


Aromatherapy Application in Nursing Care: Systematic Analysis of Studies Conducted Over the Past Decade in Turkey

Hemşirelik Bakımında Aromaterapi Uygulaması: Türkiye’de Son 10 Yılda Yapılan Çalışmaların Sistemik Analizi

 Kevser Sevgi ÜNAL^a

^aDepartment of Fundamentals of Nursing,
Osmaniye Korkut Ata University
School of Health,
Osmaniye

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Correspondence:

Sevgi ÜNAL

Osmaniye Korkut Ata University

School of Health,

Department of Fundamentals of Nursing,

Osmaniye,

TURKEY/TÜRKİYE

kevser-sevgi@hotmail.com

ABSTRACT Objective: Aromatherapy offers energy, treatment, and the balancing of body, mind, and soul by both scientific and artistic approaches. It is a non-pharmacological method that releases the healing power of essential oils obtained from herbal resources for improving a person mentally, physically and spiritually and also provides homeostasis. Aromatherapy has been used for 4,000 years as an integrative and complementary care practice. The purpose of this literature review is to analyze the studies of aromatherapy conducted in Turkey. In particular, regarding the type of research, investigators characteristics, sampling, subjects, and conclusions of the studies. **Material and Methods:** Theses and studies about aromatherapy conducted by nurses between the years of 2007–2017 are included in this study. The data from the theses were obtained from the ‘Turkey National Thesis Database’ and the databases of medicine and nursing (ScienceDirect, Pubmed, and Ulakbim). The research sample comprises 35 studies conducted in Turkey between the years of 2007-2017. **Results:** There were 35 studies about aromatherapy conducted in Turkey between 2007 and 2017. Of these, 77.1% (n=27) were postgraduate and doctoral theses. In this survey, 25.7% (n=9) are postgraduate theses, 51.4% (n=18) are doctoral theses, and 22.8% are research papers. Aromatherapy is mostly researched in doctoral theses in Turkey. **Conclusion:** It was observed that pregnant women, the elderly, and patients with osteoarthritis, dementia, and cancer are most analyzed in studies conducted about the application of aromatherapy. In these studies, aromatherapy was used for pain control, relieving constipation, managing symptoms such as tiredness and anxiety, and increasing the quality of life. It is thought that aromatherapy has a positive effect on physiological and psychological well-being. Ease of use, efficiency and affordability are factors that increase the use of aromatherapy. To continue in this direction, nurses need to apply therapies that have multi-dimensional benefits, such as aromatherapy, correctly and effectively by learning from experienced professionals and attach these applications to nursing care by analyzing evidence-based surveys in the relevant areas.

Keywords: Aromatherapy; nursing

ÖZET Amaç: Aromaterapi, hem bilimsel hem de sanatsal yaklaşımlarıyla beden, zihin ve ruhun dengelenmesine, enerjisine ve tedavisine yardımcıdır. Kişiyi zihinsel, bedensel ve ruhsal olarak iyileştirmek ve homeostasiyi dengelemek için bitkisel kaynaklardan elde edilen esansiyel yağların iyileştirici gücünü ortaya çıkaran non-farmakolojik bir yöntemdir. Bu literatür incelemesinin amacı, tamamlayıcı ve bütünleştirici bakım uygulamalarından yaklaşık 4 bin yıllık geçmişli olan aromaterapi uygulaması ile ilgili Türkiye’de yapılmış araştırmaların tipi, araştırmacı özellikleri, örneklem, konuları ve sonuçları açısından incelemektir. **Gereç ve Yöntemler:** Çalışmaya; Türkiye’de, aromaterapi uygulamasıyla ilgili 2007-2017 yılları arasında hemşireler tarafından yapılmış olan tezler ve araştırmalar dâhil edilmiştir. Veriler, tıp ve hemşirelik alanlarındaki veritabanları (Science direct, Pubmed, Ulakbim...) ve ‘‘Türkiye Ulusal Tez Veri Tabanı’’ ndaki tezlerden elde edilmiştir. Araştırmanın örneklemini, 2007-2017 yılları arasında Türkiye’de yapılmış olan toplam 35 çalışma oluşturmuştur. **Bulgular:** 2007-2017 yılları arasında Türkiye’de hemşirelik alanında aromaterapi ile ilgili yapılmış olan toplam 35 çalışma bulunmaktadır. Bunların %77.1’ini (n:27) yüksek lisans ve doktora tezleri oluşturmaktadır. Çalışmanın %25,7’sini yüksek lisans (n:9), %51,4’ünü (n:18) doktora tezi, %22,8’ ini ise (n:8) ise araştırma makaleleri oluşturmaktadır. Türkiye’de aromaterapinin en çok doktora tezlerinde uygulandığı görülmektedir. **Sonuç:** Aromaterapi uygulaması ile ilgili yapılan çalışmalar incelendiğinde çalışmaların daha çok gebeler, yaşlı bireyler, osteoartritli bireyler, demans ve kanser tanısı almış bireyler üzerinde yapıldığı görülmektedir. Çalışmalarda aromaterapi uygulamasının ağrı kontrolünde, konstipasyonun giderilmesinde, yorgunluk ve anksiyete gibi semptomların yönetiminde ve yaşam kalitesinin artırılmasında kullandığı belirlenmiştir. Aromaterapi uygulamasının fizyolojik ve psikolojik iyi oluş üzerindeki olumlu etkisinin yanı sıra, kolay, etkin ve ucuz bir yöntem olması nedeniyle sağlık alanındaki kullanımının gittikçe arttığı düşünülmektedir. Bu doğrultuda, hemşirelerin aromaterapi gibi çok boyutlu yararları olan terapileri bu alanda uzmanlaşmış profesyonel kişilerden öğrenerek doğru ve etkin şekilde uygulama yapmaları ve aromaterapi ile ilgili yapılmış kanıt dayalı çalışmalarını inceleyerek bu uygulamaları hemşirelik bakımına dahil etmeleri ve bu alandaki çalışmalarını arttırmaları gerekmektedir.

AROMATHERAPY

Aromatherapy is an inexpensive and non-pharmacological application used to heal people. The first use of aromatherapy was up to four thousand years ago. This non-pharmacological method is applied to the body in vegetable oils for healing, recuperation and feeling good via massages, compresses, inhalation (air passage) or in baths. Aromatherapy is an area of phytotherapy, which is known as herbalism, and the focus point is to control the symptoms rather than treat them.¹ According to the surveys, the essential oils used in aromatherapy have several impacts on health such as relaxation, anti-inflammatory, analgesic, disinfection, antioxidant and decreases in blood urea level. It is especially emphasized that aromatherapy establishes mood control and has anxiolytic and antidepressant effects. Moreover, aromatherapy is used to reduce pain, improve memory and fix cognitive disorders in dementia diseases.^{1,2}

The purpose of this research is to analyze studies conducted in Turkey of a 4,000-year-old aromatic treatment application that is one of the integrative and complementary care practices. The type of research, investigators characteristics, sampling, subjects, and conclusions of the studies are assessed in the present study.

We turn to natural therapeutic methods to become free from the problems of the stressful lifestyle of a modern era and to have a healthy soul and an integration of body and mental power. Aromatherapy is a leading natural therapy and has become popular as a protective treatment that allows a person to feel good and energetic without the adverse effects of chemical drugs. Particularly in recent years, people have been drawn towards natural methods by noticing the great wealth in nature. The interest in natural treatment methods has gradually increased day by day and there is a significant sign of change in behaviours concerning health in many people due to these treatments. People are no longer aware of the necessity to take responsibilities for the needs of the body and pay attention to its

voice. It is accepted today that aromatherapy has a remarkable place among natural and supportive treatments.³

THE ENTRY WAYS, ADMINISTRATION ROUTE, AND MECHANISM OF ACTION OF ESSENTIAL OILS

Aromatherapy can be applied by topical means (directly to the skin, compresses or in a bath), internal means (application in mucosa via mouthwash, vaginal or rectal route) and by means of an inhaler (inhalation with or without vapour, directly or indirectly).⁴ Essential oils used by the oral route are known as aromatic medicine and applied in a gelatine capsule. The key oils used by the oral route are prepared by mixing with alcohol, honey water and vegetable oils.⁵ When essential oils are absorbed by the skin they create a layer on the epidermis, then interact with the epidermis and circulation. Massage increases the absorption of oils by the skin via heat and friction. The volatile molecules in oil reach odour receptors that are sensitive enough to be stimulated even with very light smells in the nasal tunnel when the essential oils are breathed in. Different odour receptors are transferred to the limbic system via an electrochemical message formed in receptors, olfactory bulb, and olfactory path and the molecules associated with several areas. This condition stimulates emotional responses and memory via the hypothalamus and causes the responses to be sent to other parts of the brain and the body. The messages received turn into euphoria, relaxation, sedation and stimulate neurochemical reactions.^{4,5} It is known that lavender reduces external emotional stimulators by increasing inhibitory neurons including gamma-aminobutyric acid (GABA).⁶ It is provided to be inhibited of small-scale fibres carry the pain message by being activated the thick-scale fibres by massage. As a result of this, the transfer of sensation of pain to the Cortes by being closed of the pain door. The touch receptors are stimulated during aromatherapy via massage, and the pain is localized in a narrow area. Moreover, receptors that provide the swing of endogenous substances such as morphine are stimulated via massage. The

level of endorphins increases with this warning and prevent painful stimulators from reaching the central nervous system.³⁻⁷

USE OF AROMATHERAPY IN CLINICS AND THE POSITION IN NURSING

The problems that necessitate aromatherapy are as follows:

Infection, insomnia, nausea and vomiting, pain and inflammation, stress management, cardiological problems, elderly care problems, dermatological problems, endocrinological problems, end of life maintenance problems, immunological problems, childbirth problems, oncological problems, paediatric problems, psychiatric care problems, respiratory system problems, and intensive care problems.

Aromatherapy has become one of the most popular methods used by nurses to improve their patient care and strengthen the quality of nursing.⁸ Clinical aromatherapy reinforces nursing by contributing to nursing science and its art. In addition to this, aromatherapy provides nurses with satisfaction from their job during the care process by bringing balms to the nursing agenda once again. The development of the nursing profession continues and targeted anticancer therapy (TAT) applications from nurses who want to complete this development as soon as possible are a significant advancement in this profession. Nurses can discuss their experiences with essential oil use via nursing theories and nursing diagnosis.⁹ The number of periodicals on aromatherapy increases with each passing day all over the world. Aromatherapy continues to grow in maturity, arguably to be in line with nursing philosophy and theories. Aromatherapy can be easily and efficiently adapted to nursing practices. Essential oils are safe when they are applied by well-educated and cautious people. Because the safe application of aromatherapy necessitates a specialized knowledge and ability, education topics about essential oils can be attached to the nursing curriculum. Additionally, aromatherapy can be taught in a nursing-related unit. For example, a subject entitled 'How an aromatherapy oil mixture is pre-

pared to decrease pain and relax the patient' may be taught in a unit about pain.⁴ Despite the rapid progress in modern medicine during recent years, we can say that modern medicine has not responded to an integrated approach, which is a crucial concept in patient care. This is the deficiency in modern medicine, it cannot respond to the uniqueness of each person and their different requirements. The deficit mentioned can be closed by a holistic nursing approach.^{10,11} The care needs that cannot be met by modern medicine should be supported with TAT methods applied by nurses under the light of evidence-based information. The western medicinal authorities have started to give due importance to TAT implementation and also support the institutions and organizations for bringing the subject to a scientific platform. Supportive treatment approaches need to be considered at a scientific level and TAT activities, which are non-scientific, need to be controlled.

RISKS IN AROMATHERAPY AND POINTS TO BE TAKEN INTO CONSIDERATION

The guide offered by Kyle and Tem men has six fields to take into consideration for nurses in the application of aromatherapy: defining the best method of application, defining the density of the mixture, selecting the carrier oil used in massages, clarifying it, specifying that the patient is ready and motivated for a massage application and revealing the result criteria.¹² Several precautions need to be taken during the practice of aromatherapy. Care must be taken to avoid contacting the eyes and mucous membranes with essential oils. Essential oils also must be kept out of the reach of children. Essential oils should be used cautiously in patients with hypertension, epilepsy, allergies and also in pregnancy. It must not be forgotten that the volatile essential oils can interact with other drugs. Some essential oils may cause allergic skin reactions. The topical application of essential oils such as dill, lime, orange, and *Ruta graveolens* can cause light-sensitiveness and exposure to the sunshine for a long time may conduce ambustions. Furthermore, the overuse of some essential oils can be toxic.

MATERIAL AND METHODS

This study is a record survey conducted to analyze the use of aromatherapy in nursing in Turkey. Theses and investigations undertaken between the years of 2007 and 2017 were included in this study. The data were obtained from the research in the 'Turkey National Thesis Database' and the databases of medicine and nursing (ScienceDirect, Pubmed, and Ulakbim). Scanning was actualized by using the keywords 'aromatherapy, nursing.' The research sample was composed of 35 studies conducted in Turkey between 2007-2017. Between the years mentioned above, we found 12 theses about aromatherapy with restrictions in use implemented by the author, 15 available theses were obtained besides those 12. In total, 27 theses about aromatherapy in nursing were reviewed. Since compilations on aromatherapy did not provide any research results, they were not included within the scope of this study.

SAMPLE AND EVALUATION

Scanning was actualized by using the keywords 'aromatherapy' and 'nursing' in databases of medicine and nursing (ScienceDirect, Pubmed, and Ulakbim) and the 'Turkey National Database' between July 2016 and August 2017. Thirty-five surveys within this research were evaluated as manuals and include the years of enrolment, disciplines, sampling group, type, purpose of the research, methods of administration and investigation results.

RESULTS

According to the results of the research, there were 35 surveys on aromatherapy in nursing in Turkey between the years 2007-2017. Of these, 77.1% (n=27) were postgraduate and doctoral theses, 25.7% (n=9) were postgraduate theses, 51.4% (n=18) were doctoral theses, and 22.8% (n=8) were research papers (Tables 1-3). It was observed that the aromatherapy was studied mostly in doctoral theses. In total, 80% (n=28) were planned experimental studies and 20% (n=7) were semi-experimental. With regards to location, 37.1% (n=13) of the studies were conducted by the Department of

Internal Diseases Nursing, 11.4% (n=4) of the studies were carried out by the Department of Nursing Principles, 5.71% (n=2) were conducted by the Department of Public Health Nursing, 11.4% were carried out by the Department of Surgical Diseases Nursing, 5.71% (n=2) were conducted by the Department of Pediatrics Nursing, 8.57% (n=3) were administered by the Department of Gynecology Nursing. In total, 20% (n=7) of the studies about aromatherapy analyzed the effect on sleep quality, 31.4% (n=11) analyzed the effect on stress and anxiety, 20% (n=7) analyzed the effect on vital signs and functional status, 28.5% (n=10) analyzed the effect on pain, and 8.57% (n=3) researched the effect on life quality and tiredness. Moreover, it was determined that aromatherapy reduces colic and tiredness in babies, pruritus, and constipation in patients receiving haemodialysis, and nausea and vomiting caused by the adverse effects of chemotherapy. Besides these effects, aromatherapy had a positive impact on increasing the quality of life, comfort and satisfaction, pain, sleep, anxiety, stress, vital signs, and childbirth. In regards to the application of aromatherapy, 51.4% (n=18) of the nurses used inhalation, 40% (n=14) used massage and 8.5% (n=3) used inhalation and massage techniques together. Only one of the aromatherapy applications administrated by inhalation did not give a positive result.

DISCUSSION

It was observed that people who mostly considered aromatherapy were affected by stress, anxiety, pain, sleep, tiredness and premenstrual syndrome. According to the findings of the research, treatment using sense of smell was used to control pain, increase the quality of life, remove constipation, manage symptoms like tiredness, anxiety, and sleep. This type of therapy can also reduce pruritus in patients receiving haemodialysis and nausea from the adverse effect of chemotherapy. It was also found that aromatherapy reduces the perception of pain in the first stages of childbirth, increases the level of comfort and satisfaction, and enhances the sleep quality of women in the menopausal period. Moreover, lavender oil inhalation

TABLE 1: Master's Thesis and Their Features on Aromatherapy Applications in Turkey.

Research Name	Authors and Year Released	Location and Type of Research	Sample Number and Features	Effect-Result and Research Objective	Route of Application
Examination of the Effect of Back Massage Applied with Lavender Oil on Sleep Quality of the Elders	Seyhan Yaman 2011	Firat University Health Sciences Institute Semi-Experimental	68 Elders	Examining the effects of back massage applied with lavender oil on sleep quality of the elders	It is found that the Aromatherapy Back Massage is Effective on the Sleep of the Elders--via massage
The Effect of Aromatherapy on Stress and Anxiety of Nurses Working in the Intensive Care Unit	Nadiye Barış 2015	Cukurova University Health Sciences Institute Nursing Department Semi-Experimental	45 Nurses	Determining the Effect on Stress and Anxiety of Nurses Working in Intensive Care Unit	It is determined that the applied lavender does not have an effect on vital signs with stress and anxiety-via Inhalation Application
The Effects of Aromatherapy on Childbirth	Hacer Karabulut 2014	Istanbul University Institute of Health Sciences Gynaecology Nursing- Experimental	60 Pregnants	Determining the Effects of Aromatherapy on Childbirth	It is found that it reduces the feeling of birth pain, level of anxiety levels and duration of delivery; supports to bear the pain and confidence-Massage, inhalation
The Effect of Inhaler Aromatherapy Applied During Port Catheterization for Oncology Patients on Pain	Sümeysra Mihrap İltir 2016	Gaziantep University Health Sciences Institute-Experimental	60 oncologic patients	Evaluating the Effect on Pain in the Port Catheterization Process of Inhaler Aromatherapy	It is seen that the pain experienced by the patients during the procedure decreased by inhaler aromatherapy in the port catheterization process; also the compliance with the treatment increased
Examination of the Effect of Aromatherapy Massage on Anxiety and Sleep Quality in the Preoperative Period	Cahide Ayık 2016	Dokuz Eylül University Institute of Health Sciences -Experimental	80 patients	To examine the effect of aromatherapy massage on anxiety and sleep quality in the preoperative period	It is determined that the aromatherapy massage applied with lavender oil before the operation of patients undergoing colorectal surgery reduces the level of anxiety and increases the quality of sleep-Via Massage
The effect of aromatherapy back massage on pain level and plasma beta endorphin level in cancer patients receiving palliative care	Gizem Gürakan 2016	Ege University/Institute of Health Sciences/ Department of Internal Diseases Nursing-Experimental	31 cancer patients receiving palliative care	Determining the effect of aromatherapy massage on pain and plasma beta-endorphin level in cancer patients receive palliative care	It is seen that the aromatherapy back massage reduces the pain level and increases plasma beta-endorphin level of cancer patients receive palliative care-Via Massage
The effect of aromatherapy on the pain, comfort, and satisfaction during childbirth	Zehra Cenici (Limited Access) 2017	Çukurova University/ Institute of Medical Sciences/ Department of Nursing-Semi- experimental	60 pregnant	Determining the effect of Aromatherapy on the pain, comfort and satisfaction during the first level of childbirth	It is found that aromatherapy reduces the pain perception, increases the comfort and satisfaction level during the first level of the childbirth
The effect of aromatherapy on the sleep and life quality of menopausal women	Meryem Gürlü (Limited Access) 2017	Nevşehir Hacı Bektaş Veli University/Institute of Science and Technology/Department of Nursing-Experimental	57 women menopausal period	Determining the effect of aromatherapy on sleep and quality of menopausal period life of women in menopausal period	It is determined that the aromatherapy applied to women in the menopausal period increases the sleep quality - Inhalation
Effect of lavender oil on vital signs and anxiety levels of patients with hyperplasia of prostate preoperatively	Hasan Genç (Limited Access) 2017	İnönü University/Institute of Medical Sciences/Department of Nursing/ Nursing of surgical diseases-Experimental	110 patients with hyperplasia of prostate	Determining the effect of lavender oil on vital signs and anxiety levels of patients with benign prostatic hyperplasia in preoperative period	It is determined that the lavender oil inhalation reduces level of anxiety and has effects on vital signs-inhalation

TABLE 2: Doctoral Theses and Their Features on Aromatherapy Applications in Turkey.

Research Name	Authors and Year Released	Location and Type of Research	Sample Number and Features	Research Objective	Effect-Result and Route of Application
Effects of Touch, Music Therapy and Aromatherapy on Physiological Conditions of Intensive Care Patients	Sevban Arslan 2007	Ataturk University Institute of Medical Sciences/ Department of Nursing of Surgical Diseases -Semi Experimental	72 patients	Examining the effects of touch, music therapy and aromatherapy on the physiological status of intensive care patients.	Pulse Averages Fall After Aromatherapy-Via Inhalation
Analyzing the Effect of Aromatherapy Massage on Removing the Colic in Babies	Bengü Çetinkaya 2007	Ege University/Institute of Medical Sciences/Department of Pediatrics Nursing Experimental	40 babies with colic	Analyzing the Effect of Aromatherapy massage to remove the colic in babies	It is determined that Aromatherapy Massage Creates a Positive Change in Points of State-Anxiety Status in Babies-Via massage
The Effect of Aromatherapy on Symptoms and Life Quality of Women Breast Cancer Patients Receiving Chemotherapy	Özlem Ovayolu 2011	Erciyes University/Institute of cancer Medical Sciences/ NursingDepartment/ Department of Internal Diseases Nursing-Experimental	280 women with breast	Evaluating the effect of aromatherapy on the symptoms and life quality of patients with breast cancer and receiving chemotherapy	It is determined that the aromatherapy massage and the aromatherapy made with smell applied to women do not create any negative effect-Inhalation+massage
The Effect of Sleep and Touching with Music and Aromatherapy on the Impact Level of Fibromyalgia and Tiredness and the Sleep Quality in Fibromyalgia Patients	Birsel Canan Demirbağ 2011	Atatürk University/ Faculty of Health sciences/ Department of Public Health Nursing-Experimental	162 women patients with fibromyalgia	Determining the effect of touching with music and aroma on tiredness and sleep quality of fibromyalgia patients	It is found that this method is effective on affecting the course of the disease and increasing the sleep quality in fibromyalgia patients- Inhalation way
Effect of the Aromatherapy on Pruritus of Hemodialysis Patients	Mehtap Cürcani 2012	Atatürk University/Institute of Medical Sciences/ Department of Internal Diseases Nursing-Experimental	80 patients who received hemodialysis treatment	Determining of the effect of aromatherapy on pruritus seen in hemodialysis patients	It is found that aromatherapy reduces the complaints of pruritus of hemodialysis patients and also provides positive changes in some laboratory parameters related to pruritus-massage
Effect of aromatherapy applied byinhalation on arterial blood pressure, pulse and anxiety levels in women with essential hypertension	Hafize Özdemir 2012	Erciyes University/ Institute of Medical Sciences/ Department of Internal Diseases Nursing-Experimental	40 Women with Essential Hypertension	Investigating the effect of aromatherapy on arterial blood pressure, pulse and anxiety level in women with essential hypertension	It is monitored that aromatherapy has positive effects on arterial blood pressure, pulse and anxiety levels in women with essential hypertension- Inhalation
Relaxation Technique, Aromatherapy And The Effect Of Applying Both Methods on the Pain After Surgery	Nurten Taşdemir Doctoral Thesis 2012	Ege University/ Institute of Medical Sciences/Department of Surgical Diseases Nursing -Experimental	100 patients	It is planned to analyze the effect of aromatherapy on reducing the pain after operation	It is seen that this method reduces the amount of aromatherapy analgesic use applied to decrease the pain after surgery-Inhalation
The Impact of Aromatherapy, Musicotherapy, and Vibration on Stress and Behavior of the Newborn	Öznur Tosun Doctoral Thesis 2013	Erciyes University/ Institute of Medical Sciences/Nursing Department/Pediatry-Experimental	80 preterms with newborn	Evaluating the effect of aromatherapyon the stress and behavior of preterm infants	It is found that aromatherapy reduces the stresses of preterm newborns and affects their behavior positively-Massage
Effect of Aroma Massage on Constipation in Elders	Diğdem Lafçı Doctoral thesis 2014	Atatürk University/ Institute of Medical Sciences Department of Nursing Principles -Experimental	48 elders	The purpose was to analyze theeffect of aroma massage onconstipation in elders	It is found that aroma massage practice increases the number of stools, stool volume and the amount of the stool and also reduces the feelings of pushing during the stool and not to defecating completely which is accepted as the symptoms of constipation of elders-massage
The Effects of Aromatherapy Massage and Reflexology on Pain and Tiredness in Patients with Rheumatoid Arthritis	Zehra Gök Doctoral Thesis (Limited Access) 2015	Hacettepe University/Institute of Medical Sciences/ Department of Internal Diseases Nursing -Experimental	51 Patients with Rheumatoid Arthritis	Analyzing the effects of aromatherapy massage and reflexology on pain and tiredness of patients with rheumatoid arthritis	It is seen that aromatherapy massage and reflexology are effective in reducing pain and tiredness and increasing the health perception in patients with rheumatoid arthritis-Via Massage
Effects of inhaled aromatherapy on sleep quality and tiredness level in patients receive hemodialysis treatment	Gamze Muz (Limited Access) 2015	Erciyes University/ Institute of Medical Sciences / Nursing Department/ Department of Internal Diseases Nursing-Experimental	62 patients receive hemodialysis treatment	Determining of the effect of aromatherapy applied by inhalation on sleep quality and tiredness level in people receive hemodialysis treatment	The use of aromatherapy made with sweet orange and lavender oil may be recommended to increase the sleep quality and reduce the tiredness level of hemodialysis patients-by way of inhalation

TABLE 2: Doctoral Theses and Features on Aromatherapy in Turkey (*continued*).

Research Name	Authors and Year Released	Location and Type of Research	Sample Number and Features	Research Objective	Effect-Result and Route of Application
Effects of Aromatherapy Massage Applied in Elders with knee osteoarthritis on the Pain, Functional Status, and Life Quality	Seda Pehlivan (Limited Access) 2015	Ege University/Institute of Medical Sciences/ Department of Internal Diseases Nursing -Experimenta	90 people with knee osteoarthritis	Determining the Effect of Aromatherapy Massage Applied to Elders with Knee Osteoarthritis , on the Pain Functional Status, and Life Quality	It is found that the aromatherapy massage applied to elders with knee osteoarthritis has positive effect on pain, functional status, and life quality-Massage
The effect of aromatherapy massage on knee pain and functional status in individuals with osteoarthritis	Dilek Arslan (Limited Access) 2016	Gazi University/ Institute of Medical Sciences/Nursing Department-Experimental	95 people with osteoarthritis	Evaluating the effect of aromatherapy massage applied to individuals with osteoarthritis knee pain and functional status	It is determined that aromatherapy massage applied to individuals with osteoarthritis improves physical functions, reduces the knee pain and morning malfunction. Massage
The effect of aromatherapy applied to university students on coping with the premenstrual syndrome	Tuğba Uzunçakmak (Limited Access) 2016	Gazi University/ Institute of Medical Sciences /Nursing Department -Experimental	77 students	Determining the effect of aromatherapy applied to university students on coping with Premenstrual Syndrome (PMS)	It is resulted that the method of inhalation aromatherapy can be used to cope with PMS. Inhalation
Effect of inhaled aromatherapy on procedural pain and anxiety based on implantable venous port catheter needle puncture	Ezgi Mutluay Yayla (Limited Access) 2016	Hacettepe University Institute of Medical Sciences /Department of Internal Diseases Nursing-Experimental	123 cancer patients	Examining the effect of inhaler-applied lavender and eucalyptus essential oils on procedural pain and anxiety based on implantable venous port catheter puncture	It is determined that the lavender essential oil applied via inhalation reduces the pain level before the implantable venous port catheter needle entry procedure-inhalation
The effect of aromatherapy applied in middle and advanced patients with dementia on agitation and the burden of care provider	Tuğçe Türten Kaymaz (Limited Access) 2016	Hacettepe University Institute of Medical Sciences /Department of Internal Diseases Nursing -Experimental	28 patients with dementia and their care providers	Analyzing the effect of aromateraphy applied via massage and inhalation on the agitation levels of middle-and advanced-stage patients with dementia and burden level of care providers	It is found that aromatherapy hand massage and inhalation practices are effective in reducing the agitation of patients with dementia and the burden level of care providers-massage and inhalation
Comparing of aromatherapy applied with massage and inhaler with the effect of aromatherapy on acute nausea-vomiting based on chemotherapy	Pinar Zorba (Limited Access) 2016	Hacettepe University Institute of Medical Sciences /Department of Internal Diseases Nursing-Experimental	75 patients with breast cancer	Comparing and evaluating the effect of aromatherapy applied with massage and inhaler way on acute nausea-vomiting based on chemotherapy	It is determined that the severity of nausea significantly decreases in individuals in massage and inhaler aromatherapy groups-massage and inhalation
Effect of aromatherapy on patients' anxiety before mastectomy	Ayşe Beyliklioğlu (Limited Access) 2017	Çukurova University/ Health High School/Nursing Department/Semi experimental	80 patients with mastectomy	To investigate the effect of inhalation aromatherapy on the anxiety level of patients before mastectomy	It is found that the aromatherapy positively affects the anxiety levels of patients before mastectomy-inhalation

decreases the level of anxiety of patients with benign prostatic hyperplasia (BPH) before surgery and also affects vital signs. Additionally, it is effective in decreasing tiredness, the speed of disease development and increases the sleep quality in patients with fibromyalgia. According to other findings, aromatherapy has positive impacts on pulse level, anxiety and arterial blood pressure in women with hypertension. Aromatherapy is positively effectual on the anxiety levels of patients before mastectomy. Aromatherapy hand massage and

inhalation practices reduce the agitation of patients with dementia and the care-load of the care providers.

CONCLUSION

We can conclude that aromatherapy has been a significant point of interest in nursing studies. The TAT methods used to avoid symptoms and support medical treatment, have aroused nurses' interests and have encouraged postgraduate research and nurses to use TAT methods during

TABLE 3: Examples and Characteristics of Research Examples on Aromatherapy Applications in Turkey.

Research Name	Authors and Year Released	Location and Type of Research	Sample Number and Features	Effect-Result and Research Objective	Route of Application
The Effect of Aromatherapy on Anxiety and Vital Signs of Elders Living in Eventide Homes	Eda Ergin, Gamze Göke Arslan, Şebnem Çınar Yücel, Nihat Ayçemen	Spatula DD/Volume 7/ Number 1/2017 Experimental	50 Elders	Analyzing the Effect of Aromatherapy on Anxiety and Vital Signs	It is seen that the Aromatherapy has regulatory effect on vital signs by reduces anxiety of elders in Eventide homes-Inhalation
Effect of Aromatherapy Massage on Dysmenorrhea in Turkish Students	Serap Ejder Apay, Sevban Arslan, Reva Balci Akpınar, Ayda Çelebioğlu	Pain Management Nursing, Vol 13, No 4 (December), 2012: p 236-240 Semi Experimental	44 Students	The purpose of this study was to investigate the effect of aromatherapy massage on dysmenorrhea	Massage was effective in reducing dysmenorrhea. In addition, this study showed that the effect of aromatherapy massage on pain was higher than that of placebo massage - via massage
Effects of Aroma Inhalation on Anxiety and Vital Signs of Nursing Students during Their First Blood Drawing Practice	Kıvan Çevik, Serpil İnce, Nihat Ayçemen, Eda Ergin	International Journal of Health Sciences and Research - Deneyisel	72 nursing students	Examining the level of anxiety and vital signs of nursing students have experienced during their first depletion experience	No change was seen in the level of anxiety and vital signs of nursing students based upon aromatherapy-inhalation way
Imagery practicing with music and aromatherapy in a woman who is diagnosed with over cancer: a case report	Gamze Teskereci, Hatice Balci Yangın	Spatula DD. 5(2):79-82; 2015.	Case Report	It is aimed to apply an imagination practice with a relaxing music and aromatherapy inhalation for making relaxed a woman who is diagnosed with ovary cancer	It is monitored that the imaginary method applied with aromatherapy and music made relaxed-inhalation
Effects Of Aromatherapy Massage On The Sleep Quality And Physiological Parameters Of Patients In A Surgical Intensive Care Unit	Zeynep Karaman Özlü, and Pınar Bilican	African Journal of Traditional, Complementary, and Alternative Medicines 2017; 14(3): 83-88 - Experimental study	60 patients	To determine the effect of a romatherapy massage on quality of sleep and physiological parameters in surgical intensive care patients	Results of the study showed that aromatherapy massage enhanced the sleep quality of patients in a surgical intensive care unit and resulted in some positive changes in their physiological parameters. - massage
Effects of aroma inhalation on examining the anxiety	Adalet Koca Kutlu, Emel Yılmaz, Dilek Çeçen	Teaching and Learning in Nursing (2008) 3, 125-130 -Experimental study	95 students	Determining the effect of aromatherapy on anxiety	Aroma inhalation decreases examination anxiety - inhalation
Aromatherapy Massage for Neuropathic Pain and Quality of Life in Diabetic Patients.	Gok Metin Z, Arıkan Donmez A, Izgu N, Ozdemir L, Arslan IE	Journal Of Nursing Scholarship 2017 Jul;49(4):379-388. -Experimental study	46 patients	This study aimed to examine the effects of aromatherapy massage on neuropathic pain severity and quality of life (QoL) in patients suffering from painful diabetic neuropathy.	Aromatherapy can be used to manage neuropathic pain and improve QoL in patients with painful neuropathy -massage
Effects of aromatherapy on sleep quality and anxiety of patients.	Karadag E, Samancioglu S, Ozden D, Bakir E.	Nursing Critical Care. 2017 Mar;22(2):105-112. -Experimental study	60 patients	Investigating the effect of lavender essential oil on the sleep quality and anxiety level of patients in coronary intensive care units	Lavender essential oil increased quality of sleep and reduced level of anxiety in patients with coronary artery disease. -inhalation

recent years. The use of aromatherapy in the health sector has gradually increased due to its beneficial effects and because it is an inexpensive and easy method to use. Therefore, nurses need to be taught these therapies by professionals, take an application certificate, apply the therapy correctly and include evidence-based studies in nursing care.

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Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

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