



# Medical Journal of Europe

## Examination of Thesis on the Use of Lavender Oil in Nursing in Turkey: A Systematic Review

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### Article Info

Received: 1 February 2024

Revised: 4 February 2024

Accepted: 4 February 2024

Published: 4 February 2024

### Keywords:

Lavender oil, nursing, graduate thesis.

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### ABSTRACT

The aim of this retrospective-type research is to systematically examine the graduate thesis on the application of lavender oil by nurses who professionally perform the health profession in Turkey. This systematic collection was reviewed by scrutinizing graduate and doctoral dissertations made in nursing from 2011-2022 in the National Thesis Center database of the higher Education Board. During the examination, the keywords 'nursing' and 'lavender oil' were used. This retrospective study was carried out on XI dissertations meeting the research criteria between 01/12/2022-14.12.2022. Eight of the studies that meet the criteria for inclusion are graduate thesis three and doctorate thesis. Four of the studies were done semi-experimental, two experimental, five randomized controlled studies. The method of massage and inhalation was applied in the studies. Study areas; pain, sleep quality, anxiety, life signs, wound healing. The study revealed positive results for the use of lavender oil applied during nursing dissertations.

ISSN: 2995-7907

doi: 10.5281/zenodo.10614960

### INTRODUCTION

Lavender oil is the most commonly used essential oil in aromatherapy, which is one of the leading complementary and alternative applications (1). Lavender is the name given to the genus *Lavandula*, a member of the Lamiaceae family. In Turkey, 0.5-1% oleum lavandulae essential oil is obtained from the flower parts of lavender (2). The resulting lavender oil is frequently used for sleep disorders, sedation, prevention of itching, prevention of infection, relaxation of muscles, wound healing, regulation of vital signs and pain relief (2-3). The first application of lavender oil dates back to the Crimean War. Florence Nightingale is known to apply lavender oil to the forehead area to reduce the anxiety of the soldiers and to sedate them (4). The definition of health by the World Health Organization (WHO) is 'not only the absence of disease and disability, but also the feeling of complete physical, social and mental well-being'. Nurses are health professionals who work to ensure the physical, social and mental well-being of individuals. The common philosophy of health professional nurses and aromatherapy is to try to restore the health of the individual by evaluating them holistically (5,6). In the

literature, it is observed that nurses often prefer lavender oil while providing care (2,7-14).

### METHODS

This systematic review was examined by scanning the master's and doctoral theses made in the field of nursing between 2011-2022 in the database of the National Thesis Center of the Council of Higher Education. The keywords "nursing" and "lavender oil" were used during the study. Criteria for inclusion in the study; The full text of the studies should be accessible, made by the Department of Nursing, which is a health professional, and should have been conducted between 2011 and 2022. Limitations of the study; Among the limitations of this retrospective study are the fact that studies without full text are not included, the study was conducted only on the keywords "nursing" and "lavender oil", and the studies on a single department were included in this study. After the research, XII studies were reached and XI studies that met the inclusion criteria were included in this study.

**Table 1.** Characteristics of the graduate research evaluated.

<b>Study Name, Year</b>	<b>Type</b>	<b>Number of Samples</b>	<b>Tools Used</b>	<b>Measurement Application Features</b>	<b>Results Obtained</b>
Yaman, 2011 (15)	Semi-Experimental (Pre-test-post-test semi-experimental)	Total: 68 patients Experimental group: 34 patients Control group: 34 patients	Elderly Information Form, Pittsburg Sleep Quality Index (PSQI), 3-day version of Pittsburg Sleep Quality Index	One of the groups was given a back massage with odorless petroleum jelly, while the other group was given a back massage using lavender oil 10 minutes before bedtime and for 3 days in a row. After the application, PSQI-3 scale was applied.	It has been observed that aromatherapy back massage has a positive effect on the sleep of the elderly.
Şentürk, 2015 (1)	Experimental	Total: 34 patients Experimental group: 17 patients Control group: 17 patients	Visual Analog Scale (VAS), Hamilton Anxiety Rating Scale	Lavender oil was administered as an inhaler 30 minutes before going to sleep for 1 week.	It was determined that lavender oil applied by inhalation reduced the level of VAS daytime sleepiness and reduced all sub-dimensions and total score averages of the Hamilton Anxiety Scale.
Genç, 2017 (6)	Semi-Experimental Pre-test - Post-test	Total:110 patients Experimental group: 55 patients Control group: 55 patients	Patient Follow-up Form, Status Anxiety Scale (DCI)	The Patient Follow-up Form and Status Anxiety Scale prepared by the researchers were applied to the patients in the experimental group before the procedure. Then, lavender oil was smelled for 5-10 minutes and 20 minutes after the procedure, the Patient Follow-up Form and Status Anxiety Scale were applied to the patients again.	It has been determined that patients with Benign Prostatic Hyperplasia reduce the level of anxiety before surgery and have a positive effect on vital signs.
Eminov, 2017 (5)	Randomized Controlled	Total: 96 patients Lavender Group: 32 patients Ice Group: 31 patients Control Group: 33 patients	Visual Analog Skala (VAS), REEDA (Redness, Oedema, Ecchymosis, Discharge, Approximation) Skalası	The experimental group of patients was informed about the sitz bath and 36.5 degrees C hot water and 5-7 drops of lavender were dripped and added to the water. The patient sat in the sitz bath for 10-15 minutes and his ideas were recorded after the procedure.	Lavender oil and ice application, which are nonpharmacological methods applied after birth, have been found to reduce perianal pain and therefore improve it.
Sumer Dalkiran, 2017 (7)	Semi-Experimental	Total: 80 patients Experimental group: 40 patients Control group: 40 patients	3-day version of the Pittsburg Sleep Quality Index	A scale was applied to the experimental group patients before starting the procedure, and then a back massage was given with lavender oil for 10 minutes before going to bed. The application continued for three days and at the end of the third day, an evaluation was made with a scale.	While the sleep quality of the experimental group was lower at the beginning than the control group, the sleep quality of the experimental group was found to be better than the control group.
Erat,2019 (8)	Randomized Controlled Trial	Total: 58 patients Experimental group: 31 patients Control group: 27 patients	Restless Legs Syndrome (RLS) Severity Assessment Scale, Kidney Disease Quality of Life Scale (KDQOLTM-36) and patient follow-up charts	The patients in the experimental group were massaged with lavender oil, and the placebo control group was massaged with baby oil.	In hemodialysis sessions , it was determined that the massage applied to both lower leg areas and each leg for 10 minutes with 5% lavender oil to the intervention group three times a week, for four weeks, decreased restless legs syndrome compared to the placebo control group.
Koç, 2020 (9)	Semi-Experimental	Total: 88 patients Experimental group: 44 patients Control group: 44 patients	Patient Identification Form, Patient Vital Signs Form and State Anxiety Scale (DCI)	After the prepared forms and scales were applied to the patients in the experimental group, lavender oil was applied as an inhalation for 5-10 minutes. At the 20th minute of the application, the form and scale prepared by the researchers were applied again as a post-test. And the results were recorded as pre-test and post-test.	It has been determined that lavender oil applied to patients positively affects vital signs and reduces the level of anxiety.
Şahin,2022 (12)	Three-Arm Randomized Controlled Trial	Total: 45 patients (foot bath for group A, lavender sniffing for group L, foot bath and lavender sniffing procedure groups for group AL)	Insomnia Severity Scale and MD Anderson Symptom Index	The severity and symptoms of insomnia were evaluated on the zero and fifteenth days of all groups.	It was determined that the severity of insomnia decreased in the patients who were treated with lavender oil (AL) and lavender oil (L) together with foot bath after the application. There was no significant difference in the group where only foot bath (A) was applied.

**Table 2.** Characteristics of the doctoral research being evaluated.

Study Name, Year	Type	Number of Samples	Tools Used	Measurement Application Features	Results Obtained
Şimşek, 2019 (10)	Experimental	Total:50 individuals  Included in the study: 35 individuals	The section of the State-Trait Anxiety Inventory (STAI) that measures state anxiety, the "National Emergency Departments Overcrowding Study: NEDOCS" scale and the Emergency Service Healthcare Workers' Perception of Crowding Evaluation Form and the Emergency Department Healthcare Workers Information Form developed by the researchers	A 2x2 cm handkerchief impregnated with lavender oil was placed on the collars of the emergency department health workers and the aroma was inhaled for 10 minutes. Lavender oil aromatherapy was repeated three times on different days.	As a result of the study, it was determined that lavender oil aromatherapy had a statistically significant effect on reducing the anxiety level associated with crowding in emergency department healthcare workers.
Bulut, 2020 (11)	Experimental	Total: 60 patients  Experimental group: 30 patients  Control group: 30 patients	Patient Information Form, Visual Comparison Scale, State Trait Anxiety Scale, Volumetric Intensive Spirometer, Pulse Oximeter, Sphingomanometer, Stethoscope and Experiment and Control Group Follow-up Form	Inhalation aromatherapy with lavender oil was applied to the patients in the experimental group for 20 minutes on the first, second and third days after surgery. Patients in the control group underwent distilled water inhalation. Visual Comparison Scale scores, State Anxiety Scale scores, inspiratory capacity, oxygen saturation levels, systolic and diastolic blood pressure levels, respiratory rates and heart rates were measured at 30 and 60 minutes before and after inhalation.	After the study, it was determined that the pain, anxiety and systolic blood pressure levels of the patients in the experimental group after open heart surgery were statistically significantly lower and the oxygen saturation level was higher than the control group patients.
Demir Hacimusalar, 2021 (13)	Randomized Controlled	Total: 62 patients  Experimental group: 30 patients  Control group: 32 patients	Patient description form, Visual Analog Scale (VAS), State-Trait Anxiety Inventory (STAI)	Lavender oil was administered to the patients in the experimental group by inhalation for one month at the 2nd hour of the hemodialysis session in line with the lavender application guideline. No application other than standard care was applied to the control group.	As a result of the study, it was determined that lavender oil inhalation reduced the severity of headache and the level of state and trait anxiety in individuals undergoing hemodialysis.

Since the research is a systematic review, the ethics committee and institutional permission were not obtained for the study. There is no financial support for the study. There is no interest study in the study. In the study, the fact that it is a master's and doctoral thesis, year, type, number of samples, measurement features used, application features and the results obtained are summarized.

## RESULTS

This retrospective study was conducted between 1-14.12.2022 on XI theses that met the research criteria. Eight of the studies

that meet the inclusion criteria are master's theses and three are doctoral theses. Four of the studies were semi-experimental, two were experimental, and five were randomized controlled trials. Massage and inhalation methods were applied in the studies. Working areas; pain, sleep quality, anxiety, vital signs, wound healing and inspiratory capacity. Findings from master's studies are given in Table 1 of the examination of master's theses.

Three of the master's thesis researches included in the study were randomized controlled, four were quasi-experimental and one was experimental. Three of the theses were applied to the sample group by inhalation, three by massage, one by bath, and

one by both bath and inhalation. One of the theses was made to examine the effect of pain, one on anxiety and anxiety, one on vital signs, and three on sleep.

One of the doctoral thesis researches included in the study was randomized controlled and two were experimental. Three of the theses were applied to the sample group by inhalation. The aim of the theses was to examine the effect of pain, anxiety and vital signs.

## DISCUSSION

This retrospective study was conducted to systematically examine the graduate theses on the application of lavender oil by nurses who practice the health profession professionally in Turkey. The studies accepted for the study are semi-experimental, experimental and randomized controlled trials. Itai et al. (14) included 14 patients in the study evaluating the effect of aromatherapy on anxiety and mood in hemodialysis patients. As a result of the application, it was determined that the anxiety of hemodialysis patients decreased after lavender oil application. Bagheri et al.(16) applied lavender oil as an inhaler for 10 minutes for 4 weeks to 34 hemodialysis patients and it was found that the anxiety and depression levels of the patients participating in the study decreased. In a similar doctoral dissertation conducted in Turkey, it was determined that lavender oil inhalation reduced the severity of headache and the level of state and trait anxiety in individuals undergoing hemodialysis (13). In the master's thesis study conducted by Eminov (5), it was determined that lavender oil and ice application, which are nonpharmacological methods applied after birth, reduce perianal pain and thus improve it. In similar studies conducted abroad, it has been determined that lavender oil application reduces episiotomy pain and contributes positively to recovery time (17,18). In the study of Sümer Dalkıran (7), the sleep quality of the experimental group was lower at the beginning than the control group, while the sleep quality of the experimental group was found to be better than the control group after the application. It has been found that lavender oil increases sleep quality after applying lavender oil to cancer patients abroad (18,19). Erat (8) found that the massage applied to both lower leg areas and each leg for 10 minutes with 5% lavender oil in the intervention group three times a week for four weeks in hemodialysis sessions decreased restless legs syndrome compared to the placebo control group. In similar studies, it has been determined that the effect of lavender oil massage applied to individuals with restless legs syndrome reduces the severity of the disease (20-22). In the study of Şahin (12), it was determined that the severity of insomnia decreased in patients who were treated with lavender oil (AL) and lavender oil (L) together with foot bath after the application. There was no significant difference in the group where only foot bath (A) was applied. Seyyedrasooli et al. (22) and Harada et al. (23) found that foot bath application increases blood flow, lowers body temperature, relaxes muscles and facilitates the transition to sleep. As a result of the examination, it was determined that lavender oil is frequently used in nursing thesis studies in Turkey.

In this retrospective study, as a result of the examination of nursing theses made in Turkey between 2011-2022, it was seen

that most of the graduate theses were master's theses. As a result of the examination of the studies, it was determined that lavender oil applied during nursing theses had positive results in the field of use. It is recommended that the studies conducted by respected nurses who perform the health profession professionally using lavender oil should be increased, considering that it will contribute to the literature.

## Ethics Committee Approval

Since this study is a systematic review, it is not within the scope of studies that require an ethics committee. No ethics committee decision was taken for this study.

## Conflicts of Interest

There is no financial or other conflict of interest related to this study.

## Financial Support

There is no support of any institution / organization in this study. Financial support was provided by the researchers themselves.

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