



International Journal of Nursing and Health Care Science

Review Article

Walgren VL. J Int J Nurs & Health Car Scie 03: 2023-209

Running Head: Animal Assisted Therapy for Alzheimer's Patients

Virginia Lynn Walgren, MSN-ed, CHPN, RN[#]

School of Nursing, College of Health and Human Services, Northern Arizona University, Arizona, USA

[#]**Corresponding author:** Virginia Lynn Walgren, MSN-ed, CHPN, RN, Assistant Clinical Professor, School of Nursing, College of Health and Human Services, Northern Arizona University, 1900 S Knoles Dr, Flagstaff, Arizona 86011, USA

Submission Date: 09 February, 2023

Accepted Date: 23 February, 2023

Published Online: 28 February, 2023

How to cite this article: Walgren VL (2023) Running Head: Animal Assisted Therapy for Alzheimer's Patients. Int J Nurs & Health Car Scie 03(05): 2023-209.

Abstract

This project was conducted to create awareness for treating agitation, anxiety, and aggression in Alzheimer's patients using Animal Assisted Therapy (AAT). The problem occurring is that providers are using ineffective strategies for treating behavior symptoms in dementia patients. This has a tremendous impact on the nursing profession; because this problem affects the way we care for and treat patients. AAT will be compared to current pharmacological methods for treating behaviors in Alzheimer's Disease (AD) patients in the long term care setting. Disease prevalence, statistical information and significance to the nursing profession will be discussed. A detailed literature review on current studies of AAT and pharmacological methods for treating dementia symptoms is included. A description of the theory, Transactional Model of Stress and Coping [1] will be discussed and a rationale for selecting this theory will be given as well as how it will be incorporated into a proposal for change. A plan to implement AAT into practice will be presented. It will include a discussion of methods used to evaluate the effectiveness of AAT in AD patients. A description of variables will be assessed in relation to the proposed AAT solution. A review of developed tools used in the implementation plan will be used to evaluate patient outcomes. Finally, a summary will include strategies for disseminating results of the proposal for AAT.

Keywords: Alzheimer's; Animal; Assistance; Coping model; Dementia; Pharmacological methods

Introduction

This paper will examine animal assisted therapy for treatment of symptoms caused by dementia in Alzheimer's patients. Animal assisted therapy will be compared to current medication therapy for treatment of behaviors, such as; agitation, restlessness; aggressiveness; and fear. Disease progression and statistics will be reviewed as well as the significance and impact on the nursing profession.

The problem occurring is that providers are using ineffective strategies for treating behavior symptoms in dementia patients. This has a tremendous impact on the nursing profession; because this problem affects the way we care for and treat our patients. There is no cure for Alzheimer's Disease (AD). Medications have little effect and some pharmaceuticals can cause death [2]. The cost associated for treatment of AD is outrageous and providers must look into alternative therapy. Animal Assisted Therapy (AAT) is an alternative treatment currently being used in both the hospital and homecare settings. Studies have shown that when an animal, such as a dog was in the presence of a patient with dementia, their aggression and agitation were reduced and blood pressure and heart rates were decreased [3]. The study also suggests that having animals present increases socialization in dementia patients. One study suggested that having fish in an aquarium in a facility dining room stimulated residents to eat more and gain weight [3]. When we are able to decrease patient aggression and anxiety, we are improving their quality of life. Nurses are constantly trying to find new ways to improve patient outcomes and if healthcare providers implement AAT into practice we give hope to comfort those suffering with dementia.

Medications are being used to combat the symptoms of dementia in Alzheimer's patients. Most drugs currently used to treat dementia symptoms are cholinesterase inhibitors. These medications are thought to slow the breakdown of the neurotransmitter, acetylcholine. Patients with AD have a reduced amount of acetylcholine which is important for the formation of memories [2]. Drugs such as, Aricept, Exelon, Reminyl are thought to temporarily stabilize thinking skills and behaviors but ultimately cannot stop the progression of the disease or reverse symptoms.

Anticonvulsants, sedatives, and antidepressants are used to treat symptoms of anxiety, restlessness, agitation, depression, sleep disorders and fear. In 2005, research showed that the use of antipsychotic drugs such as, Olanzapine and Risperdone for behavior problems in elderly patients with dementia was associated with elevated risk of death [2].

Dementia is a term used to describe a group of symptoms. Those symptoms include memory loss, lack of judgment, loss of complex motor skills, and loss of intellectual functioning caused by permanent damage or death of the brain's nerve cells. Alzheimer's disease is the most common cause of dementia in patients over 65 years of age and represents 60% of all dementias [4]. Alzheimer's disease is one of the top ten causes of death in the United States, and is the 6th leading cause of death among American adults. An estimated 5.4 million Americans have Alzheimer's disease. It is expected to be as high as 16 million by 2050 [5].

In the year 2011, Medicare and Medicaid spending for patients with Alzheimer's disease came to approximately \$130 billion [5]. The cost for U.S. businesses is more than \$60 billion a year; this is caused by loss of productivity and absenteeism from primary caregivers as well as insurance costs. Annual cost for individual patients, range from \$18,500 to more than \$36,000, depending on disease progression and treatments and medications [4].

Through nursing research and evidenced based practices, nurses are making changes to improve patient outcomes. With AD and dementia symptoms on the rise, it's time to think outside the box and start exploring alternative therapies! Nurses can use alternative therapies such as AAT to treat dementia behaviors in a holistic natural way, without physical and mental side effects medications can cause. This proposal will cut costs, prevent harmful side effects, improve quality of life and bring some happiness to our patients.

Incorporation of Theory

This paper will identify a theory that can be used to support a proposed solution to ineffective pharmacological strategies for treating behavior symptoms in dementia patients. The main components of this theory will be described and evaluated. A description of the theory, Transactional Model of Stress and Coping [1] will be discussed and a rationale for selecting this theory will be given as well as how it will be incorporated into a proposal for change.

The main components of the Transactional Model of Stress and Coping include a primary appraisal process in which an individual assesses the degree of threat in relation to his or her wellbeing to a potentially stressful event [1]. When an event is perceived as threatening or a challenge, a secondary appraisal process takes place. It provides a global assessment of the individual's coping resources and ability to manage the threat/challenge. Coping responses are initiated after the cognitive appraisals. Stress outcomes of this potentially stressful event depend on the effectiveness of one's cognitive appraisals and coping processes. The stress outcomes will then feed back to the cognitive appraisal stages for further actions if required [6]. The key premise of Lazarus and Folkman's transactional model is that primary appraisal, secondary appraisal and coping strategies mediate the relationship between stressor and the individual's stress outcomes [6].

Patients with Alzheimer's Disease (AD) suffer from dementia symptoms. These symptoms present themselves in behaviors, such as; agitation, restlessness; aggressiveness; and fear. The transactional theory of stress and coping support the need for a change in treatment options for dementia behaviors. AD patients with advancing dementia lack the ability of cognitive appraisal; therefore they have very poor coping mechanisms. Assessing stress levels and providing safe coping skills is important in the plan of care for AD patients. Current standard treatment for dementia behaviors revolve around medication management. Most of these medications have harmful side effects, and research has shown that the cost of treatment outweighs the benefits. Many medications used to treat behaviors are inappropriate or dangerous [3]. The proposed solution is Animal Assisted Therapy (AAT). Studies have shown that when an animal, such as a dog, in the presence of a patient with dementia, aggression and agitation were reduced and blood pressure and heart rates were decreased [3]. This is an alternative method for treating stress and assisting patients who are lacking coping skills. An educational proposal will be created to assess signs and symptoms of anxiety and agitation, and teach staff and physicians about the benefits of Animal Assisted Therapy compared to pharmacological treatment. This will be incorporated into a change proposal based on the relationship theory of stress and coping.

Stress affects everyone to some extent. Knowing how to process stressful events can help to develop healthy coping skills. Patients that are unable to process stressful events are unable to develop healthy ways to cope in any meaningful way. This leads to an increase in fears, aggression, agitation and restlessness. Incorporating AAT into plans of care for AD patients will lead to a reduction in these symptoms resulting in an improvement of patient outcomes.

Implementation Plan

This implementation plan includes a comprehensive proposal to treat dementia symptoms such as, agitation, anxiety and fear in Alzheimer's Patients (AD). Animal Assisted Therapy (AAT) has a history of success in improving patients physical, social, emotional and cognitive functioning [7]. This proposal will demonstrate effective patient outcomes using AAT in long term care settings. After this program has been approved and put into practice, there will be an evaluation to determine the success of this program.

This AAT proposal will seek approval from the board of directors, Medical Director, Director of Nursing and administration. An extensive outline of AAT's benefits, cost, risks, and evidence-based practices will be reviewed. A video clip, "Silverado Pet therapy" will be shown demonstrating the effects of AAT with AD patients [8]. Afterwards, a power point presentation with statistical information, disease prevalence, and patient outcomes will be reviewed. Lastly, a handout will be distributed that includes how to initiate AAT to the facility, importance of AAT resources, policy, procedure and the standards of care. This program of AAT is to take place on admission to a long-term care setting. After approval is obtained, resources and funding will be requested. There will be a need to form a committee of nurses, social workers and volunteers to pilot this program. Volunteers will be utilized to give out handouts of AAT to be distributed throughout the community to gain support. This plan's cost will be covered by allocating funds from community donations. Funds will be needed to purchase the initial start up package for the ATT program from the Delta Society [9]. Our company is a non-profit organization, 10% of all income generated from the long-term care facility come from community donation. Having these extra funds leaves funding for community outreach programs such as AAT. The Delta Society will provide staff handbooks that include standards of care, and training modules for staff [9]. Within a week of securing support, an educational presentation describing this AAT proposal will be demonstrated to nursing staff, support staff and family members in the long term care setting.

Currently, healthcare providers are using ineffective pharmacological methods for treating agitation and anxiety in AD patients. A study investigated the use of anticholinergic drugs in elderly nursing home residents with dementia. The authors suggest that the use of anticholinergic medications is associated with "significant adverse effects" including exacerbating cognitive decline. The study quotes that approximately 51% of the general population uses anticholinergic medications and that 60% of elderly U.S. nursing home residents used at least one anticholinergic medication [10].

We can solve this issue of ineffective treatment for behaviors by using Animal Assisted therapy. AAT is an alternative way to approach agitation, aggression, anxiety and fear in AD patients. Current treatment methods for AD are not successful, and medication side effects can be dangerous to patients [11]. A study reviewed investigates the use of questionably beneficial and never appropriate medications administered to patients with advanced dementia in care facilities. The authors state that more than 50% of 1.6 million nursing home residents have dementia. They also quote that in nursing homes annually, 760,000 preventable adverse drug events occur. This is the largest study of daily medication use in dementia patients. Results show that nursing home patients with advanced dementia are continuing to receive drug treatment that is no longer deemed appropriate. The cost and risks of polypharmacy are great. The authors conclude that patients with limited life expectancy and advanced disability should be treated palliatively and that the "use of medications of questionable benefit should be reconsidered in favor of treatment that promotes review patient comfort." [11].

Behavior issues in AD patients are challenging and can be extremely stressful for caregivers. The cause for behaviors such as agitation, anxiety, restlessness, fears, and aggression are related to a deterioration of brain cells caused by AD. There is currently no cure for Alzheimer's disease. According to the Alzheimer's Association, After a diagnosis of AD is made, current treatment for behavior changes involve a medical evaluation to search for contributing factors, such as infection, or hearing and vision problems [4]. After this evaluation, a person's environment will be assessed. Has this patient been moved to a hospital, group home, assisted living or a new skilled facility? It is recommended that a non-drug approach used first, such as providing and promoting physical comfort and emotional comfort [4]. Although, these interventions are mentioned, there are no specific alternative therapies used before starting patients on medications for behaviors [4]. The Food and Drug Administration (FDA) has approved five prescription drugs to treat AD. Four out of five drugs are cholinesterase inhibitors, or anticholinergics. The last drug used is Memantine, an N-methyl-D-aspartate (NMDA) receptor antagonist [12].

AD destroys the cells in the brain that produce and use acetylcholine. Acetylcholine is a chemical messenger that assists with memory, judgment and thought processes. Cholinesterase inhibitors work by increasing levels of acetylcholine. Other medications being used to treat behavior symptoms in AD patients are antidepressants, anxiolytics, and antipsychotic medication [12].

Integrating AAT into plans of care for AD patients with behavior issue will take form in educating staff, nurses, physicians, social workers and volunteers. The rationale for this proposal is to use AAT to treat anxiety, aggression and agitation in AD patients, rather than using pharmaceuticals. Evidence based articles, visual demonstration and assessment tools will support this proposal. An article reviewed explores the use of CNS-affecting drugs and the related outcomes in elderly dementia patients. Results from this study reveal that of the 960 dementia patients, 62% using the Beers criteria were taking inappropriate CNS medications. The highest numbers of drug related problems were syncope, fatigue, altered level of consciousness, delirium, constipation, falls and fractures [13]. Another study reports the use of AAT reduces stress and improves health outcomes. Review of the studies performed reveal that there are many benefits stemming from pet therapy, including non-verbal and tactile outcomes. Some behaviors observed were; play laughter, comfort, and enjoyment from touching and watching the animal, improved psychosocial function and a reduction of depression [14].

Before AAT is implemented into patient care, a chart audit will be necessary to review behaviors, current medications, vital signs, and any alternative therapies that have been used to treat symptoms. If the patient is an appropriate candidate for AAT, therapy will be started, monitored and evaluated for effectiveness. AAT is goal oriented; therefore the proposed program will be monitored initially by trained nurses and social workers. The Delta Society, now called Pet Partner's is a National non-profit organization that helps people live healthier and happier lives by incorporating therapy, service and companion animals into their lives. Pet Partners provides resources for healthcare, educational and other professionals so they can learn how to safely and effectively incorporate therapy animals into their practices [9]. Nurses, social workers and volunteers will form the AAT committee and will initially be shown the Delta Society's "Introducing visiting animal program" video [9]. To start an animal assisted therapy program, the Pet Partners' Therapy Animal Program will be utilized. This program was established in 1990 to ensure that "both ends of the leash," people as well as animals are trained in the art of pet therapy. Pet Partners' Therapy Animal Program is the only national registry that requires volunteer training and screening of animal-handler teams. This program will assist in establishing our program's policies and procedures using the Standards of Practice for Animal Assisted Activities and Therapy handbook [9]. After introducing AAT to staff, another video produced by Silverado Senior Living, Memory Care will be shown to actually demonstrate AAT in action [8]. This video enforces the idea that animal therapy can decrease the need for medications for anxiety and agitation. AAT has been shown to extend life, promote exercise, and decrease blood pressure. This video relates that AAT goals are to restore purpose in people's lives [8].

Staff will be shown a power point of AAT, before issuing a detailed educational packet. This power point presentation has been created to show benefits of using AAT in AD patients. It contains a review of literature on current studies that have been shown to reduce behavior symptoms of dementia (Appendix A). There will be a variety tools encompassed in an educational packet that will be given to staff. The first tool requires an assessment of AD patients who live in long term care settings. The "Initial Dementia Screen: Observed behavior checklist form" will be initiated (Appendix B). This form will inform nurses the level of anxiety, agitation or aggression the patient is demonstrating before AAT is introduced.

A second tool that will be utilized is the "After Pet Therapy Session - Behavior Checklist" this will be completed by the nurse after AAT has been completed (Appendix C) This tool will measure the effectiveness of AAT in relation to frequencies of behaviors, such as, appropriate verbal response, appearing sad or depressed, crying, smiling, calling out, arguing, or irritability.

The last tool that will be incorporated is a graph measuring the patient's vital signs (Appendix D). This graph will measure blood pressure and heart rate, and respirations before AAT is introduced and again directly after AAT has been completed. This graph will demonstrate how AAT reduces blood pressure, heart rate and slows breathing to manageable levels. Staff will receive a copy of all the tools encompassed in this educational packet. There will be a committee meeting to educate staff nurses how to effectively use these tools.

This plan will include a discussion of methods used to evaluate the effectiveness of Animal Assisted Therapy (AAT) in Alzheimer's Disease (AD) patients. A description of the variables will be assessed in relation to the proposed AAT solution. Finally, a review of developed tools used in the implementation plan will be used to evaluate patient outcomes.

The first method used in this evaluation process will be to analyze all the data. Data from the "Initial Dementia Screen: Observed behavior checklist form" [15] will be organized on a spread sheet using excel computer program software called "Analyze it". This is a statistical analysis software program for clinical laboratories and researchers [16]. This tool provides method validation software to help establish, verify and demonstrate method performance during development, compliance, implementation, QA, proficiency testing & support [16]. The committee will receive extensive training of this software as well as all of the assessment tools prior to initiating AAT.

Information will be separated into categories of behavior problems, such as; aggression, anxiety, and fear prior to integrating AAT. Once AAT is introduced, behaviors will be assessed for change and will be recorded. Again, this data will be organized and analyzed for identifying patterns in behaviors. Immediately after AAT has been completed, the "After Pet Therapy Session - Behavior Checklist" will be recorded. L [17]. Lastly, a vital sign graph will demonstrate a comparison a patient's blood pressure and heart rate pre and post intervention [18]. For example, patient Mr. Jones has been calling out loud "Somebody help me!" he's agitated and picking at his blankets, and clothing. Initial assessment reveals agitation as his behavior, AAT is introduced and after a twenty minute session, Mr. Jones is sitting quietly, smiling, and petting a small dog on his lap. This behavior of being calm, relaxed, smiling are measurable patient outcomes and will be placed in a list of positive AAT results. All of this information obtained will lead to the identification of certain behavior patterns and aide the AAT Committee to measure patient outcomes accurately and in a meaningful way.

There are many variables to consider when considering AAT. First, the committee needs to determine through chart reviews, if a patient has been taking medications to treat behavior problems. Nurses need to be aware of all medications the patient is currently taking, and how long they have been on these medications. It is also important to know if the patient is taking any anticonvulsants, sedatives, and antidepressants, are used to treat symptoms of anxiety, restlessness, agitation, depression, sleep disorders and fear. Patients with AD have a reduced amount of acetylcholine which is important for the formation of memories [2]. Drugs such as, Aricept, Exelon, Reminyl are thought to temporarily stabilize thinking skills and behaviors [2].

Another variable is related to disease progression, how long has the patient had AD? What other co-morbidities do they have? Do they have any allergies or phobias? These are important assessment questions that need to be addressed prior to AAT. These variables need to be taken into consideration when evaluating the effectiveness of AAT.

Lastly it is necessary to research what other alternative therapies these AD patients have received previously to assist them with any anxiety, aggression or fears.

After this AAT program has been in effect for one year, all the data will be collected and evaluated. This evidence will be presented to the Directors and administration, as well as nurses, social workers, physicians, and volunteers. Once successful, this program will be trademarked and available to long term care facilities for treatment of behaviors in AD patients.

Dissemination Plan

This summary will include strategies for disseminating results of the proposal for Animal Assisted Therapy (AAT). After one year of implementing AAT, a meeting will be held with the board of directors, Medical Director, Director of Nursing and Administration. At the time of the meeting, a brief video will be shown of an actual demonstration of AAT held in our facility, with current Alzheimer's residents. This video will include comments from family members and staff on their thoughts of our program and anecdotal stories of what they noticed about their loved one after receiving AAT. There will be a packet of information given out afterward that includes spread sheets from excel computer program software called "Analyze it" [16]. This is a statistical analysis software program that helps to establish, verify and demonstrate method performance during development of AAT. Copies of the appendices will be included to show the positive effects of AAT evidenced by a decrease in blood pressure and heart rate, and a decrease in anxiety, aggression and fear [3]. This packet will also include how AAT is in compliance with current standards; reveal the implementation plan, and quality assurance information. After the results have been shared, a new request for resources, funding and support will be requested for the continuation and growth of the AAT program.

After the initial meeting with administration, another meeting will be held for staff members, social workers, volunteers, nurses and members of the AAT committee. The video and handouts of the results of our AAT program will be distributed in its entirety. At this time of the meeting, feedback from staff will be requested as well as a suggestion box placed to gather new ideas.

Once successful, this program will be trademarked and available to long term care facilities for treatment of behaviors in AD patients. A request will be made to the Alzheimer's Foundation of America to publish results of our AAT program. Establishing an affiliation with the Alzheimer's foundation will increase the validity of our project. In addition to the publication of AAT, the committee will create a website that includes information on our AAT program, results, video clips and testimonies will be displayed. The purpose of this website is to foster community awareness that AAT is successful in treating anxiety, aggression and fear in AD patients. The site will also provide contact information about setting up AAT in other facilities and organizations.

It is important to disseminate the results of AAT. Sharing the knowledge and research on AAT will help justify the initial proposal. It also provides evidence that will help gain continued support from staff, and creates awareness to our community and the nursing profession.

Conclusion

Evidenced based practice has shown that Animal Assisted Therapy is beneficial in treating dementia behaviors in AD patients. Research has demonstrated that pharmacological methods for treating these symptoms have been proven ineffective and can actually cause harm. Based on current studies, there is a need for continued research into AAT therapy. It is important for the nursing profession to stay updated on current standards of care for treating dementia as well as any alternative therapies that may improve patient outcomes.

Review of Literature

This study attempts to discern the likelihood of successful treatment of inappropriate vocalization (screaming, yelling, moaning, loud singing) by nonpharmacological means [19]. The goal for this study was to find assessment strategies that could be used to form a clinical pathway for treating these symptoms of dementia. The authors report that constant noise in long term care settings can lead to emotional distress for staff caring for these patients. It is reported that up to 30% of patients in nursing homes may display inappropriate vocalization.

This qualitative study uses a hierarchical approach to dementia and psychological symptoms of dementia. Stage one considers underlying illness. It is then separated into 3 parts; physical, psychiatric, and context. Stage two examines hidden meaning. This contains 3 parts as well. The first is environment, care givers, and lastly personality. Stage three examines empirical treatments. In this stage, researchers examine behavioral interventions, symptomatic pharmacotherapy and adjunctive approaches. In conclusion, researchers have developed a 9 step treatment algorithm and educational tool for managing inappropriate vocalization in dementia patients. Only after careful examination of all stages physical health, psychiatric syndromes, environmental issues, and family involvement should medication be prescribed. This article suggests that there are options for treating dementia symptoms, rather than a pharmacological approach.

This article is significant to nursing and patient care because it creates awareness to readers that it is possible to treat dementia symptoms with other therapies besides medication. This is important when suggesting a change in treatment such as, animal assisted therapy. Research also suggests that antipsychotic medications are too sedative and now are being limited due to the concerns over cerebrovascular adverse effects.

This study investigated the use of anticholinergic drugs in elderly nursing home residents with dementia. The authors suggest that the use of anticholinergic medications is associated with “significant adverse effects” including exacerbating cognitive decline [10]. The study quotes that approximately 51% of the general population uses anticholinergic medications and that 60% of elderly US nursing home residents used at least one anticholinergic medication.

This qualitative study examined anticholinergic medication use in elderly dementia patients from the 2004 US National Nursing Home Survey (NNHS). According to the authors, they used sampling weights to conduct descriptive analysis to determine the use of anticholinergic medications in the data set. Using the Andersen Behavioral Model, multiple logistic regressions were used to determine associated factors. Use of anticholinergic medications was the dependant variables and predisposing, enabling, and need factors were the independent variables. The weakness of the study was due to the cross-sectional nature and the particulars of the NNHS data set and did not address clinical outcomes.

The authors conclude that prescribing cognitively impaired nursing home residents medications with anticholinergic effects should be avoided when possible and that non-pharmacological treatment options should be considered in treating elderly patients with dementia.

This study is significant to nursing and patient care because it highlights the inappropriate use of anticholinergics in elderly dementia patients and supports the trial of alternative therapies such as AAT to more safely manage symptoms.

This article discusses the history of AAT, and gives the definitions of AAT and Animal -assisted activities (AAA) [7]. The author includes a case study that describes treatment of a 10 year old girl with posttraumatic stress disorder, AAT was used as part of a cognitive- behavior therapy intervention. This study reports that AAT using dog therapy can reduce anxiety; improve mood; and in children, improve behavior.

There is no specific statistical information in this qualitative article however; history reveals that Boris Levinson discovered he had success with his patients during therapy when his dog, Jingles was present. In 1961, he presented his findings to the American Psychological Association convention in 1961. Afterwards a survey revealed that 16% of 319 psychologists actually used companion animals in their work with patients. The Delta society is an international organization that registers pets that provide AAT. The Delta society's definition of AAT is “AAT is a goal- directed intervention in which an animal that meets specific criteria is an integral part of the treatment process.” Limitations are reported due to lack of quantitative research, and anecdotal reports.

Outcomes reveal that AAT aids in improvement in patients physical, social, emotional and cognitive functioning. Researcher has established that administrative support is essential and special training is required. Rules and guidelines must be followed to carry out AAT.

This article is significant to nursing and to patient care because it begins to establish guidelines in AAT in which providers can incorporate into their practice. It promotes further research that would be of benefit to the delivery of care to patients.

This article explores the use of CNS-affecting drugs and the related outcomes in elderly dementia patients. The purpose of this study was to examine patterns and the prevalence of inappropriate CNS medications [13]

Results from this study reveal that of the 960 dementia patients, 62% using the Beers criteria were taking inappropriate CNS medications. The highest numbers of drug related problems were syncope, fatigue, altered level of consciousness, delirium, constipation, falls and fractures.

This article is significant to nursing and patient care because it concludes that poor patient outcomes are related to use of CNS medications. Investigating non-pharmacological therapies could be beneficial. The author concludes that using CNS drugs often causes preventable drug related problems, poor outcomes, and may be an indication of poor quality care.

This article addresses the four domains of agitation relating to dementia. It compares pharmaceutical interventions in relation to potential side effects, drug-drug interactions and masking behaviors that may indicate a need [20]. Two theoretical models are used to assess behavior disturbances in dementia patients, the unmet psychosocial needs model and the reduced stress- threshold model. This article assesses alternative therapies for managing dementia behaviors.

Multiple studies both qualitative and quantitative have been performed in AAT, light therapy, multisensory stimulation, music and massage and aromatherapy. Reports demonstrated promising results in decreasing physical aggression, verbal aggression. One limitation is the lack of rigor in the design of the studies, however the effectiveness of interventions presents a strong case that should promote further research.

Anecdotal evidence reports that AAT intervention in long term care settings reduces loneliness, lower blood pressure, alleviate depression. The authors conclude that AAT has shown to be effective in calming patients with agitation and aggression.

This article is significant to nursing and patient care because it provides reports of positive outcomes in patient behaviors using alternative therapies.

This article outlines AAT in care settings and its positive effects on residents and staff. The article also gives advice for staff when introducing animals into long term care settings [21]. Benefits of AAT include, reduction of loneliness, feeling calm, lower stress levels and blood pressure, increases confidence, increased conversation and reminiscing and increased movement. It can help people recover from illness and cope with different disease processes.

This article contains two case studies. The first study takes place in a long term care dementia facility. An elderly patient who usually communicates by calling out numbers or sequences becomes engaged in normal conversation when a pet therapy dog enters the facility. It was thought that this patient had lost all verbal fluency, but when the dog jumped onto her lap, she laughed and was able to ask questions about the animal. Her agitation and anxiety decreased, she was smiling and calm. This type of research is anecdotal. Goals and outcomes were not measured; however stories like these prompt researchers to investigate further into AAT.

The article concludes that pet therapy can have valuable benefits for care facility residents and staff if managed appropriately. When facility implement a policy of involving animals into plans of care, there may come a time when legislation is passed for people to bring their pet with them into care settings.

This article is significant to nursing and to patient care because it directly influences patient outcomes. Examining the behavior changes an animal can bring to a dementia patient, encourages others to perform more research and testing.

This research highlights the need for alternative methods of symptom management in advanced dementia patients as many medications currently used are of little benefit or are contraindicated in patients with advanced dementia. This study is significant to nursing and patient care because it illuminates that symptoms of dementia should not and cannot be appropriately managed by pharmaceuticals alone, which leaves open the possibility of managing symptoms with alternative and/or complimentary therapies such as AAT.

This article provides evidence to informal caregivers who are exploring non-drug approaches for dementia. The author states that predictions estimate that internationally there were 24.3 million people with dementia and these numbers will double every 20 years [23].” More recent estimates there are 29.3 million people with dementia, and cost the government 315.4 billion a year. This article also discussed the reduction of cost when implementing alteration therapies for dementia patients. This supports need for change based on saving money.

This qualitative study used methods that took place in the form of a literature review. 2. A total of seven electronic data bases were explored. Articles were examined for non- drug approaches for treating dementia symptoms. Questions posed were “What treatments worked and what for?” and “What treatments might work and again what for?” Research results yielded 33 reviews, 25 articles were judged as high quality, and however, this research is limited due to weak study designs and small sample numbers.

Outcomes revealed that music therapy, gentle touch and activity were found effective for use in treating dementia symptoms. AAT was reported to “might” work for treatment dementia behaviors. Introduction of a dog or cat into a long term setting revealed positive results in behaviors and psychological symptoms. This research prompts further investigation into using AAT for treating dementia patients.

This research is important to nursing and patient care due to the possibility that AAT may work in treating behaviors in dementia patients. Anytime alternative therapies show positive results, further studies are needed; this may improve patient outcomes by lessening side effects of medication use.

This study focused on eight elderly nursing home patients with “mild” dementia in Japan. The study examined the perception of AAT in the participants and its relevance to nursing practices [24]. The authors conclude that human-animal relationships are grouped into two categories of animal assisted interventions. This includes both animal assisted therapy, which is considered goal directed and animal assisted activity which is more casual. The authors noted the expected increase in the percentage of the population becoming elderly by 2030 (25% being 65 + by 2020) and that the perception of a positive quality of life was important for mental well-being.

This qualitative study poses the questions, “Hoe did institutionalized Japanese older adults, who have been participating in AAA for two years, perceive the activity?” and “What relevance do these perceptions of older adults have on clinical nursing practices in the AAA context?” Research conducted included 8 elderly women in long term care settings. Data was collected through interviews. This data was analyzed based on Colaizzi's phenomenology. This is both a philosophical movement and a research method in which the main objective is to examine and describe phenomena as they are experienced. This study is limited due to a small sample size.

The research showed that there was a positive influence in several identified “experience themes” in relation to AAT. Six themes emerged concerning interactive relationships. Positive feelings about the dogs, confidence in oneself, recalling memories about dogs, a break from daily routine, interacting with other residents through dogs, and advanced communication with volunteers.

This study is relevant to clinical practice because it provided insight into dementia patient's social interaction. It is thought that animals create a pathway for patients to express themselves, create relationships and help with communication. This has proved a positive result and may help with diminishing anxiety and agitation. Motomura N Yagi T Ohyama H 2004 Animal assisted therapy for people with dementia

This article evaluates the use of AAT in Japan with eight female dementia patients; two with AD and two with vascular dementia [25]. The AAT consisted of one hour with two dogs over four days. The subjects were evaluated before and after AAT using MMSE, GDS, and PSMS examinations.

This is a quantitative pilot study that took four female subjects with AD and four with vascular dementia and gave them a battery of tests, including the MMSE, GDS, PSMS, and irritability and apathy tests before and after exposure to AAT. The study did not include a control subject and was on a very small number of patients; however, it does add information to a growing body of evidence supporting AAT.

This study found that while there was no improvement after AAT on the scales evaluated (MMSE, GDS, PSMS, irritability); the subjects overall enjoyed the experience and were less apathetic.

The study adds to nursing knowledge because it lends support to AAT as giving elderly dementia patients an enjoyable experience that helps reduce apathy and therefore improves quality of life.

This article "summarizes and critiques" nine studies related to AAT in institutionalized elderly dementia patients [26]. The authors identify problematic behavioral and psychological symptoms as increasing risk of physical harm in patients and negatively impacting caregivers and other residents.

This article was a literature review. The authors reviewed nine studies including different methodologies of the benefit dog therapy with dementia patients. The authors state that the limitation of the review was due to the methodological variability of the studies and lack of standardized psychometric instruments to measure outcomes which made a definitive conclusion difficult.

This article identifies "some promise" for managing negative behavioral and psychological symptoms with AAT according to their literature review. The authors suggest that in the future, confounding variables should be better controlled in future research of this subject.

This literature review is significant to nursing and patient care because it does identify some potential benefit in using AAT for symptom management in dementia patients. This article reports the main reason for the institutionalization of AD patients as due to caregiver's inability to manage behavioral symptoms at home [27]. Half of AD patients are institutionalized where behavioral symptom management continues to be a challenge. Therapeutic interventions are being studied to manage behavior issues in AD patients. It has been found that agitated behaviors and socialization behaviors are positively impacted with AAT.

This experimental research included four elderly patients with dementia symptoms. The patient's age, educational level, years living in long term care, diagnosis, functional status and the score on the Mini- mental state examination were taken into account. This study used principles from applied research and a single-case experimental design. This approach was implemented on all participants. 39 behaviors were identified and then separated into 4 sub-types of behavior: verbally non-aggressive, verbally aggressive, physically non-aggressive and physically aggressive. This can be calling out for attention, cursing, and repetitious mannerisms and grabbing onto people. A Social Behavior Observation Checklist (SBOC) was created for this study. Behaviors included, smile/laugh, leans, looks, touch, verbalization. Patients in this study were videotaped for 15 minutes using this SBOC tool when evaluating AAT. Limitation includes a small sample population and short-term AAT.

Outcomes reveal in the study that in short-term AAT there did not appear to be an influence on agitation and social behaviors. This may be due to a small sample size and only a 15 minute time frame. Long term results may be different but have not been studied yet. Results do suggest that AAT may be a viable intervention to decrease agitation and anxiety, and promote social behaviors in dementia patients in long term care.

This research is significant to nursing and patient care because it accurately assesses the effectiveness of AAT. Researchers have found that studies on AAT need to include a practice foundation, philosophical and theoretical paradigms, and description and protocol for implementation.

This article investigates the use of questionably beneficial and never appropriate medications administered to patients with advanced dementia in care facilities [11]. The authors state that more than 50% of 1.6 million nursing home residents have dementia. They also quote that in nursing homes annually, 760,000 preventable adverse drug events occur.

This research design was a prospective cohort study that took place in 22 nursing homes. Methods included the study population of 323 patients which was part of the Choices, Attitudes, and Strategies for Care in Advanced Dementia at End of Life study (CASCADE). Data was collected from medical records, a mental status exam, and nursing interviews. Medication administration records were reviewed to look at the daily medications. This study demonstrated that daily medications for chronic conditions are commonly prescribed to nursing home patients who are terminally ill and with end stage dementia. Limitations include, patient population of predominantly Caucasian people, secondly the nursing home characteristics may influence palliative care.

This is the largest study of daily medication use in dementia patients. Results show that nursing home patients with advanced dementia are continuing to receive drug treatment that is no longer deemed appropriate. The cost and risks of polypharmacy are great. The authors conclude that patients with limited life expectancy and advanced disability should be treated palliatively and that the "use of medications of questionable benefit should be reconsidered in favor of treatment that promotes comfort."

This is significant to nursing and patient care because it reflects on how nurses are treating dementia symptoms; it leaves room to the possibility of alternative therapy, when medication is no longer appropriate.

This article discusses the benefits of AAT in elder care settings. This research was performed by Baun, Mara, DNSc, coordinator of the PhD program in nursing at the University of Texas Health Sciences Center [28]. Baun states "Even people with Alzheimer's recognize a dog and they see that the dog is someone new in their environment.

This informational article provides details of how to implement AAT into long term care settings. It provides information about animal temperament, individual strengths, training, registrations and certificates, and cleanliness. It also discusses how to implement infection control when giving AAT. This article lacks statistical information and data. It is primarily anecdotal.

In conclusion, the author states "Therapy dogs and other animals can stimulate social interaction and ease agitation in dementia". AAT results in reduced agitation, increase physical activity, improve eating and increase pleasure.

This article is significant to nursing practice and patient care because it provides information on how to implement AAT into treating patients with dementia symptoms. This article is about research performed.

This article summarizes ten studies regarding animal assisted therapy, specifically dog visitation for dementia patients [14]. The author reports the use of AAT is to reduce stress and improve health outcomes. Review of the studies performed reveal that there are many benefits stemming from pet therapy, including non-verbal and tactile outcomes. Some behaviors observed were; play laughter, comfort, and enjoyment from touching and watching the animal, improved psychosocial function and a reduction of depression.

This article is a review of literature including different methodologies of the benefit of dog therapy for dementia patients in long term care settings. Limitations were discussed as lacking goals of therapy and an evaluation process as well as most being anecdotal. Ethical approval and documented safety protocol came into question. Findings have been reported having a positive effect on behavior disturbances, such as; aggression, irritability, poor sleep, and inappropriate and annoying behaviors.

Many of the studies reviewed revealed improvement of heart rates, blood pressures and overall positive contribution to a person's wellbeing. However, many studies lack scientific rigor. Research findings have encouraged further investigation.

This is significant to nursing and patient care because it supports positive outcomes in behavior and suggests that providers start evaluating the effectiveness of AAT and document patient outcomes.

Reference

1. Lazarus RS, Folkman S (1984) Stress, appraisal, and coping. New York.
2. National Institutes of Health (2012) Dementia: Is there any treatment?
3. Filan SL, Llewellyn- Jones RH (2006) Animal-assisted therapy for dementia: a review of the literature. *International Psychogeriatrics* 4: 597-611.
4. Alzheimer's Foundation of America (2012) About Dementia- Definition.
5. Centers for Disease Control and Prevention (2012) Alzheimer's disease Statistics.
6. Goh Y, Sawang S, Oei T (2010) The Revised Transactional Model (RTM) of occupational stress and coping: An improved process approach. *Australian and New Zealand Journal of Organisational Psychology* 3: 13-20.
7. Eggiman J (2006) Cognitive- Behavior Therapy: A case report- Animal assisted therapy. *Topics in advanced practice nursing eJournal* 6.
8. Silverado Senior Living Memory Care (2010) Silverado Pet Therapy.
9. Delta Society (2012) Start an Animal Assisted Activities/ Therapy Program.
10. Chatterjee S, Mehta S, Sherer J, et al. (2010) Prevalence and predictors of anticholinergics medication use in elderly nursing home residents with dementia. *Drugs Aging* 27: 987-997.
11. Tjia J, Rothman M, Kiely D, et al. (2010) Daily medication use in nursing home residents with advanced dementia. *Journal of the American Geriatrics Society* 58: 880-888.
12. U.S. Food and Drug Administration (2012).
13. Fick D, Kolanowski A, Waller J (2007) High prevalence of central nervous system medications in community-dwelling older adults with dementia over a three-year period. *Aging & Mental Health* 11: 588-595.
14. Williams E, Jenkins R (2008) Dog visitation therapy in dementia care: A literature review. *Nursing Older People* 20: 31-35.

15. Mundt JC, Freed DM, Griest JH (2000) Lay person-based screening for elderly detection of Alzheimer's disease; development and validation of an instrument. *J Gerontol B Psychol Soc Sci* 55B: 153-170. Adapted, compiled, and expanded by Kate Barrett, LCSW, Orange County Department on Aging with consultation from D. Kaufer, MD, Alzheimer's Association (2012) Treatments for behaviors.
16. Analyze It (2012) Analyze-it® Method Evaluation edition.
17. Ann Marie- Wordley (2010) Old Man's best friend: Animal Assisted Intervention for older people with dementia (Doctoral dissertation, The University of Adelaide).
18. Brookside Associates (2007) Graphic Sheet.
19. Barton S, Findlay D, Blake R (2005) The management of inappropriate vocalisation in dementia: A hierarchical approach. *International Journal of Geriatric Psychiatry* 20: 1180-1186.
20. Forbes D, Peacock S, Morgan D (2005) Nonpharmacological management of agitated behaviors associated with dementia. *Geriatrics and Aging* 8: 26-30.
21. Heathcote J (2010) Paws for thought: involving animals in care. *Nursing & Residential Care* 12: 145-8.
22. Holmes H, Sachs G, Shega J, et al. (2008) Integrating palliative medicine into the care of persons with advanced dementia: Identifying appropriate medication use. *The American Geriatrics Society* 56: 1306-1311.
23. Hulme C, Wright J, Crocker T, et al. (2010) Non-pharmacological approaches for dementia that informal carers might try or access: a systematic review. *International Journal of Geriatric Psychiatry* 25: 756-763.
24. Kawamura N, Niiyama M, Niiyama H (2008) Animal-Assisted Activity: Experiences of institutional Japanese older adults. *Journal of Psychosocial Nursing* 47: 41-46.
25. Motomura N, Yagi T, Ohyama H (2004) Animal assisted therapy for people with dementia. *Psychogeriatrics* 4: 40-42.
26. Perkins J, Bartlett H, Travers C, et al. (2008) Dog-assisted therapy for older people with dementia: a review. *Australasian Journal on Ageing* 27: 177-182.
27. Sellers D (2006) The evaluation of an Animal Assisted Therapy intervention for elders with dementia in long-term care. *Activities, Adaptation & Aging* 30: 61-77.
28. Vann M (2010) How animal therapy helps dementia patients.