

Healing Scents: An Overview of Clinical Aromatherapy for Emotional Distress

By: Andrea Butje, LMT; [Elizabeth Repede, MS, APRN-BC, FNP, CMH](#); and [Mona Shattell, PhD, RN](#)

Butje, A., Repede, E., & Shattell, M. (2008). Healing scents: An overview of clinical aromatherapy for emotional distress. *Journal of Psychosocial Nursing and Mental Health Services*, 46(10), 46-52.

Made available courtesy of Slack Inc.: <http://www.slackinc.com/>

***** Note: Figures may be missing from this format of the document**

***** Note: Slack Inc. requests that interested viewers (Scholars and Researchers) understand that these articles can be accessed for their personal and reference use. The articles should not be reproduced in large quantities for distribution in classrooms or seminars without obtaining the rights from Slack Incorporated. We provide licensed reprints for distribution purposes for an appropriate fee.**

Abstract:

Individuals in emotional distress are often treated with psychotherapeutic agents, but other treatment options exist. One safe and effective adjunct for the prevention and treatment of emotional distress is aromatherapy. This article describes the physiological effects of scent, reviews the research on aromatherapy, presents practical information on the use of clinical aromatherapy for emotional distress, and suggests resources for additional training and education.

Article:

Individuals in emotional distress are often treated with psychotherapeutic agents, but other treatment options exist (Hogan & Shattell, 2007). One safe and effective adjunct for the prevention and treatment of emotional distress is aromatherapy (Field et al., 2005; Kuroda et al., 2005; Lemon, 2004)—the therapeutic use of inhaled essential oils. Aromatherapy is one of the fastest growing modalities in complementary and alternative medicine (CAM) in the United States (d'Angelo, 2002), but research on aromatherapy is relatively scant, and few nursing programs offer courses in aroma-therapy. This article describes the physiological effects of scent, reviews the research on aroma-therapy, presents practical information on the use of clinical aromatherapy for emotional distress, and suggests resources for additional training and education.

BACKGROUND

The medicinal use of aromatic oils extends back to ancient Egyptian and Chinese cultures (Lis-Balchin, 2006), but the term aromatherapy was coined by Rene-Maurice Gatteefosse, a French chemist who experimented with essential oils for wound healing during World War I (d'Angelo, 2002). However, it was not until the 1980s that aromatherapy began to develop as a serious discipline (Robins, 1999), when work on mind-body healing and the emerging field of psychoneuroimmunology stimulated interest in the use of aromatherapy to alleviate emotional and mental distress (d'Angelo, 2002).

Aromatherapy is currently taught in French medical schools, prescribed by European physicians, reimbursed by many European health insurers, and used in Japanese factories to enhance worker productivity and prevent the spread of airborne infectious diseases (Robins, 1999). Aroma-therapy is often not prescribed by traditional U.S. medical practitioners; however, its use has increased among CAM and nursing practitioners (d'Angelo, 2002).

PHYSIOLOGICAL EFFECTS OF SCENT

The sense of smell is crucial for survival in mammals. Human beings have more than 1,000 different genes that regulate the production of specialized receptors in the nose (Buck, 2004). Each receptor cell is

specific and able to detect only a few molecule odors. The responses to an odor are neurologically transmitted to the olfactory bulb in the brain. There the information from several olfactory receptors is combined, forming a pattern that is perceived as a distinct odor in multiple areas in the cerebral cortex and the limbic system (Buck, 2004). Even though nasal receptors are quite specific, human beings are able to differentiate up to 10,000 odors through a complex sensory-somatic cascade that instantaneously activates the autonomic nervous system, memory, and emotion through the amygdala and other limbic structures (Buck, 2004)

TABLE 1

ESSENTIAL OIL RECIPES FOR EMOTIONAL DISTRESS

Issue	Essential Oils	Carrier	Application
Anxiety, fear, panic attacks	Sandalwood: 5 drops Lavender: 5 drops Bergamot: 2 drops	Inhaler tube ^a	Inhale several times daily when the feelings arise
Chronic worry, overthinking	Sandalwood 10 drops Lavender: 5 drops Lemon: 3 drops	Inhaler tube	Inhale several times daily
Depression	Clary sage: 6 drops Geranium: 6 drops Lemon: 4 drops	4 oz spray bottle with water	Spray face (eyes closed), chest, and back of neck in the morning and evening
Grief, shock, depression	Rose otto: 6 drops Clary sage: 5 drops Lemon: 4 drops	2 oz unscented lotion or jojoba oil	Apply to chest, stomach, and lower back several times daily
Insomnia	Bergamot: 2 drops Lavender: 10 drops Roman Chamomile: 5 drops	2 oz unscented lotion or jojoba oil	Apply freely to chest and neck prior to bed
Stress, tension	Jasmine: 4 drops Bergamot: 2 drops Clary sage: 5 drops	2 oz bath salts (sea salts)	Use 1 oz in one bath at night; place in tub when water is full

^a An inhaler tube is a small plastic tube that comes with a cotton part onto which the oils are dropped. The oil-soaked cotton is then inserted into the tube. The oils are inhaled through a small hole in the top of the tube. It also comes with a cover.

Olfactory stimulation causes immediate physiological changes in blood pressure, muscle tension, pupil size, blink magnitude, skin temperature, skin blood flow, electrodermal activity, heart rate, brain wave patterns, and sleep/arousal states (Kuroda et al., 2005). Inhaled odors activate the release of neurotransmitters such as serotonin, endorphins, and norepinephrine in the hypothalamic pituitary axis and modulate neuroreceptors in the immune system, altering mood, reducing anxiety, and interrupting the stress response (d' Angelo, 2002).

The sense of smell is related to daily functions such as alertness, relaxation, attention, performance, and healing, and these may be mediated purposefully with different aromas (Field et al., 2005). Lavender, for example, has been associated with parasympathetic stimulation of the autonomic nervous system, leading to increased beta power and decreased contingent negative variation on electro-encephalogram; these in turn are associated with decreased anxiety, improved mood, and increased sedation (Moss, Cook, Wesnes, & Duckett, 2003). Peppermint and rosemary have been associated with increased arousal, improved cognition and memory, and enhanced performance on cognitive assessment tests (Moss et al., 2003). The parasympathetic-stimulating effects of lavender and the sympathetic-stimulating effects of rosemary have been shown to significantly decrease salivary cortisol and increase free radical reactive scavenging activity, suggesting a protective effect on the body from oxidative stress, as well as possible anti-inflammatory, anti-aging, and anti-carcinogenic activity (Atsumi & Tonosaki, 2007).

These findings on the physiological effects of scent in human beings suggest a link to emotions and memory, both modulators of physical and mental health. The effect is immediate and works beyond the level of conscious awareness (Moss et al., 2003). Thus, certain aromas may be used to affect psychoneuroimmune functions to promote healing.

RESEARCH ON AROMATHERAPY

Aromatherapy studies have focused primarily on the physiological and emotional arousal effects of essential oils, which can be inhaled, ingested, or applied topically. Much of the research has evaluated aromatherapy in conjunction with other modalities such as massage and reflexology (Buckle, 2007; Louis & Kowalski, 2002). However, recent studies have sought to isolate the effects of aromatherapy as a stand-alone therapy.

In a study of 73 healthy college students, different scents produced different mood states following administration of an anxiety-provoking task (Burnett, Solterbeck, & Strapp, 2004). Students receiving inhaled rosemary scored significantly higher on measures of tension-anxiety and confusion-bewilderment than did those in lavender and control groups. Both rosemary and lavender were significantly associated with lower fatigue-inertia ratings. The groups did not differ on physiological parameters. These results suggest differences in the effects of aromatic oils on mood, independent of physiologically measurable parameters.

Evaluating the effect of aromatherapy on crisis management, Fowler (2006) found that 77% of a convenience sample of 43 adolescents in a residential mental health facility asked for aroma-therapy when they felt agitated. Fowler used a blend of 3% ylang ylang, sweet marjoram, and bergamot in jojoba oil, either inhaled or topically applied using a modified hand massage technique. During the 3-month study, the number of pharmacological injections for agitation decreased from 43 to 31, the number of oral as needed medications for anxiety or agitation decreased from 631 to 397, and the number of seclusion and restraint events decreased from 29 to 20.

In a convenience sample of 200 adults awaiting dental procedures in Austria, those who received diffused ambient odors of orange or lavender while waiting had significantly less anxiety and better mood than did those exposed to music or controls, even controlling for dental pain (Lehrner, Marwinski, Lehr, Jöhren, & Deecke, 2005). However, among a convenience sample of 118 patients awaiting endoscopy in a same-day surgery center in the United States, no significant difference in anxiety was found before and after lavender inhalation (Muzzarelli, Force, & Sebold, 2006). In this acute care setting, mean anxiety scores were extremely high both before and after the intervention, suggesting that aromatherapy may be better for moderate anxiety than for severe anxiety. Even so, the authors noted that anecdotal reports from patients who received aromatherapy suggested continued use of this modality (Muzzarelli et al., 2006).

Louis and Kowalski (2002) examined physiological and emotional parameters in a convenience sample of 17 terminally ill cancer patients following treatment with humidified lavender. While physiological and psycho-logical scores improved in the predicted direction, the differences were not statistically significant, perhaps because of the small sample. Interestingly, the patients' caregivers reported increases in their own relaxation and sense of well-being during the lavender aromatherapy treatments.

Itai et al. (2000) compared the effects of lavender, hiba oil, and odorless conditions on depression and anxiety in a group of 14 hemodialysis patients. Hiba oil significantly decreased mean scores on both anxiety and depression, and lavender significantly decreased mean anxiety scores. The findings were significant independent of personality traits, psychological status, and psychotherapeutic medication for anxiety and sleep.

Lemon (2004) studied the effects of nine essential oils on anxiety and depression in 32 acute care psychiatric patients. The study compared levels of depression and anxiety in a control group receiving massage with carrier oil and an experimental group receiving essential oils diluted in carrier oil during massage. The group receiving massage with essential oils showed significantly more improvement in scores on depression, anxiety, and severity of emotional symptoms than did those receiving massage alone.

Clearly, the research continues to show mixed findings on the efficacy of aromatherapy. This may be due, in part, to study limitations, such as small and convenience samples, one-time or short-term interventions, and methodological issues. However, even in those studies in which aromatherapy interventions failed to achieve statistically significant improvements, continued use and study of this modality were encouraged by the researchers and participants (Louis & Kowalski, 2002; Muzzarelli et al., 2006). Significant improvements were most common in studies in which the aromatherapy was tailored to the client by an experienced and holistically trained aromatherapist (Itai et al., 2000; Lemon, 2004). Buckle (2007) reported clinically significant findings even in the absence of statistical significance in many studies and noted that institutional aromatherapy pro-grams have been implemented for relaxation, emotional well-being, and agitation.

TABLE 2

AROMATHERAPY AND ESSENTIAL OILS RESOURCES

Resource Type	Organization	Web Site
Organizations	National Association for Holistic Aromatherapy	http://www.naha.org
Publications	<i>Aromascents Journal</i> (Canada)	http://www.aromascentsjournal.ca
	<i>Aromatherapy Journal</i> (United States)	http://www.naha.org/journal.htm
	<i>Aromatherapy Thymes</i> (United States)	http://www.aromatherapythymes.com
	<i>Aromatherapy Today</i> (Australia)	http://aromatherapytoday.com
	<i>International Journal of Clinical Aromatherapy</i> (France)	http://www.ijca.net
	<i>International Journal of Essential Oil Therapeutics</i> (France)	http://www.ijeot.com
Aromatherapy education and certification programs	The Aromahead Institute, School of Essential Oil Studies	http://www.aromahead.com
	The College of Botanical Healing Arts	http://www.cobha.org
	The Institute of Integrative Aromatherapy	http://www.aroma-rn.com
	R.J. Buckle Associates LLC	http://www.rjbuckle.com
Essential oil distributors	Aromatics International	http://www.aromaticsinternational.com
	Florihana® Distillery	http://www.florihana.com

USE OF CLINICAL AROMATHERAPY

Essential Oils to Relieve Emotional Distress

Essential oils can be applied in several ways. They can be added to a carrier, such as a vegetable oil or unscented lotion, and then applied to the skin, or they can be added to bath salts, room sprays, or diffusers for inhalation. However, the most effective application route for decreasing anxiety and slowing an overactive mind is inhalation. Using a small blank inhaler tube, essential oils are added to a piece of cotton that is inserted into the tube. The oil is then available to smell.

Oils used by aromatherapists to reduce anxiety, improve mood, and reduce stress include (d'Angelo, 2002; Lis-Balchin, 2006):

- Bergamot (citrus bergamia).
- Lemon (citrus limon).
- Clary sage (salvia sclarea).
- Lavender (lavandula angustifolia).
- Roman chamomile (chamaemelum nobile).
- Geranium (pelargonium graveolens).
- Rose otto (rosa damascene).
- Sandalwood (santalum album).
- Jasmine (jasminum officinalis).

The effects and dosing of these nine essential oils are shown in Table 1. Data on each of these oils, including uses, side effects, precautions, chemical and botanical information, and potential interactions can be found in Lis-Balchin's (2006) aromatherapy text.

Buying and Storing Essential Oils

Adulterated oils or oils that are synthetic and called fragrance or perfume oils will not offer the same therapeutic effects as pure plant-extracted oils, and they may actually cause allergies, headaches, and chemical sensitivities. Gas chromatography (GC) and mass spectrometry (MS) are methods of separating compounds in essential oils into individual components and identifying major components in the oil. These processes are used to identify any adulteration of an essential oil, which means the oil has had chemicals or other substances added or removed. GC/ MS testing is also used to identify the exact chemical profile of an oil and assess its potential therapeutic uses. The breakdown of chemical components in individual oils is important because some of the therapeutic benefits of oils are determined by their chemical makeup. Reports of chemical components should be available to the buyer on request. Factors that cause oxidation of essential oils include exposure to oxygen, heat, and light. Storage affects the shelf life of essential oils. When stored properly, their oxidation rate slows significantly. The potential for allergic reactions and skin irritation from essential oils increases when essential oils oxidize. Ideally, oils should be stored in a dark, cool room. Bottles should be dark-colored glass. Shelf life can range from 1 to 8 years, depending on the chemical makeup of the oil and the storage conditions. Handling of oils and possible problems in storage conditions are reduced when there is only one company between distiller and customer, so it is best to purchase essential oils from a company that buys directly from a distiller.

Precautions

Like all medicinal products, essential oils can be toxic or incompatible with other compounds or treatments, or they can produce side effects or cause allergic reactions (Lis-Balchin, 2006). When recommending a therapeutic regimen of essential oils for a client, the appropriate dosing, the route of administration, and the client's size, health status, and individual preferences should be taken into account (d'Angelo, 2002). Side effects can include exacerbation of asthma or respiratory disorders due to allergen load, and with topical application, contact dermatitis or irritation. Also, particular odors may be unpleasant or irritating to clients.

Some oils, such as bergamot or lemon, may cause photosensitivity. This can be avoided by limiting sun and ultraviolet light exposure for 12 hours after use (d'Angelo, 2002). Just as with allopathic medications, certain oils are contraindicated in certain health conditions, including epilepsy (lavender, rosemary), hypertension (rosemary), asthma (rosemary), and pregnancy (lemon balm). Practitioners must practice in an ethical and safe manner based on professional aromatherapy and nursing guidelines (Buckle, 2003; d'Angelo, 2002).

AROMATHERAPY EDUCATION

Safe use of essential oils requires an understanding of botany, biochemistry, physiology, and essential oil therapeutics, including dosing, administration, toxicity, interactions, and side effects (Buckle, 2003). Essential oils can be used by nurses, but advanced training should be obtained before clinical use. Continuing education programs in aromatherapy can be found through the American Holistic Nurses Association (AHNA) and the National Association for Holistic Aromatherapy (NAHA). A list of these programs is provided in Table 2. Courses to obtain certification in aromatherapy are also available.

The NAHA (2005) has issued national educational standards for aromatherapy certification. To be certified through the NAHA, an aromatherapist must have 200 hours of training from an approved school, which includes courses in the chemistry, botany, and anatomy and physiology of aromatherapy; the use of essential oils; extraction methods; oil quality and absorption; carrier oils; blending techniques; methods of application; clinical therapeutics; and ethics. Aromatherapy texts (Buckle, 2003; Lis-Balchin, 2006) and a variety of Internet resources available from AHNA and NAHA may also be helpful to nurses interested in using aromatherapy.

CONCLUSION

Clinical aromatherapy shows promise as a safe alternative or complement to traditional health care interventions to relieve stress, reduce anxiety, and improve mood; however, more research is needed. Suggestions for future research include intervention studies that isolate the effects of particular oils and combinations of oils on mood, memory, and sense of well-being; replication studies using rigorous study designs and appropriate sample sizes; studies on the use of aromatherapy in various populations (i.e., children, older adults, ethnic or cultural groups); and studies that combine aromatherapy with guided imagery, meditation, or hypnosis to augment the management of emotional distress.

The accessibility, low cost, and low side effect profile make aromatherapy attractive for managing emotional distress. In addition, its wide adaptability and ease of use make it easy to tailor to diverse inpatient and outpatient settings. Effective use requires adequate knowledge and skills and the ability to safely tailor interventions to the unique needs of each client. The art of nursing requires a balanced and integrative approach to healing. Aromatherapy is a healing practice that blends the "essence" of science with the holism inherent in the art of nursing.

KEYPOINTS

1. The medicinal use of aromatic oils extends back to ancient Egyptian and Chinese cultures.
2. The sense of smell is related to daily functions such as alertness, relaxation, attention, performance, and healing, and these may be mediated purposefully with different aromas.
3. Essential oils used to reduce anxiety, improve mood, and reduce stress include bergamot, lemon, clary sage, lavender, Roman chamomile, geranium, rose otto, sandalwood, and jasmine.
4. Effective use of aromatherapy requires adequate knowledge and skills and the ability to safely tailor interventions to the unique needs of each client.

**Do you agree with this article? Disagree? Have a comment or questions?
Send an e-mail to Karen Stanwood, Executive Editor, at kstanwood@slackinc.com.
We're waiting to hear from you!**

REFERENCES

- Atsumi, T., & Tonosaki, K. (2007). Smelling lavender and rosemary increases free radical scavenging activity and decreases cortisol level in saliva. *Psychiatry Research*, 150(1), 89-96.
- Buck, L.B. (2004). Unraveling the sense of smell. Retrieved May 16, 2007, from the Nobel Prize Web site: http://www.nobelprize.org/nobel_prizes/medicine/laureates/2004/buck-lecture.html
- Buckle, J. (2003). *Clinical aroma-therapy: Essential oils in practice* (2nd ed.). New York: Churchill Livingstone.
- Buckle, J. (2007). Literature review: Should nursing take aromatherapy more seriously? *British Journal of Nursing*, 16, 116-120.
- Burnett, K.M., Solterbeck, L.A., & Strapp, C.M. (2004). Scent and mood following an anxiety-provoking task. *Psychological Reports*, 95, 707-722.
- d'Angelo, R. (2002). Aromatherapy. In S. Shannon (Ed.), *Handbook of complementary and alternative therapies in mental health* (pp. 71-92). San Diego, CA: Academic Press.
- Field, T., Diego, M., Hernandez-Reif, M., Cisneros, W., Feijo, L., Vera, Y., et al. (2005). Lavender fragrance cleansing gel effects on relaxation. *International Journal of Neuroscience*, 115, 207-222.
- Fowler, N.A. (2006). Aromatherapy, used as an integrative tool for crisis management by adolescents in a residential treatment center. *Journal of Child and Adolescent Psychiatric Nursing*, 19, 69-76.
- Hogan, B.K., & Shattell, M.M. (2007). Fallout from the bio-logical model: Implications for psychiatric mental health nurses. *Issues in Mental Health Nursing*, 28, 435-436.
- Itai, T., Amayasu, H., Kuribayashi, M., Kawamura, N., Okada, M., Momose, A., et al. (2000). Psychological effects of aroma-therapy on chronic hemodialysis patients. *Psychiatry and Clinical Neurosciences*, 54, 393-397.
- Kuroda, K., Inoue, N., Ito, Y., Kubato, K., Sugimoo, A., Kakuda, T., et al. (2005). Sedative effects of the jasmine tea odor and (R)-(-)-linalool, one of its major odor components, on autonomic nerve activity and mood status. *European Journal of Applied Physiology*, 95, 107-114.
- Lehrner, J., Marwinski, G., Lehr, S., Jöhren, P., & Deecke, L. (2005). Ambient odors of orange and lavender reduce anxiety and improve mood in a dental office. *Physiology & Behavior*, 86, 92-95.
- Lemon, K. (2004). An assessment of treating depression and anxiety with aromatherapy. *International Journal of Aromatherapy*, 14(2), 63-69.
- Lis-Balchin, M. (2006). *Aromatherapy science: A guide for healthcare professionals*. London, United Kingdom: Pharmaceutical Press.

- Louis, M., & Kowalski, S.D. (2002). Use of aromatherapy with hospice patients to decrease pain, anxiety, and depression and to promote an increased sense of well-being. *American Journal of Hospice & Palliative Care*, 19, 381-386.
- Moss, M., Cook, J., Wesnes, K., & Duckett, P. (2003). Aromas of rosemary and lavender essential oils differentially affect cognition and mood in healthy adults. *International Journal of Neuroscience*, 113, 15-38.
- Muzzarelli, L., Force, M., & Sebold, M. (2006). Aromatherapy and reducing preprocedural anxiety: A controlled prospective study. *Gastroenterology Nursing*, 29, 466-471.
- National Association for Holistic Aromatherapy. (2005). Standards of training. Retrieved September 3, 2008, from <http://www.naha.org/standards.htm>
- Robins, J.L. (1999). The science and art of aromatherapy. *Journal of Holistic Nursing*, 17, 5-17.