However, aromatherapy was not useful in relieving skin rashes, infections or nausea associated with high dose chemotherapy [13].

5.3 Digestive disorders

Peppermint essential oil has been widely researched for its potential in gastro-intestinal disorders. The data are suggestive that peppermint may be useful as a digestive anti-spasmodic [14].

5.4 Mental health

Several experiments in mental health have proved that there are positive emotional effects of using aromatherapy [13]. 60% of the visits to doctors are related to stress; several mental health services have already incorporated aromatherapy into their care units [13].

5.5 Thrombosis

Linalyl acetate (36% of lavender oil) seemed to be the main active antiplatelet agent [12]. Onion (Allium cepa) is well known for promoting cardiovascular health, and populations with a high consumption of onions are associated with decreased rates of atherosclerosis or thrombotic disease [12]. However, garlic was found to be more potent than onion in lowering TXB2 levels (Bordia et al., 1996). Organosulfur components such as allicin, isolated from garlic essential oil, showed a potent inhibition of platelet aggregation [12].

5.6 Antibacterial agents

The Ancient Egyptians used aromatic plants in embalming to stop bacterial growth and prevent decay, an effect attributed to a great extent to their essential oils [14]. Strong in vitro evidence indicates that essential oils can act as antibacterial agents against a wide spectrum of pathogenic bacterial strains including Listeria monocytogenes, L. innocua, Salmonella typhimurium, Escherichia coli O157:H7, Shigelladysenteria, Bacillus cereus, Staphylococcus aureus and Salmonella typhimurium[14].

5.7 Antioxidants

Free radicals and other reactive oxygen species cause oxidation of biomolecules including proteins, amino acids, unsaturated lipids and DNA, and ultimately produce molecular alterations related to aging, arteriosclerosis and cancer [15], Alzheimer's disease [16], diabetes and asthma. The human body is equipped with an inherent defense system which can quench free radicals present in almost all cells [17]. An imbalance between free radical production and their removal by the body's antioxidant system leads to a phenomena known as 'oxidative stress' [17]. Essential oils, as natural sources of phenolic components, attract investigators to evaluate their activity as antioxidants or free radical scavengers [12].

5.8 Sleep

The order of lavender as compared to other essential oils has been suggested to treat insomnia and improve the quality of sleep.Intake of lavender, basil, juniper, and sweet marjoram in specific proportions has showed a significant beneficial influence on quality and duration of sleep and improved general mental and physical health without causing any unwanted sedative or other drug specific effects in 221 patients suffering from subsyndromal (mixed) anxiety disorderand they scored 5 or more on thePittsburgh Sleep Quality Index (PSQI) [18].The reputed sedative nature of lavender has consistently been demonstrated through the relief of anxiety and tension and improvements inmood. The presence of such effects has further been established by physiological and electrophysiological measurements[20].

5.9 Haemodialysis

Hiba oil has found to be an effective, non-invasive means for the treatment of depression and anxiety, among the people undergoing Haemodialysis. 14 female patients who were being treated with chronic haemodialysis were investigated with the after effects of aromatherapy on mood and anxiety. The effects of aromatherapy were measured using the Hamilton rating scale for depression (HAMD) and the Hamilton rating scale for anxiety (HAMA). In one week the HAMD and HAMA for Hima oil had decreased[19].

5.10 Antifungal

Melaleucaalternifolia (tea tree) oil tested positive for its all constituents for in vitro antifungal activity except beta-myrcene. Hammer et al. identified that most of the components of tea tree oil had wide range of fungicidal potential, especially against dermatophytes and filamentous fungi [22].

5.11 Insect/mosquito repellent action

Insect repellence/toxicity results were promising from the essential oils of Nepetaparnassica, on the Culexpipiensmolestus[21, 23].

Table 1. Essential oils commonly used for various conditions

Conditions	Essential oils
Insomnia, anxiety, agitation, stress	Citrus sinensis (sweet orange) [25] Cymbopogonmartinii (palmarosa) [25] Eucalyptus staigeriana(lemon-scented ironbark) [24] Lavandulaangustifolia (lavender) [18] Litseacubeba (may chang) [21] Ocimumbasilicum (basil) [21] Origanummajorana (sweet marjoram) [25] Pelargonium graveolens (geranium) [20] Pogostemon patchouli (patchouli) [24] Valerianaofficinalis (valerian) [25] Santalum album (sandalwood) [24] Boswelliacarteri (frankincense) [21]
Fatigue	Citrus paradisi(grapefruit) (exhaustion) [20] Coriandrumsativum(coriander) (including mental) [25] Cymbopogonnardus (citronella) [12] Eucalyptus radiata(black peppermint) (chronic) [21] Eucalyptus smithii (gully gum) [24] Juniperuscommunis ram. (juniper twig) [21] Menthaspicata (spearmint) (mental) [24] Pelargonium graveolens(geranium) (nervous) [25] Pinussylvestris (Scots pine) [21] Rosmarinusofficinalis ct. cineole, ct. camphor, ct. verbenone (rosemary) [20] Salvia sclarea (clary) (nervous) [24] Zingiberofficinale (ginger) [25]
Mental exhaustion	M. piperita (peppermint) [20] Ocimumbasilicum (basil) [25]

CONCLUSION

This review attempts to shed light on the therapeutic potential of naturally available essential oils and their aroma on mind and emotions. It provides a basis for reviving the old art of ‘aromatherapy’ based on the scientific knowledge of their composition and mode of action. Essential oils affect our minds,

emotions and bodies most profoundly.Inhalation of essential oils can be used to alleviate stress and emotional trauma. It can also be used to stimulate the production of hormones from the hypothalamus. This stimulation may increase production of thyroid hormones (our energy hormone) and growth hormones (our youth and longevity hormone) [1].More research and applications can be considered in the field aromatherapy.

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