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Effect of Therapeutic Touch in Treating Agitation of Persons with Alzheimer's Disease

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Masters of Nursing Scholarly Project

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Abstract

There approximately 5.1 million Americans who may have Alzheimer's disease (AD). This number is expected to increase with the increase in the aging population. Theories based on genetic and neuropathological findings suggest genetic mutations are responsible for AD. There are 7 stages of AD. The stages of disease are a reference on how the disease may progress, but not all stages are experienced by all persons with AD. AD can only be diagnosed by histopathologic examination of the brain there for clinical criteria are utilized for diagnosis. Clinical criteria include diagnostic tests such as laboratory and imaging studies, neuropsychological testing, mental status exam, and neurologic exam. The majority of persons with AD exhibit behavioral symptoms. Behavioral symptoms may include disruptive vocalization (screaming), restlessness, repetitive questions, wandering, pacing, and physical aggression toward self or others. Treatment of behavioral symptoms is challenging and a wide range of interventions are utilized by caregivers and health care professionals. Chemical and physical restraint utilization for behavioral symptoms can lead to a higher risk for falls. Family caregivers of AD patients have a high incidence of depression as consequence of caring for a person with dementia. Therapeutic touch is a non-pharmacologic intervention that has been minimally utilized for the treatment of behaviors seen in patients with AD. It has been found through research to decrease stress and anxiety, and to improve quality of life and emotional, physical, and spiritual well-being. Evidence has shown therapeutic touch does not cause patients any harm. An intensive review of the literature and studies on the use of therapeutic touch as an intervention to treat behavioral symptoms of AD indicates that it is appropriate for primary care givers to consider therapeutic touch therapy to treat behaviors of patients with AD.

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Effect of Therapeutic Touch in Treating Agitation of Persons with Alzheimer's Disease

Experts estimate there are 5.1 million Americans who may have Alzheimer's disease (AD) (National Institutes of Health (NIH), 2008). AD is the most common forms of dementia in the older population. Agitated behaviors, including hitting, screaming, pacing, repetitive sentences or questions, throwing, hoarding, sexual advances, restlessness, and hurting self or others occurs in approximately 90% of persons with advanced dementia (Wang & Hermann, 2006). Agitation affects the quality of life of Alzheimer's patients, their families, and their caregivers. Behaviors increase the risk of falls, social isolation, and the use of chemical and physical restraints (Hawranik, Johnston, & Deatrich, 2008). Experienced caregivers have reported an extreme caregiver burden of caring for patients with AD in relation to agitated behaviors (Parahoo, Whall, Colling, & Nusbaum, 2005). Burden develops as a result of the chronic emotional and physical stress of caring for a person with AD (Papastravou, Kalokerinou, Papcostas, Tsangari, & Sourtzi, P, 2007). The caregiver burden can lead to depression and a decline in physical health, leading to a poor quality of life for the caregiver. Several interventions are applied in hopes of calming the person and minimizing the behavior (Woods, Craven, & Whitney, 2005). Pharmacotherapy with anti-anxiolytics and/or antipsychotics, pet therapy, recreational activities, and music are some examples of interventions utilized to treat agitated behaviors. Touch therapies have existed for centuries throughout the world, but have recently been used as an intervention to help decrease and treat agitated behaviors in persons with AD (Wang & Hermann, 2006). Therapeutic touch is an intervention in which energy imbalances are identified and corrected by a therapeutic touch practitioner (Hawranik, Johnston, & Deatrich, 2008). The aim of this paper is to present the effectiveness of therapeutic touch as an intervention to decrease agitated behaviors in persons with AD.

Alzheimer's Disease

Definition

AD is an irreversible disorder of the brain in which memory is slowly destroyed and thinking skills deteriorate usually over several years (NIH, 2008). In most cases, symptoms first occur after age 60.

Epidemiology

There is a significant increase in the aging population worldwide. In the year 2000 there were 420 million people ages 65 and older in the world (Qui, Kivipelto, & Strauss, 2009). This number is expected to increase to nearly 1 billion by the year 2030. In the United States (U.S.) alone it was estimated that 13% of the population were 65 years of age or older in the year 2010 (Vincent & Velkoff, 2010). "By 2030, there will be 71 million American older adults (ages 65 and older) accounting for roughly 20% of the U.S. population" (Center for Disease Control and Prevention and The Merck Company Foundation, 2007, p. III). AD is associated with increasing age, therefore it is estimated the population with AD will increase with the aging population (Qui, Kivipelto, & Strauss, 2009). According to the Alzheimer's Association (2011), the estimated annual incidence of AD in the United States increases with age "from approximately 53 new cases per 1,000 people aged 65-74, to 170 new cases per 1,000 people aged 75-84, to 231 new cases per 1,000 people over the age of 85" (p. 14). There are more than 25 million people worldwide with dementia, mostly caused by AD. Approximately 60-80% of dementia cases are caused by AD (Alzheimer's Association, 2011). The second most common cause of dementia is vascular dementia. This type is caused by decreased blood flow to areas of the brain as a result of blocked arteries or small strokes. There are several less common types of dementia including

mixed dementia, dementia with Lewy bodies, Parkinson's dementia, frontotemporal dementia, Creutzfeldt-Jakob disease, and normal pressure hydrocephalus. There is an estimate of around 5 million new cases of dementia each year. Approximately two-thirds of Americans with AD are female. Women have a longer average life span than men, accounting for the higher prevalence of AD in women. Age specific studies have shown the incidence of AD or any dementia is not significantly different between males and females.

Impacts of Alzheimer's Disease

AD shortens life expectancy and causes physical disabilities, institutionalization, therefore decreasing the person's quality of life (Qui, Kivipelto, & Strauss, 2009). "AD is the sixth leading cause of death across all ages in the U.S." (Alzheimer's Association, 2011, p. 20). Deaths attributed to AD increased by 66% from the year 2000 to 2008. "Regardless of the cause of death, 61% of people with AD at age 70 are expected to die before age 80 compared to 30% of people at age 70 without AD" (Alzheimer's Association, 2011, p. 21). The median survival time with a diagnosis of AD is 3-6 years (Qui, Kivipelto, & Strauss, 2009). It has been estimated that 43% of individuals with AD need high level of care, such as nursing homes. Due the cognitive decline in people with AD it is expected they will need supportive caregivers and higher levels of care (Alzheimer's Association, 2011). As the person advances across the stages of AD the assistance needed increases. As the disease progresses people with AD need assistance with activities of daily living, such as grocery shopping, managing finances, taking medications correctly, bathing, and dressing (Alzheimer's Association, 2011). Caregivers of people with AD provide assistance to find and use medical services. Caregivers are responsible to manage safety issues and behavioral symptoms of the disease, such as agitation or wandering. AD patients with co-morbidities, such as coronary artery disease or diabetes, are more likely to

be hospitalized than people with the same medical condition but do not have an AD diagnosis or other dementia. In addition, patients with AD have longer hospital stays. In 2005 it was estimated that the societal costs of dementia was more than $315 billion in the United States (Qui, Kivipelto, & Strauss, 2009).

Pathophysiology

AD was named after Dr. Alois Alzheimer, who in 1906 discovered abnormal clumps and bundles of fibers in a female patient who had died of an illness with symptoms of memory loss and unpredictable behavior (NIH, 2008). The abnormal clumps are now known as amyloid plaques and the bundles of fibers are now called neurofibrillary tangles.

The complete pathophysiology of AD is not fully understood, but there are theories based on genetic and neuropathological findings (Chouliaras et al, 2010). There are two broad categories of AD, early onset and late onset. According to Chouliaras et al (2010), studies suggest mutations of amyloid-precursor protein genes and presenilin 1 and 2 genes in connection with familial early onset AD. The majority of AD cases are late onset and have been linked to the variation of the apolipoprotien E4 genotype. The neuropathological hallmarks of AD include the loss of neurons and synapses resulting in neuritic plaques composed of beta-amyloid fibrils and neurofibrillary tangles composed of tau protein. The plaques accumulate due to the endoproteolysis of the amyloid-precursor protein. The neurofibrillary tangles are formed from the hyperphosphorylation of the tau protein. Synaptic and neuronal dysfunction, disruptive synaptic and neuronal integrity, and synaptic and neuronal loss in the brain occur as a result of the amyloid plaques and neurofibrillary tangles leading to impairments of cognitive functioning.

Stages of the Alzheimer's Disease

Patterns of the progression of symptoms of AD are classified into stages (Alzheimer's Association, 2007). Nerve cell damage begins with the cells involved with memory and learning, and then gradually effects cells controlling aspects of thinking, judgment, and behavior. Eventually the cell damage affects movement and coordination. There are seven stages of AD based on the framework of Barry Reisber, M.D. The staging system is a reference on how the disease may progress, but not all stages are experienced by all persons with AD. Symptom presentation may vary significantly from person to person. The stages of AD are often referred to by health professionals with widely used concepts of mild, moderate, moderately severe, and severe AD along with early-stage, mid-stage, and late-stage categories.

The Alzheimer's association (2007) provides the following description of the various stages of AD:

- Stage one is identified as the stage with no cognitive impairment. There are no memory problems experienced and no symptoms of AD are evident to a health care professional during a medical interview because the person has normal function. Therefore, a diagnosis during this stage is not possible.
- Stage two is identified as a mild decline in cognitive functioning. The person may forget familiar words, the location of keys, names, or other everyday objects and might be aware of these memory lapses. These problems are not evident during a medical exam or apparent to friends or family.
- Stage three is associated with mild cognitive decline. This stage is identified as part of the early-stage AD category. During this stage, family or friends may notice deficiencies. There may be memory and concentration problems measurable with clinical testing during a medical exam and interview. Common symptoms during this stage include

difficulties with word finding, naming of family or close associates, decreased ability to remember names after introductions to new people, performance issues in social environments noticeable to others, decreased ability to retain reading material, losing objects, and decline in the ability to organize or plan.

- Stage four is when moderate cognitive decline occurs. This stage is considered part of the mild or early-stage AD categories. A medical interview can identify cognitive deficiencies. The symptoms include, decreased knowledge of recent events, impaired ability to perform challenging mental arithmetic such as counting backward from 100 by 7's, decreased ability to perform complex tasks, such as paying bills, reduced memory of personal history, and withdrawal from socially and mentally challenging situations.
- Stage five is recognized as the stage with moderately severe cognitive decline and is considered in the moderate or mid-stage AD categories. Major gaps in memory and cognitive deficits emerge resulting in a need for assistance with daily activities. During a medical interview the client may be unable to recall important details, such as their address or phone number. At this stage of AD persons may exhibit confusion in orientation to person, place, and time. There may be trouble with simple mental arithmetic, such as counting back from 20 by 2's. Help is needed to choose proper clothing for a season or occasion. However, the person usually knows their own name and possibly the names of spouse and children. In most cases the individual is still toileting and eating independently.
- Stage six is when there is severe cognitive decline. This stage is included in the moderately severe or mid-stage AD categories. During this stage memory declines, personality changes may emerge, and extensive assistance is needed with daily activities.

The symptoms that may be present during this stage include: a loss of awareness of recent experiences or activities, impairment in recollection of personal history, occasional forgetfulness of spouse and caregiver names, and inability to dress appropriately where the person may put pajamas on over clothes or put shoes on the wrong feet. A person in this stage of AD may experience other features including a disruption of sleep/wake cycle and inability to toilet independently with episodes of incontinence or urine or stool. During this stage, significant personality changes may occur. These behavioral symptoms may include delusions, hallucinations, and/or repetitive behaviors, as well as wandering with increased potential for the individual to get lost.

- Stage seven is known as the stage with very severe cognitive decline and is categorized in the severe or late-stage AD. During this stage the person loses the ability to respond to their environment, the ability to speak, and ability to control movement. The individual is completely dependent on caregivers for eating and toileting. The individual is unable to walk, hold their head up, or sit up without assistance. Reflexes are delayed or absent and muscles grow rigid, and there is significant swallowing impairment.

These stages are summarized in Table 1.

Table 1: Table of Stages of Alzheimer's Disease

Stage	Stage title	Possible Symptoms/Findings
Stage 1	No Cognitive Impairment	- No memory problems
Stage 2	Very Mild Decline	- Memory lapses - Forget familiar words, names, location of keys - Problems not evident during a medical examination or the friends/family
Stage 3	Mild Cognitive Decline (Early Stage AD)	- Word or name finding problems noticed by family/friends - Decreased ability to remember names when introduced to new people - Performance issues noticeable to others - Retaining little material after reading a passage - Misplacing valuable objects

Stage	Stage title	Possible Symptoms/Findings
		- Decline in the ability to plan or organize
Stage 4	Moderate Cognitive Decline (Mild or Early Stage AD)	- Decrease in knowledge of recent events - Impaired ability to complete challenging mental arithmetic (e.g. count backward from 100 by 7's) - Decrease in capacity to perform complex task (e.g. paying bills) - A reduction in memory of personal history - Subdued or withdrawn
Stage 5	Moderately Severe Cognitive Decline (Moderate or Mid-Stage AD)	- Unable to recall address or important details in medical interview - Confused about date/time/season - Trouble with less challenging arithmetic (e.g. count back from 20 by 2's) - Assistance needed to choose proper clothing for the season or occasion
Stage 6	Severe Cognitive Decline (Moderately Severe or Mid-Stage AD)	- Lose awareness of recent experiences - Imperfect recollection of personal history - Occasionally forget name of spouse or primary caregiver, but recognize faces - Assistance need to dress properly - Disruption of normal sleep/waking cycle - Assistance with details of toileting (e.g. flushing toilet) - Increase episodes of incontinence - Personality/behavioral symptoms, hallucinations, and/or compulsive behaviors - Wander or get lost
Stage 7	Very Severe Cognitive Decline (Severe or Late-Stage AD)	- Lose capacity for recognizable speech - Need assistance with eating and toileting, generally incontinent - Lose ability to walk without assistance - Impaired swallowing - Reflexes abnormal and muscles grow rigid

Diagnostics

Clinical features for possible AD include: a presentation, or progression of dementia without a known etiology, the presence of another potential causative systemic or neurologic disorder that is not considered to be the etiology of dementia, and progression of deterioration in a single cognitive domain with the absence of any identifiable etiology (Grabowski, 2010).

The diagnosis of AD requires a histopathologic examination of the brain (Grabowski, 2010). Therefore, clinical criteria are used to diagnose AD. Clinical criteria includes diagnostic tests such as laboratory and imaging studies, neuropsychological testing, mental status exam, and

neurologic exam. Laboratory values, physical exam, and imaging studies are used to exclude other diagnoses or etiologies, such as adverse reactions to medications, depression, cerebrovascular changes, traumatic brain injury, and/or metabolic deficiencies or disorders. The use of neuropsychological testing is helpful in the evaluation of patients with cognitive impairment. The neuropsychological testing can differentiate between the diagnosis of dementia and depression. A neurophsycological evaluation gives a quantitative measurement of behavioral and cognitive abilities of a patient using a variety of clinical tests and exams. Testing should be completed and evaluated by a neuropsychologist to ensure accuracy of results. Testing also provides baseline information and is helpful in monitoring the progression of disease. Neuropsychological testing is also used to assess and guide recommendations in regards to driving, financial decision making compacity, and the need for further supervision/care. A complete cognitive and neurologic exam is essential. The Mini-Mental State Examination (MMSE) is a widely used quantified screening test for cognitive function to document the presence and progression of AD and other dementia diagnoses. Tombaugh & McIntryre (1992) completed a comprehensive review of information collected over a period of 26 years regarding the utilization of the MMSE. Reliability and validity of the MMSE was found satisfactory in measuring cognitive impairment (Tombaugh & McIntryne, 1992). The MMSE should not be used as diagnostic tool by itself to identify dementia, but it does provide a valid quantitative assessment of the severity of cognitive impairment and measurement of cognitive changes over time. A score between 20 and 26 on the MMSE indicates early-stage AD (Grabowski, 2010). Scores between 10 and 20 are associated with moderate AD. MMSE score below 10 correlates with severe AD.

According to Grabowski (2010), the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association have identified 6 criteria for the diagnosis of AD. These criteria are:

1. Clinical examination, standardized brief mental status examination, and neuropsychological testing confirms dementia
2. Deficits in two or more areas of cognition.
3. Progression of worsening memory and cognitive function.
4. Normal level of consciousness
5. Age of onset is between 40 and 90 years of age
6. Absence of other systemic or neurologic disorders sufficient to account for the progression of cognitive deficits

Behavioral Symptoms

According to Woods, Craven, and Whitney (2005), about 80% of nursing home residents with a diagnosis of AD develop behavioral symptoms. Behavioral symptoms of AD can be challenging to manage in patients with Alzheimer's disease. Behavioral symptoms may include disruptive vocalization (screaming), restlessness, repetitive questions, wandering, pacing, and physical aggression toward self or others. The most frequent reported behaviors include disruptive vocalization of approximately 30-48% and restlessness in approximately 29-44% (Woods, Craven, & Whitney, 2005). Behavioral symptoms worsen with progression of the disease. This leads to the requirement for higher staff to patient ratios in the nursing home/hospital setting. Behavioral symptoms can lead to a higher risk for falls, which results in an associated increased risk of injuries (Hawranik, Johnston, & Deatrich, 2008). Unfortunately, the higher staff ratios and costly resultant injuries lead to a rise in overall health care cost.

Behavioral symptoms contribute to the use of chemical and physical restraints. As defined by Mott, Poole, & Kenrick (2005) a chemical restraint is both the deliberate and incidental use of pharmaceuticals to control behavior and/or restrict freedom of movement. Haloperidol and benzodiazepine agents, such as lorazepam, are examples of chemical restraints. "These drugs may be purposely administered to sedate the patient as a means of convenience" (Mott, Poole, & Kenrick, 2005, p. 97). Most commonly used are short-acting benzodiazepines, such as alprazolam and lorazepam (Gutierrez, 2008). Short-acting benzodiazepines enhance the effect of the neurotransmitter, gamma-aminobutyric acid (GABA) by binding to the GABA receptor sites. This strengthens the inhibitory effects on neurons in the brain associated with anxiety, fear, and arousal resulting in a sedative, hypnotic, anxiolytic, and muscle relaxant effect. Adverse effects of benzodiazepines include but are not limited to, dizziness, ataxia, restlessness/agitation, and headaches and increase the patient's risk for falls and decline in cognition (Mott, Poole, & Kernick, 2005). Antipsychotic medications, such as haloperidol, are used as a chemical restraint. These medications block dopamine-2 receptors in the mesolimbic area of the brain. By blocking the dopamine-2 receptors in the nigrostriatal pathway antipsychotic medications can cause extrapyramidal symptoms, including but not limited to, dystonia, parkinsonism, and akathisia (Gutierrez, 2008). These medications cause anticholinergic effects due to partial blockade of acetycholine. Anticholinergic effects, such as dry mouth and eyes, hypotension, and urinary retention are most common. Orthostatic hypotension is an adverse effect of antipsychotics increasing the risk for falls. According to Tune (2001) treating AD patients with medications with anticholinergic effects can cause vision changes and will likely worsen the disease process by causing cognitive decline. Woolcot et al. (2009) completed a meta-analysis of 22 articles meeting inclusion criteria on 9 medication classes on falls in the

elderly. The 9 medication classes included in the meta-analysis were: sedatives, diuretics, antidepressants, benzodiazepines, hypnotics, neuroleptics, narcotics, nonsterioidal anti-inflammatory drugs, and antihypertensives. Bayesian method of statistical analysis was used for medication risk assessment (Woolcot et al, 2009). The meta-analysis concluded the use of sedatives, hypnotics, antidepressants, and benzodiazepines significantly increased the risk of falls in the elderly population.

"A physical restraint is any physical or mechanical device, material or equipment attached or adjacent to a patient's body that the individual cannot control or remove easily" (Mott, Poole, & Kenrick, 2005, p. 96). Physical restraints restrict the freedom of movement of the patient's body. Wrist and ankle restraints, hand mitts, and wheelchair safety bars are examples of physical restraints. Physical restraints can cause the patient to become fearful of staff and an increase risk of injury occurs. Luo, Lin, & Castle (2011) studied physical restraint use in residents of nursing homes with and without dementia, residents with dementia were more likely to be physically restrained. Physical restraints included in this study were trunk (waist) restraints, chair restraints, and increased bed rails (Luo, Lin, & Castle, 2011). The 2004 National Nursing Home Survey (NNHS) was the data source for this study. This is a survey of participating nursing homes in the United States. Data was collected for each randomly chosen resident. The final sample for the analysis included 5057 residents with AD or dementia and 4224 residents without. A weighted analysis was conducted with the Surveyfreq and Surveylogistic procedurs in SAS version 9.1. It was concluded that trunk restraints and chair restraints increased the residents risk for falls and injury.

Caregiver Burden

Behavioral symptoms seen in an AD patient can lead to caregiver burden issues. "Caregiver burden has been defined as a negative reaction to the impact of providing care on caregivers' social, occupational, and personal roles" (Papastavrou, Kalokerinou, Papacostas, Tsangari & Sourtzi, 2007, pp. 446). Family caregivers of AD patients have a high incidence of depression as consequence of caring for a person with dementia. A study by Papastavrou, Kalokerinou, Papacostas, Tsangari & Sourtzi (2007), found 68.02% of the 172 caregiver sample were highly burdened and 65% expressed depressive symptoms. The volunteer sample consisted of caregiver/care recipient dyads recruited from neurology clinics in Cyprus from 2004 to 2005. The Memory and Behavior Problem Checklist, Burden Interview, Center for Epidemiological Studies-Depression Scale and Ways of Coping Questionnaire were utilized by the interviewer for data collection. Data was analyzed by using independent samples t-tests, correlation analysis and one-way ANOVA followed by *post hoc* adjustments for multiple comparisons. Germain et al. (2009) studied the variables associated with caregiver burden of those caring for AD patients. Baseline data was collected from the ICTUS study, which is an ongoing longitudinal prospective observational study of AD in Europe from 29 specialist outpatient clinics in 12 countries (Germain et al., 2009). A total of 1381 patients and their caregivers were included in the sample for analysis. Over a 2 year period, on a 6 month basis, participants were assessed using The Burden Interview, AD Assessment Scale-Cognitive Section (ADAS-Cog), Clinical Dementia Rating Scale, Basic Activities of Daily Living, Instrumental Activities of Daily living, and the Neuropsychiatric Inventory (NPI). Principal component statistical analysis was conducted with Statistica, version 8.0. 1091 caregivers responded to the all of the Burden Interview Items. 34% had mild to moderate burden, 9.6% had moderate to severe burden, and 1.4% had severe burden. A regression model was used to identify patient characteristics which best predict caregiver

burden. It was found that behavioral and psychological symptoms including hallucinations, delusions, and agitation as one of the most significant contributing variables to caregiver burden.

Caregiver burden is a strong determinant of institutionalization of individuals with dementia (Papastavrou, Kalokerinou, Papacostas, Tsangari & Sourtzi, 2007). According to Gilley, McCann, Benias, & Evans (2005), several dementia cohort studies have found that caregiver burden resulting from caring for people with AD increases the risk of institutionalization. Institutionalization accounts for the majority of the cost of medical care of patients with AD (Gilley, McCann, Benias, & Evans, 2005). Caregiver burden affects the quality of life of the caregiver and AD patient negatively (Papastavrou, Kalokerinou, Papacostas, Tsangari & Sourtzi, 2007).

Although there have been several studies of caregiver burden of family members of people with AD, there is minimal research about burden as it pertains to professional caregivers, such as long-term care providers (McCarty & Drebring, 2003). More than 2 million long-term care residents have AD type dementia or other conditions causing dementia. There are 600,000 to 1.4 million professional caregivers who provide this long-term care. McCarty & Drebring (2003) conducted a qualitative, explorative, and descriptive design study to explore and describe professional caregivers' perceptions and meanings associated with caring for residents with AD. A sample of 22 caregivers were interviewed. The sample consisted of 1 physician, 6 registered nurses, 2 licensed practical nurses, 2 social workers, 1 psychologist, and 10 nursing assistants from several long term care environments in Southern New England area. Interview data was analyzed with content analysis. The major theme derived from the data was balancing self-care with care for patient with AD. An exclusive pattern associated with this theme was managing the patients' problematic behaviors. "Staff often noted the inevitable death outcome; the long,

slow process of multiple losses; and the physically and emotionally draining nature of the caregiving process" (McCarty & Drebing, 2005, p. 46). Even with limited research there is evidence that caregiver burden experienced by paid professional caregivers does exist and needs further attention.

Therapeutic Touch

Therapeutic touch is a non-pharmacologic intervention that has been minimally utilized for the treatment of behaviors seen in patients with AD.

Definition

There are several related terms associated with therapeutic touch, such as Reiki therapy and healing touch. For the purpose of this paper the definition for therapeutic touch, defined by Delores Kreiger and stated by Woods, Craven, & Whitney (2005) as:

> Therapeutic touch is an intentionally directed process during which the practitioner uses the hands as a focus to facilitate the healing process. As a contemporary interpretation of several ancient healing practices, therapeutic touch is founded on the premise that the human body, mind, emotions, and intuition form a complex, dynamic field. In health, the field is balanced; in disease, the field becomes unbalanced and disordered. (p. 67)

Therapeutic Touch Practitioners

In 2006 it was estimated there were 40,000 practitioners worldwide (Doherty, Wright, Aveyard, & Sykes, 2006). There are three levels of certification for practitioners of therapeutic touch. These levels are basic, intermediate, or advanced levels (Hawranik, Johnston, & Deatrich, 2008). Basic level practioners have completed a minimum of 12 contact hours at a basic level

workshop taught by a qualified therapeutic touch teacher. At the basic level the practitioner can perform therapeutic touch, but are required to complete one year of practice with a mentor. To maintain basic level certification it is required to do one of the following: maintain regular contact with mentor, practice therapeutic touch at least twice a week with journaling, or biannual knowledge skills update with a qualified therapeutic touch teacher (Nurse Healers-Professional Associates International, 2010a). Intermediate level practitioners must complete 14 contact hours at the intermediate level of education. After this completion at the intermediate level they can practice independently without a mentor and have the option to complete an application to become recognized as a Qualified Therapeutic Touch Practitioner (QTTP). Practitioners at the advanced level are QTTPs who are maintaining practice, have completed further continuing education, and are mentors/teachers for therapeutic touch. Therapeutic Touch and Healing certification and credentialing programs require a minimum of 100 hours of education, including seminars, workshops, supervised practice, written exams, and skills testing (Hawranik, Johnston, & Deatrich, 2008). Students study the energy system of the body, meditation, the therapeutic touch procedure, energy techniques for the chakra system, known as the energy center, and the spine. The practitioners also study, specific techniques for working with individuals with lung disease and cancer. After certification it is expected the practitioner practices therapeutic touch on a consistent basis with an average of at least two sessions per week (Nurse Healers-Professional Associates International, 2010a). Currently there is not a specified number of continuing education hours or renewal process. The standards and scope of practice established by the Nurse Healers-Professional Associates International (2010a) state that practitioners are expected to have consistent practice, continuing education, and mentoring. According to the Nurse Healers-Professional Associates International (2010a), anyone can become certified as a

therapeutic touch practitioner. However, licensed health care professionals, such as nurses, who become certified, can practice in hospitals and other health care settings within the individual policies of the institution. Practitioners who are not health care professionals must practice according to each individuals state regulations of where they can practice therapeutic touch. All therapeutic touch practitioners are responsible to practice according to state law and regulations.

Process of Therapeutic Touch

There is a process of therapeutic touch utilized to identify and correct energy imbalances (Hawranik, Johnston, & Deatrich, 2008). During a therapeutic touch treatment the individual is generally not physically touched. The process of therapeutic touch is included in the therapeutic touch policy and procedure for health care professionals (Healers-Professional Associates International, 2010b). Therapeutic touch begins with an explanation of the procedure and verbal permission is obtained whenever possible. The practitioner explains therapeutic touch as a relaxation intervention to relieve pain, decrease anxiety, and/or promote a sense of well being. The practitioner brings the person's body, mind, and emotions to a quiet, focused state of consciousness. This is to be maintained throughout the session. A baseline energy pattern assessment is completed by assessing the energy field. The practitioner becomes aware of differences in the energy field with sensory cues in the palmar surfaces of their hands by holding hands about 2-4 inches away from the individual's body in a head to toe direction. Calm and rhythmic hand movements are used to clear areas of energy imbalance. This assessment and rhythmic hand movements are continued throughout treatment to determine when the session is completed. Once treatment is completed the individual is given an opportunity to rest and the response is evaluated by the practitioner. Outcomes of the session are then documented by the practitioner, followed by development of an intervention plan. Therefore, the time needed for the

intervention and the number of sessions is determined by the practitioner. In general, the actual intervention time is 15-25 minutes per session. The practitioner is expected to view the client from perspective of wholeness so the client is seen as an open, complex, and pandimensional energy system. The client perceptions are acknowledged, valued, and respected in a non-judgmental manner by the practitioner. The practitioner collaborates with the health care team of the client.

Effects of Therapeutic Touch

The effects of therapeutic touch include a variety of clinical situations. The most consistent result of therapeutic touch is a relaxation response (Woods & Dimond, 2002). This response decreases the physiological response to stress by activating the parasympathetic nervous system. Therefore, therapeutic touch can be used to reduce anxiety and stress, relieve pain, improvement of immune system function, lower blood pressure, and improve wound healing (Hawranik et al, 2008). When the therapeutic touch process is completed on individuals with AD exhibiting behavioral symptoms it is expected that the relaxation response will decrease the amount and intensity of the behavioral symptoms.

Literature Review

The research on the use of therapeutic touch to treat agitation in AD is limited. Several studies support that therapeutic touch and closely related therapies such as, healing touch, and Reiki therapy are beneficial in treating agitation in dementia patients.

Wang & Hermann (2006) conducted a pilot study to test the effectiveness of healing touch on agitated people diagnosed with dementia. The study was a nonrandomized quasi-experimental study to assess the effectiveness of healing touch in lowering agitation levels of

residents with dementia. The study took place in an 18 bed dementia special care unit in Prescott, Arizona. The agitation levels of residents were measured using the *Cohen-Mansfied Agitation Inventory* (CMAI). The CMAI measures agitation based on a compilation of observable behaviors. Agitation levels are then rated by calculating the frequency of the 29 behaviors. There was a sample size of 14 male residents included in the study. 14 was the census of the special care unit during the time of this study and were all included in the study. CMAI scores were recorded for two weeks to determine the control and treatment group. The control group included the residents who had lower CMAI scores. The treatment group included the residents who achieved higher CMAI scores. Eight were in the control group and six were in the interventional group receiving healing touch therapy for 10 minutes a day for four weeks. A mean agitation level was assessed and reported from the group as a whole prior to receiving the intervention. During the treatment period the intervention group had a significant decrease in agitation as compared to the control group. The statistical hypothesis test was used to test the significance of the results. It was concluded that the treatment group response has lower agitation levels than the non-treatment group, with a ± = 0.05 level. Qualitative observations of patient behavior were done using a separate data sheet. Included in this collection were observations of participant behavior and comments. According to these qualitative observations several participants often stated they felt relaxed after treatment and they enjoyed it. Three of the residents receiving psychotropic meds in the treatment group had a decrease in their prescribed dosages during and after the treatment. It was also reported that two of the residents in the treatment group had a dose increase 2 weeks after treatment was stopped. Although the sample size was small and the study was nonrandomized, healing touch treatment was found to be an effective intervention for the treatment of agitation. No negative effects of the treatment were identified or reported.

A study by Skovdahl, Sorlie, & Kihlgren (2007) examined the effect of tactile stimulation treatments on the occurrence of aggressive behaviors. A method of tactile massage was developed in Sweden in the 1990s. It is a form of soft strokes reaching only the tactile receptors, rather than deep tissues. The aim of tactile stimulation is to convey attention and promote well-being to decrease worry and stress. A sample of 40 trained caregivers were instructed to provide tactile stimulation at a minimum of once per week, with a goal of daily over a 28 week period. The tactile stimulation was provided to twenty residents from 4 different wards of a nursing home. Residents who received the tactile stimulation therapy had a diagnosis of moderate to severe dementia and exhibited restlessness and aggressive behaviors. Documentation of the intervention was done on a form developed by the authors. Included on the documentation form was: the week of the study, the date of treatment, duration of treatment time, person who provided the treatment, where the treatment took place, and the parts of the body being stimulated. The provider of the treatment gave their description of the session by answering 5 questions. There was an area for comments, but none of the providers made further comments. Findings from the study were summarized and reported using a random sample of 5 of the residents included in the study. All residents displayed signs of positive feelings and relaxation during and after tactile stimulation. The caregiver's reported positive interactions with the residents which lead to a warmer relationship. Overall, it was found tactile stimulation was beneficial technique to promote relaxation and better therapeutic connections with residents.

Developments in neuroendocrinology suggest there is an alteration of the hypothalamic-pituitary-adrenal axis as AD progresses resulting in an increase of salivary and urine cortisol levels (Woods & Dimond, 2002). A study conducted by Woods & Dimond (2002), studied the effect of therapeutic touch on agitated behavior and cortisol levels of persons with AD. A

sample of 10 residents of a special care unit participated in this pilot study. The residents exhibited moderate to severe agitation behavior with a score of 15 or higher on the Brief Agitation Rating Scale (BARS). The BARS is a shorter version of the CMAI used to measure agitation. A score of 15 or higher signified high agitation. Baseline agitation levels for each participant were collected for 4 days prior to the intervention. Therapeutic touch was performed for 5 to 7 minutes twice a day for 3 days. Post-treatment data was collected for 9 days. During data collection for baseline, treatment and pos-treatment, urine and salivary samples were collected to analysis the cortisol levels. A modified Agitated Behavior Rating Scale was used by observers to measure the dependent variable, frequency, and intensity of agitated behavior. The five major behaviors measured on this scale included manual manipulation, escape from restraints, searching or wandering, tapping or banging, and vocalizations. Freidman rank scores and analysis of variance (ANOVA) were calculated to assess a change over time in the outcome measures. These scores showed a decrease in agitated behaviors overall, with the most prominent decrease during the treatment periods. ANOVA indicated a significant decrease in agitated behavior, specifically vocalization and pacing or walking during treatment and post-treatment. There was no significant decrease trend in saliva or urine cortisol levels according to ANOVA and the Friedman rank test. However, there was a decrease trend in urine and cortisol levels reported from treatment to first post-treatment period suggesting a treatment effect. Due to the small sample size the statistical power of cortisol levels is limited and the lack of a comparison group limited definitive conclusions. Woods & Dimond (2002) concluded therapeutic touch has the potential to decrease the most prevalent behaviors, vocalization and pacing, and suggests further research and larger samples to examine the effect of therapeutic touch on agitated behaviors and cortisol levels.

Woods, Craven, & Whitney (2005) studied the effect of therapeutic touch on the frequency and intensity of behavioral symptoms of dementia. A randomized, double-blind, three-group experimental study was conducted using 57 residents aged 67-93 years old. The three groups of the study were placebo, experimental, and control. The residents included in the study exhibited behavioral symptoms associated with dementia. Residents were randomized into groups from three special care units within three long term care facilities in a western Canadian province. Therapeutic touch was given to the experimental group for 5-7 minutes twice daily for 3 days. Trained observers recorded behavioral observations every 20 minutes for 3 days pre-intervention, 3 days of treatment, and 3 days post treatment of all three groups. Observers were blind to group assignments. A significant difference in behavioral symptoms was found in the experimental group according to the ANOVA and Kruskal-Wallis test. In conclusion the study supports that therapeutic touch has clinical relevance to decrease behavioral symptoms in patients with dementia.

A study was reviewed regarding the effectiveness of therapeutic touch and agitation in individuals diagnosed with AD by Hawranik, Johnston, & Deatrich (2008). This was a randomized, multiple time series, three-group experimental design. The design was used to study the difference in effect of therapeutic touch on agitation of older residents with AD compared to those who received a simulated therapeutic touch and another group who received usual care. The multiple time series design measured agitation levels using the CMAI 2 hours after each treatment, 24 hours after final treatment, 1 week after final treatment, and 2 weeks after the final treatment. The sample used in the study included 51 residents diagnosed with AD of a long term care facility. There were 16-18 residents per group. One group received therapeutic touch once per day for 5 days, the second group received simulated therapeutic touch

once per day for 5 days, and the other group received their usual care. Generalized estimated equations for analysis of repeated measures of discrete outcomes were utilized in the multivariable analysis. The effects of treatment were reported as incidence ratios with 95% confidence intervals. Physical non-aggressive behaviors decreased significantly in residents of the therapeutic touch group. The study provided preliminary evidence for the potential of therapeutic touch as an effective treatment in decreasing non-physical aggressive behaviors such as wandering and restlessness.

Wardell & Weymouth (2004) conducted a systematic review of studies of healing touch and its implications for practice and research. Over 30 studies were analyzed and reviewed. The studies were divided into eight categories according to the target of the intervention and the outcomes evaluated. Categories included pain, cancer, immune, cardiovascular, elderly, mental health, postoperative recovery, theoretical, and pediatrics. Included in the elderly category were two studies conducted by Ostuni & Puietro in 2001 finding an overall improvement of behavioral symptoms in patients with AD related to healing touch treatments. A study by Wang & Hermann in 1999 found a decrease in agitation levels in dementia patients who received health touch. The overall data reviewed in the elderly category supports the use of healing touch for the elderly population to decrease behavioral symptoms.

Appendix A summarizes the studies in this literature review.

Recommendations

Health care providers are challenged with the management of patients with AD exhibiting aggressive and agitated behaviors. Caregivers of AD patients exhibiting these symptoms can become burdened and stressed. An intensive review of the literature and studies

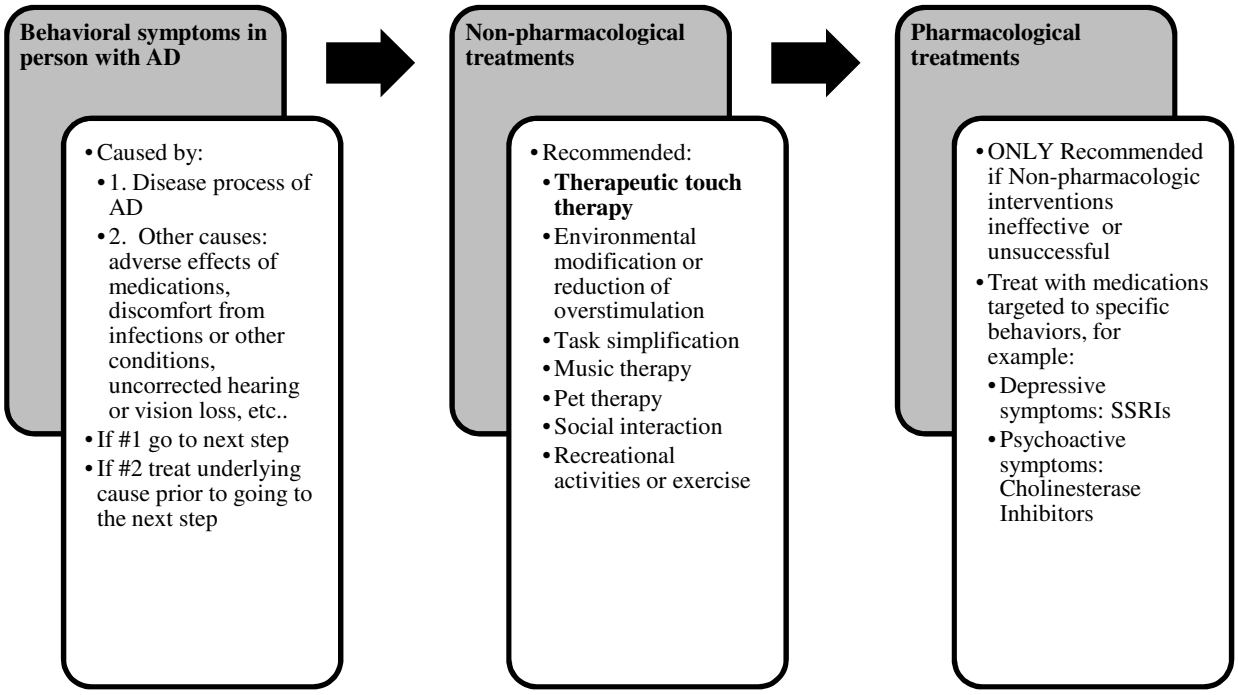
on the use of therapeutic touch as an intervention to treat behavioral symptoms of AD indicates that it is appropriate for primary care givers to consider therapeutic touch therapy to treat behaviors of patients with AD. It has been found through research to decrease stress and anxiety, and to improve quality of life and emotional, physical, and spiritual well-being. Despite a limited amount of available research, collectively the evidence have shown therapeutic touch does not cause patients any harm. There is an improvement of agitation and other behavioral symptoms with the use of therapeutic touch. The comprehensive literature suggests considering therapeutic touch as an intervention to treat agitated behaviors of clients with AD. Therapeutic touch decreases agitation making it easier to provide care to AD patients, which relieves caregiver burden. In order for caregiver's to provide quality care for patients with AD, there is a need for decreased stress. Therefore, therapeutic touch therapy can improve the quality of life of the patient with AD and their caregiver's.

Implications for Practice

It is important for primary care providers to consult with a certified therapeutic touch practitioner when suggesting therapeutic touch therapy. The consultation should include a discussion of the patient's medical history and behavioral symptoms. Once it has been decided by the primary care provider, the patient's guardian/caregiver, and the therapeutic touch practitioner to provide therapeutic touch therapy, the practitioner will complete an assessment and treatment plan. The therapies will be given by the practitioner according to the treatment plan and evaluated. If the patient and caregiver are satisfied with the treatment and outcomes, the practitioner can continue treatments according to his/her guidelines. The primary care provider is responsible to continue monitoring behavioral symptoms and treat as necessary in conjunction with the therapeutic touch therapy.

Considering cost containment, therapeutic touch is a non-invasive, readily learned, non-pharmacologic intervention to treat selected behavioral symptoms (Woods, Craven & Whitney, 2005). Therapeutic touch is low in cost and can be applied and practiced in many settings without specialized equipment. Most often therapeutic touch practitioners are supported by donations or the organization (hospital or nursing home) itself (Bach, 2011). Some therapeutic touch practitioners volunteer their services to organizations. Therefore, it is probable that AD patients who are living in a nursing home setting have access to therapeutic touch practitioners covered by the organization. According to the National Center for Complementary and Alternative Medicine (NCCAM) (2010a), touch therapies are classified as an energy field practice, which is recognized as a complementary and alternative medicine (CAM) practice. Coverage of CAM by insurance companies is relatively limited compared to coverage of conventional therapies (NCCAM, 2010b). Medicare does not cover therapeutic touch therapy. However, if the rise in utilization of CAM continues, it is expected insurance companies will consider covering CAM found to be safe and effective. The average cost is $40-$90 per hour with a therapeutic touch practitioner (Bach, 2011). Regardless of the cost of therapeutic touch treatment outside of a nursing home or hospital setting it is less than the cost of institutionalization of the individual. Therefore, therapeutic touch is a cost-effective and non-invasive intervention to consider when treating behavioral symptoms of AD. See Diagram 1.

Diagram 1: Treating Behavioral Symptoms



Education and Counseling

Patients with AD and their caregivers need to understand that therapeutic touch is used to treat a symptom associated with AD. Therapeutic touch is not a treatment intended to slow the progression or cure AD. Providers of therapeutic touch are responsible for educating the family and patients about the goals of therapeutic touch treatment and the expected results of treatment. Therapeutic touch may or may not be appropriate for all behavioral symptoms depending on the individual's response to treatment, making it crucial for collaboration of the practitioner and primary provider. The overall goal of using therapeutic touch as an intervention to treat behavioral symptoms of AD is to improve the quality of life of the patient with AD and their caregivers/family.

The process of therapeutic touch needs to be explained to the patient and their caregivers. If the patient is confused the practitioner is expected to attempt to explain the process to the patient. If the confused patient refuses treatment the practitioner will offer treatment at a

different time and discuss the patient's refusal for treatment with the caregiver. Therapeutic touch is most effective if the patient receives sessions on a consistent basis established by the practitioner, therefore the caregiver should be encouraged to stay on track with therapeutic touch therapy sessions. It is important to reassure the patient and caregiver that therapeutic touch does not cause any harm to the person receiving treatment. If the patient is non-compliant with treatment the practitioner will not force the client to participate and will adjust the treatment plan accordingly. With this explanation it is important to indicate that some patients may not respond to treatment, if so, the caregivers, family, and primary care provider will explore alternate treatments together.

If caregiver stress and burden are suspected, the provider should provide the caregiver with resources and education regarding behavioral symptoms. Included in this education should be the expected stages of AD, and preparing families/caregivers for the progression of the disease. Resources, such as respite care or supplemental caregivers should be offered and discussed. Give them encouragement to contact their primary care provider for support or any questions they may have.

Education and counseling for patients with AD and their families/caregivers is ongoing and needs to be addressed at a minimal of each provider appointment.

Conclusion

AD is a progressive disease effecting millions of people across the world. AD can cause challenging behavioral symptoms for the patient, family, and/or caregiver. Advances in the care for the AD population have led to use of therapeutic touch as an intervention to treat agitated behaviors. Although research is limited, the common result is that therapeutic touch can decrease

agitated behaviors, improving the quality of life the person with AD and their caregivers. Collaboration of primary care providers, families and caregivers of patients with AD, and therapeutic touch practitioners is crucial for therapeutic touch to be effective. Education and counseling regarding AD and the goals of therapeutic touch therapy need to be addressed prior to treatment and should continue throughout the treatment plan. Therapeutic touch is a cost-effective, non-invasive intervention for primary care providers to consider when treating AD patients with agitated behaviors.

Recommended Internet Sites

The Alzheimer's Association website (www.alz.org) provides information on AD for patients, families, caregivers, and health care professionals. The website is user friendly and provides updated information on current and completed research on AD.

The Nurse Healers- Professional Associates International has provided a website (www.therapeutic-touch.org) with information on therapeutic touch. The scope of practice of therapeutic touch, credentials and training for practitioners of therapeutic touch, and history can be found on this website. A database of certified therapeutic touch practitioners is available. It is a reliable website when researching the process and goals of therapeutic touch for health care professionals and others interested in therapeutic touch.

The Center for Disease Control website (www.cdc.gov) is a helpful website to find facts, general information, current research, and statistics regarding a wide range of diseases and illnesses. The website can be challenging to navigate, but the information provided is valuable to health care professionals and the general public.

The United States Department of Health and Human Services provides a website from the National Institutes of Health (www.nih.gov). This website provides information about health, disease, research, and guidelines. The website has numerous links to resources making the website difficult to find what you are interested in. However the information provided is reliable and valuable to the entire population and health care professionals.

Appendix A: Table of Studies of Literature Review

Title	Author/Year	Description	Results
Pilot study to test the effectiveness of healing touch on agitation in people with dementia	Wang & Hermann (2006)	Nonrandomized quasi-experimental study to assess the effectiveness of healing touch in lowering agitation levels of residents with dementia; sample size of 14 male residents (8 in control group; 6 in the interventional group); healing touch therapy for 10 minutes a day for four weeks. A mean agitation level was assessed and reported from the group as a whole prior to receiving the intervention.	Significant decrease in agitation in interventional during treatment: treatment response is lower in agitation than the non-treatment response at the ± = 0.05 level; participants stated how they felt relaxed after treatment and enjoyed it. Three of the residents receiving psychotropic meds in the treatment group had a decrease in their prescribed dosages during and after the treatment. It was also reported that two of the residents had a dose increase 2 weeks after treatment was stopped.
Tactile stimulation associated with nursing care to individuals with dementia showing aggressive or restless tendencies: an intervention study in dementia care	Skovdahl, Sorlie, & Kihlgren (2007)	Over 28 weeks, a 40 trained caregivers were instructed to provide tactile stimulation at a minimum of once per week, with the optimum goal of daily. Twenty residents from 4 different wards of a nursing home, with a diagnosis of moderate to severe dementia exhibiting restlessness and aggressive behaviors, received the tactile stimulation intervention.	All residents displayed signs of positive feelings and relaxation during and after tactile stimulation. The caregiver's felt they had interacted with the residents in a more positive way leading to a warmer relationship with the residents. Overall, it was found tactile stimulation is a beneficial technique to promote relaxation and better therapeutic connections with residents.
The effect of therapeutic touch on agitated behavior and cortisol in persons with Alzheimer's disease	Woods & Dimond (2002)	Pilot study: sample of 10 residents from a special care unit with moderate to severe agitated behavior and a score of 15 or higher on the Brief Agitation Rating Scale. A practitioner performed therapeutic touch for 5 to 7 minutes twice a day for 3 days. For nine days post-treatment data collection continued. Throughout the study, urine and salivary samples were collected to analysis the cortisol levels. A modified Agitated Behavior Rating Scale was used by observers to measure the dependent variable, frequency, and intensity of agitated behavior.	The study resulted in no decrease in each category of behavior, however Freidman rank scores showed a decrease in agitated behaviors overall, with the most prominent decrease during the treatment periods. There was a decreasing trend in saliva or urine cortisol levels reported. The Study concluded therapeutic touch has the potential to decrease the most prevalent behaviors, vocalization and pacing, and suggests further research and larger samples to examine the effect of therapeutic touch on agitated behaviors and cortisol levels.
The effect of therapeutic touch on behavioral symptoms of	Woods, Craven & Whitney (2005)	Randomized, double-blind, three-group experimental study; 57 residents aged 67-93 years old exhibiting behavioral symptoms associated with dementia. The three	A significant difference in behavioral symptoms was found in the experimental group according to the analysis of variance and Kruskal-Wallis test. In conclusion

Title	Author/Year	Description	Results
persons with dementia		groups of the study were placebo, experimental, and control. Residents were randomized into groups from three special care units within three long term care facilities; Therapeutic touch was given to the experimental group for 5-7 minutes twice daily for 3 days. Trained observers recorded behavioral observations every 20 minutes for 3 days pre-intervention, 3 days of treatment, and 3 days post treatment of all three groups. Observers were blind to group assignments.	the study supports that therapeutic touch has clinical relevance to decrease behavioral symptoms in patients with dementia.
Therapeutic touch and agitation in individuals with Alzheimer's disease	Hawranik, Johnston, & Deatrich (2008)	Randomized, multiple time series, three-group experimental design; Sample of 51 residents diagnosed with AD from a long term care facility; 16-18 residents per group; One group received therapeutic touch once per day for 5 days, the second group received simulated therapeutic touch once per day for 5 days, and the other group received their usual care. Agitation levels were measured at various times after the treatment and compared.	The study concluded therapeutic touch was effective in decreasing non-physical aggressive behaviors such as wandering and restlessness, but did not reduce physically aggressive behaviors.
Review of studies of healing touch	Wardell & Weymouth (2004)	Review of studies of healing touch and its implications for practice and research. Over 30 studies were analyzed and reviewed. The studies were divided into eight categories according to the target of the intervention and the outcomes evaluated.	The overall data reviewed in the elderly category supports to use of health touch for the elderly population to decrease behavioral symptoms.

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