

# The Effect of Aromatherapy in the Management of Cancer-Related Pain at the End of Life: A Pilot Study

Grace Cullen, DNP, FNP-BC, AOCNP®, ACHPN®, PMGT-BC™, Lynn Neely, PhD, Maureen R. McDonald, CTRS, Kelly M. Cousino, CTRS, Carrie Drobek, CTRS, and Melissa A. Przywara, OTR/L

**BACKGROUND:** The use of clinical aromatherapy for managing pain has been studied in surgical patients and in women during childbirth. However, there are limited data on the use of aromatherapy for alleviating cancer-related pain, particularly at the end of life.

**OBJECTIVES:** This pilot study identifies the pre- and postimplementation effects of aromatherapy on pain level, pain perception, and the use of oral morphine equivalent among patients with cancer at the end of life.

**METHODS:** A survey was conducted to assess participant pain levels preimplementation of aromatherapy. Participants were then asked to rate their pain and describe how they felt 15 minutes postimplementation of aromatherapy. A chart review comparing oral morphine equivalent use pre- and postimplementation of aromatherapy was also performed.

**FINDINGS:** Postimplementation of aromatherapy, mean pain scores and 24-hour oral morphine equivalent use decreased. Participants also described an improved pain experience and found aromatherapy to be soothing.

## KEYWORDS

aromatherapy; cancer; pain; essential oils; end of life; pain management

## DIGITAL OBJECT IDENTIFIER

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**THE CENTERS FOR DISEASE CONTROL AND PREVENTION** reported a 45% increase in opioid overdose deaths from 2016 to 2017 (Dalal & Bruera, 2019). Pain has been reported by as many as 70% of patients with advanced cancer. Opioids have largely been used to treat cancer-related pain because of their quick and effective way of controlling this symptom. Although there has been an increase in opioid-associated death in patients with cancer from 2006 to 2016, opioid-related deaths are still 10 times less likely among this patient population compared to those without cancer (Dalal & Bruera, 2019). Aside from their potential for misuse, opioids have also been associated with extensive side effects that include constipation, nausea, pruritus, sedation, cognitive impairment, delirium, hallucination, myoclonus, hyperalgesia, and respiratory depression (Dalal & Bruera, 2019). Because of side effects from opioid administration, the American Society of Clinical Oncology and the National Comprehensive Cancer Network recommend using nonpharmacologic interventions for managing cancer-related pain (He et al., 2020).

The use of aromatherapy has increased worldwide, and the global revenue for aromatherapy is expected to reach \$5 trillion by 2050 (Farrar & Farrar, 2020). Clinical aromatherapy is a form of mind-body therapy that uses essential oils for clinical purposes and therapeutic interventions (Farrar & Farrar, 2020). Essential oils are natural, plant-based, and safe nonpharmacologic options for pain management. Laboratory studies conducted on essential oils have shown that they are generally safe and even safer when diluted in a mixture (Zhao et al., 2023). According to Thornton (2019), nurses have been using natural healing therapies since the 1700s, including the use of essential oils as medicinal herbs and aromatherapy.

Essential oils used in aromatherapy have been found to help minimize symptoms of pain, stress, depression, anxiety, and poor sleep quality in different patient populations, including patients who are in labor, undergoing hemodialysis, or undergoing invasive procedures (Akbari et al., 2019; Freeman et al., 2019; Tabatabaeichehr & Mortazavi, 2020). The use of lavender and orange essential oils via nebulizer or inhaler has also improved pain in children undergoing dental procedures (Nirmala & Kamatham, 2021). Findings from a randomized controlled trial conducted among patients with rheumatoid arthritis showed a decrease in patients' pain with the use of inhaled eucalyptus essential oil as aromatherapy (Varkaneh et al., 2022). Other essential oils that have been associated with pain management include ylang-ylang and bergamot (Borgonetti et al., 2022; Perna et al., 2019).