

Ayurveda and Aromatherapy: Holistic Integration for Well-being

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Abstract: Aromatherapy, a safe and easily implemented non-pharmacological technique, utilizes plants, animals, and minerals with medicinal or aromatic properties known as *Sugandhi Dravyas*. It has gained popularity in complementary and alternative medicine, particularly within phytotherapy. Derived from essential oils extracted from plants, aromatherapy is a subset of herbal medicine with roots in Ayurveda. For centuries, Ayurveda has integrated aromatic oils into therapeutic practices, recognizing their role in balancing doshas—the fundamental energies governing physiological and psychological functions. Fragrant flowers, garlands, and specific oils are commonly used in Ayurveda, each associated with different doshas. Ancient texts like the *Arka Prakasha* by Ravan detail the preparation and extraction of aromatic substances, emphasizing their historical significance. *Sugandhadravya*, substances that provide pleasure and have subtle qualities, are integral to Ayurvedic formulations and rituals, promoting overall well-being. Aromatherapy in Ayurveda expands beyond aromatic substances to include unique formulations like *Arka Kalpana*, utilizing volatile components for therapeutic purposes. Ayurvedic *Ghreyayoga*, relying on fragrance, offers a non-invasive alternative for diverse applications such as inducing vomiting and managing delicate conditions. Aligning with Ayurvedic principles, aromatherapy targets *marmas* (meridian points) to stimulate *prana* (vital energy) flow, promoting holistic health. It proves effective in pain management across medical contexts, from chronic back pain to postoperative recovery, offering a safe, cost-effective alternative to traditional painkillers. Aromatherapy also shows promise in addressing postoperative nausea and vomiting, improving sleep disorders, and reducing anxiety. Research indicates potential benefits in cancer care, alleviating symptoms and displaying anti-cancer properties.

Keywords: Aromatherapy, Ayurveda, Aromatic Plants, *Sugandhi Dravya*, Pain, *Arka kalpana*.

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INTRODUCTION

A growing number of people are becoming interested in complementary and alternative medicine, which includes phytotherapy. Using herbs, herbal preparations (such as concentrates, infusions, decoctions, tinctures, and other herbal extracts), and phytochemicals for therapeutic purposes is known as phytotherapy. The terms "aroma" and "therapy" are combined to form the phrase aromatherapy, which refers to the use of potent essential oils extracted from flowers and plants to treat a variety of illnesses. René Maurice Gattefossé, a French chemist and perfumer, first used the word "aromatherapy" in the 1920s. It is a subset of "herbal medicine" (Gattefossé, 1993). The book by Gattefossé was released in 1937. He recommended using aromatherapy to cure illnesses in almost every organ system. There is research data from many nations shows that rates of usage of pregnant women using aromatherapy increased from 13% to 78%. Side effects of many of the modern painkillers, particularly opioids and non-steroidal anti-inflammatory medicines, include bleeding, nausea, pruritus, and respiratory depression. With few to no known side effects, aroma therapy is the safest alternative to use in conjunction with current pain management procedures. This therapy is substantially less expensive than the price of conventional.

In Ayurveda, *Vedana, beda, avasada, dukha, sula, ruja, ruk, sadana, pida* are words used for pain. According to Sushruta samhita the main causative factor of pain is vata. The seat of pain is *mana* (psyche) and *sharira* (body).¹ Acharya have mentioned various formulations to be inhaled. This may be as a part of prevention, treatment or shodhana. It utilises mostly medicines with volatile content for this purpose, i.e., *sugandhita dravya*.² *Nasya* and *Dhūmapāna* have gained widespread popularity in society due to their proven effectiveness. The development of comprehensive formulations, such as *arka kalpana*, has been undertaken to harness the volatile constituents in drugs, exemplified by substances like *Ajamoda arka* or *Karpūrādya arka*. Additional kalpanas like '*hima*' and '*phūṭa*' are employed in practical applications to preserve the volatile content of drugs, which may contain valuable active components.

Ayurveda and Aroma Therapy

In *Astāṅgasamgraha*, it is elucidated that since the nose serves as the gateway to

¹ Bhaskar Govind Ghanekar, Sushruta Samhita (Sharir Sthana), chapter 6, citation no.16 Meharchand Lachhamandas Publications Reprint, nov. 2008; 69.

² Sangeetha Pillai G.,Yadevendra Yadav, Khem Chand, Rediscovering the significance of aroma in yurveda through ghreyayoga, Aryavaidyan. Vol. XXXII, No. 4, May- July 2020, Pages 32-38

the head (*śira*), drugs administered through the nostrils traverse the nasal passages (*nasasrota*), reaching the forehead (*śira*) and spreading further into the brain (*mūrdhā*). Following the pathways of the eyes (*netra*), ears (*śrotra*), throat (*kaṇṭha*), and the opening of vessels (*sīramukha*), the drug scrapes away morbid doshas in the supraclavicular region, extracting them from the *uttamāṅga*.¹ The term '*Gandha*' (aroma) is attributed to the quality of the Earth element (Prithvi Mahābhūta). Ayurvedic scholars have devised specific pharmaceutical dosage forms to preserve the aromatic properties of drugs (Arka, Hima, Phanta etc.).² A whole *Kalpana*, i.e. *Arka Kalpana*, has been developed to utilise the volatile contents in a drug.^{3,4}

History of Aromatherapy in Ayurveda

Since at least 3000 years ago, the ancient Indian medical system known as Ayurveda has included essential oils into its therapeutic practices. More than 700 medicinal herbs, including cinnamon, ginger, myrrh, and sandalwood, are listed in ancient Ayurvedic literature as being beneficial for healing. Management of psychotic diseases to recover the consciousness e.g. as described in the *Ramayana*, one instance of applying aromatic nasal medications is the restoration of *Lakshman's* consciousness.⁵ *Gandhamadana*, is a mountain named after so, harbouring ample fragrant plants.⁶ *Arka Prakasha* written by *Ravan* is considered as a compressive referral book as far *Arka Kalpana* is concerned⁷ this is helpful in making aromatic substances.

Sugandhadravya in Ayurveda

Sugandha, derived from the Sanskrit terms 'Su' and 'Gandha,' denotes a quality

¹ Vagbhata, Ashtanghrdayam, English Translation and Commentary by Sreekumar T., Uttarasthanam 24/4, P 273

² Srikanth N, Venkateswarlu B, Jirankalgikar N, Singh R, Rao MM, Ota S, MM S, Padhi MM, Lavekar gs. concept and applicability of aroma therapy and herbal, cosmetology in ayurveda: research issues and challenges.

³ Acaraya Siddhinandan Mishra, Abhinava Bhaishjyakaupa Vynana, P 109- 110, Chaukhamnha Surabharati Prakashan Reprint Edition, 2018.

⁴ The Ayurvedic Pharmacopoeia of India, P 102, 2nd Edition, Government of India, Department of Indian System of Medicines and Homeopathy.

⁵ Srikanth N, Venkateswarlu B, Jirankalgikar N, Singh R, Rao Mm, Ota S, Mm S, Padhi Mm, Lavekar Gs. Concept And Applicability Of Aroma Therapy And Herbal, Cosmetology In Ayurveda: Research Issues And Challenges.

⁶ Srikanth N, Venkateswarlu B, Jirankalgikar N, Singh R, Rao MM, Ota S, MM S, Padhi MM, Lavekar Gs. Concept And Applicability Of Aroma Therapy And Herbal, Cosmetology In Ayurveda: Research Issues And Challenges.

⁷ Ravana, Indradev Tripathy. Arkaprakasha.2nd ed. Varanasi: Chowkamba Sanskrit, Series; 2006, p.1, 8,9

that is subtle and capable of providing a sense of pleasure and satisfaction. The herbal system of medicine, one of the oldest healing systems, necessitates comprehensive research to validate its principles.

The *Karpuradi Varga* enumerates 56 dravyas, each possessing various actions such as *Raksoghna*, *Vranaropana*, *Varnya*, *Rasayana*, *Twakprasdana*, *Medhya*, *Shirorogahara*, *Krimihara*, *Swasahara*, *Kasahara*, *Vyangahara*, and *Hridrogahara*. This holistic approach holds promise for enhancing the overall quality of life and extending lifespan.

- In *Dinacarya*: Application of perfumes after bath¹
- In *Ritucarya*: Application of kumkuma, musk on body and dhupana by agaru in *Hemantacarya*.²
- In *Vasanta Ritucarya*, application of *karpkra*, *chandana*, *agaru* and *kumkuma* on the body after bathing.³
- In *Grisma ritucarya*, *Vagbhata acharya* has advocated the usage of drinking cool water flavoured with *patala* and *karpkra* and also staying at places where walls are made of clothes dribbling scented cold water⁴ He also suggested wearing garlands made of *karpkra* and jasmine flowers and necklace of *candana* beads.⁵
- In *Varsa ritucharya*, application of perfumes have mentions and also to clear srotas after *nasya* or *vamana* been suggested.⁶
- In *Sarad ritucarya*, *acharya* mentions anointing the body with pastes of sandal, *usira* and *karpura* at night.⁷

¹ Vagbhata, Ashtangahridayam, English Translation and Commentary by Sreekumar T., Sutrasthanam 2/32, P 78 I Edition, January 2007.

² Vagbhata, Ashtangahridayam, English Translation and Commentary by Sreekumar T., Sutrasthanam 3/11, P 87

³ Vagbhata, Ashtangahridayam, English Translation and Commentary by Sreekumar T., Sutrasthanam 3/20, P 89

⁴ Vagbhata, Ashtangahridayam, English Translation and Commentary by Sreekumar T., Sutrasthanam 3/31, 34, P 92, 94

⁵ Vagbhata, Ashtangahridayam, English Translation and Commentary by Sreekumar T., Sutrasthanam 3/40, P 95

⁶ Vagbhata, Ashtangahridayam, English Translation and Commentary by Sreekumar T., Sutrasthanam 3/47, P 97

⁷ Vagbhata, Ashtangahridayam, English Translation and Commentary by Sreekumar T., Sutrasthanam 3/53, P 98

- *Sarvagandhodaka*, i.e. water with aromatic drugs, is used for bathing a newborn child.¹
- *Shunthi Arka* indicated in *vibandha*, *Amavata Shoola*.²
- In treatment of *pitta*: It is indicated to use fragrances which are *Sita* and *hiradya* and frequent application of a paste of *karpkra*, *chandana* and *usira* over the body.
- In formulations: It is indicated to use jasmine flowers for the smell in *Driksadi hima* in *Jvaradhikira*."
- In fumigation: Fumigation of *vranagara* with *sarsapa*, *nimbapatra* and ghee for disinfection.
- Fumigation of clothes, bedsheets and beds in *kumaraagara* with drugs like *atasi*, *hingu*, *guggulu* etc. with ghee in *kumaragara*.
- Sarvagandhodaka, i.e. water with aromatic drugs, is used for bathing a newborn child.
- An explanation of how various *Arka* can be used to treat surgical diseases such as *Galaganda*, *Gandamala*, *Granthi*, *Arbuda*, etc. The process of cutting the wound without the need for surgery is described by *Ravana*.³
- Finally, Dravya explains how to prepare Arka from narcotics (*Madaka*). *Ravan* has revealed how to prepare Arka from flesh (*Mamsa*), and he quotes related preparations like *Kanjika*, *Tusodaka*, and *Arishta*.⁴

Ayurveda's Ghreyayoga

Ghreyayoga represents a distinctive and relatively unexplored formulation that relies exclusively on the fragrance of the preparation. The term "*Ghreya*" refers to that which is meant to be smelled. Unlike *dhumapana*, there is no need to burn substances to inhale the fumes, and it does not involve the instillation of solids or liquids into the nose, as seen in *nasya*.

¹ Vagbhata, Ashtangahrdayam, English Translation and Commentary by Sreekumar T., Sarirasthanam 10/13, P 144

² Gaitonde Vrashank, Katti Anand. Arka Prakasha of Ravana: A Book Review, IJAPR | May 20 22 | Vol 10 | Issue 5

³ Gyanendra Pandey, Ravana's Arka Prakasha, Chaukambha Sanskrit Series Office Varanasi, 2018, Chapter 5, P. No. 119

⁴ Gyanendra Pandey, Ravana's Arka Prakasha, Chaukambha Sanskrit Series Office Varanasi, 2018, Chapter 1, P. No. 13

The word *ghreya yoga* has been used in *Charaka samhita Kalpasthana* in the context of *shodhana*.¹

- The *Phala pippali* after 21 bhavana in *madana kasaya*, is sprinkled over flowers in evening and plucked in the morning and is inhaled for inducing *vamana*. This method is used for delicate, utklista pitta, kapha patients and having an aversion to medicine.²
- Inducing vomiting in individuals who are sensitive to perfumes by inhaling a garland of powdered dried fruit juice and *Iksvaku* flowers.
- Vomiting is induced by inhaling flowers of water lily impregnated profusely with powder of fruits of *Dhämürgava*.
- In equal amounts, *trvt*, *aragvadha*, *danti*, *sankhini*, and *satpala* should be ingested; they should then be left overnight in cow's urine and sun-dried the next day. It is infused with sudhi latex for a week after a week of repetition, and then it is impregnated in fabric or garlands. Kings with *mrdukosta* experience *virecana* when they inhale this.
- A somewhat different method for inhalation is given in the Nasarogapratishedha chapter of both *Astāngahrdayam* and *Astīngasañgraha*. *Astīngasañgraha* suggests making a poultice with a cloth containing powders of *rohisa*, *ajaji*, *vacha*, *koraka*, *jira*, *tarkari*, and *katurjataka* and frequently inhaling it as a cure for *pratisyaya*. In the same context, *Astāngahrdayam* suggests using the above composition with less medication. i.e. excluding *rohisa* and *Katurjataka*.³

Mode of Action

Aromatherapy is frequently administered through topical application or inhalation. Essential oil constituents traverse the nasal passages, reaching the olfactory system and the limbic system in the brain. Inhaling or absorbing essential oil molecules through the skin can stimulate the amygdala and hippocampus, influencing physical, emotional, and mental well-being.⁴ In the context of Ayurveda, *Marma* can be likened to

¹ Vagbhata, Ashtangahrdayam, English Translation and Commentary by Sreekumar T., Kalpasthanam 1/19, P 655-652

² Vagbhata, Ashtangahrdayam, English Translation and Commentary by Sreekumar T., Kalpasthanam 1/19, P 655

³ Vagbhata, Ashtangahrdayam with Commentary of Sarvangasundara of Arunadatta and Ayurveda Rasayana of Hemadri, Uttarasthanam 20/4, P 844, Reprint Edition, Chaukhambha Sanskrit Sansthan, Varanasi.

⁴ Zehra Gok Metin, PhD, RN , Ayse Arıkan Donmez, PhD, RN , Nur Izgu, PhD, RN 1, Leyla Ozdemir, PhD, RN & Ismail Emre Arslan, MD, Aromatherapy Massage for Neuropathic Pain and Quality of Life in Diabetic Patients, Journal of Nursing Scholarship, 2017; 49:4, 379–388

the meridian point system, aligning with organs, nerves, and bodily systems.¹ The *Prana* (vital energy) present in *marmas* can be directed to remove blockages (even in distantly connected places) and increase energy flow through the stimulation of *Marma* through the use of aromatherapy, leading to a state of healthy body, mind, and spirit.²

Aroma Therapy in Pain Management:

Aromatherapy has shown promise in various medical settings for managing different types of pain. Here is a summary of its applications in different contexts:

Chronic Back Pain: A combination of acupuncture with lavender essential oil in a randomized controlled trial resulted in a significant reduction in subjective pain intensity and improved physical functional performance in patients with sub-acute and chronic lower back pain.

Haemodialysis Pain: Lavender aromatherapy demonstrated a significant reduction in pain and anxiety associated with needle insertion during haemodialysis treatment.

Paediatric Pain: Lavender aromatherapy provided faster soothing effects for infants undergoing blood draws, despite no difference in pain perception during the procedure.

Menstrual Pain: Aromatherapy abdominal massage, particularly with essential oils, was found to be more effective in alleviating menstrual pain compared to acetaminophen in some studies.³

Labour and Childbirth: Inconclusive results were found in studies examining aromatherapy during labour and childbirth. While some reported no significant differences, others found positive effects on pain relief, anxiety reduction, and decreased medical interventions.⁴

Post-Caesarean Section Pain: Lavender aromatherapy was found effective in

¹ Dr. Deepika Gupta, Dr. Rajesh Kumar Agrahar, Dr. Vivek Kumar Tiwari, Various Methods Of Pain Management In Ayurveda- A Review Article, World Journal Of Pharmaceutical And Medical Research, 2018,4(4), 256-259

² David Frawley, Avinash Lele, Subhash Ranade, Many methods of marma therapy; Energy points of Yoga and Ayurveda. Ayurveda and Marma therapy; Energy points in yogic healing; Lotus press, Twin lakes, Wisconsin, 2003; 3: 65-79.

³ T. M. F. Marzouk, A. M. R. El-Nemer, and H. N. Baraka, "The effect of aromatherapy abdominal massage on alleviating menstrual pain in nursing students: A Prospective Randomized Cross-Over Study," *Evidence-Based Complementary and Alternative Medicine*, vol. 2013, Article ID 742421, 6 pages, 2013

⁴ Mahbubeh Tabatabaeichehr, Hamed Mortazavi. The Effectiveness of Aromatherapy in the Management of Labor Pain and Anxiety: A Systematic Review. *Ethiopian Journal of Health Sciences*. 2020;30(3):449.doi:<http://dx.doi.org/10.4314/ejhs.v30i3.16>

reducing pain after caesarean section, with high patient satisfaction. However, it is recommended as part of a multimodal pain management routine.

Episiotomy Pain: Lavender aromatherapy was associated with reduced analgesic use in women managing episiotomy pain.¹

Postoperative Pain: Eucalyptus aromatherapy was linked to lower pain levels and blood pressure in patients recovering from total knee replacement surgery. Lavender aromatherapy in breast biopsy surgery recovery reported higher satisfaction with pain management.²

Hospice and Cancer Pain: While not showing significant long-term benefits in reducing anxiety or pain, aromatherapy demonstrated improvements in sleep scores and depression reduction in hospice patients.³

Renal Colic: Rose oil aromatherapy, in combination with conventional therapy, significantly reduced pain in patients with renal colic compared to conventional therapy alone.⁴

Aromatherapy is generally considered safe, with no reported adverse effects in the included studies. Its cost-effectiveness makes it a potentially valuable addition to current pain management procedures.

Postoperative Nausea and Vomiting

Postoperative nausea and vomiting (PONV) is a common side effect of general anaesthesia, affecting approximately one-third of individuals undergoing surgery. Traditional therapies for PONV often have sedation as a side effect. Essential oils, particularly ginger (*Zingiber officinale*), spearmint (*Mentha spicata*), and peppermint (*Mentha piperita*), have shown promise in addressing postoperative nausea and vomiting.

¹ F. Sheikhan, F. Jahdi, E. M. Khoei, N. Shamsalizadeh, M. Sheikhan, and H. Haghani, "Erratum to "Episiotomy pain relief: use of lavender oil essence in primiparous Iranian women" [Complement Ther Clin Pract 2012;18(1):66–70]," *Complementary Therapies in Clinical Practice*, vol. 18, no. 3, p. 195, 2012.

² J. T. Kim, M. Wajda, G. Cuff et al., "Evaluation of aromatherapy in treating postoperative pain: pilot study," *Pain Practice*, vol. 6, no. 4, pp. 273–277, 2006.

³ K. Soden, K. Vincent, S. Craske, C. Lucas, and S. Asley, "A randomized controlled trial of aromatherapy massage in a hospice setting," *Palliative Medicine*, vol. 18, no. 2, pp. 87–92, 2004.

⁴ M. Ayan, U. Tas, E. Sogut, M. Suren, L. Gurbuzler, and F. Koyuncu, "Investigating the effect of aromatherapy in patients with renal colic," *Journal of Alternative and Complementary Medicine*, vol. 19, no. 4, pp. 329–333, 2013.

Aroma Therapy and Hypnotic effects

In Western medicine, Lavender is recognized for its sedative-hypnotic and anti-anxiety effects, while other essential oils like Sandalwood, Agar wood, Sweet Orange, Rose, Frankincense, and Orange Blossom are acknowledged for their potential in inducing relaxation, alleviating depression, and promoting overall mental well-being.¹ The non-destructive nature of inhalation administration adds to the appeal of aromatherapy in managing various psychological conditions.

Aromatherapy and its Sedative Effects

Vetiver essential oil from *Vetiveria zizanioides* is traditionally used in aromatherapy for stress relief and insomnia. Chemical analysis revealed sesquiterpenes like khusimol, a-vetivone, and b-vetivone as major components. In a rat study, inhalation of vetiver oil decreased rearing motility, indicating a sedative effect, aligning with its traditional use.²

Aromatherapy for Sleep Disorders

Sleep disorders, particularly insomnia, are prevalent in modern society, often leading to the use of sleep-inducing drugs with potential drawbacks like overdose and addiction.³ Alternative treatments like aromatherapy, specifically aroma inhalation therapy, have gained attention. Studies indicate significant effects in improving sleep, reducing stress, anxiety, and depression. Lavender, known for its calming properties, is commonly used in these studies. The therapy's effectiveness increases with the number of sessions, making it a potential complementary approach for various emotional disorders and severe conditions like cancer.^{4,5,6}

¹ Sugawara Y, Hara C, Tamura K, et al. Sedative effect on humans of inhalation of essential oil of linalool: sensory evaluation and physiological measurements using optically active linalools. *Anal Chim Acta*. 1998;365(1–3):293–9.

² Thisayakorn, Krittiya & Suntornatanasat, Taweesak. (2003). *Vetiver Oil and Its Sedative Effect*.

³ Roland PS, Rosenfeld RM, Brooks LJ, et al. Clinical practice guideline: polysomnography for sleep-disordered breathing prior to tonsillectomy in children. *Otolaryngol Head Neck Surg* 2011;145(1 suppl):S1–5.

⁴ Bilia AR, Guccione C, Isacchi B, et al. Essential oils loaded in nanosystems: a developing strategy for a successful therapeutic approach. *Evid Based Complement Alternat Med* 2014;2014: 6515931–14.

⁵ Tisserand R, Young R. *Essential Oil Safety-e-book: A Guide for Health Care Professionals*. Elsevier Health Sciences, 2013; 20–75

⁶ Cheong MJ, Lee GE, Kang HW, et al. Clinical effects of mindfulness meditation and cognitive behavioral therapy standardized for insomnia: a protocol for a systematic review and meta-analysis. *Medicine (Madr)* 2018;97:e13499:1–7.

Anxiolytic Effect of Aromatherapy

Aromatherapy is employed in a holistic approach to minimize preoperative anxiety, which if heightened, can lead to increased procedural difficulty, physical discomfort, and the need for higher doses of medications. Certain plant oils, including lavender, rose, bergamot, and sandalwood, is commonly used as anxiolytics.¹ Bergamot, in particular, has been studied extensively and demonstrated effectiveness in reducing preoperative anxiety. The mechanism of action of bergamot is not fully understood but may involve the release of neurotransmitters that interfere with synaptic plasticity.² Regardless of prior surgical experience, patients exposed to bergamot essential oil aromatherapy exhibited lower anxiety levels.³

Aromatherapy in Cancer Care

Aromatherapy is explored for its potential benefits in cancer patients, offering relief from anxiety, emotional stress, pain, muscular tension, and fatigue. Extensive research has investigated the anti-inflammatory, antioxidant, antibacterial, antifungal, and antiviral activities of various essential oils in both in vivo and in vitro settings. Pre-clinical trials have explored essential oils' cytotoxic, free radical scavenging, carcinogenic, apoptosis-inducing, and anti-neoplastic effects.⁴ The anticancer activities of essential oils are attributed to mechanisms such as free radical production, membrane potential changes, overexpression of detoxification enzymes, and modifications to oncogenes. Essential oils are also found to act synergistically with conventional chemotherapy.

Pine tree essential oil, rich in about 50 different terpene components, contains 37 monoterpenes known for their anti-cancer properties. Alpha-pinene also enhances natural killer (NK) cell activation, leading to cancer cell apoptosis. Aroma components in sweet orange, grape, and lemon oils have demonstrated apoptosis-inducing effects on human leukemic cancer cells.⁵ Blood orange essential oil inhibits vascular endothelial growth

¹ W. N. Setzer, "Essential oils and anxiolytic aromatherapy," *Natural Product Communications*, vol. 4, no. 9, pp. 1305–1316, 2009.

² G. Bagetta, L. A. Morrone, L. Rombol'a et al., "Neuropharmacology of the essential oil of bergamot," *Fitoterapia*, vol. 81, no. 6, pp. 453–461, 2010.

³ Ni, Cheng-Hua & Hou, Wen-Hsuan & Kao, Ching-Chiu & Chang, Ming-Li & Yu, Lee-Fen & Wu, Chia-Che & Chen, Chieh-feng. (2013). The Anxiolytic Effect of Aromatherapy on Patients Awaiting Ambulatory Surgery: A Randomized Controlled Trial. *Evidence-based complementary and alternative medicine : eCAM*. 2013. 927419. 10.1155/2013/927419.

⁴ Lesgards, J.F.; Baldovini, N.; Vidal, N.; Pietri S. *Phytother Res*. 2014, 28, 1423-1446.

⁵ 127. Hata, T.; Sakaguchi, I.; Mori, M.; Ikeda, N.; Kato, Y.; Minamino, M.; Watabe, K. Induction of apoptosis by *Citrus paradisi* essential oil in human leukemic (HL-60) cells. *In Vivo* **2003**, 17, 553–559.

factor (VEGF), prevents cell proliferation, and induces apoptosis in colon cancer cells. These findings highlight the potential of essential oils in cancer therapy, particularly in inducing apoptosis and inhibiting cancer cell proliferation.¹

Indian Govt. Initiative:

CSIR constituent laboratories play a key role in cultivating Medicinal and Aromatic Plants (MAPs) using traditional and biotechnological approaches, developing improved varieties for diverse ecological conditions.² A notable success is the introduction of mint cultivation in 1953 under Col Sir R N Chopra's supervision. CSIR focuses on post-harvest technologies, including low-cost, user-friendly distillation and extraction methods. They've created various agri-implements, and the Aroma D database provides valuable information on aroma molecules, essential oils, plants, and related data, aiding research on structural similarities, essential oils, and fragrance types.³ This free resource offers screening functions based on various criteria for aroma molecules.

DISCUSSION:

Aromatherapy, rooted in Ayurveda, emphasizes the use of aromas for holistic well-being. In Ayurvedic medicine, the delivery of herbal medicines through aromatic forms like *Arkas* and *Himas* enhances patient experience and treatment efficacy. Aromatherapy, primarily through inhalation, is gaining popularity for pain management, offering relief and a sense of calm. Ayurveda's long-standing awareness of the benefits of aromas, or "*Sugandha*," has potential for further exploration and integration with modern approaches.

Childbirth pain management through aromatherapy is transformative, providing relief and a soothing environment. While Ayurvedic *Kashayas* and *Taila* have proven effective, there's room for improvement in making treatments more pleasant. Aromatherapy, as a versatile and patient-friendly approach to pain management, aligns with Ayurvedic principles. Integrating aromatherapy effectively into Ayurvedic practices can enhance the

¹ Murthy, K.N.C.; Jayaprakasha, G.K.; Patil, B.S. D-limonene rich volatile oil from blood oranges inhibits angiogenesis, metastasis and cell death in human colon cancer cells. *Life Sci.* **2012**, *91*, 429–439. [CrossRef]

² Sattigeri, Viswajanani J, Council of Scientific and Industrial Research-AYUSH initiatives towards creating benchmarks, *International Journal of Ayurveda Research* **3**(1):p 48-54, Jan-Jun 2022. | DOI: 10.4103/ijar.ijar_12_22

³ Kumar Y, Prakash O, Tripathi H, Tandon S, Gupta MM, Rahman L-U, Lal RK, Semwal M, Darokar MP and Khan F (2018) AromaDb: A Database of Medicinal and Aromatic Plant's Aroma Molecules With Phytochemistry and Therapeutic Potentials. *Front. Plant Sci.* **9**:1081. doi: 10.3389/fpls.2018.01081

overall healing experience. Further research is needed to explore the full potential of aromas in improving the quality of life and well-being. Essential oils, known for their biological activities, hold economic importance and are extensively used in pharmaceutical industries, but more studies are required to understand their mechanisms, dosages, and potential toxicological effects for increased applications.

Conclusion

Aromatherapy serves as a versatile and patient-friendly complimentary system and with integration in traditional healing, such as Ayurveda, highlights the rich historical and cultural significance of using fragrant substances for therapeutic purposes. Aromatherapy, with its emphasis on essential oils and their aromatic properties, has demonstrated a wide range of applications in various medical contexts.

Aromatherapy's roles that are proved in various research studies all over world in pain management indicate its potential as a safe and cost-effective complementary therapy. Additionally, the therapy's positive effects on postoperative nausea and vomiting, hypnotic effects, sedation, sleep disorders and anxiolytic effects demonstrate its versatility in addressing psychological and emotional well-being.

While aromatherapy is generally considered safe with minimal reported adverse effects, its diverse applications underscore the need for further research to establish standardized protocols and deepen our understanding of its mechanisms of action. As an accessible and non-invasive therapeutic option, aromatherapy holds promise for enhancing overall health and well-being, providing a holistic approach to healing that aligns with both traditional and modern medical practices.

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2. Sangeetha Pillai G.,Yadevendra Yadav, Khem Chand, Rediscovering the significance of aroma in yurveda through ghreyayoga, Aryavaidyan. Vol. XXXII, No. 4, May- July 2020, Pages 32-38
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