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File: ■ Lavender (*Lavandula angustifolia*), Lamiaceae)
■ Sleep/Fatigue
■ Multiple Sclerosis

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RE: Aromatherapy with Lavender Essential Oil Improves Sleep Quality and Reduces Fatigue in Patients with Multiple Sclerosis

Kavuran E, Yurttas A. The effect of aromatherapy with lavender essential oil on the sleep and fatigue level of patients with multiple sclerosis in Turkey: a randomized controlled trial. *Niger J Clin Pract.* May 29, 2024;27(5):635-642. doi: 10.4103/njcp.njcp_811_23.

Multiple sclerosis (MS), a chronic, progressive, inflammatory central nervous system (CNS) disease, affects ~ 2.5 million people worldwide, affecting more women than men. Symptoms include sensory, motor, and autonomic disorders associated with affected portions of the CNS and significantly decrease the quality of life (QoL) of people with MS. Irregular circadian rhythms, a function of the CNS, may cause sleeplessness and fatigue, reported by 36.5% of patients with MS. Other physical and psychological problems, e.g., depression, anxiety, cognitive impairment, and poor self-esteem often arise in MS. Drug treatments, physical rehabilitation, and exercise are all used to manage fatigue in patients with MS. Patients with MS have demonstrated a willingness to use complementary and alternative medicine (CAM), with 80% using CAM in one study.

Among CAMs, aromatherapy (AT) promotes relaxation, relieves physical and psychological stressors, and enhances feelings of well-being. In AT, plant essential oils (EOs) stimulate the parasympathetic nervous system via their aromatic qualities. AT may be administered using compresses, baths, massage, or, most commonly, inhalation. AT is reported to reduce sleep problems, pain, spasticity, urinary problems, and joint disorders in patients with MS. Among EOs frequently used in AT, common lavender (*Lavandula angustifolia*, Lamiaceae) EO (LEO) is nontoxic and allergenic, with anti-anxiety, antispasmodic, anti-fatigue, relaxing, and refreshing effects. LEO, along with chamomile (*Matricaria chamomilla* syn. *Chamomilla recutita*, Asteraceae) and sweet orange (*Citrus × sinensis*, Rutaceae) EOs, is reported to relieve MS symptoms. LEO's main compounds, linalool and linalyl acetate, have sedative-hypnotic, anxiolytic effects.

Independent nursing's scope of work includes assessing and acting to improve factors affecting patients' restful sleep. However, studies of the effects of AT to alleviate fatigue in patients with MS are limited. The authors conducted a randomized, controlled clinical trial (RCT) of AT with LEO in patients with MS at the Atatürk Research Hospital Neurology Outpatient Clinic (Erzurum, Türkiye) in April – June 2023, to provide evidence-based treatment data for nurses working with patients with MS. A priori analysis indicated that 30 patients per group would provide 80% power to predict a medium effect size with a 95% confidence interval and statistical significance at $P < 0.05$. Inclusion criteria were age ≥ 18 ;

MS diagnosis for \geq one year, no problems with hearing, speech, or sense of smell; no allergy to lavender; having sleep problems and fatigue for \geq three months; not using any treatment to promote sleep: and scores of \geq 5 on the Pittsburgh Sleep Quality Index (PSQI), \geq 4 on the Fatigue Severity Scale (FSS), and 2-5 on the Extended Disability Status Scale (EDSS). Exclusion criteria were having had an MS attack in the previous month, pregnancy/breastfeeding, having respiratory problems, and use of sleeping pills. Of 81 patients assessed, 66 met criteria and were randomized to AT with LEO or standard care (33 per group), thus allowing for potential dropouts. In the LEO group, two patients withdrew from the RCT; in standard care, one, leaving 63 for analysis.

A patient description form covering socioeconomic and medical information was collected from participants and a 24 h skin test was used to screen for any allergy to lavender. The patient description form, FSS, and PSQI were administered to patients at the first study interview. The FSS and PSQI were administered by researchers after one week, two weeks, three weeks, and four weeks of enrollment. LEO (manufacturer is not given) was delivered with a supply of 2 cm \times 2 cm cotton (*Gossypium herbaceum*, Malvaceae) pads for application. Patients in the LEO group were shown how to apply LEO to the pads and inhale it for 30 minutes before bed for 30 days, using a new cotton pad and three drops of fresh LEO from a well-sealed bottle. The bedroom should be well-ventilated and free of competing odors for AT. All patients were asked to avoid tea (*Camellia sinensis*, Theaceae), coffee (*Coffea arabica*, Rubiaceae), and sleeping pills during the RCT and avoid activities that increase fatigue before bedtime. All patients completed the same data collection forms. The standard care group did not receive AT. Participants who did not like the smell of lavender or experienced an adverse effect were withdrawn from the RCT.

Groups were not significantly different in age, gender distribution, educational level, marital status, employment status, income level, presence of other chronic diseases, duration and type of MS, and number of seizures. At baseline, there were no significant between-group differences in mean FSS or PSQI scores. Mean FSS and PSQI scores in the LEO group decreased significantly over 30 days vs. standard care ($P < 0.001$ for both). Mean FSS and PSQI scores in the standard care group decreased insignificantly over 30 days. LEO caused significant group \times time interaction effects in FSS ($P = 0.011$) and PSQI ($P = 0.002$) scores, with smaller effects after one week of AT and larger effects after weeks 2, 3, and 4. By improving sleep quality in these participants, fatigue was reduced.

The study's limitations include a small sample size, potential interference from environmental sounds due to the home-based setting, and uncontrollable variations in participants' sleep habits. Additionally, the brand name of the product and its chemical profile are missing, and the reason for the two dropouts in the LEO group is noted only in Turkish (neglecting to use LEO according to the experimental procedure). Nurses may confidently use AT with LEO in patients with MS who have trouble sleeping. The authors had no conflicts of interest.

—*Mariann Garner-Wizard*

Referenced article can be accessed at
https://journals.lww.com/njcp/fulltext/2024/05000/the_effect_of_ aromatherapy_with_lavender_essential.12.a.spx.

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