

Application of Rosemary Essential Oil in Aromatherapy from the Perspective of Traditional Chinese Medicine Theory

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Abstract: Aromatherapy in traditional Chinese medicine integrates the principles of traditional Chinese medicine and Western essential oil therapy, utilizing plant essential oils to regulate qi and blood, unblock meridians, and harmonize emotions. Rosemary essential oil, a commonly used substance, exhibits anti-inflammatory, analgesic, and mood-enhancing properties. Through methods such as massage and inhalation, essential oil molecules act on the body to restore visceral balance and promote physical and mental well-being. Aromatherapy in traditional Chinese medicine offers a novel perspective for preventive medicine and is widely applied in treating various symptoms.

Keywords: Traditional Chinese medicine; Aromatherapy; Rosemary essential oil; Aromatherapy of traditional Chinese medicine

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1. Introduction

Aromatherapy is a natural therapeutic method that employs essential oils derived from plants such as herbs, fragrances, and spices^[1]. These essential oils, extracted from pure natural plant components, have been shown to relax the body and mind while enhancing the natural healing process, aligning closely with the principles of traditional Chinese medicine (TCM). Aromatherapy harnesses the energy of plants to alleviate physical and mental discomfort, prevent disease, and foster a balanced state of physical and mental health. Similarly, TCM employs the properties, tastes, meridians, and therapeutic characteristics of herbs to prevent, diagnose, and treat diseases, as well as to provide rehabilitation and health care.

The primary medium of aromatherapy is plant essential oils, which are administered through techniques such as massage, bathing, and inhalation. Massage involves techniques like pushing, holding, lifting, pinching, and kneading at acupoints, guided by TCM meridian theory, to achieve effects such as unblocking meridians,

promoting qi and blood flow, relieving pain, eliminating pathogens, harmonizing Yin and Yang, and extending longevity ^[2]. Traditional massage techniques, combined with essential oil application, not only help relax the body and mind but also enable the active components of essential oils to penetrate the skin, enter the bloodstream, and circulate throughout the body. This process alleviates muscle stiffness, relieves pain, and enhances joint flexibility.

2. Aromatherapy under the theory of traditional Chinese medicine

2.1. Qi, blood, body fluid, and meridians

According to the theory of TCM, the meridian system runs throughout the human body, encompassing meridians, collaterals, and acupoints. Each meridian is associated with a specific internal organ and maintains the body's normal functions through the circulation of qi and blood ^[3]. Essential oils used in aromatherapy possess distinct odors that enter the body via the olfactory system and influence bodily functions through the meridian connections. Different essential oil scents correspond to specific meridians and internal organs, enabling the regulation and balancing of qi and blood flow to promote health by selecting the appropriate essential oil.

2.2. The Five Elements Theory

The Five Elements Theory categorizes everything in the universe into five elements: wood, fire, earth, metal, and water. In TCM, the human body is also classified according to this theory. The five elements serve as a bridge connecting the human body and nature, and the balance of Yin and Yang within the five elements determines overall health ^[4]. Essential oils guided by the Five Elements Theory are classified into the same five types, which correspond to the five elements. By leveraging the relationships of generation, restriction, and interaction among the five elements, essential oils can be used to restore balance, treat diseases, and promote health.

2.3. Theory of Disease-Causing Seven Emotions

In TCM, emotions are closely tied to the internal organs. Emotional instability can result in disturbances to qi dynamics, causing imbalances in internal organs qi and corresponding clinical symptoms. As stated in *Su Wen: Lift Pain Theory*: “All diseases arise from qi. Anger causes qi to rise, joy slows qi, sadness dissipates qi, fear descends qi... Panic leads to chaos... Thinking causes stagnation.” Essential oils influence psychology and emotions through aromatic stimulation. The aromas of essential oils not only calm and soothe the mind but also adjust qi dynamics, nourishing the body and aligning with the holistic principles of TCM theory.

3. Rosemary essential oil

Essential oils are derived from the glands of plants and are composed of terpenoids, esters, phenols, ketones, aldehydes, alkenes, ether compounds, and organic acids. They are naturally volatile, dispersing into the surrounding environment, and can also be dissolved in ethanol, water, and vegetable oil. Due to their non-greasy and non-fat properties, essential oils are widely used on the skin without concerns about residual risks. Essential oils have multiple applications and are categorized into six types: aromatherapy, chemical, medicinal, fragrant, edible, and industrial. Among these, aromatherapy essential oils have the most stringent quality standards. Plants used for aromatherapy essential oils must be cultivated without pesticides, and only those oils meeting quality standards verified by gas chromatography-mass spectrometry (GC-MS) testing can be used. Approximately

300 essential oils are utilized in aromatherapy, with extraction methods including pressing or cold pressing, evaporation, and chemical extraction ^[6-8].

Rosmarinus officinalis L., commonly known as rosemary, is a spicy and warm shrub native to the Mediterranean coasts of Europe and Africa. Belonging to the Lamiaceae family, it can grow up to 2 meters in height, with linear leaves that grow along the branches and are either short or sessile. Research indicates that rosemary contains two key components with significant therapeutic properties: essential oils (volatile components such as sesquiterpenes and monoterpenes) and antioxidant compounds (non-volatile diterpenoids like rosmarinic acid, carnosic acid, and carnosol). Rosemary essential oil is primarily concentrated in its leaves and stems.

Pharmacological studies have demonstrated that rosemary essential oil exhibits notable antibacterial, antioxidant, anti-tumor, and anti-inflammatory properties. It also improves symptoms such as stomach discomfort, appetite loss, and intestinal motility. Additionally, rosemary essential oil effectively inhibits the growth of bacteria such as *Escherichia coli*, *Staphylococcus aureus*, and *Vibrio cholerae*. Its anti-acne effects are particularly prominent against *Propionibacterium* ^[9].

Rosemary essential oil is categorized into three main types based on its chemical composition and therapeutic uses ^[10]:

- (1) *Rosmarinus officinalis* camphoriferum: Extracted from the leaves, this type of rosemary essential oil offers numerous health benefits, including relief from indigestion, hormone balance, and regulation of irregular menstruation. Traditionally, it has been used to alleviate digestive system disorders, purify the liver, relieve pain, promote diuresis, and reduce venous obstruction. It also helps mitigate menstrual pain, lower limb edema, and cellulite wrinkles. Due to its analgesic and antipyretic properties, it is beneficial for improving rheumatism, avoiding postpartum depression, regulating the nervous system, promoting wound healing, and eliminating parasites.
- (2) *Rosmarinus officinalis* cineoliferum: Extracted from the leaves, this variety is particularly effective for treating respiratory infections. It acts as a potent stimulant, aids in energy recovery, and enhances metabolism within the circulatory system.
- (3) *Rosmarinus officinalis* verbenoniferum: Also extracted from the leaves, this type helps dissolve mucus and address issues related to sputum accumulation in the bronchus and lungs. It balances the endocrine and nervous systems, making it suitable for treating depression. Additionally, it supports liver detoxification, exhibits antiviral properties, and nourishes the liver and gallbladder.

4. Rosemary essential oil and aromatherapy in traditional Chinese medicine

Traditional Chinese Medicine aromatherapy is a contemporary preventive healthcare approach that combines elements of Oriental Chinese medicine with Western aromatherapy. Guided by TCM principles, aromatic Chinese herbs are utilized for disease prevention and treatment ^[11]. Instead of traditional medicinal forms, high-purity plant essential oils common in Western aromatherapy are employed. TCM aromatherapy diagnoses an individual's constitution to determine appropriate treatments, employing both transdermal and transnasal methods. Transdermal techniques include acupoint or meridian massages using essential oils, aromatherapy baths, and wet compresses. Transnasal approaches involve inhalation techniques such as direct sniffing, incense pillows, and burning incense ^[12]. These methods collectively work to restore a healthy physical and mental state.

In recent years, some aromatic Chinese herbs have been distilled into essential oils for use in beauty and

wellness care. TCM institutions in China have introduced courses on “Aromatherapy of Traditional Chinese Medicine,” accompanied by the publication of innovative textbooks.

Rosemary essential oil is a widely used component in aromatherapy, known for its anti-inflammatory, analgesic, skin-conditioning, mosquito-repelling, and refreshing properties. Introduced to China during the reign of Emperor Wei Wen of the Three Kingdoms, it was first documented in the *Wei Lue* ^[13]. The *Bencao Shiyi* notes its qualities as “pungent, warm, non-toxic, expelling evil qi.” The *Illustrated Guide to Chinese Medicinal Plants* describes it as “invigorating, sweat-inducing, calming the stomach, soothing the mind, relieving headaches, and preventing early baldness when combined with borax.” In TCM aromatherapy, rosemary essential oil is applied through methods such as topical application, massage, and inhalation.

4.1. Efficacy

4.1.1. Pain relief

Rosemary essential oil holds a prominent position in TCM aromatherapy due to its soothing and analgesic properties. Its key components, including eugenol and tannic acid, act through complex physiological mechanisms. These compounds stimulate the cerebral cortex, triggering nervous system responses that promote neurotransmitter release, resulting in analgesic effects. Additionally, rosemary essential oil dilates blood vessels, enhances local blood circulation, and accelerates the metabolism and clearance of inflammatory factors, thereby alleviating pain caused by external pathogens (e.g., wind, cold, and dampness), muscle tension, or inflammation ^[14].

In TCM clinical practice, rosemary essential oil is frequently used to treat joint and muscle pain. By integrating meridian theories, specific massage techniques direct the essential oil along the meridians to penetrate deeply into the affected area. This not only alleviates localized pain but also improves qi and blood circulation throughout the body, achieving a holistic therapeutic effect.

4.1.2. Mood enhancement

Rosemary essential oil is renowned for its ability to enhance emotional well-being and harmonize internal organs. This process begins with the olfactory system, where the oil’s molecules are absorbed and converted into electrical signals transmitted to the brain’s limbic system, which governs emotions and memory. Here, the interaction of essential oil molecules with the neural network helps regulate the endocrine and immune systems, optimizing both physical and mental health.

Rosemary essential oil also alleviates spleen and stomach issues, such as appetite loss, abdominal pain, and diarrhea, caused by liver qi stagnation. Liver qi stagnation disrupts the spleen and stomach’s functional balance, which rosemary essential oil helps restore by unblocking the qi mechanism ^[15].

In TCM practice, rosemary essential oil is often paired with specific acupoint stimulation, such as Taichong (Liver Meridian) and Sanyinjiao (Spleen Meridian) points. This combination enhances the oil’s penetration and augments its efficacy in regulating emotions and harmonizing the internal organs. This integrative approach is particularly effective for managing modern emotional disorders.

4.2. Application

4.2.1. Massage

Based on TCM meridian theory, rosemary essential oil is applied through massage to balance the body’s five elements and restore the dynamic equilibrium of qi, blood, body fluids, and yin-yang. For example, headaches and

insomnia caused by liver and gallbladder disharmony can be treated by massaging acupoints such as Taiyang and Fengchi to soothe the liver, relieve stress, and promote relaxation.

4.2.2. Aromatherapy

In TCM aromatherapy, inhalation of rosemary essential oil affects the brain's limbic system, regulating the endocrine and immune systems to harmonize internal organs and improve emotional states. The essential oil's molecules evaporate into the air and are absorbed through inhalation, directly influencing the brain's limbic system and overall well-being.

4.3. Safety guidelines

Due to its stimulatory effects on blood circulation and the nervous system, rosemary essential oil is contraindicated for individuals with hypertension and epilepsy, as it may exacerbate their conditions. Additionally, its potential glucose-raising effect makes it unsuitable for diabetic patients and pregnant women.

5. Summary

As a distinctive medical system, TCM aromatherapy possesses a profound theoretical foundation and broad practical applications. The core theoretical framework is rooted in the concepts of qi, blood, body fluid, and the five elements of yin and yang. Rosemary essential oil, a commonly utilized material in TCM aromatherapy, demonstrates a wide range of effects, particularly in pain relief and analgesia. Through the in-depth study and application of TCM aromatherapy theories and techniques, effective treatment options can be developed to benefit patients.

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