

## **Cognitive Stimulation Therapy: An Adjunct Treatment In Alzheimer's Dementia**

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In examining our current health care system, one of the major concerns is the lack of qualified medical providers to care for our imminently aging geriatric population. Current literature suggests Americans are living longer and presenting to providers with increasingly complex multiple chronic conditions in record numbers (Centers for Disease Control and Prevention, 2013). The United States Department of Health and Human Services (2014) estimates in 2013 there were 44.7 million Americans aged 65 and older residing in all 50 states comprising 14.1 percent of the United States population, or one in every seven American. Furthermore, predictions from the United States Census Bureau (2010) estimates the number of older adults residing in the U.S. will double to nearly 88 million by the year 2050.

One of the many chronic conditions that may affect this aging population is cognitive decline and dementia. Alzheimer's disease (AD) represents the most common form of dementia and is estimated to affect nearly 5 million Americans (Centers for Disease Control and Prevention, 2014). Patients diagnosed with AD undergo progressive mental decline, which affects all cognitive functions and functional abilities. Alzheimer's disease is currently ranked as the sixth leading cause of death in the United States. However, the number of deaths from AD is thought to be substantially underreported implying AD may actually be the third leading cause of death among Americans (National Institute on Aging, 2015). Additionally, this progressive and degenerative disease creates a significant economic burden for our nation. The Alzheimer's Association of America (2015) estimates AD and other dementias will cost the nation \$226 billion dollars this year and predicts by the year 2050 that number could rise to \$1.1 trillion dollars annually.

While no specific cure exists for AD, treatments are aimed at improving cognitive functions and lessening symptoms thereby improving quality of life. Current first line therapy for the treatment of AD is a cholinesterase inhibitor followed by a NMDA receptor antagonist as symptoms progress and worsen (National Guideline Clearinghouse, 2015). Expert opinions vary on when to discontinue cholinesterase inhibitors as the disease progresses and improvement of symptoms becomes no longer evident. Bishara, Sauer, & Taylor (2015) suggest patients taking cholinesterase inhibitors should continue the selected agent for as long as possible due to the risk of further decline and deterioration of cognitive functions. In addition to pharmacological management, cognitive stimulation therapy (CST), a behavioral approach, may prove beneficial in treatment of AD (Kahn, Corbett, and Ballard, 2014).

Cognitive stimulation therapy is described as a non-pharmacological approach aimed at stimulating cognition and social functioning with interventions directed towards stimulation of patients' cognitive abilities (Aguirre et. al, 2013). Kahn, Corbett, and Ballard (2014) evaluated several randomized controlled studies and suggest augmenting pharmacological agents with cognitive stimulation therapy improves cognition and well-being in patients diagnosed with AD. The purpose of this manuscript is to inform the reader of cognitive stimulation therapy as an adjunct treatment for the management of AD through a detailed literature review.

There are many commercially available CST programs available for purchase and use by the general public. However, there is no general consensus or evidence based guideline to establish standardization of a program during the design and development process (Aguirre et. al, 2010). Furthermore, a detailed literature search failed to yield any type of evaluation of a specific CST program to establish validity. However, numerous published studies exist in the literature to support the idea of CST as a behavioral approach to the management of AD with benefits including improved cognition and quality of life for patients with AD and mild cognitive impairment (MCI).

Of the studies examined multiple randomized controlled trials (RCTs) exist and are widely found in the literature. One research trial completed examined the effects of CST on cognition and symptoms of depression of elders residing in nursing homes in Portugal. The sample size consisted of fifty-six individuals residing in four different nursing homes with the treatment group comprised of twenty-three residents. Data was obtained in a pre and post method utilizing the Montreal Cognitive Assessment (MoCA), the Geriatric Depression Scale-15, and the Barthel Index of Activities of Daily Living. The treatment group was exposed to fourteen group sessions of CST while the control group only received standard care. Post intervention data suggested CST improved cognition, but had little to no effect on symptoms of depression. Furthermore the researchers,

determined these results were not interdependent on one's ability to perform ADLs (Apóstolo, Cardoso, Rosa, & Paúl, 2014).

Yamanaka et. al (2013) published similar finding from a RCT which took place in a similar setting in Japan. The researchers examined residents residing in three residential homes and one nursing home near Tokyo to evaluate the efficacy of a CST program adapted from a group program in the United Kingdom and translated into Japanese. While the instruments utilized in the study varied, the results were very similar. The researchers found there was a significant improvement in cognitive function in the control group after being exposed to the CST program for a period of seven weeks. Similar to the study completed by Apóstolo et al. the experimental group was small consisting of only 26 subjects. This creates significant limitations to the study; however, the results are encouraging for future research.

Difficulty completing instrumental activities of daily living (IADLs) can be a major concern for individuals with MCI and AD and their caregivers. Jiang & Xu (2014) published a study to determine if there was any association between doing housework, an IADL, and MCI. Participants included in the study were randomly selected from three communities in a major city in China based on inclusion criterion to include demographics, social behaviors, and health status. The study participants underwent one-on-one interviews and were asked about the frequency associated with completing housework. Concurrently, during the interview participants were screened for MCI using the MoCA. Conclusions from the study revealed there was an association with MCI and those participants who stated they never completed housework. However, the study had several limitations, mainly bias from participants' perception of the level of housework completed as this could vary among individuals.

The feelings and attitudes of patients, caregivers, and family members (stakeholders) should be a consideration before implementing any type of intervention into a patient's plan of care. Spector, Gardner, & Orrell (2011) completed a qualitative study to evaluate the perceptions of stakeholders involved in CST. The study acknowledged cognitive benefits of CST, but desired to evaluate if the stakeholders themselves observed any benefits of CST. The study included thirty-eight participants recruited for three established CST group based programs. The sample included seventeen patients; each of them had a diagnosis of AD except one who had another form of dementia, fourteen caregivers, and seven staff members. The study participants underwent group discussions as well as one-on-one interviews related to the impact of the group on multiple cognitive functions. The study concluded CST fostered positive perceived benefits for both mental wellness and improved cognition supporting the idea of including CST as an adjunct treatment in the management of AD.

Research on the effectiveness of CST in the United States is very limited although CST has been widely used as an adjunct treatment for the management of AD in the United Kingdom for sometime. In fact, there is a national clinical guideline in the United Kingdom, which recommends CST should be readily accessible by individuals with mild to moderate dementia (National Institute for Health and Care Excellence, 2015). A systematic review completed by Aguirre, Woods, Spector, & Orrell (2013) of over ninety available studies concluded the benefits of CST are superior to any other treatment for AD including pharmacological approaches.

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