

# Aromatherapy

## The effect of lavender on anxiety and sleep quality in patients treated with chemotherapy

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**BACKGROUND:** A cancer diagnosis is a serious stressor that is associated with anxiety, depression, sleep disorders, and inability to fulfill daily routines. Many pharmacologic and nonpharmacologic options are available to help patients with cancer manage anxiety.

**OBJECTIVES:** This randomized, controlled trial examined the effects of lavender oil aromatherapy on anxiety and sleep quality in patients undergoing chemotherapy.

**METHODS:** 70 patients were randomly assigned to a lavender oil group, a tea tree oil group, and a control group with no oil. A patient identification form, the State-Trait Anxiety Inventory, and the Pittsburgh Quality Sleep Index (PSQI) were used to measure anxiety and sleep quality before and after chemotherapy.

**FINDINGS:** State anxiety before and after chemotherapy did not vary among groups. The authors compared trait anxiety values before and after chemotherapy and found a significant difference in the lavender group. In addition, a significant change in PSQI measurements before and after chemotherapy was observed.

### KEYWORDS

aromatherapy; lavender; sleep quality; anxiety; PSQI; STAI; chemotherapy

### DIGITAL OBJECT IDENTIFIER

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**ESSENTIAL OILS ARE CHEMICALS EXTRACTED FROM PARTS OF PLANTS** that have a unique aroma and complex chemical properties (National Cancer Institute [NCI], 2018; Worwood, 2016). Essential oils can be inhaled, digested, or applied topically, and they are eliminated from the body through urine and by respiration (Maddocks-Jennings & Wilkinson, 2004; NCI, 2018). They were introduced to nursing care by Florence Nightingale, and their use grows daily by nurses with certification in the use of essential oils (Gnatta, Kurebayashi, Turrini, & Silva, 2016; Smith & Kyle, 2008).

Lavender is a member of the mint family and contains linalyl acetate, linalool, and caryophyllene. *Lavandula angustifolia* increases the effect of gamma-Aminobutyric acid on the amygdala and has narcotic and sedative effects similar to those of benzodiazepines (Conrad & Adams, 2012; Fisser & Pilkington, 2012; Maddocks-Jennings & Wilkinson, 2004). In addition, *Lavandula hybrida* has relaxing and sedative properties (Price & Price, 2011). In addition to its antibacterial, antifungal, and carminative characteristics, which increase wound healing and the detoxification of enzymes associated with insect bites, lavender has no known contraindications and is safe to use (Braden, Reichow, & Halm, 2009; Howard & Hughes, 2008; Kritsidima, Newton, & Asimakopoulou, 2010; Muzzarelli, Force, & Sebold, 2006). Inhaling lavender has been reported to have an immediate effect, and topical administration takes effect in 10–90 minutes and lasts a few days (Worwood, 2016).

Lavender is used for spiritual relaxation, for therapeutic purposes (to build physical and emotional well-being), and for regulation of sleep disorders (Koulivand, Khaleghi Ghadiri, & Gorji, 2013; Kritsidima et al., 2010). In a study conducted by Franco et al. (2016), 2% lavender oil was administered to one group of women and odor-free aromatic oil was given to another group for 10 minutes through an oxygen mask before all underwent a breast biopsy. Women who inhaled lavender oil reported decreased negative feelings, and the aromatherapy was shown to be effective in the management of preoperative anxiety (Franco et al., 2016). Another study showed that smelling four drops of 10% lavender oil for four weeks improved sleep quality in postpartum women (Keshavarz Afshar et al., 2015). Kritsidima et al. (2010) observed the diagnosis and treatment procedures carried out on a group of patients who visited an outpatient clinic for dental treatment in a room where a 10-cc cup of water with 5 drops of lavender oil was located. They observed the procedures conducted on another group in an odor-free room. At the end of the study,