Geriatric Nursing xx (2016) 1–7

Contents lists available at ScienceDirect

Geriatric Nursing

journal homepage: www.gnjournal.com

Research Paper

Effects of aromatherapy on agitation and related caregiver burden in patients with moderate to severe dementia: A pilot study

Tugce Turten Kaymaz, PhD, RN *, Leyla Ozdemir, PhD, RN

Hacettepe University, Faculty of Nursing, 06100, Sıhhıye, Ankara, Turkey

ARTICLE INFO

Article history:
Received 21 July 2016
Received in revised form
1 November 2016
Accepted 7 November 2016
Available online xxx

Keywords:
Agitation
Aromatherapy
Caregiver burden
Dementia
Neuropsychiatric symptoms
Nursing

ABSTRACT

We examined the effects of aromatherapy on agitation in patients with dementia and evaluated related caregiver burden. Patients and their caregivers from two hospitals in Turkey were selected and divided into an intervention group ($n = 14$) and a control group ($n = 14$). Patients were stratified according to their dementia phase and intake of antipsychotic medication. The intervention group received aromatherapy via massage and inhalation at home for 4 weeks. The control group received no intervention. Data were collected using the Neuropsychiatric Inventory (NPI), the Cohen-Mansfield Agitation Inventory (CMAI) and the Zarit Burden Interview (ZBI). At 2 and 4 weeks, the NPI scores were significantly lower in the intervention group ($p < 0.05$). At 4 weeks, the CMAI and ZBI scores were significantly lower in the intervention group ($p < 0.05$). In conclusion, after aromatherapy, agitation, neuropsychiatric symptoms, and caregiver distress significantly reduced, and aromatherapy prevented caregiver burden increase.

Introduction

In patients with dementia, cognitive symptoms are accompanied by psychiatric and behavioral symptoms that develop over time.[1] Psychiatric and behavioral symptoms are seen in 92% of patients with dementia.[2] One of the most frequently observed behavioral symptoms is agitation, with a prevalence of 63–70%,[2–4] which can manifest as hitting, pushing, self-harm, swearing, wandering, hoarding, or continuously and repetitively asking questions.[1,5,6] This behavioral symptom tends to persist throughout the course of the disease; indeed, it is frequently observed during the moderate and advanced stages of the disease.[2–4]

Agitation leads to several problems for patients as well as their relatives or caregivers. Problematic symptoms observed in patients with dementia and agitation include wandering; leaving home without informing caregivers, which can result in traffic accidents or the patient losing his or her way; self-harm; collecting and hoarding, which can clutter the patient's living area and lead to accidental injuries; swearing; inappropriate undressing; or making physical or sexual advances. These effects of agitation and dementia can result in social isolation.[7–9]

Caregivers of patients who display agitation symptoms need to devote more time to these patients. As a result, they may be at a greater risk for physical trauma, psychological problems, and economic losses.[1,10] Therefore, it is clear that agitation as a behavioral manifestation of dementia often increases the probability of patients and caregivers developing physical and psychological illnesses, being hospitalized for treatment, and bearing increased treatment costs. The yearly costs of health and social care in patients with agitation are between £7000 and £15,000 depending on the severity of agitation in the United Kingdom,[11] and the yearly cost of informal care per case is between $3630 and $17,700 in the United States of America.[12] Overall, caregivers of patients with dementia and agitation have an increased burden. Often, they cannot cope with the problems caused by the agitation and its related effects, and they may eventually seek nursing home residence for those in their care.[2,13–15]

In dementia, a variety of non-pharmacological treatments have been recommended for agitation,[16–18] one of which is aromatherapy.[19–21] The essential oil most frequently used to decrease the symptoms of agitation in dementia is lavender oil (*Lavandula angustifolia*), which has tranquilizing properties that have been shown to relieve agitation and improve sleep.[8,22–26] Theoretically, using different essential oils with similar effects together should be more effective than using only one essential oil. Aside from

Conflicts of interest: The authors have no financial disclosures to declare and no conflicts of interest to report.

* Corresponding author. Fax: +90 312 312 70 85.
E-mail address: tgctrtn@gmail.com (T. Turten Kaymaz).

0197-4572/$ – see front matter © 2016 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.gerinurse.2016.11.001

lavender oil, there are various essential oils with calming and sedative effects, such as melissa and lemongrass.[27] Lemongrass oil (*Cymbopogon citratus*) can also be used to manage behavioral symptoms in patients with dementia because of its sedative-hypnotic, anxiolytic, calming, and tranquilizing effects.[28–30] Lemongrass is also more preferable due to its lower price than melissa. Although several studies have shown that massage aromatherapy, as well as inhalation and lotions, is effective in managing the behavioral and psychiatric symptoms of dementia,[20,21,23,25] other studies have concluded that these methods are ineffective.[22,26,31,32] A systematic review examining seven randomized trials regarding the influence of aromatherapy on patients with dementia and agitation reported that only two studies contained usable data on agitation and behavioral symptoms.[33] Of these two studies, one showed significant improvement, and the other showed an insignificant effect on reducing agitation. Both studies used topical application of melissa aromatherapy oils without using massage and were conducted in nursing homes, meaning the applicability of the findings to other settings could be limited.[20,34] Previous reports have investigated aromatherapy methods that involved either an inhaler or a massage. We found no investigations into the effects of aromatherapy involving inhalation and massage together in the same patient. Therefore, studies are needed to elucidate the combined effects of inhalation and massage aromatherapy on agitation in patients with dementia.[33] Furthermore, previous studies have analyzed the effects of aromatherapy in patients who were nursing home residents. We found no research on the effectiveness of aromatherapy in decreasing agitation and reducing caregiver burden in patients with dementia being cared for at home.

The present randomized, controlled study aimed to analyze the effects of aromatherapy applied via massage and inhalation on the agitation levels of patients with moderate to severe dementia who live at home, as well as on related caregiver burden.

Materials and methods

Ethical considerations

The present study adhered to the Helsinki Declaration. It was approved by Hacettepe University and Ankara University hospitals institutional review board, and that informed consent was granted by the patients' legal guardians. The study was approved by the Ethical Commission of Turgut Ozal University, Ankara, Turkey. Written informed consent was obtained from the patients' caregivers after they had agreed to participate in the study. Study subjects were informed that if they did not want to continue, they could withdraw from the study at any time without stating a reason.

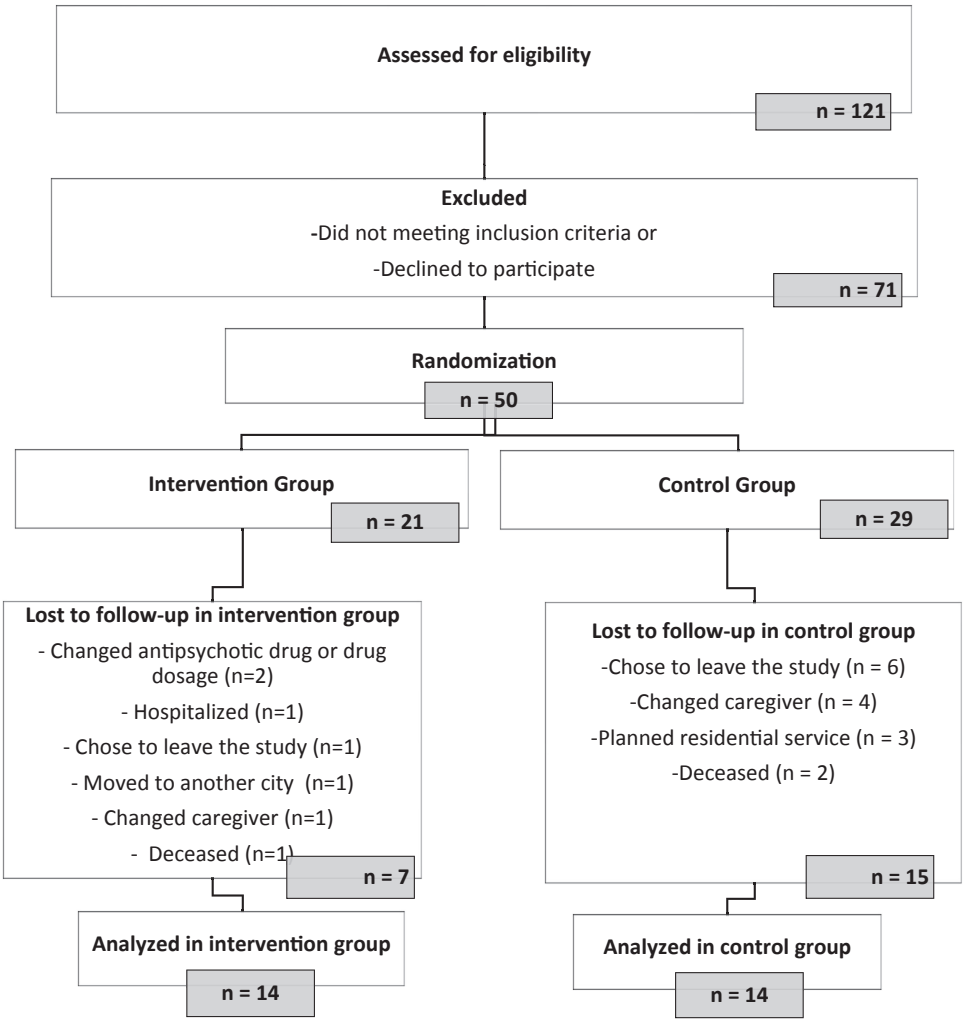

Fig. 1. Flow chart of patient selection.