

The Effect of Aromatherapy on Psychological Repercussions of Cancer Patients

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Significance Statement:

It considered the psychological consequences associated with cancer treatment that affect the patient's quality of life. Aromatherapy is considered an emotional intervention involving responding to sensory stimuli, knowing that olfactory stimuli may effectively promote well-being. Research within the field of aromatherapy emphasizes investigating the effect of different essential oils on precise brain centers known to regulate an individual's mood. This narrative review explores the information in the literature regarding the therapeutic psychological uses of certain aromatic oils that could support cancer patients.

Abstract:

A cancer diagnosis can affect the emotional health of patients. Common feelings during this life-changing experience include anxiety, distress, and depression. It is important to recognize these changes and try to assist. The search for the most effective and safe treatments is essential. Aromatherapy has attracted many researchers' attention as a complementary method for treating psychological consequences. In general, it seems to relieve pain, improve mood, and promote a sense of relaxation. Smelling and inhaling essential oil vapors can activate the immune system and assist in psychotherapy during the cancer treatment journey.

Keywords: Aromatherapy; Cancer; essential oils, depression, stress

Introduction:

Cancer patients suffer from a variety of psychological repercussions associated with their physical pain, having a substantial adverse effect on mood, resulting in anxiety, depressive feelings, and even suicidal thoughts, and cognitive functions are disturbed, reflecting on their daily lives [1]

Therefore, searching for a safe treatment would help them overcome these repercussions was necessary. Aromatherapy attracted the attention of many researchers as a complementary method in therapy due to its low cost and ease of use on the one hand and the lack of side effects on the other hand. It is the practice of using volatile plant oils, including essential oils, for psychological and physical well-being. Essential oils, the pure essence of a plant, have been found to provide both psychological and physical benefits when used correctly and safely [2].

It immediately impacts the sense of smell and inhaling essential oils, which stimulates the olfactory system (the part of the brain connected to smell, including the nose and the brain). Molecules that enter the nose or mouth would pass to the lungs, and from there, to other parts of the body. As the molecules reach the brain, they affect the limbic system, linked to emotions, heart rate, blood pressure, breathing, memory, stress, and hormone balance. In this way, essential oils can have a subtle yet holistic effect on the entire body. Hence, using essential oils, aromatherapy recreates the environment of mesmerizing essence and fragrance that reflect on the psychological state of mind [3].

The theory behind aromatherapy is that each essential oil has properties that give health and psychological benefits. Aromatherapists indicated different modes of essential oils application, including aerial diffusion for environmental fragrancing or aerial disinfection; or direct inhalation for respiratory disinfection, decongestion, expectoration as well as psychological effects; and topical applications for general massage, baths, and compresses.

There is evidence that essential oils might help with general well-being, anxiety, and some side effects of cancer treatment. This review explores the information available in the literature regarding therapeutic uses of aromatic oils used in aromatherapy to deal with psychological repercussions associated with cancer physical pain such as anxiety, Depression related to lack of sleep, and Nausea.

Methods:

This paper employs a narrative review as its methodology. This approach is used to summarize and evaluate articles from certain scholarly periodicals. Findings from literature searches in electronic databases, manual literature searches, and canonical texts are synthesized using narrative reviews of the relevant literature. The database for this study was consulted in the search for articles with keywords including “aromatherapy and cancer”, “Depression”, “anxiety, stress”, and Nausea”. Articles were included if their abstracts discussed the possible link between aromatherapy and the physiological consequence of cancer disease.

Results and Discussion:

1. Anti-stress effect of *Citrus aurantium* L. essential oil:

Chronic stress comes from emotional pressure experienced over a long period. This can cause an increase in the release of stress hormones, which can lead to mental and physical problems. When diagnosed with cancer, many people feel an increase in stress, and it can easily become chronic. Knowing that; stress can speed up the spread of cancer throughout the body [4].

Despite the numerous classes of drugs available for treating anxiety, complete remission has remained elusive. The emerging clinical cases have shown increasing interest among health practitioners and patients in phytomedicine. Developing anxiolytic drugs of plant origin takes advantage of a multidisciplinary approach [5]. Essential oils (EOs) are extracted from plants and contain active components with therapeutic effects. Evidence shows that various EOs, such as citrus oils, have various health benefits.

Citrus aurantium L., also known as sour orange or bitter orange, belongs to *Rutaceae* family; the parts mostly used for medicinal purposes are this plant's fruit peel, flowers, and leaves. At the same time, essential oils from different parts is usually obtained by subjecting them to hydro-distillation [6].

The orange essential oil (OEO) and its components have been attracting interest due to its sedative and relaxing actions, which is related to the presence of limonene with a well-known depressant activity on the central nervous system [7] that much research shed light on its key role as phytochemical that have shown promise as potential neuroprotective agents [8].

Investigation of the biological activity underlying the anxiolytic effects of *C. aurantium* essential oil (EO), strengthened the suggestion that citrus fragrance could be useful in diminishing the symptoms of anxiety. According to [9], The citrus fragrance treatment exhibited an anxiolytic effect; and reduced the signs and symptoms associated with anxiety in patients with chronic myeloid leukemia (CML).

According to [10] Citrus EOs are fragrant volatile molecules, which upon inhalation, can alter hemodynamic parameters or blood flow in the body by controlling circulation through the autonomous nervous system that could manage the stress.

2. Anti- depression effect of Lavender essential oil:

Cancer is a physical disease and one of the leading clinical manifestations where psychosocial problems are prevalent. While depression is a common comorbidity in cancer cases, affecting >10% of patients. Knowing that cancer diagnosis is life-changing, a source of considerable psychological and emotional stress. Non-pathological sadness may be a normal response to a cancer diagnosis; however, stress beyond the coping mechanisms of patients may result in major depressive disorder [11].

While treating cancer with modern medicine, we often focus more on the quantity of life lived; however, factors like pain, stress, anxiety, fatigue, fear of death, and depression are often overlooked by the treating physicians. In this context, many researchers have directed aromatherapy as a complementary treatment to alleviate cancer symptoms, help identify psychological problems to understand the patient better, facilitate his adaptation to the new condition, and plan an appropriate approach [12].

EOs from different plant extracts have been studied to demonstrate other effects; inhalation is the most commonly adopted method among all different administration routes. And lavender EOs are the most widely used ones for relaxation in either single-use or mixed-use with reported pharmacodynamic interactions [13].

Lavender is an aromatic plant that belongs to *Lamiaceae* family. It grows primarily for its essential oil obtained by hydro-distillation of the flowers; this oil is chemically made of over 100 constituents. Linalool is considered the primary active constituent responsible for the pharmacological effects, including its supposed calming and sedative activity [14].

The potential of lavender EO for preventing and even treating depression and anxiety symptoms was demonstrated by [15]. The favorable outcomes may be due to multiple mechanisms, including the

regulation of monoamine levels, the induction of neurotrophic factor expression, the regulation of the endocrine system, and the promotion of neurogenesis.

In a reported study related to Colorectal cancer; the second most common cancer in women and the third most common cancer in men, the effects of aromatherapy massage with lavender oil were examined; It was found it increased the sleep quality in patients with colorectal surgery in the preoperative period and improved the mood [16].

More than one-third of patients with cancer experience sleep disturbance during and after active treatment [17]. In the study related to leukemia, it was found that these symptoms plague the patients, significantly affecting the quality of life and daily mood, in some cases, successful remission and disease control; their impact on treatment recovery and quality of survivorship is undeniable [18] Also, According to [19] Aromatherapy with Lavender oil is a viable intervention for improving insomnia and other symptoms commonly experienced by patients with acute leukemia.

3. Effect of Ginger essential oil on nausea:

The treatment journey for cancer patients is arduous and tiring, while chemotherapy and radiotherapy lead to a deterioration in the quality of life to a large extent due to some physical effects associated with it, which are significantly reflected in the patient's psyche. The feeling of nausea is one of the most important of these symptoms. An unpleasant feeling in the back of the throat and/or stomach may come and go in waves. It is very important to prevent and control nausea and vomiting in patients with cancer so that they can continue treatment and perform activities of daily life. Despite the widespread use of antiemetics, nausea continues to be reported by over 70% of patients receiving chemotherapy. Recently, it was found that aromatherapy with ginger oil is an effective complementary therapy for controlling nausea.

Zingiber officinale, commonly known as ginger, a member of *Zingiberaceae* family, is a spice widely used for culinary and traditional medicines since thousands of years ago. Its essential oil is extracted from rhizomes, and the most important chemical compositions are Zingiberol, zingiberene, phellandrene, and linalool, which differs in the source of rhizome, freshness or dryness, and extraction methods [20].

A study has investigated ginger aromatherapy's utility in relieving chemotherapy-induced nausea in children with cancer. Among 21 patients who indicated feeling nausea prechemotherapy, 67% reported improvement in their post-infusion PeNAT score [21].

Also, to assess the efficacy of inhaled ginger aromatherapy on nausea, vomiting, and health-related quality of life (HRQoL) in chemotherapy breast cancer patients. A clinical experiment was done by [22] And, The findings for HRQoL were encouraging, with significant improvement in several domains. It is hypothesized that the direct effect of ginger on the gastrointestinal tract may be due to its aromatic, spasmolytic carminative, and absorbent properties.

Ginger pure essential oils reduced the severity of chemotherapy-induced nausea and vomiting in newly admitted patients receiving autologous blood and marrow transplants (BMTs). They may serve as a beneficial complementary treatment, according to [23].

Conclusion:

Alternative medicine remedies have become more acceptable and trusted by people. Aromatherapy could serve as a self-nursing intervention measure for psychological drawbacks that could emerge during the cancer treatment journey. It is safe and easy for cancer patients and positively affects psychological well-being. It was noted that many systematic reviews proved that no side effects could prevent its use. Aromatherapy could be considered an inexpensive, noninvasive treatment that can be administered and controlled per the patient's preference.

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