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Review

Effect of therapeutic touch on agitated behavior in elderly patients with dementia: A review

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the prevalence of agitated behavior in elderly demented patients is 70–90% [2]. In China, the incidence of elderly demented patients with agitated behavior living at home or in nursing institutions was 86.1% and 90.8%, respectively [3]. Agitated behaviors increase nursing expenses and hospitalization rate, as well as increase caregiver burden, and lead to the patients being admitted to nursing institutions earlier than they would in the absence of these behaviors [4–6].

The treatment of agitated behavior can be divided into two types: one is drug intervention based on the biomedical model, and the other is non-drug intervention based on patient [7]. However, currently, drug interventions are limited, have low efficacy, and are often accompanied with numerous and undesirable side effects, including increased mortality, increased incidence of a cerebrovascular event, and the acceleration of cognitive decline [1]. Non-drug interventions focus on trying to improve agitated behaviors in patients with dementia by fully considering the needs of the patients [8,9].

Therapeutic touch (TT) is one of the non-drug interventions that has been widely used in other countries to treat elderly demented patients with agitated behavior, both in clinical practice and research settings, with remarkable results [10–19]. The concept of TT was first introduced in China in 1995, and has since been widely used on infants, especially for newborn care and medical research [20–24], as well as in the study of preoperative anxiety, postoperative pain and sleep disorders on adults. However, intervention studies on elderly demented patients with agitated behavior have not previously been studied in China. Therefore, we aimed to review the literature from foreign researchers on the impact of TT intervention on elderly demented patients with

1. Introduction

The recent increase in life expectancy in China is also leading to an increased incidence of dementia. Dementia is a common, chronic, organic disease, which manifests extensive degenerative changes in the brain. In addition to cognitive dysfunction, people with dementia often have additional mental and/or behavioral symptoms, including verbal or physical aggression, wandering, hiding, shouting, hallucinations and paranoia; the most common and destructive of these is agitated behavior [1]. Foreign studies have shown that

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agitated behavior to provide a reference for enhancing the nursing environment in China for both the patients and caregivers.

2. Agitation in elderly demented patients and therapeutic touch as a treatment

2.1. Agitation

2.1.1. The concept of agitation

Agitated behavior is characterized by inappropriate verbal, vocal, or motor activity that is not judged by an outside observer to result directly from perceptible needs or confusion of the agitated individual [25]. Agitation in persons with dementia is manifested in a wide variety of verbal and physical behaviors that deviate from social norms, including irrelevant vocalizations, screaming, cursing, restlessness, wandering, strange movements, and handling things inappropriately [26].

2.1.2. The types of agitation

Depending on the expressive characteristics, agitated behavior can be divided into two dimensions: aggressive vs. non-aggressive, and physical vs. vocal/verbal. Specifically, agitation includes four categories: (1) physically non-aggressive (inappropriate dressing and/or disrobing, inappropriate eating or drinking, exit seeking behaviors, handling things, hiding things, hoarding, pacing, repetitious mannerisms, and restlessness); (2) physically aggressive (biting, grabbing, hitting, hurting oneself or others, falling intentionally, kicking, physical sexual advances, pushing, scratching, spitting, tearing things, and throwing things); (3) verbally non-aggressive (attention-seeking behaviors, complaining, negativism, and repetitive sentences or questions); and (4) verbally aggressive (cursing, making strange noises, screaming, and verbal sexual advances) [27].

2.2. Therapeutic touch

2.2.1. The concept of therapeutic touch

In the early 1970s, Dolores Krieger and Dora Kunz first described TT, defined as an intentionally directed process in which the practitioner uses the hands as a focus to facilitate the healing process [28]. TT is a treatment method that fuses both ancient medicine and modern technology, and involves an energy exchange between the implementer and a service object. The emphasis is on creating a balance in the whole body instead of focusing only on abnormal functional sites [29], with the intent of speeding up the recipient's healing process by restoring harmony and balance to their energy system.

2.2.2. The types of therapeutic touch

TT includes three types: caring touch, protective touch, and task touch [30]. Caring touch is defined as physical contact outside the domain of the nurses' procedural tasks, such as face touching, head touching, hand-holding, placing an arm around the client's shoulders, and/or the placement of the nurse's hand on the client's arm or hand. Protective TT is employed as a means of emotionally and physically protecting

both the client and the nurse, such as the use of physical restraint and control, helping the patient relax, thereby increasing the potency of the drug. This type of touch is geared at older adults who are cognitively impaired and those who have psychiatric diagnoses. Task touch is the physical contact that is incidental to client care procedures.

2.2.3. The mechanism of therapeutic touch

A previous study found that patients will subconsciously stimulate the system after they have received TT, which triggers the release of enkephalin and endogenous hormone [23]. The physiological role of these two endogenous chemicals acts similar to morphine by easing pain locally, as well as acting through the endocrine system to increase the therapeutic effect throughout the body. Currently, the mechanism of TT intervention on elderly demented patients with agitated behaviors is still in the exploration stage. One possible explanation for its effectiveness may be that TT excites the nociceptive pathways in patients, helping the patient relax mentally and physically, thereby ameliorating the agitation.

2.2.4. The use of therapeutic touch as a treatment

Since the 1950s, the benefits of TT have been widely recognized in the United States. The United States has even set up a TT certification program that has been approved by the American Holistic Nurses Association. Studies have shown that TT can not only relieve pain and anxiety, promote patients to relax, and improve the quality of life, but it can also help treat some diseases by enhancing immune function [31].

3. Review of literature on the effects of therapeutic touch on elderly demented patients with agitated behavior

3.1. Therapeutic touch promotes relaxation and alleviates the symptoms of agitation

Restlessness is one of the most frequent and disturbing behaviors experienced by patients with dementia, and it is the outward manifestation of patients' inner tension [10]. Therefore, taking effective measures to relieve that restlessness is extremely important when trying to decrease patients' agitated behavior. In a 2009 study by Woods et al., researchers examined the effect of therapeutic touch on agitated behavior among 65 nursing home residents using a double blind experimental interrupted time series ABAB design [10]. The practitioner delivered the intervention according to a specific protocol that began with a mental intention to therapeutically assist the participant, followed by centering (quieting) by the practitioner. The practitioner then focused her attention on the participant and concentrated on the wholeness of the person with dementia. Standing behind the person, the practitioner then used contact TT, resting her hands on the participant's shoulders, and performing a series of gentle movements (down, then up the back, up the neck, and behind the ears) and rested one hand on the forehead while making contact with the back of the neck with the other hand. At the end of the session, the practitioner again rested her hands on the participant's shoulders and directed thoughts of balance

toward the participant. TT was delivered twice a day for three days at the same time each day (between 10:00 and 11:30 a.m. and 3:00 and 4:30 p.m.). The intervention lasted 5–7 min. During the study, behavior was observed and recorded every 20 min for 10 h per day from 8:00 a.m. until 6:00 p.m. Research assistants with five–eight years experience performed the TT intervention. A modified Agitation Behavior Rating scale (mABRS) was used to measure the frequency and intensity of agitated behavior. This study found that restlessness was significantly reduced in the experimental group compared to the control group ($p = 0.03$), and suggests that therapeutic touch may be effective for management of symptoms like restlessness. In a separate prospective study conducted by Holliday-Welsh et al. researchers tested the effect of TT intervention on agitated behavior in 54 cognitively impaired residents in a nursing facility [11]. Data was collected for three days to establish a baseline, for six days during the intervention, and again at a follow-up at XX. Five aspects of agitation were assessed: wandering, verbal agitation or abuse, physical agitation or abuse, socially inappropriate or disruptive, and resisting care. The type of TT used in this study is defined under classic Western massage techniques. Lotion was used in some instances to reduce the friction between the hands and the skin. The primary areas of the body massaged for this study were the upper extremities, including head, shoulders, and hands, and subjects remained clothed during the intervention. In this study, the TT intervention was provided by a physical therapy assistant trained in TT techniques. At each observation, agitation was scored five times during the one-hour window of observation. The subjects' agitation was lower during the TT intervention than at baseline, and remained lower at follow-up. Of the five agitated behaviors examined in this study, TT was associated with significant improvement for four of them, including wandering, verbal agitation or abuse, physical agitation or abuse, and resisting care. In this study, they found that decreased levels of agitation persisted at seven and fourteen days following the TT interventions. We believe that this long-term effect may have been mediated by the presence of the observer recording the level of agitation at follow-up.

Previously, Azermai et al. made a systematic review non-pharmacological interventions about TT on agitated behavior respectively in elderly patients with dementia and use the language of love and encouragement, which will help patients feel relaxed and decrease agitated behavior [12,13]. This is consistent with the findings of the previous studies [14]. Collectively, these studies indicate that TT can promote relaxation and alleviate the symptoms of agitation.

3.2. Therapeutic touch improves daily behavior and cognitive function, as well as improves quality of life

The agitated behaviors expressed in elderly demented patients affect their daily behavior and cognitive function, hindering daily activities and relationships, and making family members and caregivers feel helpless and angry [15]. Ultimately, this can decrease their quality of life. Rodríguez-Mansilla et al. performed a controlled, randomized longitudinal study that included one hundred twenty elderly subjects with dementia institutionalized in residential homes in

Extremadura (Spain) [16]. These patients received treatment based on TT and ear acupuncture over three months. Behavior alterations, sleep disturbances, and participation in rehabilitation and eating were assessed every month during the three months of intervention, and again at follow-up one and two months after the end of treatment. The TT therapy group received a relaxing TT by a physiotherapist every day from Monday to Friday. The TT was applied in the back and lower limbs for 20 min. The TT techniques used were superficial effleurage and deep kneading with moisturizing cream. The study was performed over five months, with three months of experimental treatment and two months with no treatment. Both TT and ear acupuncture positively affected on measured variables (such as participation in therapy and eating) in the third month of intervention when compared to the control group ($p < 0.001$), and these benefits were maintained two months after completing the treatment ($p < 0.021$). A separate study by Hansen et al. also found that hand TT for the immediate or short-term can reduce agitated behavior, and the addition of touch to verbal encouragement to eat can normalize nutritional intake [17].

In another study, Moyle et al. examined the effect of TT for four weeks on patients with a diagnosis of dementia and a history of clinically significant agitation [18]. For this study, 17 men and 5 women (mean age 84.7 years) received a 10-min foot TT each day for 14 days. The intervention method was as follows: trained TT therapists provided participants with a standardized 5-min TT on each foot, once a day, for 14 days. All TTs were conducted between 1 pm and 6 pm. Light pressure TT with long, gliding, rhythmical strokes of the entire foot and ankle was used. Unscented sorbolene was applied as a lubricant for the TT. Agitation and related behavioral problems were assessed three times in the study, once as a baseline before TT, immediately following the end of the two week TT treatment phase (posttest), and two weeks after the cessation of TT therapy (two week follow-up). Assessment was conducted using the short form of the Cohen-Mansfield Agitation Inventory (CMAI-SF), and the Revised Memory and Behavior Problems Checklist (RMBPC). The result shows that CMAI-SF and RMBPC scores were significantly reduced at the posttest and remained significantly lower than baseline at the follow-up. This study provides preliminary evidence suggesting that limited short-duration foot TT reduces agitation and related behavioral problems in people with dementia, and that these behavior changes are maintained after the TT ceases.

Suzuki et al. performed a controlled, randomized trial to clarify the effects of a 6-week TT on changes in physical and mental function, symptoms of behavioral and psychological symptoms of dementia (BPSD) among elderly patients with dementia [19]. A TT group consisting of elderly patients with dementia received TT therapy a total of 30 times each for about 20 min between 4 p.m. and 5 p.m. In the control group, the mean scores for “intellectual” and “emotional function” score decreased significantly after six weeks ($p < 0.05$); however, no change was observed in the TT group. These data suggest that TT can protect patients' cognitive function, and delay the process of its decline. Livingston et al. systematically reviewed the evidence for clinical effectiveness and cost-effectiveness of non-pharmacological interventions for

reducing agitation in dementia [15]. The review found that the differences in the scores for agitation behaviors, daily behavior, cognitive ability and quality of life in patients who have received TT as compared to controls are statistically significant. They concluded that TT has a positive impact on the lives of the dementia patients. Importantly, it is a non-invasive and non-pharmacological intervention that is easy to learn, easy to implement, and easy to be grasped by nurses and family members of patients, and therefore, can be widely used in clinical practice.

4. Reflections and prospects

Our research on the application of TT intervention for the treatment of agitated behavior in Chinese patients with dementia is still in its infancy. Currently, a big gap exists between what we can do in China as compared with other countries, in both theoretical verification and practical exploration. A major hurdle for this treatment is embedded in the Chinese culture. As a nation, the Chinese are not good at using body language to express kindness, and physical contact with a stranger is easily misunderstood as a sexual innuendo, which can easily cause resentment. Both nurses, patients and their families will find it very difficult to accept this form of treatment psychologically, and therefore it will be difficult to implement in clinical practice.

Other additional hurdles exist before we will be able to implement TT as a treatment for dementia. One major hurdle is the belief of many people that dementia is a natural phenomenon of aging, and therefore the mental or behavioral abnormalities in elderly patients with dementia are often misunderstood. The first inclination of many families is to ignore the initial symptoms of cognitive function decline, blaming verbal or behavioral abnormalities, such as name-calling, suspicion, possession of garbage, etc., on quirks or send them to a mental institution to be given antipsychotic treatment. Unfortunately, this treatment will worsen the symptoms of dementia. Another hurdle is that even when the patient is diagnosed with dementia, some families will take a negative attitude towards the treatment, decreasing the efficacy of the treatment and increasing the symptoms in these patients. The last hurdle that must be overcome is that it is very difficult for non-specialist doctors to make a correct diagnosis of dementia, which causes a high rate of missed diagnosis.

Currently, research on the effect of TT on agitated behavior in elderly demented people is rare, and this means that there is a lack of relevant evidence-based research, which in turn limits the implementation and promotion of the therapy. According to the figures, the prevalence rate of people in China with dementia over the age of 60 years is about 5%, over 65 years is 5–10%, over 75 years is 20–50% [32]. Faced with an increasing number of elderly demented people, it is very necessary to carry out related research on TT to control agitation behaviors. The development of TT intervention will hopefully not only effectively improve the quality of life of patients and help them live with dignity until the end of life, but it will also reduce caregiver burden, the rate of hospitalization and save medical resources. Fortunately, more and

more people have recognized these benefits and have started to give TT more attention.

In the future, we should focus on learning from previous advances from other countries, and be mindful of the shortcomings of this research. When we select samples, we should follow the inclusion and exclusion criteria rigorously to improve the consistency of elderly patients with dementia in type, degree and other aspects in order to control for confounding factors. We should also expand the sample size appropriately and use a double-blind design to enhance the statistical power. We can carry out randomized controlled trials to provide more evidence for clinical practice. We should increase the implementation of our findings based on our national condition, such as accelerating the construction of China's elderly specialist care and specific key nursing specialties. We can encourage and sponsor research on the application of relevant theory and practice by elderly care personnel. We can launch knowledge lectures and skills training on TT to improve their skills for clinical nursing staff. We should strengthen the propaganda and guidance to gradually change people's traditional concept of dementia by raising the public's awareness of disease prevention and treatment of dementia. With these measures taken simultaneously, we believe we will get good results.

Conflict of interest

We declare no potential conflicts of interest with respect to the research and/or publication of this article.

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