

Massage Therapy in Nursing as Nonpharmacological Intervention to Control Agitation and Stress in Patients With Dementia

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ABSTRACT

Context • Agitation, aggression, stress, and anxiety are common in patients with dementia. Another essential feature of dementia is a significant decline in a patient's cognitive ability, and communicating among patients through language becomes virtually ineffective. Scientists have examined techniques to maintain communication with patients with dementia at a basic level, such as through gentle touch in the form of massage.

Objective • The literature review intended to examine the role of massage therapy, either alone or in conjunction with other nonpharmacological interventions such as aromatherapy or calming music, in attenuating aggression and related behavioral disorders in patients with dementia.

Design • The research team performed a literature review, searched the PubMed database, using different keyword combinations, including *massage*, *message* AND *aromatherapy*, *dementia*, *agitation*, *stress*, and *anxiety*.

Setting • The study was performed in China-Japan Union Hospital of Jilin University (Changchun, China).

Results • The employment of massage therapy, either alone or in combination with aromatherapy or calming music, can significantly decrease agitation, aggression, stress, and anxiety in patients with dementia. Moreover, massage therapy can also be beneficial for nursing personnel involved in taking care of patients with dementia. The combination of massage with aromatherapy seems to impart the most significant results in patients with dementia.

Conclusion • Massage therapy may be a useful nonpharmacological intervention in nursing profession to control agitation and stress in patients with dementia. (*Altern Ther Health Med.* 2020;26(6):29-33)

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INTRODUCTION

The development of agitation, anxiety, and stress in individuals with Alzheimer's disease is common and generally accounts for their restlessness, which is characterized by a constant need to move around in the form of wandering.¹ These behavioral alterations pose a significant challenge to health care practitioners in their care of such patients.

The various drugs to control agitation and associated behavioral symptoms include antipsychotics, sedatives, hypnotics, and anxiolytics. However, the employment of these drugs in addition to conventional drug therapy to combat memory disorders can lead to undesirable drug-drug interactions or development of adverse effects, including motor impairment—with antipsychotics—and sedation—with sedatives or anxiolytics.^{2,3} Therefore, exploring the usefulness of alternative nonpharmacological therapies to control behavioral abnormalities in patients with dementia has increased.

Another essential feature of dementia is a significant decline in patients' cognitive abilities, and communicating with patients through language becomes virtually ineffective. Scientists have examined techniques to maintain communication with patients with dementia at a basic level, such as through gentle touch in the form of massage.⁴ Some studies have shown the utility of massage and touch as a nonpharmacological alternative for controlling or managing anxiety, agitation, and stress in patients with dementia.^{5,6,7}

Table 1. Efficacy of Massage Therapy in Reducing Agitation^a

References	Interventions	Comments
Snyder et al ⁸ (2005); Snyder et al ⁹ (1999)	Hand massage and therapeutic touch	<ul style="list-style-type: none"> • Effective in controlling agitation • Higher efficacy of hand massage
Malaquin-Pavan ¹⁰ (1997)	Touch massage	<ul style="list-style-type: none"> • Decrease in wandering, restlessness, and shouting • Increase in physical relaxation and sleepiness and better communication
Kilstoff & Chenoweth ⁵ (1998); Sansone & Schmitt ⁶ (2000)	Gentle massage on hands	<ul style="list-style-type: none"> • Development of positive relationship between patient and caretaker • Decrease in agitation, distress, withdrawal, and wandering • More alertness and better sleep
Moyle et al ⁷ (2011)	Foot massage	<ul style="list-style-type: none"> • Decrease in agitation and behavioral abnormalities
Moyle et al ¹² (2014)	Foot massage	<ul style="list-style-type: none"> • Reduction in blood pressure and heart rate
Schaub et al ¹³ (2018)	Hand massage	<ul style="list-style-type: none"> • Decrease in stress markers, including serum cortisol and salivary alpha-amylase
Brooker et al ⁴ (1997)	Aromatherapy (exposure to lavender oil) and/or massage (hand and lower arm)	<ul style="list-style-type: none"> • Normalization of disturbed or agitated behavior • No additional benefit of aromatherapy
Smallwood et al ¹⁴ (2001); Yang et al ^{18,19} (2016); Turten Kaymaz & Ozdemir ²⁰ (2017); Fung & Tsang ²¹ (2018)	Aromatherapy with massage	<ul style="list-style-type: none"> • Decrease in agitation and depressive symptoms • Decrease in neuropsychiatric symptoms, distress, and caregiver burden • Combination superior to massage therapy only • Reduction in agitated behavior
Snow et al ¹⁷ (2004)	Per se aromatherapy with no massage	<ul style="list-style-type: none"> • No effect on agitation in dementia patients
Remington ²³ (2002)	Hand massage and/or calming music	<ul style="list-style-type: none"> • Reduction in agitated behavior
Moyle et al ²⁵ (2013)	Massage therapy for nurses taking care of dementia patients	<ul style="list-style-type: none"> • Improvement in mood and decrease in diastolic blood pressure
Dimitriou et al ²² (2018)	Music therapy vs aromatherapy vs massage therapy	<ul style="list-style-type: none"> • Superiority of music therapy over aroma and massage therapy
Hodgson & Andersen ²⁴ (2008)	Treatment with reflexology	<ul style="list-style-type: none"> • Decrease in physiological distress
Rowe & Alfred ¹¹ (1999); Anderson et al ²⁶ (2017); Fu et al ²⁷ (2013); Moyle et al ²⁸ (2013)	Massage therapy	<ul style="list-style-type: none"> • Not effective in reducing agitation
Yoshiyama et al ²⁹ (2015)	Aroma therapy with massage	<ul style="list-style-type: none"> • Did not improve mood and agitation

^aThe table summarizes the studies, showing the effectiveness of massage therapy either alone or in conjunction with aromatherapy and calming music in attenuating agitation, stress, and anxiety for patients with dementia as well as for the nurses taking care of them.

The present review intended to examine the role of massage therapy, either alone or in conjunction with other nonpharmacological interventions such as aromatherapy or calming music, in attenuating aggression and related behavioral disorders in patients with dementia.

METHODS

Procedures

The research team searched the PubMed database, using different keyword combinations, including *massage*, *message* AND *aromatherapy*, *dementia*, *agitation*, *stress*, and *anxiety*. The purpose was to include all those studies documenting the positive or negative role of massage therapy either alone or in combination with other nonpharmacological interventions in altering agitation and stress in patients with dementia. All types of studies, including case reports, case studies, and randomized controlled trials pertaining to objective of this

study were included. In total, 23 studies were found describing the influence of massage therapy either alone or in combination with other nonpharmacological interventions on agitation, stress, and anxiety in patients with dementia.

RESULTS

Table 1 summarizes the results of the literature review.

Behavioral Changes

Reducing Agitation. Studies have shown the positive influence of massage therapy in controlling agitation and reducing behavioral problems in patients with dementia. Snyder et al’s studies evaluated the massage methods to control agitation in patients with dementia.^{8,9} The researchers employed 2 methods: hand massage and therapeutic touch. They found that hand massage can control agitation and was superior to therapeutic touch.

Malaquin-Pavan's study of 4 older adults with Alzheimer's disease revealed the efficacy of touch-massage in improving abnormal behavior in terms of wandering, restlessness, and shouting.¹⁰ The participants received 2 sessions of massage per week, each comprising 30 minutes, during a 6-month period, for a total 51 sessions. The researchers observed positive effects during the session as well as at 15 minutes after the session. They observed significant changes in the patients, including physical relaxation, better sleep, and better communication together with a decrease or stoppage of abnormal behavior.

Kilstoff and Chenoweth performed a study in a multicultural health care center treating dementia and found that gentle massage on the hands of patients with dementia in the course of a period of 18 months produced a significant effect: the development of a positive relationship between patients and caretakers, a decrease in agitation, less distress, more alertness, a better sleeping pattern, and fewer incidences of withdrawal and wandering.⁵

The importance of slow-stroke massage in reducing physical expressions of agitation, including wandering and resistiveness, has also been described in individuals with Alzheimer's disease. However, Rowe and Alfred found that slow-stroke massage was not successful in attenuating verbal forms of agitation such as shouting.¹¹

Sansone and Schmitt's 1-year demonstration project explored the effectiveness of gentle massage in older adults with dementia living in a nursing home.⁶ The researchers found that massage given by trained nurses could attenuate anxiety and lower agitation in the patients. Massage was given in three 12-week phases, and beneficial effects were evident from the second phase. In addition to reducing patients' agitation, nursing staff indicated that the patients enjoyed the tender touch of massage, which led to an improvement in communication between patients and health care staff.

A short-duration pilot study reported the efficacy of foot massage therapy in reducing agitated behavior in older patients (N = 17) who were suffering from dementia and had a history of clinically significant agitation.⁷ These patients received foot massage for 10 minutes daily for 14 days. A behavioral checklist analysis showed a decrease in agitation and related behavioral abnormalities immediately after massage therapy and at a 2-week follow-up.

Reducing Stress and Anxiety. Some studies have also shown that massage therapy can reduce stress and anxiety in patients with dementia. A randomized controlled trial evaluated the effects of foot massage on the parameters of the physiological stress response—reduction in blood pressure and heart rate—in patients (N = 53) suffering from moderate-to-severe dementia.¹² The researchers divided the participants into 2 groups, one receiving foot massage for 10 minutes and a control group receiving no intervention. Participants in the intervention group showed a greater reduction in heart rate and systolic blood pressure than those in the control group, suggesting the significance of massage therapy in attenuating stress response in patients with dementia.

A recent, hospital-based, randomized controlled trial explored the effects of hand massage on stress and agitation in patients with dementia (N = 40).¹³ The hand massage, in the course of a period of 3 weeks, led to a significant decrease in stress markers, including a decrease in the levels of serum cortisol and salivary alpha-amylase during the second and third week.

Effectiveness of Combined Therapies

Massage and Aromatherapy. Aromatherapy is a nonpharmacological intervention in which patients are exposed to essential oils, and the fragrance of these oils has been found to produce calmness and reduce anxiety. However, it is essential to follow certain guidelines related to use of aromatherapy, such as performing skin testing for allergies before commencing therapy and using the oils at a low concentration—a maximum concentration of 3%—to avoid skin irritation.

Because massage therapy and aromatherapy both have been found to attenuate anxiety and agitation, scientists considered combining these nonpharmacological interventions to attenuate anxiety and agitation in patients with dementia. A case study of patients with severe dementia found that participants receiving 8 to 12 treatments of aromatherapy—exposure to lavender oil for 30 minutes—or massage—hand and lower arm massage for 30 minutes—or both in the course of a 3-month period experienced a normalization of disturbed or agitated behavior.⁴ However, the study found that no additional benefits occurred by adding aromatherapy to massage therapy.

In contrast, a randomized clinical trial with patients with dementia (N=21) found that the combination of aromatherapy with massage was superior to massage-only therapy in attenuating agitation, in terms of motor behavior, in these patients.¹⁴ Studies have reported that a decrease in olfactory thresholds occurs with aging, and it is severely diminished in patients with dementia.^{15,16} Therefore, scientists have suggested that the significant effects for aromatherapy in patients with dementia may be due to absorption of essential oil through the skin.

A controlled trial to evaluate the particular effect of aromatherapy in decreasing agitation in patients with dementia (N = 7) has also been conducted.¹⁷ The patients received aromatherapy only—no massage—for 10 weeks with 3 different essential oils: lavender oil, thyme oil, and unscented grapeseed oil. In this aroma technique, essential oil was placed on a fabric pinned to a patient's shirt, and the person was exposed to the aroma for 3 hours. However, this intervention did not produce any significant effects in decreasing agitation in patients with dementia. The lack of effectiveness of the aroma therapy may be due to the reduced olfactory functioning in patients with dementia, and absorption of oils from massage therapy may be necessary to produce any effect for essential oils in patients with dementia.

A cohort study was conducted with an aim of comparing the relative efficacy of aroma massage therapy (n = 29),

cognitive stimulation therapy (n = 29), and reminiscence therapy (n = 43) in patients with dementia.¹⁸ The patients received different interventions once per week for 8 to 10 weeks. Among these interventions, aroma massage therapy was reported to be more efficacious than the other therapies in decreasing agitation and depressive symptoms in patients with dementia.

Another randomized controlled trial conducted by the same group of scientists with 59 patients reported a significant decline in agitation and depressive symptoms upon receiving aromatherapy with massage once per week for 8 weeks.¹⁹ Another study conducted with patients with dementia (N = 14) at 2 hospitals in Turkey also revealed the efficacy of 4 weeks of aromatherapy with massage in attenuating agitation, neuropsychiatric symptoms, distress, and caregiver burden.²⁰ A recent randomized clinical trial in 60 older patients with dementia also revealed the efficacy of attenuating behavioral and psychological symptoms using aromatherapy and massage therapy.²¹ These studies suggest that the combination of aromatherapy and massage therapy may be as effective as well as a safe intervention to overcome agitated behaviors and depressive mood in patients with dementia.

Massage With Calming Music. Like aromatherapy, exposure to calming music has been found to attenuate anxiety, stress, and agitation. A recent, randomized, controlled crossover trial has found a superiority of music therapy over aromatherapy and massage therapy.²² Accordingly, scientists have attempted to combine massage and calming music as a nonpharmacological intervention in controlling behavioral disturbances in patients with dementia. However, data are limited about using a combination of massage and calming music with patients with dementia.

In residential nursing home, exposure of hand massage or calming music or their combination in patients with dementia (N = 68) for 10 minutes significantly reduced agitated behaviors.²³ Nevertheless, no significant effect was observed for the combination of calming music and massage in comparison to the individual treatments regarding improvements in behavioral abnormalities in patients with dementia.

Reflexology. *Reflexology* is defined as gentle pressing on certain zones of the hands or/and feet to produce a desirable therapeutic effect in the body. Like aromatherapy, calming music and reflexology also belong to the category of nonpharmacological interventions, and they may produce a number of desirable effects in the body, including decreasing anxiety and agitation. A crossover study in a nursing home was conducted to explore the efficacy of reflexology in reducing physiologic distress and pain in patients (N = 21) with mild-to-moderate dementia in the United States.²⁴ These patients were randomly divided into 2 groups, and one group received 4 weeks of reflexology treatment followed by 4 weeks of friendly visits from nurses. The second group first received 4 weeks of friendly visits from nurses and then 4 weeks of reflexology treatment. The study found that the reflexology treatment resulted in a decrease in physiological distress, assessed in terms of a decrease in the levels of

salivary alpha-amylase. Moreover, it also decreased pain perception for these patients with dementia, suggesting the utility of reflexology in reducing stress in patients with mild-to-moderate dementia.

Massage Therapy for Health Care Personnel

Taking care of patients with dementia is a demanding job and often leads to caregivers developing stress and mood variations. A pilot study has been conducted to explore the effectiveness of massage therapy on reducing the stress and elevating the mood levels of nurses taking care of patients with dementia.²⁵ In a parallel, randomized controlled trial, 19 nurses involved in taking care of patients with dementia were recruited and divided into 2 groups, one receiving a foot-massage intervention (n = 9) and a control group resting silently (n = 10). The intervention group underwent 3 sessions of massage in a week for a period of 4 weeks, each session lasting for 10 minutes. The results showed a trend toward improvement in mood together with a significant decrease in diastolic blood pressure and anxiety, suggesting the efficacy of short-duration massage in alleviating anxiety and reducing stress in health care caregivers.

Lack of Beneficial Effects for Massage Therapy

In contrast to the aforementioned studies showing the effectiveness of massage therapy, a few studies have shown no beneficial effects for aromatherapy and massage therapy on agitation in patients with dementia.²⁶ In a single-blinded, randomized controlled trial, 67 patients with dementia with a history of clinically diagnosed disruptive behavior were exposed to either aromatherapy or aromatherapy in conjunction with hand massage therapy twice daily for 6 weeks.²⁷ However, the study documented no significant differences between the placebo and the massage therapy for the patients.

Another randomized, controlled, crossover study that was conducted in the course of 3 weeks in Australia compared the effects of 10 minutes of foot massage—the intervention—with a quiet presence of nurse (but not doing any massage)—no intervention as the control—on controlling agitation and aggression in patients with dementia (N = 55).²⁸ Although a downward trend occurred in the intensity of agitation and aggression in patients receiving the foot massage in comparison with the control patients, the differences were not statistically significant.

A randomized, crossover pilot study involving patients with dementia (N = 14) in Japan reported that application of aroma therapy together with massage 3 times per week for 4 weeks did not improve mood, agitation, or verbal or nonverbal communication.²⁹

DISCUSSION

Except for few studies showing no significant results for massage therapy,^{26,29} most of studies have documented that massage therapy, either alone⁷⁻⁹ or in combination with aromatherapy^{4,17-20} was effective in normalizing behavioral

abnormalities in patients with dementia in terms of reducing stress, anxiety, and agitation. From these studies, the current research team would suggest that long-term massage therapy, in combination with aromatherapy, was more significant than other combinations of therapies in controlling behavioral abnormalities.

These nonpharmacological interventions seem suited to countering emotional distress and anxiety and inducing physical relaxation and better sleep together with improving communication and decreasing wandering, restlessness, and shouting.¹⁰ Moreover, massage therapy has also been found to be useful in reducing the biomarkers of stress, including cortisol and salivary amylase levels in patients with dementia.¹³ The current research team would suggest that aromatherapy may not be useful alone due to the decrease in olfactory functioning during aging; therefore, absorption of essential oils during massage seems essential for the beneficial effects of aromatherapy.¹⁷

Apart from reducing stress and anxiety in patients with dementia, massage therapy has also been shown to be beneficial for health care providers who have been assigned the duty of looking after patients with dementia.²⁵

Unlike the beneficial effects of the combination of aromatherapy and massage therapy, the combination of calming music and massage therapy does not seem to enhance the effects of each, and no significant effects have been found for combining calming music and massage therapy in controlling agitation in patients with dementia.²³ However, this observation was the result of a single study; more such studies are needed to draw more conclusive results regarding the effects of the combination of calming music and massage therapy.

CONCLUSIONS

The employment of massage therapy, either alone or in combination, with aromatherapy or calming music, can significantly decrease agitation, aggression, stress, and anxiety in patients with dementia. Moreover, massage therapy can be beneficial for nursing personnel involved in taking care of patients with dementia. The combination of massage with aromatherapy seems to impart the most significant results in patients with dementia.

AUTHOR DISCLOSURE STATEMENT

The authors declare that they do not have any conflicts of interest related to the study.

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