

PROPOSED THERAPEUTIC ART TO DIMINISH AGITATION IN ELDER CARE

Bonnie Dearen Curington, MSW, BSW

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APPROVED:

Stanley R. Ingman, Major Professor
James H. Swan, Committee Member
Dennis Myers, Committee Member
Daniel Rodeheaver, Chair of the
Department of Sociology
Thomas Evenson, Dean of the College of
Public Affairs and Community
Service
James D. Meernik, Acting Dean of the
Toulouse Graduate School

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This research study examines the decreased agitation level utilizing nonpharmacological therapeutic interventions in dementia patients, age 65 and older. The study examined the following question: Will a therapeutic art program diminish agitated behaviors in persons diagnosed with dementia, aged 65 and older?

In this quasi-experimental research design, the sample consisted of 19 participants in 3 groups, selected using these criteria: must be receiving services from a long term care facility, be diagnosed with dementia, display agitated behaviors, and be age 65 and older. This research measures the reduction of agitated behaviors in demented patients with the use of a therapeutic art program.

The therapeutic art group pretest, midtest and posttest means were separated into Factor 1: aggressive behavior, Factor 2: physically nonaggressive behaviors, and Factor 3: verbally aggressive behavior. A multivariate analysis of covariance (ANCOVA) was conducted on the data for Factor 1, Factor 2, and Factor 3. The ANCOVA was not statistically significant for Factor 1. The ANCOVA indicated statistically significant findings when using a one tailed test for Factor 2 and Factor 3. The ANCOVA indicated statistically significant findings using a two tailed test for overall agitation.

These findings inform professionals about the efficacy of therapeutic art programs on patients with levels of agitation and dementia. A therapeutic art program may contribute to a better quality of life for persons with dementia. Recommendations are included for use with dementia patients, therapeutic programs and long term care.

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CHAPTER 1

INTRODUCTION

The quality of life of people who suffer from dementia often deteriorates as a result of stressors created by the disease. As new circumstances arise, dementia sufferers often exhibit behavioral changes, such as undesirable behavioral outbursts. Nonpharmacological interventions, such as art therapy, have shown promise in mitigating the severity of undesirable behavioral changes by concentrating therapy efforts toward the patient's environment, rather than the disease (Cohen-Mansfield, 2005). This quasi-experimental research project explored the efficacy of therapeutic art as a nonpharmacological intervention and the improvement it provides in agitation levels with dementia patients. This chapter discusses the literature that reviews dementia, agitation, and nonpharmacological interventions. The report further explains the design of research and objectives for such a research program.

Statistics

In the United States the population of age 65 and over is expected to double within the next 25 years. In 2010, there were 43% males and 57% females of the total population that were 65 and older in the United States (National Institute on Aging, 2011). Approximately, 21 million Americans are in need of long term care services and about 3 million Americans were aged 85 and older (Alzheimer's Association, 2011). In 2011, the Alzheimer's Association estimates that there are 15 million dementia and Alzheimer's patients (Alzheimer's Association, 2011). Alzheimer's disease accounts for 60-80% of these cases. The National Institute on Aging states people with Alzheimer's

disease and other dementias will continue to increase unless the disease can be prevented or better treatment evolves (National Institute on Aging, 2011). As Americans life expectancy continues to increase older the risk of developing Alzheimer's disease and dementias increases as well. According to the National Institute on Aging, after age 65 the risk of developing Alzheimer's disease doubles for every 5 year interval (National Institute on Aging, 2011).

Reason for New Innovations

The rationale behind developing new innovations is for various reasons but one main concern is the overuse of medications on agitated behaviors. The quality of life of people who suffer from dementia often deteriorates as a result of situations created by the disease and their environments. As new circumstances or environments change, dementia sufferers often exhibit behavioral changes, such as undesirable behavioral outbursts. "Inappropriate and unnecessary prescribing of drugs has become so prevalent that more than 40% of people with dementia in care facilities, in the developed world, are prescribed neuroleptic drugs" (Douglas, James, & Ballard, 2004).

Psychotropic drugs are being widely used in long-term care facilities in the treatment of many different conditions (Hughes, and Lapane, 2005). Sadly, one major use of some psychotropic drugs is to reduce agitation or aggressive behaviors, which is a form of chemical restraints. Chemical restraints are used too often as a solution to problems that could be solved by using nonpharmacological interventions such as art therapy, music therapy, pet therapy, etc (Hughes, and Lapane, 2005).

According to Cohen-Mansfield, nonpharmacological interventions have been used to enhance cognition and affect performance of daily living activities (Cohen-Mansfield, 2005). “The nonpharmacological interventions help to reinforce a positive sense of self, reduce agitation and relieve some psychotic symptoms” (Cohen-Mansfield,2005). Some of the interventions are designed to revive past experiences in order to stimulate the brain to release the same chemicals that the drug supplies. For example, some antidepressant drugs contain serotonin which is the same chemical released through the body when exercising; therefore an exercise therapy would be a great replacement for antidepressants.

Promotion of a Healthy Lifestyle

The etiology of dementia arises from a variety of complex factors such as, predisposing characteristics, life events, and the current condition of the individual. These factors can occur in several different domains such as a genetic, biological, medical, psychosocial and environmental domain (Cohen-Mansfield, 2005). Currently, research shows no definite link to certain foods or physical exercise that prevents the development of dementia (National Institute on Aging, 2011). However, a good diet, physical activity, human relationships, and mental stimulation have shown to help individuals age healthy. The National Institute on Aging suggests the possibility a healthy lifestyle reduces the risk of decline cognitively. It is definite our lifestyle, diet and exercise affects our mental status, functionality and abilities even as we age.

The Alzheimer's Association has brought to light challenges in healthy lifestyles for certain populations and the linkage to dementia related diseases. According to the

Alzheimer's Association, African Americans are 2 times more likely than whites to develop cognitive impairments (Alzheimer's Association, 2011). African Americans are already at a higher risk for vascular disease and with new research would be at a higher risk for Alzheimer's disease (Alzheimer's Association, 2011). Women are more likely than men to develop dementia. Even though there are no definite differences between the genders and their relationships it is believed to be because women live longer than men.

Effects of Nonpharmacological Interventions on Healthcare Providers

The nonpharmacological interventions help to reinforce a positive sense of self, reduce agitation and relieve some psychotic symptoms (Cohen-Mansfield, 2005). In order to implement nonpharmacological interventions in nursing homes, many steps must be taken to ensure fidelity. These steps would be costly because it would require multiple staff members, time and dedicated space. Developing a care plan that would implement nonpharmacological interventions for each individual with dementia would make a great impact on nursing home staff. Nursing home treatment plans tend to care only for the individuals medical care and activities but not driven to therapeutic programs. If the staff was able to develop a specific treatment plan for these interventions, the environment would need to embrace such activities. The average nursing home is overly stimulated and loud for the average person.

Problem Statement

It is believed that therapeutic art can help prevent unnecessary prescribing of

medications for agitation. Chaudhury (2003) explored a reminiscence of home through art by residents with dementia. This study was conducted with dementia patients living in a nursing facility. Participants were asked to draw a picture of their home and results showed three emotional aspects of home: psychological attachment, longing for home and a desire to revisit. Chaudhury noted “long-term art therapy can be used to calm anxiety, and bring relief from depression” (Chaudhury, 2003, p 119).

Statement of Purpose

This quasi-experimental study examined the extent to which therapeutic art program reduces agitation in dementia patients. The study evaluated the effectiveness of this program by implementing 3 different groups. The groups included therapeutic art, reminiscence, and a control group. Each group’s posttest mean was tested for the effectiveness of each program. The following question stimulated the specific design:

Research Question: Will a therapeutic art program diminish agitated behaviors in persons diagnosed with dementia and aged 65 and older?

Significance

Alzheimer's disease and other dementia disease have caused complex symptomology and complications. It is highly important to continue research on these diseases in hopes to discover new therapies, pharmacologic and nonpharmacologic. Historical researches on nonpharmacological therapeutic groups have shown effectiveness. A therapeutic art program can help maintain appropriate stimulation levels for an agitated individual (Chaudhury, 2003). In order to help promote and incorporate this therapeutic art program into specific environments these stimulation

levels must be better understood. This research data will provide a better understanding about appropriate stimulation and agitation levels and help professionals understand and develop appropriate nonpharmacological interventions.

Hypotheses

The objective of this research was to test the effect of a therapeutic art program on the agitation level of patients diagnosed with dementia. For the purpose of this study, therapeutic art is defined as using art to stimulate life review within the participant. The main hypothesis is that the therapeutic art program will positively affect agitated behaviors on demented persons 65 and older. The secondary hypothesis is that the therapeutic art program will positively affect the Factor 1 aggressive behaviors, on demented persons 65 and older. The third hypothesis is that the therapeutic art program will positively affect the Factor 2 physically nonaggressive behaviors, on demented persons 65 and older. The final hypothesis is that the therapeutic art program will positively affect the Factor 3 verbally aggressive behavior.

Theoretical Framework

The theoretical framework organized for this study is the environmental/vulnerability stress threshold model by Dr. Jiska Cohen-Mansfield (Cohen, 2000). This model was developed from the theory on progressively lowered stress threshold (PLST) by Hall and Buckwalter (Hall & Buckwalter, 1987). The originator of the environmental psychology was Powell Lawton (Lawton, 1983). Lawton addressed the effects of the environment on the people. His belief was the environment places more demands and

stress on people than other stimuli and specifically focused on issues that involved sensory stimulation, privacy regulation and orientation. Lawton further identified five main points about understanding the relationships in a person's environment. The five main points include: sonal environment, group environment, supra-personal environment, social environment, and physical environment. The sonal environment includes significant others (spouse, children, parents) in a person's life. Group environment includes the effects of several individuals on others. The supra-personal environment includes the cumulative characteristics of others surrounding the individuals (age, income). The social environment focuses more on the political, economic, and cultural views. Finally, the physical environment is connected to the natural and/or created environment.

In the original work of Lawton's theory, he describes the person's environment can be problematic, categorizing the environment into maladaptive, marginal, comfortable and enhancing correlating it to their competency. Lawton states, "a small improvement in environmental quality could make all the difference in the world to a person with major limitations on his competence" (Lawton, 1986, p. 14). Overall, Lawton has driven research to take action in improving the environment to improve the quality of life that is unable.

Many thoughts by Cohen Mansfield were incorporated in order to look further into the agitation in the long term care setting. Cohen Mansfield incorporated her thoughts into the environmental/vulnerability stress threshold model. "The environmental/ vulnerability stress threshold model suggest that for optimal functioning, a match is needed between an individual's needs and abilities and the demands of the

environment” (Cohen-Mansfield, 2000). In dementia patients, their coping skills and abilities are lost or reduced allowing them to view their environment as more stressful. Many times in long term care facilities the environment stimuli will exceed the threshold of stress leading to agitated behaviors and anxiety. Cohen- Mansfield states, “The lowered stress threshold levels can result from decreased comprehension, fatigue, change in routine, and the inability to communicate” (Cohen- Mansfield, 2000). The consistent relationship between cognitive impairment and problem behaviors naturally gives rise to the question concerning the role of dementia in causing these behaviors (Cohen-Mansfield, 2000). Cohen-Mansfield divides these theories into four categories: biological model, the unmet needs model, behavioral model and the environmental vulnerability model (Cohen-Mansfield, 2000). “An individual with dementia is unable to independently fulfill these needs because of a combination of perceptual problems, communication difficulties and an inability to manipulate the environment through appropriate channels” (Cohen-Mansfield, 2005).

Cohen-Mansfield's models for the cause of the problem behaviors are defined below. The models include: direct impact of dementia-biological model, the unmet needs model, behavioral model, and environmental vulnerability model. Direct impact of dementia-biological model utilizes two premises: problem behaviors result directly from neurological changes in the brain and the severe organic brain deterioration results in behavioral disinhibition. The unmet needs model explains how the dementia process results in a decreased ability to meet one's needs because of a decreased ability to communicate the needs, and a decreased ability to provide for oneself. The behavioral model the problem behavior is controlled by its antecedents and consequences. The

environmental vulnerability model claims that the dementia process results in greater vulnerability to the environment and a lower threshold at which stimuli affect behavior. Cohen-Mansfield defines behavioral problems, also known as agitation, as an inappropriate verbal, vocal, or motor activity that is not judged by an outside observer to result directly from the needs or confusion of the individual (Cohen-Mansfield, 1989). Cohen-Mansfield further developed subtypes, which she explained can be constructed differently depending on the location of the participants. Cohen-Mansfield defines the four subtypes the problem behaviors fall into are physically aggressive behavior, physically nonaggressive behaviors, verbally aggressive behaviors, and verbally nonaggressive behaviors (Cohen-Mansfield, 2005).

Treatment Routes for Exploring Agitation (TREA)

Cohen-Mansfield has further developed treatment routes for exploring agitation (TREA), which is an approach based on the theoretical framework that provides a systematic methodology for individualized nonpharmacological interventions to the unmet needs of agitated persons. TREA helps identify the needs and preferences of agitated persons by using formal collection, informal collection, and observation collection. The formal collection is gained through documentation provided by nursing staff and physicians. The informal collection is through caregivers and family members. The observation collection is gained through the agitated persons behaviors and environment. The information gained during the data collection helps determine the personalized interventions used with the person. Each agitation level, such as verbal agitation and nonaggressive agitation, are different syndromes and require different

decision trees. The decision trees are developed from the symptoms for each agitation level.

Research indicates significant differences in efficacy of interventions among clients with higher educational levels than those with lower educational levels (Cohen-Mansfield, 2005). However, research is weak in studying ethnic or cultural accommodations for the interventions offered. For clients who have cultural or ethnic needs, nonpharmacologic interventions can be revised to meet those needs. In order to understand the cultural needs, a clinician must be culturally competent in order to watch for environments causing conflict with a client's culture or ethnicity. Education about cultural and ethnic needs of the individual should be provided to staff in order for adequate accommodations. The individualized plans developed for client needs provided the best results when implementing nonpharmacological interventions. Cohen-Mansfield, through research, discovered that the combination between nonpharmacological and pharmacological interventions conjunction with individualized plans showed the highest level of effects on disruptive behaviors (Cohen-Mansfield, 1989).

Under the treatment routes for exploring agitation theoretical framework there are approaches to identify the needs and preferences of the agitated persons. Both the Agitation Behavior Mapping Instrument (AMBI) and the Cohen Mansfield Agitation Inventory (CMAI) were developed and tested by Cohen Mansfield (1989) to provide a reliable assessment of agitated behaviors in elderly people with high levels of cognitive decline and physical impairment. The CMAI and ABMI are great assessment tools to be implemented when working with dementia impaired participants. The development of

the assessment consists of several different types of informants. The concern with reliability and validity of testing is due to the scheduling of informants in a nursing home. The varied schedule makes it difficult to capture reliable data from just one informant. The ABMI utilizes direct observation and CMAI uses the informant style assessment. The informant style assessment poses a risk to the validity of testing due the reliance on staff. The direct observation provides the researcher firsthand information about the participant and removes secondary information from staff. The problem with direct observation is it is costly and time consuming for the researcher.

In conclusion, the ABMI developed for agitation may not be adequately suited for a nursing home setting due to staff time needed. The CMAI is more feasible, as it utilizes an informant style assessment for the nursing home setting. This type of inventory helps reduce the financial burden and time constraints on staff. ABMI is more complex and helps control validity and reliability in controlled research but can be costly.

The environmental vulnerability model and unmet needs model (Hall, & Buckwalter, 1987) provides an explanation for the level of agitation in participants. In a nursing home setting many times increased agitation can occur due to the inability of an individual to express or communicate their needs to staff. Agitation can also be caused by the inability to complete tasks own while being in a new environment. The environmental vulnerability model applies to the environmental stimuli and the inability for the participant to handle such stimuli. The level of agitation is driven by the participant's level of stimuli to the environment. The utilization of nonpharmacological interventions can provide an outlet for appropriate stimulation through ones

environment. The key to success or failure is meeting everyone at their level of stimuli, which can be extremely difficult in a nursing home setting.

Definition of Terms

- Therapeutic art program- a program designed to implement art projects while providing stimulation to a person's environment and incorporating an individual's past life events.

- Older adults- an adult aged 65 and over.

- Dementia- is a descriptive term that is based on a series of clinical symptoms.

The hallmark of dementia is the abnormality of short- and/or long-term memory.

“Changes associated with dementia include judgment, intellectual abilities, activities of daily living and possibly personality” (Butler, Lewis, & Sunderland, 1991).

- Agitation- a behavioral response of anxiety, these responses are also known as inappropriate behaviors or behavioral problems.

- Nonpharmacological interventions- interventions provided in conjunction with or without pharmacological interventions. The interventions are used to stimulate the individual's environment and prevent or alleviate complications to a chronic condition. These interventions incorporate the individuals' interests and past to stimulate release of negative feelings. Examples are followed: art therapy, pet therapy, music therapy, garden therapy, and relaxation therapy

- Pharmacological interventions- medically stimulated intervention such as the use of psychotropic drugs

The following behaviors are defined by the CMAI, Cohen-Mansfield, 1989:

- Physically aggressive behavior- behavior that is premeditated, such as slapping, hitting, spitting, or kicking and happens at least several times a week
- Physical nonaggressive behavior-behavior that is performed to express the need for stimulation such as undressing in inappropriate places, hoarding things, tearing things and happens at least once a day.
- Verbal agitation- verbal statements or advances that are performed to voice an individual's need or confusion but may have no merit behind the requests such as repetitious cries for help, sexual advances, or cursing and occur at least once a day.

Summary

The purpose of this study is to examine the effects of a therapeutic art program on agitation in the demented person, age 65 and older. This chapter presented the background information on the presenting problem and its significance for the aging population developing dementia. The information provides reasoning to further research the effects of a therapeutic art program on agitation. The importance of understanding the effects of a therapeutic art program will not only provide the research field further data but it will also encourage the use of nonpharmacological therapeutic interventions instead of constant overmedicating for agitated behaviors. Finally, the project will educate the healthcare professionals about the development of agitated behaviors with demented people and hopes to provide alternatives to them and their staff members.

CHAPTER 2

REVIEW OF LITERATURE

Approximately, 21 million Americans are in need of long term care services and in 2010 there were 5.8 million Americans aged 85 and older. This age population is expected to grow to 8.7 million in 2030 and 19 million in 2050 (Census Bureau, 2012). The aggregate costs of care for people age 65 and older with dementia are costing the nation \$200 billion dollars annually (Alzheimer's Association, 2011). It is highly important to continue research on these diseases in hopes to discover new therapies, pharmacologic and nonpharmacologic, to help contain the cost of this disease. This research project explored the efficacy of therapeutic art as a nonpharmacological intervention and the improvement it provides in agitation levels with dementia patients. This chapter discusses the literature that reviews dementia, agitation, and nonpharmacological interventions.

In 2010, the United States population of age 65 and over was 40.2 million but in 2050 it is expected to double to 88.5 million (Census Bureau, 2012). In 2010, there were 43% males and 57% females of the total population that were 65 and older in the United States (Census Bureau, 2012). Approximately, 21 million Americans are in need of long term care services and in 2010 there were 5.8 million Americans aged 85 and older. This age population is expected to grow to 8.7 million in 2030 and 19 million in 2050 (Census Bureau, 2012).

The aggregate costs of care for people age 65 and older with dementia are costing the nation \$200 billion dollars annually (Alzheimer's Association, 2011). The nation pays the \$200 billion accordingly; Medicare is responsible for \$104.5 billion,

Medicaid is responsible for \$35.5 billion, out of pocket is \$33.8 billion and other with accounts for \$26.2 billion (Alzheimer's Association, 2011). It is highly important to continue research on these diseases in hopes to discover new therapies, pharmacologic and nonpharmacologic, to help contain the cost of this disease. Historical researches conducted on nonpharmacological therapeutic groups have shown effectiveness of cost cutting medications.

The importance of understanding the effects of a therapeutic art program will not only provide the research field further data but it will also encourage the use of nonpharmacological therapeutic interventions instead of constant overmedicating for agitated behaviors. Finally, the project will educate the healthcare professionals about the development of agitated behaviors of the demented person and give alternatives to them and their staff members.

Dementia

Dementia imposes a great deal of responsibility on families and patients. Individuals and families carry the heavy burden of managing the symptomology and progression of dementia. In 2011, the Alzheimer's Association estimates that there are 15 million dementia and Alzheimer's patients (Alzheimer's Association, 2011). Alzheimer's disease accounts for 60-80% of these cases. The National Institute on Aging states people with Alzheimer's disease and other dementia will continue to increase unless the disease can be prevented or better treatment evolves (National Institute on Aging, 2011).

"Dementia" is a descriptive term that is based on a series of clinical symptoms.

The hallmark of dementia is the abnormality of short and/or long-term memory. Changes associated with dementia include judgment, intellectual abilities, activities of daily living and possibly personality (Alzheimer's Association, 2011). The beginning and course of dementia depend on the underlying cause and vary considerably from case to case. Dementia has many causes that are difficult to differentiate. Some causes of dementia may include various diseases, infections, strokes, head injuries, drug therapies, and nutritional deficiencies (Alzheimer's Association, 2011).

According to the *Diagnostic and Statistical Manual of Mental Disorders IV* (American Psychiatric Association, 2000) dementia is defined as the development of multiple cognitive deficits manifested by both:

1. Memory impairment (impaired ability to learn new information or to recall previously learned information)
2. One or more of the following cognitive disturbances:
 - (a) aphasia (language disturbance)
 - (b) apraxia (impaired ability to carry out motor activities despite intact motor function)
 - (c) agnosia (failure to recognize or identify objects despite intact sensory function)
 - (d) disturbance in executive functioning (i.e., planning, organizing, sequencing, abstracting)
- B. The cognitive deficits in criteria A1 and A2 each cause significant impairment in social or occupational functioning and represent a significant decline from a previous level of functioning.
- C. Focal neurological signs and symptoms (e.g., exaggeration of deep tendon reflexes, extensor plantar response, pseudobulbar palsy, gait abnormalities, weakness of an extremity) or laboratory evidence indicative of cerebrovascular disease (e.g., multiple infarctions involving cortex and underlying white matter) that are judged to be etiologically related to the disturbance.
- D. The deficits do not occur exclusively during the course of a delirium.

With Behavioral Disturbance: if there is clinically significant behavioral disturbance.

Lifestyle, Signs, and Symptoms

The etiology of dementia arises from a variety of complex factors such as predisposing characteristics, life events, and the current condition of the individual. These factors can occur in several different domains such as a genetic, biological, medical, psychosocial and environmental domain (Cohen-Mansfield, 2005). The various types of disease, which can cause dementia symptoms, include Alzheimer's disease, vascular dementia, Parkinson disease, Lewy body dementia, Huntington disease, Pick disease, and Creutzfeldt-Jakob disease (Alzheimer's Association, 2011).

Currently, research shows no definite link to certain foods or physical exercise that prevents the development of dementia (Alzheimer's Association, 2011). However, a good diet, physical activity, human relationships, and mental stimulation have shown to help individuals age healthy. Many new research projects suggest the possibility a healthy lifestyle reduces the risk of decline cognitively (Alzheimer's Association, 2011). It is definite our lifestyle, diet and exercise effects our mental status, functionality and abilities even as we age.

According to the Alzheimer's Association, high blood pressure, heart disease, diabetes and strokes are being further researched for the suggested key link to Alzheimer's disease and other dementia related diseases (Alzheimer's Association, 2011). Women are more likely than men to develop dementia. Even though there are no definite differences between the genders and their relationships it is believed to be because women live longer than men.

Many signs occur with the onset of dementia. They include language disturbances, impaired motor functions, impaired sensory functions, impaired executive

functions, however, memory changes are one of the most obvious and noticeable symptoms of dementia (Alzheimer's Association, 2011). When there is a clear progression in the illness over time, the general diagnosis of dementia becomes more apparent. Areas of higher function that may become impaired include language, judgment, motor function and attention (Alzheimer's Association, 2011). During the final stages of dementia, individuals may have difficulty speaking or paying attention for long periods of time. One commonality found among a large amount of dementia diseased patients are agitated behaviors.

Agitation and Dementia

Agitated behaviors are usually defined as inappropriate verbal and physical movement (Cohen-Mansfield & Libin, 2004). These behaviors include screaming, hitting, and pacing. "The term 'agitation' is the one most commonly used for these behaviors in nursing homes in the United States" (Cohen-Mansfield & Libin, 2004). "Cohen-Mansfield describes agitation by using other terms, such as 'behavior problems' and disruptive problems' are often used interchangeably with 'agitation'" (Cohen-Mansfield & Libin, 2004).

Behaviors will often increase the individual's suffering by indirectly creating barriers to treatment especially the understanding of the complexity of such behaviors. If these behaviors are not properly cared for they eventually require more restrictive care. The utilization of more restrictive care often includes the application of pharmacological and physical restraints. Warning signs of behavioral issues may arise during the initial assessment. Patient assessment is the consideration of how an individual's behaviors

can be impacted by their unique qualities; such as ethnicity/culture, education, gender and socioeconomic status (Cohen-Mansfield & Libin, 2004). If any of these qualities are disturbed it is good protocol to watch for agitated behaviors.

Lichtenberg (1999) described three reports support the notions that at least some features of agitation are similar cross-culturally. These studies are examined below:

- A Dutch study completed by De Jonghe & Kat, 1996, utilized factor analysis to determine syndromes of agitation, the syndromes were similar to those described in the United States population.
- A French study completed by Micas, Ousset, & Vellas, 1995, examining the relationship between the syndromes of agitation and cognitive functioning also revealed relationships very similar to those discovered in the United States.
- A final study completed by Mintzer, Nietert, Costa, and Waid, 1996, compared the syndromes of agitation in African American and white elderly persons living in two settings: the nursing home and a selected community group. They concluded that agitation factors reported mainly in white populations equally apply to African American populations and the levels of agitation are predicted more by demographic variables and settings than by ethnic identity.

According to Cohen-Mansfield, 2004, agitated behaviors can be classified as verbal or physical and aggressive or non-aggressive (Cohen-Mansfield & Libin, 2004).

Cohen- Mansfield divides behaviors into four main subtypes: physically aggressive, physically non-aggressive, verbally aggressive and verbally non-aggressive (Cohen-Mansfield, 2001). The subtypes classified by Cohen Mansfield in the CMAI are defined below:

- Physical nonaggressive behavior-behavior that is performed to express the need for stimulation such as undressing in inappropriate places, hoarding things, tearing things and happens at least once a day (ie. performing repetitious mannerisms, exit-seeking, inappropriate robing and disrobing, eating inappropriate substances, handling things inappropriately, trying to get to a different place, pacing, wandering, intentional falling, general restlessness, and hiding thing)
- Verbal agitation- verbal statements or advances that are performed to voice

an individual's need or confusion but may have no merit behind the requests such as repetitious cries for help, sexual advances, or cursing and occur at least once a day.

- Physically aggressive behavior- behavior that is premeditated, such as slapping, hitting, spitting, or kicking and happens at least several times a week (ie. physical sexual advances, hurting self or others, throwing things, tearing things, scratching, grabbing, pushing, and biting)

According to Cohen-Mansfield, physically aggressive behavior is more likely to be manifested by individuals with severe cognitive impairment; physically non-aggressive behavior tends to increase with the deterioration of cognitive functioning; verbally non-aggressive behavior increases at the middle levels, and decreases at end stages of dementia; and verbally aggressive behavior tends to increase only at late stages of dementia (Cohen-Mansfield, 2000).

Misuse of Psychotropic Drugs

Due to agitated types of behaviors, many facilities have misunderstood the communication pattern and are treating it with inappropriate and unnecessary prescribing of prescription drugs. This prescribing of inappropriate and unnecessary drugs has become so prevalent that more than 40% of people with dementia in care facilities are prescribed antipsychotic drugs (Douglas, James, & Ballard, 2004). It was reported in January 2012, Senior News, the government inspector reported 83% of Medicare claims were for dementia residents and for the prescriptions of antipsychotics where the label on the drugs warned against their use with dementia patients (Senior News, 2012). When using antipsychotics there is a significant increase in adverse side effects such as sedation, falls, and external involuntary movements.

Sadly some psychotropic drugs are being used as chemical restraints. Chemical or physical restraints are agents that are designed to control involuntary or voluntary movements that may do physical harm to self or others. Chemical restraints are used too often as a solution to problems that could be solved by using nonpharmacological interventions such as art therapy, music therapy, pet therapy, etc. Some of these interventions are designed to revive past experiences in order to stimulate the brain to release the same chemicals that the drug supplies (Cohen-Mansfield, 2005).

According to Cohen-Mansfield, nonpharmacological interventions have been used to enhance cognition and affect performance of daily living activities. "It has been reported that nonpharmacological interventions help to reinforce a positive sense of self, reduce agitation and relieve some psychotic symptoms" (Cohen-Mansfield, 2005).

Many times nursing homes are operated like hospital type settings with paging systems or call light systems that provide an overstimulation to many individuals diagnosed with dementia. As new circumstances or environments change, dementia sufferers often exhibit behavioral changes, such as undesirable behavioral outbursts. "Relatively healthy individuals who suffer from advanced dementia may manifest these behaviors as a form of stimulation, as their dementia or the nursing home environment limits opportunities for meaningful activities" (Cohen-Mansfield, 2005). The quality of life of people who suffer from dementia often deteriorates as a result of situations created by the disease and their environments. The agitated behaviors become more prevalent when individuals are by themselves, in the evening or when staff is performing the activities of daily living. Agitation can be associated with pain, unmet needs, or some sort of discomfort to their environment (Cohen-Mansfield, 2005).

Environmental Needs

The environmental/ vulnerability stress threshold model suggest that for optimal functioning, a match is needed between an individual's needs and abilities and the demands of the environment (Cohen-Mansfield, 2000). In dementia patients, their coping skills and abilities are lost or reduced allowing them to view their environment as more stressful. Many times in long term care facilities the environment stimuli will exceed the threshold of stress leading to agitated behaviors and anxiety. Cohen-Mansfield states, "The lowered stress threshold levels can result from decreased comprehension, fatigue, change in routine, and the inability to communicate" (Cohen-Mansfield, 2000). The consistent relationship between cognitive impairment and problem behaviors naturally gives rise to the question concerning the role of dementia in causing these behaviors (Cohen-Mansfield, 2000). These theories can be divided into four categories: biological model, the unmet needs model, behavioral model and the environmental vulnerability model (Cohen-Mansfield, 2000). "An individual with dementia is unable to independently fulfill these needs because of a combination of perceptual problems, communication difficulties and an inability to manipulate the environment through appropriate channels" (Cohen-Mansfield, 2005).

The environmental vulnerability model and unmet needs model provides an explanation for the level of agitation in participants (Cohen-Mansfield, 2005). In a nursing home setting many times increased agitation can happen due to the inability of an individual to express or communicate their needs to staff. Agitation can also be caused by the inability to complete tasks in their new environment. The environmental vulnerability model applies to the environmental stimuli and the inability for the

participant to handle such stimuli. The level of agitation is driven by the participant's level of stimuli by the environment. The utilization of nonpharmacological interventions can provide an outlet for appropriate stimulation through ones environment. The key to success or failure is meeting everyone at their level of balance between environmental stimuli and the competency of the resident, which can be extremely difficult in a nursing home setting.

Importance of Nonpharmacological Interventions

Nonpharmacological interventions are various therapies that do not incorporate pharmacology but helps address underlying physical, emotional, and mental problems with individuals. Nonpharmacological interventions tend to include variations of reminiscence groups, art therapies, pet therapies, cognitive-behavioral therapy, validation therapy, and aromatherapy (Cohen-Mansfield, 2005).

Cohen-Mansfield (2005) set the stage to explain the importance of nonpharmacological interventions. Nonpharmacological interventions enable staff to address the individual's environment stimuli and also their psychosocial needs (Cohen-Mansfield, 2005). These interventions are effective because they are able to provide flexibility and individuality, whereas pharmacology enhances dangerous side effects and has limitations to meet a persons individualized needs.

The purpose of utilizing nonpharmacological interventions with individuals diagnosed with dementia is to encourage individuality and provide insight into the persons agitated behaviors and provide appropriate stimulation. Nonpharmacological interventions focus on the responsive stimuli levels of the environment and the

individual to help create relief from the symptomology of the dementia (Cohen-Mansfield, 2005). Research has suggested that residents with dementia are likely to engage more in activities that connect their past with their present, which provides an opportunity for reminiscing (Chaudhury, 2003). During a person's lifespan, the majority of individuals are stimulated in their internal or external environment through social interactions, hobbies and relationships. Many younger individuals stimulate their own environments throughout their lives with therapies known as hobbies such as sewing, gardening, exercising, music etc. In order to continue homeostasis its natural an individual would need comparable stimulation as a person ages. Comparable stimulation incorporates nonpharmacological interventions but focuses on the individualized need for stimulation in a person's environment.

Examples of Nonpharmacological Interventions

Cohen-Mansfield (2005) focused on decreasing behavior problems and enhancing performance of a patient's daily living activities. Nonpharmacological interventions incorporate self-affirming activities, which were suggested for persons with depression or low self-esteem. They include, but are not limited to, reminiscence therapy, validation therapy, garden therapy, art therapy, humor therapy, religion therapy, etc.

During reminiscence therapy, the person is encouraged to talk about the past through aids such as music, art, and plays. These aids could be in a therapeutic art program like the one used in Chaudhury (2003). The aid used in this study was a picture of the person's home, which provided the most comfort and safety. Chaudhury

defines art therapy as “a medium of self-expression, which offers the potential of helping residents with dementia with diminished verbal communication abilities to remember and express their personal pasts” (Chaudhury, 2003, p 119). Art therapy has grown into an effective method of communication, assessment, and treatment with children and adults in various settings (Woolston, 2005). Art therapy has emphasized the recognition of the creative process of art making and has enhanced recovery, health, and wellness (Woolston, 2005).

Mintz (2005) nicely incorporated a new type of therapeutic intervention. He brought to light the use and effectiveness of a therapeutic garden in hospitals and care facilities. He spoke of a client receiving healing from a therapeutic garden. The client had become depressed and had an uncontrollable mood. The social worker evaluated the client’s environment and advocated to physicians to allow him to sit outside in the garden. The client was able to go home after much needed “rehumanizing from nature.” An important aspect of the garden was the idea of placing well-known plants in the garden. These types of plants showed to have a therapeutic effect of “stimulating memory and inspiring a meaningful connection between the past and present in dementia patients.”

Jonas-Simpson & Mitchell (2005) researched and explained expressed the need for the quality of life of persons who live with dementia and who reside in long-term care, primarily in locked cognitive support units. In the study, an art and music therapist assisted in offering music and art to participants to further express their current quality of life. The results showed eight key messages about what life was like: feeling content, importance of relationships, choosing an attitude for living on, feeling worthy,

wishes for freedom amid restrictions, living with loss, struggling with thinking and communicating, and persisting with life patterns. The sample ($N = 17$) in the study was persons with dementia of any kind and that were in long term care facilities. The art therapists were asked to go to the secured units in long term care facilities and pick their sample. One of the key findings was the feeling contentment; the researcher stated the study did not provide enough material on this finding. The stated the need for research on the perspectives of persons living with dementia. The researcher also stated that doing so would help learn more about dementia. More studies need to be done on long term care facilities to continue representing the persons with dementia.

Cook (1998) examined the efficacy of a reminiscence group on the life satisfaction of an elderly female nursing home resident. The sampling criteria were: to be at least 65 years of age, English speaking, able to respond to the items on the instruments, able to participate in a 1-hr group process, and with no diagnosed mental illness. The results discovered an increase in the ego integrity when measured by Life Satisfaction Index A (LSI-A), which is a type of life satisfaction instrument. The hypothesis stated that elderly female nursing home residents who participate in a 16-week reminiscing group have significantly higher posttest scores on the LSI-A than those residents who do not participate in a reminiscing group. The sample ($N = 36$) in the study consists of female residents of three different nursing homes in an urban area of the southern United States (Cook, 1998).

Effects of Nonpharmacological Interventions on Agitation

Nonpharmacological interventions provide an outlet for mental stimulation and

enjoyment for individuals dealing with stress, life changes, and extreme environmental changes. These interventions can be specifically useful when dealing with individuals in care type facilities because they focus on the individual's needs and environmental stress.

Nanda, Eisen, Zadeh, and Owen (2011) investigated the impact of different visual artwork on anxiety and agitation levels studying psychiatric patients. The study utilized different artwork on the walls of the facility was displayed in a multi-purpose lounge where patients spent most of their time. The patients' need for a PRN medication was recorded by nursing staff and utilized to determine the change in the anxiety and agitation levels. Results proved that artwork with more nature driven themes versus abstract artwork was the most affective on reducing the anxiety and agitation levels. The study concluded that the cost savings to the facility from reduction in medication use would have been \$4000-\$27,000 depending on the type of artwork utilized. The most important conclusion was the levels of anxiety and agitation in the patients was reduced when utilizing natural scenic artwork (Nand, Eisen, Zadeh, and Owen, 2011).

Stephenson (2006) promoted the self-expression through art therapy. The researcher revealed the significant effect art had on an older adult's mental health and self-esteem. In this informative report, Ms. Stephenson reports the first hand affects she has experienced with her patients during her practice as an art therapist. She reports the most effective art is visual when working with frail elderly. The visual arts encourage and empower "creative growth." In understanding aging, many adults deal with transitions that cause several changes and losses. Whether it is the loss of a

friend, home, family or cognition as we age we have transitions that cause loss. Stephenson reports art therapy helps with these transitions and adjustments to these changes. The process of art therapy utilizes the strengths and abilities of each person. As shown in many research studies, when an individual is given an opportunity to engage in a project of strength they do better and tend to feel more in control. Stephenson reports the same of art therapy. She stated that the art provides a “self-expression and introspection which allows the individual to build on his or her strengths and life experience” (Stephenson, 2006).

Cohen-Mansfield (2010) studied the efficacy of different types of stimuli on agitated behaviors. Cohen-Mansfield developed the study to assess whether the systematic presentation of different types of stimuli could prevent agitation in a nursing home population. The primary hypothesis was that all interventions would be preferable to no intervention and would offer a proactive approach to preventing agitation. The secondary hypothesis was that music, social stimuli, simulated social stimuli, and individualized stimuli based on the person's self-identity would have a significant effect on the prevention of behavior problems. The final hypothesis was that self-identity interventions would have a greater effect in lowering agitation than the other interventions, because each self-identity intervention is modified to the distinct characteristics of the participants. The sample was taken from 111 ($N = 111$) participants from 7 nursing home buildings on Maryland. The sampling plan required minimal levels of agitated behaviors, and a diagnosis of dementia. The average age of the group was 85.4. Of the participants 80.2% were females, 78.4% were Caucasian, and 60.4% were widowed (Cohen-Mansfield, 2010).

The approach implemented was the Agitated Behaviors Mapping Instrument (ABMI) and the Cohen Mansfield Agitation Inventory (CMAI). This approach was based on the theoretical framework, Treatment Routes Exploring Agitation (TREA) that wants to provide a reliable assessment of agitated behaviors in elderly people with high levels of cognitive decline and physical impairment. The Agitation Behavior Mapping Instrument is utilized by a research assistant that includes 14 items describing problematic behaviors (Cohen-Mansfield, 1989).

The results of the study revealed that an individualized plan for live stimulation is more effective on physical aggression versus verbal aggression. The live stimulation helped to alleviate boredom. Clear limitations to the research include: poor agitation levels, similar stimuli has not been proven to effect agitation, and lifestyle and prior habits not the intervention played a large part of improvement to the agitation.

Summary

Approximately, 21 million Americans are in need of long term care services and in 2010 there were 5.8 million Americans aged 85 and older. The aggregate costs of care for people age 65 and older with dementia are costing the nation \$200 billion dollars annually (Alzheimer's Association, 2011). It is highly important to continue research on these diseases in hopes to discover new therapies, pharmacologic and nonpharmacologic, to help contain the cost of this disease.

Many studies have been conducted on the effects of nonpharmacological interventions with many types of populations and how it relates to their life.

Nonpharmacological interventions are being used more frequently to relieve anxiety, pain and stress, while decreasing episodes of disruptive behavior.

CHAPTER 3

METHODOLOGY

The purpose of this research was to test the effect of a therapeutic art program on the agitation level of patients diagnosed with dementia. The main hypothesis is that the therapeutic art program will positively affect overall agitated behaviors on demented persons 65 and older (Factors 1 through 3). The secondary hypothesis is that the therapeutic art program will positively affect the Factor 1 aggressive behaviors, on demented persons 65 and older. The third hypothesis is that the therapeutic art program will positively affect the Factor 2 physically nonaggressive behaviors, on demented persons 65 and older. The final hypothesis is that the therapeutic art program will positively affect the Factor 3 verbally aggressive behavior.

Research Design and Methods

In order to test the study hypotheses, a cross-sectional quasi experimental research design utilized a pretest/posttest comparison group to evaluate the extent to which a therapeutic art program affects agitated behaviors on people diagnosed with dementia. The three different groups were chosen to test if there was a significant difference between the control group and the various groups.

The comparison group was a reminiscence group and the control group was a monitoring program. The monitoring program involved checking on their behaviors by observation or by staff presenting the information each week. No intervention was provided in the control group. In order to form a control group participants had an equal chance of being placed in a therapeutic art program, a reminiscence group or a

monitoring program. The participant was assigned a participant number, randomly chosen by the participant from a bucket with random numbers and was then put back into the bucket and randomly placed into each group.

The intervention consisted of 8 sessions, once a week, lasting approximately one hour each and delivered during the period, June 2011 through August 2011. Pretesting took place during Week 0 and 1; mid-testing took place during Week 6 and post-testing concluded during Week 13.

Sample

The sample consisted of nursing home participants ($N = 19$) from 3 separate nursing homes to include people with non-Anglo ethnic identities. In order to maintain the confidentiality, the sample was chosen by the administration and staff from each nursing home. The nursing home administration and staff were told about the criteria and asked to identify participants that met the requirements. They then contacted the family or participant to ask for consent prior to presenting the information for research. Participants in this study were patients of the local nursing home, which include one in Waco TX and two in Austin TX. The effects of a therapeutic art program on persons with dementia was examined by selecting a criterion sampling using these criteria: must be diagnosed with dementia as determined by the clinical administrator, five occurrences of agitated behavior in the last six months and must be age 65 and older.

Instrument

The Cohen-Mansfield Agitation Inventory produced by Cohen-Mansfield (Cohen-

Mansfield, 1989) was administered to facility staff before participation in either the therapeutic art program, the reminiscence program or the monitoring program and after all programs were concluded. This inventory is designed to be used with staff to test for the agitation level of the participants if direct observation style assessment is utilized. The specific inventory used for testing was the Cohen-Mansfield Agitation Inventory-Long Form that has expanded descriptions of behaviors consisted of 29 closed ended questions and is ordinal level. The questions pertained to agitated behaviors and the frequency levels.

The Cohen-Mansfield Agitation Inventory (1989) developed an inter-rater agreement rate that was calculated for each behavior. There were 3 sets of raters and they averaged .92 ($n = 16$), .92 ($n = 23$), and .88 ($n = 31$). The validity included three factors of agitation and they include:

- Factor 1 - Aggressive behavior: Hitting, kicking, pushing, scratching, tearing things, cursing or verbal aggression, grabbing (biting, spitting).
- Factor 2 - Physically nonaggressive behavior: Pacing, inappropriate robbing or disrobing, trying to get to a different place, handling things inappropriately, general restlessness, repetitious mannerisms.
- Factor 3 - Verbally agitated behavior: Complaining, constant requests for attention, negativism, repetitious sentences or questions, screaming.

Data Collection

Before the first session, I met with nursing home staff and administration and asked them to identify participants that met the criteria and gain written legal consent from the family. Once the consent was received, I then met with the participants again to ask them if they wanted to participate in the study. If the participant chose to participate, I had them sign an informed consent form. In order to protect the

participant's identity, the participant was assigned a participant number, randomly chosen by the participant from a bucket with random numbers. Each facility administrator held the master list, matching the participant name with their corresponding identification number. Only the facility administrator, co-research coordinator and I had access to the master list. The master list was destroyed after the results of the study were released.

In order to measure the effects the program had on the level of agitation, The Agitated Behavior Scale by Cohen-Mansfield, 1989, administered to the group to measure the level of agitated behaviors pretest and posttest. The pretest, consisted of the Agitated Behavior Inventory, was administered to facility staff members immediately before the therapeutic programs began. The participants' randomly chosen identification numbers were placed on both questionnaires to facilitate a match with pretests, midtests and posttests. The numbers assigned to the participants were placed back into a bucket and randomly chosen and placed into each specific therapeutic group. In week 6, the mid-test, was administered to facility staff members and was the same instrument used for the pretest. In Week 13, immediately after the completion of the programs, the post-test, was administered to facility staff members and was the same instrument used for the pre-test.

Treatment Group A ($n = 7$) was provided the therapeutic art program intervention. Treatment Group B ($n = 7$) was provided the reminiscence program intervention. Group C ($n = 5$) was the control group and only received observations of the agitation level no interventions.

The test administered to the participants was completed in their natural environment and without interference from the administrator. All tests were administered in a secluded area within the facility, free from most distractions. A research assistant was trained to assist in administering the tests and was trained by the IRB. Human subjects were required because it is the only data collection method that would reveal the affects a therapeutic art program would make on agitated behavior of a dementia patient, age 65 and older.

Dependent Variables

According to Cohen-Mansfield, 1991, agitation is the behavioral response of anxiety; these responses are also known as inappropriate behaviors or behavioral problems. Cohen-Mansfield further separates the inappropriate behaviors into categories. The categories are defined below:

- Physically aggressive behavior: behavior premeditated, such as slapping, hitting, spitting, or kicking and happens at least several times a week
- Physical Nonaggressive behavior: behavior that is performed to express the need for stimulation such as undressing in inappropriate places, hoarding things, tearing things and happens at least once a day
- Verbal Agitation: verbal statements or advances that are performed to voice an individual's need or confusion but may have no merit behind the requests such as repetitious cries for help, sexual advances, or cursing and occur at least once a day.

Independent Variables

Nonpharmacological interventions provided in conjunction with or without pharmacological interventions. These interventions are used to stimulate the individual's environment and can be used prevent or alleviate complications to chronic

conditions. These interventions incorporate the individual's interests and past lifestyles to stimulate the release of negative feelings. Examples are followed: Art therapy, Pet therapy, Music therapy, Garden therapy, and Relaxation therapy. Defined by me, a therapeutic art program is a program designed to implement art projects that provide stimulation to a person's environment and incorporates an individual's past life events. Also, defined by me, the monitoring program provided was the control group to provide a baseline for comparison. The monitoring group did not implement an intervention, just provided visitation and an update on the participants level of agitation.

Data Analysis

The Statistical Package for Social Sciences (SPSS) was used to calculate the study data. The analysis of covariance (ANCOVA) statistically calculated the differences between the groups. ANCOVA analyzed one variable in 2 or more groups but accounting for covariates. The therapeutic art program and reminiscence therapeutic program are the independent variable, while the level of agitated behaviors is the dependent variable. The factors were divided into factor pretest, factor midtest, and factor posttest to include all data throughout the research study. The covariate used was the pretest for each Factor. The level of measurements used will be interval.

The data examined was for the total sample ($N = 19$), and the three specific groups separately, therapeutic art ($n = 7$), reminiscence ($n = 7$), and control group ($n = 5$). The groups were compared with one another to test the improvement levels. The level of measurement used was ordinal and interval. The alpha level was set at .05, one- tailed to fit with the directional hypotheses, to judge statistical significance.

Between the three groups the mean age of Group A was 81.7, Group B was 82.5, and Group C was 83.43. The ethnicity of the groups was 100% Caucasian. Fourteen of the 21 participants were female. Seventeen participants completed some college or education higher than a high school diploma.

On the Cohen-Mansfield Agitated Inventory, the frequency of each behavior was rated on a 7-point scale. The scale rates the levels of agitation with a scale as follows: 1 = *never*, 2 = *less than once a week but still occurring*, 3 = *once or twice a week*, 4 = *several times a week*, 5 = *once or twice a day*, 6 = *several times a day*, and 7 = *several times an hour*. The mean scores were divided into Factor 1: aggressive behavior- pretest, midtest, and posttest, Factor 2: physically nonaggressive behaviors- pretest, midtest, and posttest, and Factor 3: verbally agitated behavior- pretest, midtest, and posttest. To compare the data even further the mean scores were divided into the therapeutic group and then the nursing home. Unfortunately, inter-rater reliability does not exist for judging the disruptiveness due to the subjectivity of information provided by the rater.

I compared the pretest and posttest mean of each group to determine the improvement or decline of agitation by utilizing ANCOVA statistics. The therapeutic art and reminiscence group were also compared with one another to examine the extent, if any, to which a therapeutic art program affects the level of agitation.

Summary

This chapter includes the specific methodology utilized to analyze the hypotheses. The main hypothesis is that the therapeutic art program will positively affect

overall agitated behaviors on demented persons 65 and older (Factors 1 through 3). The secondary hypothesis is that the therapeutic art program will positively affect the Factor 1 aggressive behaviors, on demented persons 65 and older. The third hypothesis is that the therapeutic art program will positively affect the Factor 2 physically nonaggressive behaviors, on demented persons 65 and older. The final hypothesis is that the therapeutic art program will positively affect the Factor 3 verbally aggressive behavior.

In order to test the hypotheses the methodology was set up as a cross-sectional quasi experimental research design utilizing a pretest/midtest/posttest comparison group. The research participants were divided into three different groups; therapeutic art, reminiscence, and a control group. Once the data was collected the pretest, midtest, and posttest mean scores were tested with the Statistical Package for Social Sciences.

CHAPTER 4

ANALYSIS AND DISCUSSION OF THE RESULTS

The purpose of this research was to test the effect of a therapeutic art program on the agitation level of patients diagnosed with dementia. The main hypothesis is that the therapeutic art program will positively affect agitated behaviors on demented persons 65 and older.

I collected data by administering the Agitated Behavior Scale by Cohen-Mansfield, 1989, to facility staff members immediately before the therapeutic programs began and after it concluded. In Week 6, the midtest was administered to facility staff members and was the same instrument used for the pretest. In Week 13, immediately after the completion of the programs, the posttest was administered to facility staff members and was the same instrument used for the pretest.

On the Cohen-Mansfield Agitated Inventory, the frequency of each behavior was rated on a 7-point scale. The scale rates the levels of agitation with a scale as follows: 1 = *never*, 2 = *less than once a week but still occurring*, 3 = *once or twice a week*, 4 = *several times a week*, 5 = *once or twice a day*, 6 = *several times a day*, and 7 = *several times an hour*. The mean scores were divided into Factor 1: aggressive behavior- pretest, midtest, and posttest, Factor 2: physically nonaggressive behaviors- pretest, midtest, and posttest, and Factor 3: verbally agitated behavior- pretest, midtest, and posttest. To compare the data even further the mean scores were divided into the therapeutic group and then the nursing home.

The Statistical Package for Social Sciences (SPSS) was used to calculate the study data. The analysis of covariance (ANCOVA) statistically calculated the

differences between the groups. The therapeutic art program, reminiscence therapeutic program and control group are the independent variables, while the level of agitated behaviors is the dependent variable. The level of measurements used will be interval.

The data examined was for the total sample ($N = 19$), and the three specific groups separately, therapeutic art ($n = 7$), reminiscence ($n = 7$), and control group ($n = 5$). The midtest data had missing values due to inadequate reporting within a factor, reason for decreased n ($n = 6$). The groups were compared with one another to test the improvement levels. The level of measurement used was interval. The alpha level was set at .05 to indicate the statistical significance utilizing one tailed test.

I compared the pretest, midtest and posttest mean of each group to determine the improvement or decline of agitation. The therapeutic art, reminiscence group, and control group were also compared with one another to examine the extent, if any, to which a therapeutic art program affects the level of agitation.

Sample Characteristics

The sample consisted of nursing home participants ($N = 19$) from 3 separate nursing homes to include people with non-Anglo ethnic identities. The nursing home administration and staff were told about the criteria and asked to identify participants that met the requirements. Participants in this study were patients of the local nursing home, which include one in Waco TX and two in Austin TX. The effects of a therapeutic art program on persons with dementia was examined by selecting a criterion sampling using these criteria: must be diagnosed with dementia as determined by the clinical

administrator, five occurrences of agitated behavior in the last six months and must be age 65 and older.

Table 1 summarizes the characteristics of the total sample ($N = 19$) to include gender, age range, level of education and ethnicity.

Table 1

Participant Characteristics

Sample Characteristics		<i>n</i>
Age Range	65-74	4
	75-84	7
	85-94	7
	95+	1
Ethnicity	Caucasian	19
	African American	0
	Hispanic	0
	Asian	0
	Other	0
Education Level	High School	4
	Some College/Trade	9
	Bachelor's	2
	Masters +	4
Gender	Male	6
	Female	13

The sample included thirteen female participants and six male participants. Four participants were within the age range 65-74, seven participants were 75-84, seven participants were 85-94 and only one participant was 95+. All participants had a high school diploma or higher education. Nine participants achieved some college or trade school, two participants received a bachelor's degree, three other participants

completed graduate level education and one completed medical school. In addition, the ethnicity of the total sample ($N = 19$) was 100% Caucasian. The sample characteristics of the 19 participants who concluded the study and testing appear in Appendix F (F.1: Total Sample Gender, F.2: Total Sample Age, F.3: Total Sample Education).

Findings

Research Question: Will a therapeutic art program diminish agitated behaviors in persons diagnosed with dementia and aged 65 and older? The main hypothesis is that the therapeutic art program will positively affect agitated behaviors on demented persons 65 and older. The secondary hypothesis is that the therapeutic art program will positively affect the Factor 1 aggressive behaviors, on demented persons 65 and older. The third hypothesis is that the therapeutic art program will positively affect the Factor 2 physically nonaggressive behaviors, on demented persons 65 and older. The final hypothesis is that the therapeutic art program will positively affect the Factor 3 verbally aggressive behavior.

In order to adequately analyze the data each factor of the Cohen-Mansfield Agitated Inventory must be broken down and reviewed for differences. Cohen-Mansfield divided the factors into three factors of behaviors. They are as follows: Factor 1: aggressive behavior, Factor 2: physically nonaggressive behavior, and Factor 3: verbally aggressive behavior.

Table 2 summarizes the cross-tabulation of the therapeutic group and the nursing home facility.

Table 2

Crosstabulation of Therapy Group by Nursing Home Facility

	Count	Group ID			Total
		NH 1	NH 2	NH 3	
Intervention ID	Therapeutic Art	4	1	2	7
	Reminiscence	1	4	2	7
	Control Group	2	2	1	5
Total		7	7	5	19

Figure 2 helps to depict the inequality among the nursing home facilities and the therapeutic interventions in the crosstabulation.

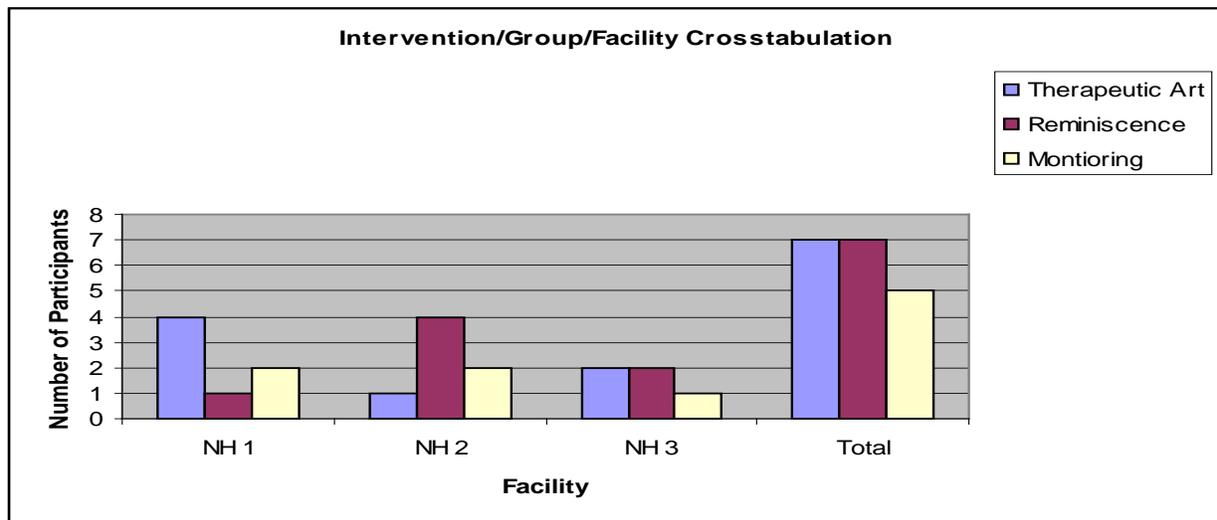


Figure 1. Crosstabulation of therapy group by nursing home facility.

A crosstabulation was conducted on the intervention group and the assigned nursing home. Each independent variable, therapeutic intervention, was randomly assigned in each nursing home. The crosstabulation displayed the inequality among each nursing home in each intervention group. The inequalities within each group projects a non-statistical research study could be possible.

Factor 1 was the first data to analyze suggested by the Cohen-Mansfield Agitated Inventory. According to Cohen Mansfield (2005), Factor 1 focuses on Aggressive Behaviors which can include: slapping, hitting, spitting, or kicking and happens at least several times a week. The midtest data had missing values due to inadequate reporting within a factor, reason for decreased n ($n = 6$).

Table 3 summarizes the descriptive statistics for Factor 1 among the therapeutic groups.

Table 3

Factor 1: Aggressive Behavior Descriptive Statistics

	Intervention ID	Mean	Std. Deviation	N
Factor 1- Pretest	Therapeutic Art	1.36	0.19	7
	Reminiscence	1.27	0.19	7
	Control Group	2.15	0.23	5
Factor 1- Midtest	Therapeutic Art	1.18	0.15	7
	Reminiscence	1.28	0.35	6
	Control group	1.61	0.62	5
Factor 1- Posttest	Therapeutic Art	1.29	0.48	7
	Reminiscence	1.28	0.28	7
	Control group	1.47	0.43	5

Table 4 summarizes the relationship between the covariate (pretest) and the dependent variables (midtest and posttest) for Factor 1. Table 5 summarizes the analysis of covariance using the covariate (pretest) and the dependent variables (midtest and posttest).

Table 4

Relationship between Covariate and Dependent Variables

Source	DV	SS	df	MS	F	p
Intervention ID*Factor 1 pretest	Factor 1 Mid	2.18	3	0.72	14.26	0.0002
	Factor 1 Post	0.64	3	0.21	1.52	0.25
Error	Factor 1 Mid	0.71	15	0.05		
	Factor 1 Post	2.13	15	0.13		
Total	Factor 1 Mid	2.90	17			
	Factor 1 Post	2.78	18			

Table 5

Analysis of Covariance for Factor 1: Aggressive Behavior by Intervention Group

Source	DV	SS	df	MS	F	p
Factor 1-Covariate	Factor 1 Mid	1.62	1	1.62	31.84	<.0001
	Factor 1 Post	0.52	1	0.52	3.66	0.07
Intervention ID	Factor 1 Mid	0.10	2	0.05	1.01	0.39
	Factor 1 Post	0.02	2	0.12	0.09	0.91

A multivariate analysis of covariance (ANCOVA) was conducted on the data for Factor 1: aggressive behavior. The independent variables, therapeutic interventions, included three groups: therapeutic art, reminiscence, and a control group. The dependent variables are the Factor 1: aggressive behavior midtest and posttest scores and the covariate accounted for is the pretest of the Factor 1: aggressive behavior

scores. A preliminary analysis evaluating the homogeneity-of-regression (slopes) assumption indicated that the relationship between the covariate and the dependent variables did not differ significantly as a function of the independent variable, Factor 1 midtest $F = 14.26$, $p = .0002$ and Factor 1 posttest $F = 1.52$, $p = .025$. The ANCOVA was not statistically significant, Factor 1 midtest $F = 1.01$, $p = .39$ and Factor 1 posttest $F = 0.09$, $p = .91$ (see Table 5).

Table 6 summarizes the differences between the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for Factor 1. There are no adjusted means at pretest because the midtest and posttest means are adjusted for pretest scores.

Table 6

Adjusted Means by Intervention Group

Group	Factor 1 Midtest	Standard Error	p Value
Therapeutic Art	1.30	.08	<.0001
Reminiscence	1.45	.09	<.0001
Control Group	1.24	.11	<.0001

Group	Factor 1 Posttest	Standard Error	p Value
Therapeutic Art	1.35	.14	<.0001
Reminiscence	1.37	.15	<.0001
Control Group	1.26	.201	<.0001

Figure 6 displays the differences between the adjusted means by intervention group and the dependent variables (midtest and posttest) for Factor 1.

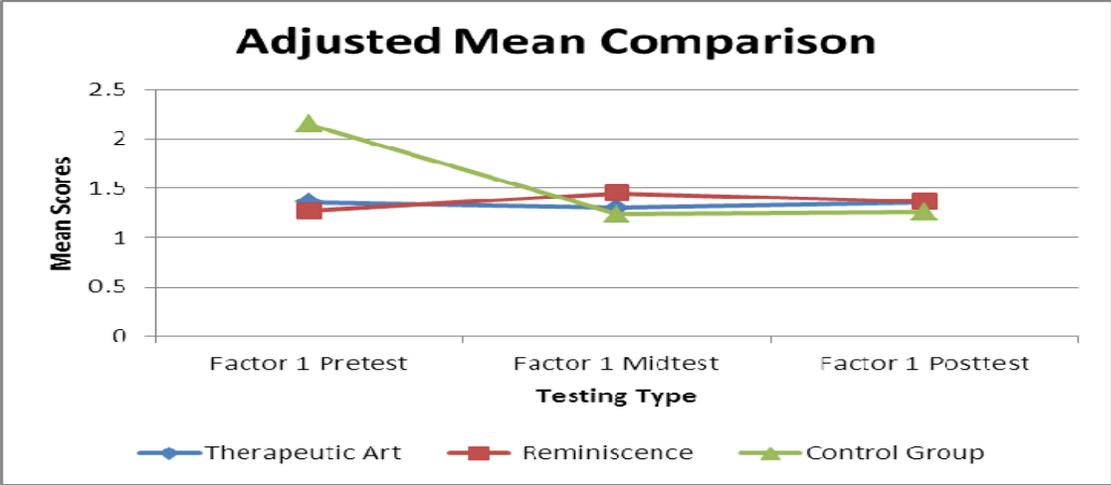


Figure 2. Comparison of adjusted mean scores for Factor 1.

Table 7 summarizes the *p value* of the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for Factor 1. There are no statistically significant findings of change to the agitation level in Factor 1.

Table 7

Adjusted Mean p Value of Comparison by Intervention Group

Factor 1 Pretest/Posttest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.9262	0.7301
Reminiscence	0.9262		0.6875
Control Group	0.7301	0.6875	

Factor 1 Pretest/Midtest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.2488	0.7468
Reminiscence	0.2488		0.2418
Control Group	0.7468	0.2418	

Factor 2 was the second data to analyze suggested by the Cohen-Mansfield Agitated Inventory. According to Cohen Mansfield (2005), Factor 2 focuses on physically Nonaggressive behavior is performed to express the need for stimulation such as undressing in inappropriate places, hoarding things, tearing things and happens at least once a day. The midtest data had missing values due to inadequate reporting within a factor, reason for decreased n ($n = 6$).

Table 8 summarizes the descriptive statistics for Factor 2 among the therapeutic groups.

Table 8

Factor 2: Physically Nonaggressive Behavior Descriptive Statistics

	Intervention ID	Mean	Std. Dev.	n
Factor 2- Pretest	Therapeutic Art	2.35	0.85	7
	Reminiscence	1.90	0.53	7
	Control Group	1.70	0.43	5
Factor 2- Midtest	Therapeutic Art	1.75	0.56	7
	Reminiscence	2.26	1.02	6
	Control group	1.73	0.34	5
Factor 2- Posttest	Therapeutic Art	1.53	0.52	7
	Reminiscence	2.00	0.80	7
	Control group	2.13	0.81	5

Table 9 summarizes the relationship between the covariate (pretest) and the dependent variables (midtest and posttest) for Factor 2. Table 10 summarizes the analysis of Covariance using the covariate (pretest) and the dependent variables (midtest and posttest) for Factor 2.

Table 9

Relationship between Covariate and Dependent Variables

Source	DV	SS	df	MS	F	p
Intervention ID*Factor 2 pretest	Factor 2 Mid	3.01	3	1.00	2.44	0.10
	Factor 2 Post	2.57	3	0.85	1.88	0.18
Error	Factor 2 Mid	5.76	14	.411		
	Factor 2 Post	6.87	15	.458		
Total	Factor 2 Mid	8.77	17			
	Factor 2 Post	9.45	18			

Table 10

Analysis of Covariance for Factor 2: Physically Nonaggressive Behavior by Intervention Group

Source	DV	SS	df	MS	F	p
Factor 2- Covariate	Factor 2 Mid	1.92	1	1.92	4.67	0.05
	Factor 2 Post	1.34	1	1.34	2.93	0.11
Intervention ID	Factor 2 Mid	1.47	2	0.73	1.79	0.30
	Factor 2 Post	2.21	2	1.10	2.41	0.12

A multivariate analysis of covariance (ANCOVA) was conducted on the data for Factor 2: physically nonaggressive behavior. The independent variables, therapeutic interventions, included three groups: therapeutic art, reminiscence, and a control group. The dependent variables are Factor 2: physically nonaggressive behavior midtest and posttest scores and the covariate accounted for is the pretest of the Factor 2: physically non aggressive behavior scores. A preliminary analysis evaluating the homogeneity-of-

regression (slopes) assumption indicated that the relationship between the covariate and the dependent variables did not differ significantly as a function of the independent variable, Factor 2 midtest $F = 2.44, p = .10$ and Factor 2 posttest $F = 1.88, p = .18$. The ANCOVA indicated statistically significant findings when using a one tailed test, Factor 2 midtest $F = 01.79, p = .30$ and Factor 2 posttest $F = 2.41, p = 0.12$ (see Table 10).

Table 11 summarizes the differences between the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for Factor 2. There are no adjusted means at pretest because the midtest and posttest means are adjusted for pretest scores.

Table 11

Adjusted Means by Intervention Group

Group	Factor 2 Midtest	Standard Error	p Value
Therapeutic Art	1.59	.25	<.0001
Reminiscence	2.28	.26	<.0001
Control Group	1.93	.30	<.0001

Group	Factor 2 Posttest	Standard Error	p Value
Therapeutic Art	1.38	.27	0.0001
Reminiscence	2.04	.25	<.0001
Control Group	2.27	.31	<.0001

Figure 11 displays the differences between the adjusted means by intervention group and the dependent variables (midtest and posttest) for Factor 2.

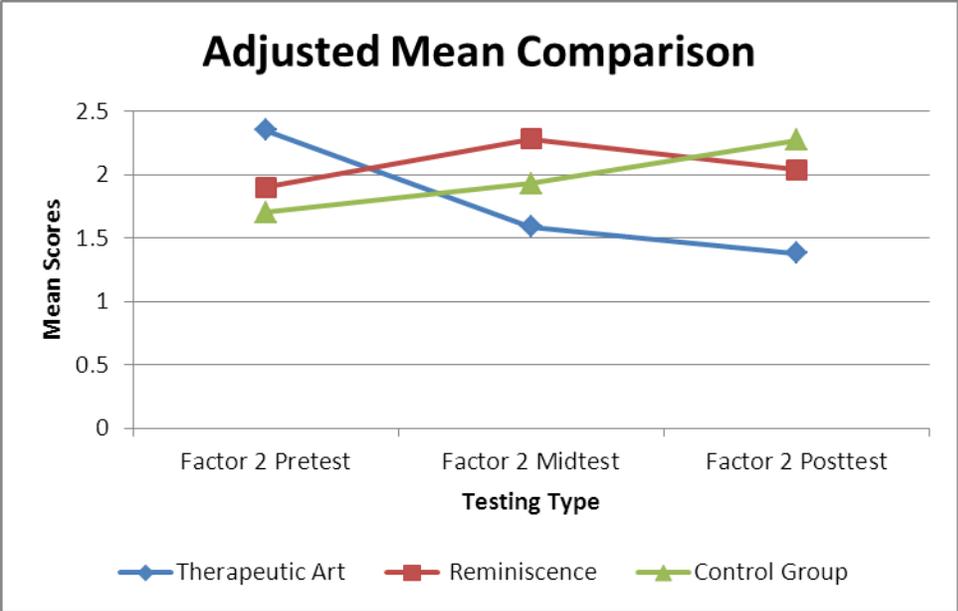


Figure 3. Comparison of adjusted mean scores for Factor 2.

Table 12 summarizes the *p* value of the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for Factor 2. There are statistically significant findings of change to the agitation level in Factor 2 using a one tailed test $p < 0.029$; which is half of a two tailed test ($p < 0.058$). This significant finding indicates a reduction in physically nonaggressive behaviors when utilizing therapeutic art versus the control group. There were no other significant findings within this factor.

Table 12

Adjusted Mean p Value of Comparison by Intervention Group

Factor 2 Pretest/Midtest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.079	0.415
Reminiscence	0.079		0.415
Control Group	0.415	0.396	

Factor 2 Pretest/Posttest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.103	0.058
Reminiscence	0.103		0.584
Control Group	0.058	0.584	

Factor 3 was the third data to analyze suggested by the Cohen-Mansfield Agitated Inventory. According to Cohen Mansfield (2005), Factor 3 focuses on verbal agitation which is verbal statements or advances that are performed to voice an individual's need or confusion but may have no merit behind the requests such as repetitious cries for help, sexual advances, or cursing and occur at least once a day. The midtest data had missing values due to inadequate reporting within a factor, reason for decreased n ($n = 6$).

Table 13 summarizes the descriptive statistics for Factor 3 among the therapeutic groups.

Table 13

Factor 3: Verbally Agitated Behavior Descriptive Statistics

	Intervention ID	Mean	Std. Deviation	n
Factor 3-Pretest	Therapeutic Art	2.64	.956	7
	Reminiscence	1.93	.950	7
	Control Group	3.80	2.11	5
Factor 3- Midtest	Therapeutic Art	1.75	.595	7
	Reminiscence	2.08	1.45	6
	Control group	3.60	1.42	5
Factor 3- Posttest	Therapeutic Art	1.85	1.02	7
	Reminiscence	2.00	.957	7
	Control group	3.45	1.15	5

Table 14 summarizes the relationship between the covariate (pretest) and the dependent variables (midtest and posttest) for Factor 3.

Table 14

Relationship between Covariate and Dependent Variables

Source	DV	SS	df	MS	F	p
Intervention ID*Factor 3 pretest	Factor 3 Mid	15.99	3	5.33	4.80	0.02
	Factor 3 Post	12.98	3	4.32	5.08	0.01
Error	Factor 3 Mid	15.53	14	1.10		
	Factor 3 Post	12.77	15	.085		
Total	Factor 3 Mid	31.53	17			
	Factor 3 Post	25.75	18			

Table 15 summarizes the analysis of covariance using the covariate (pretest) and the dependent variables (midtest and posttest) for Factor 3.

Table 15

Analysis of Covariance for Factor 3: Physically Nonaggressive Behavior by Intervention Group

Source	DV	SS	df	MS	F	P
Factor 3 pretest-Covariate	Factor 3 Mid	5.24	1	5.24	4.73	0.05
	Factor 3 Post	4.38	1	4.38	5.15	0.04
Intervention ID	Factor 3 Mid	4.90	2	2.45	2.21	0.15
	Factor 3 Post	3.31	2	1.65	1.95	0.18

A multivariate analysis of covariance (ANCOVA) was conducted on the data for Factor 3: verbally agitated behavior. The independent variables, therapeutic

interventions, included three groups: therapeutic art, reminiscence, and a control group. The dependent variables are Factor 3: verbally agitated behavior midtest and posttest scores and the covariate accounted for is the pretest of the Factor 3: verbally agitated behavior scores. A preliminary analysis evaluating the homogeneity-of-regression (slopes) assumption indicated there was not a statistically significant relationship between the covariate and the dependent variables as a function of the independent variable, Factor 3 midtest $F = 4.80, p = .02$ and Factor 3 posttest $F = 5.08, p = .01$. The ANCOVA indicated statistically significant findings using a one tailed test, Factor 3 midtest $F = 2.21, p = .15$ and Factor 3 posttest $F = 1.95, p = .18$ (see Table 15).

Table 16 summarizes the differences between the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for Factor 3. There are no adjusted means at pretest because the midtest and posttest means are adjusted for pretest scores.

Table 16

Adjusted Means by Intervention Group

Group	Factor 3 Midtest	Standard Error	p Value
Therapeutic Art	1.77	.39	0.0005
Reminiscence	2.44	.46	0.0001
Control Group	3.12	.51	<.0001

Group	Factor 3 Posttest	Standard Error	p Value
Therapeutic Art	1.87	.34	<.0001
Reminiscence	2.30	.37	<.0001
Control Group	3.00	.45	<.0001

Figure 4 displays the differences between the adjusted means by intervention group and the dependent variables (midtest and posttest) for Factor 3.

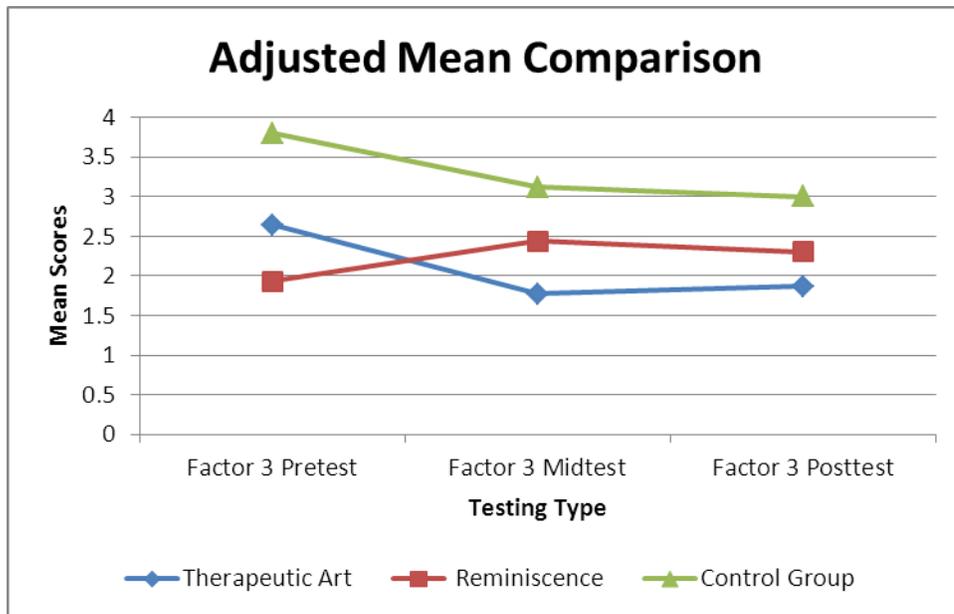


Figure 4. Comparison of adjusted mean scores for Factor 3.

Table 17 summarizes the p value of the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for Factor 3. There are statistically significant findings of change to the agitation level in Factor 3 using a one tailed test ($p < 0.034$), which is half of a two tailed test ($p < 0.068$). This significant finding indicates a reduction in verbal agitated behavior when utilizing therapeutic art versus the control group. There were no other significant findings within this factor.

Overall agitation factors was the final data to analyze but was not suggested by the Cohen-Mansfield Agitated Inventory. The overall agitation Factors were analyzed together to depict any type of relationship with the therapeutic groups. The overall agitation factors were the means from all above factors together (Factors 1-3). The

midtest data had missing values due to inadequate reporting within a factor, reason for decreased n ($n = 6$).

Table 17

Adjusted Mean p Value of Comparison by Intervention Group

Factor 3 Pretest/Midtest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.2890	0.0605
Reminiscence	0.2890		0.3786
Control Group	0.0605	0.3786	

Factor 3 Pretest/Posttest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.41418	0.0685
Reminiscence	0.41418		0.2815
Control Group	0.0685	0.2815	

Table 18 summarizes the descriptive statistics for overall agitation factors (Factors1- 3) among the therapeutic groups

Table 18

Overall Agitation Factors Descriptive Statistics

	Intervention ID	Mean	Std. Dev.	n
Overall-Pretest	Therapeutic Art	2.45	0.39	7
	Reminiscence	1.77	0.42	7
	Control Group	2.19	0.78	5
Overall –Midtest	Therapeutic Art	1.65	0.36	7
	Reminiscence	1.88	0.92	6
	Control group	2.18	0.65	5
Overall- Posttest	Therapeutic Art	1.58	0.50	7
	Reminiscence	1.80	0.67	7
	Control group	2.25	0.59	5

Table 19 summarizes the relationship between the covariate (pretest) and the dependent variables (midtest and posttest) for overall agitation (Factors 1- 3).

Table 19

Relationship between Covariate and Dependent Variables

Source	DV	SS	df	MS	F	p
Intervention	Overall Mid	2.42	3	0.81	2.19	0.13
ID*Overall pretest	Overall Post	2.36	3	0.79	2.53	0.09
<hr/>						
Error	Overall Mid	5.16	15	0.36		
	Overall Post	4.66	15	0.31		
<hr/>						
Total	Overall Mid	7.59	17			
	Overall Post	7.02	18			

Table 20 summarizes the analysis of covariance using the covariate (pretest) and the dependent variables (midtest and posttest) for overall agitation (Factors 1- 3).

Table 20

Analysis of Covariance for All Agitation Factors Combined by Intervention Group

Source	DV	SS	df	MS	F	p
All factors pretest- Covariate	Overall Mid	1.61	1	1.61	4.36	0.06
	Overall Post	1.04	1	1.04	3.37	0.09
<hr/>						
Intervention ID	Overall Mid	1.54	2	0.77	2.09	0.36
	Overall Post	1.81	2	.908	2.92	0.08

A multivariate analysis of covariance (ANCOVA) was conducted on the data for all agitation factors. The independent variables, therapeutic interventions, included three groups: therapeutic art, reminiscence, and a control group. The dependent variables are Factor 1, Factor 2, and Factor 3 midtest and posttest scores and the

covariate accounted for is the pretest of the Factor 1, Factor 2, and Factor 3 agitation scores. A preliminary analysis evaluating the homogeneity-of-regression (slopes) assumption indicated that there was no statistically significant relationship between the covariate and the dependent variables as a function of the independent variable, overall midtest $F = 2.19$, $p = .13$ and overall posttest $F = 2.53$, $p = .09$. The ANCOVA indicates statistically significant findings using a two tailed test, overall midtest $F = 2.09$, $p = .36$ and overall posttest $F = 2.92$, $p = .08$ (see Table 20).

Table 21 summarizes the differences between the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for overall agitation (Factors 1- 3). There are no adjusted means at pretest because the midtest and posttest means are adjusted for pretest scores.

Table 21

Adjusted Means for Overall Factors (Factors 1-3)

Group	Factor 3 Midtest	Standard Error	p Value
Therapeutic Art	1.48	.24	<.0001
Reminiscence	2.09	.26	<.0001
Control Group	2.17	.27	<.0001

Group	Factor 3 Posttest	Standard Error	p Value
Therapeutic Art	1.43	.23	<.0001
Reminiscence	1.97	.23	<.0001
Control Group	2.23	.25	<.0001

Figure 5 displays the differences between the adjusted means by intervention group and the dependent variables (midtest and posttest) for overall agitation (factors 1-3).

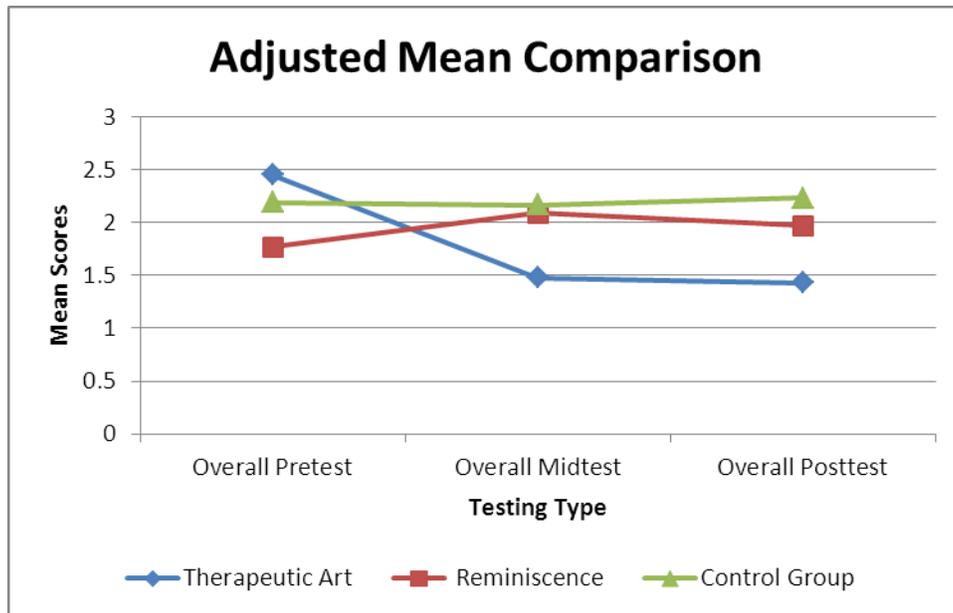


Figure 5. Comparison of adjusted mean scores for overall factors.

Table 22 summarizes the *p value* of the adjusted means by intervention group (experimental groups-therapeutic art and reminiscence group) compared to control group and the dependent variables (midtest and posttest) for overall agitation. There are statistically significant findings of change to the overall agitation level using a one tailed test ($p < .016$), which is half of a two tailed test. The overall agitation level is also significant with a two tailed test ($p < .031$). This significant finding indicates a reduction in overall agitation when utilizing therapeutic art versus the control group. There were no other significant findings within this factor.

Table 22

Adjusted Mean p Value Comparison by Intervention Group

Overall Factors (Factors 1-3) Pretest/Midtest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.1343	0.0798
Reminiscence	0.1343		0.8490
Control Group	0.0798	0.8490	

Overall Factors (Factors 1-3) Pretest/Posttest	Therapeutic Art	Reminiscence	Control Group
Therapeutic Art		0.1393	0.0315
Reminiscence	0.1393		0.4791
Control Group	0.0315	0.4791	

Interpretation of Findings

The analysis answers the question: Will a therapeutic art program diminish agitated behaviors in persons diagnosed with dementia and aged 65 and older? The results depicted above states the therapeutic art program does affect the overall level of agitation in persons with a diagnosis of dementia and aged 65 and older. The analysis of the data does support the main hypothesis; therapeutic art can improve the agitation level of persons with dementia. The intervention posttest effects ($p = .016$), using a one tailed test, and posttest effects ($p = .031$), using a two tailed test, depicts a decline in the overall agitation level.

The analysis of data does not support the secondary hypothesis that the therapeutic art program will positively affect the Factor 1 aggressive behaviors, on

demented persons 65 and older. This result from data would indicate that therapeutic art was not effective enough on the more aggressive behaviors and perhaps a more intensive program would be better.

The analysis of data does support the third hypothesis that the therapeutic art program will positively affect the Factor 2 physically nonaggressive behaviors, on demented persons 65 and older. The intervention posttest effects ($p = .029$), using a one tailed test, depicts a decline in physically nonaggressive behaviors. This result in data indicates that therapeutic art has an effect on physically nonaggressive behaviors.

The analysis of data does support the final hypothesis that the therapeutic art program will positively affect the Factor 3 verbally aggressive behavior. The intervention posttest effects ($p = .034$), using a one tailed test, depicts a decline in verbally agitated behaviors. This result in data indicates that therapeutic art has an effect on verbally agitated behaviors.

There was statistical significant data found with the comparison of the control group and therapeutic art, using a one tailed test, ($p = .016$) and using a two tailed test ($p = .034$). For the reminiscence group and the other Factors there was no statistically significant data with ($p < .05$). In order to provide a more significant study a larger sample, direct observation in conjunction with the CMAI, and more adequately trained staff within the nursing home may have reflected a larger difference between the mean improvements of both treatment groups.

Summary

Based upon the findings of this research study, the research question or

hypotheses were statistically supported. Future studies of the efficacy of nonpharmacological interventions are needed, specifically therapeutic art, in relation to the reduction in agitation levels among dementia patients. The research study helps by providing specifics on how to complete a more statistically significant change in the agitation level. The nursing home atmosphere can be a difficult environment to incorporate any type of program. With further research, s can start piecing together what provides the best quality of life for the individuals but also help eliminate unnecessary complexities with staff and administration.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This study is valuable to professionals because the population of study is growing and problematic overmedicating has become a great concern with the federal inspector. The concern stems because drugs are being used so prevalently the effectiveness is not realized until the dose is too high. High doses, drug interactions or death are all ill effects of improperly used psychotropic medications. This study has the potential to shed light on interventions that can be administered without the heavy use of drugs and make changes in a person's quality of life.

The small database of studies on the effect of therapeutic art on agitation levels makes this study valuable to professionals trying to improve agitation in people with a diagnosis of dementia. Furthermore, the small database available only includes minimal data on how to implement such project into a nursing home.

An important implication of this study is for healthcare providers to become more effective in advocating for the patients quality of life. This study may even open the door for healthcare providers to use alternative therapies not only with dementia patients but with other populations and incorporated in everyday care. The more research completed on nonpharmacological interventions the more policy can be developed to incorporate financial support. Currently, there is little financial means to cover such services for any population. The United States is behind in this development where as other countries have embraced such therapies and are absorbing the benefits.

A policy implication to this study was the use of therapeutic art versus art therapy. Art therapy is performed by a certified art therapist and can be quite costly to a

nursing home center. Research found an art therapist to be costly and adjusted the program to parallel art therapy but also meet the individual and the environmental needs as well. While an art therapist performs strictly to fidelity a long term care facility would have great difficulty meeting such demands due to the quantity and requirements of the individuals. If services were to be utilized in a long term facility, Medicaid would most likely require the services be performed by an art therapist in order to be billable. The policy implication would be the need to integrate all nonpharmacological interventions together instead of specifically targeted to one main therapy in order for long term facilities to be able to adjust the therapy as needed to meet specific needs of everyone within the facility.

Limitations of Study

Limitations that threatened the internal and external validity of the study include sample limitations. The dementia population brings many challenges to research, which can all threaten the internal and external validity. Due to the criteria chosen, dementia diagnosis, sample limitations include changes in drugs, changes in environments, sporadic cognitive behavioral changes, and statistical regression. The sample was smaller due to limited amount of people that fit the criteria of diagnosed dementia and agitation within the facility. The sampling was also randomly selected, which limited the equality among the test subjects because each participant did not possess the exact same characteristics and/or credentials.

The group pretest/midtest/posttest design allowed for many internal validity threats. These threats include drug changes, environmental changes, sporadic cognitive

behavioral changes and statistical regression. Drug changes could have created an internal validity quandary that could have affected the patient's score on the Cohen Mansfield Agitation Inventory. The concern with drug changes is they could have been administered before I conducted the pretest or posttest, which one could argue caused the slight improvement in the agitation levels, not the stimulus program.

When working with dementia patients, sporadic cognitive behavioral changes may occur, this can affect the results of the pretest, midtest or posttest. I had limited time in each session to stimulate the participants, and the stimulation time varied in each session. The pretest-posttest design allowed for statistical regression, which is the natural fluctuation of a participant's behavior from pretest to posttest.

The temporary changes and distractions in the environment could have also affected the results. The distractions could have broken the participant's concentration to where the participant may not have regained their focus for the rest of the session. For example, a participant's family came to visit while in the middle of a session. The participant no longer wanted to participate and left with the family.

I collaborated with 3 local nursing facilities to provide both space and clients for study. The staff and administration at all facilities were able to hold the distractions to a minimum, however, since I was not staff there was some difficulty in communication about the study. The communication limitation weighed heavily on the level of testing with staff members and appeared there was no general understanding of the study.

Recommendations

I recommend that agencies continue implementing therapeutic groups for further

study. However, in future studies the recommends having a secluded area within the facility where the participants would have minimal distractions. A larger sample size of 50 participants, if possible, is also suggested along with a longer time period to work within the groups. Also, it can be quite difficult to incorporate therapy groups that have an impact on agitation if the facility has an inflexible schedule. The schedule driven nursing homes created problems because of the following reasons: medication are given in the mornings, making it difficult to work with the individuals and after lunch, individuals were taken to their rooms to sleep.

Overall, I would strongly encourage the cumulative use of nonpharmacological interventions rather than chooses one specific one in order to better meet the needs of all individuals. Other recommendations include the creation of a more therapeutic environment which is quite realistic for facilities to implement. Further, the facilities would need to address their call light and paging systems to reduce the external agitation and over stimulation. The facility would need to create a more home like environment with flexibility within the schedule to tailor it to the individual needs. Administration and staff members would need to be trained on the correlation of agitation and dementia. Many staff members don't understand the reasoning behind certain behaviors or how to divert the behavior. Finally, when groups are set up the most commonly cognitively impaired participants need to be placed together to ensure maximum quality. It was observed during the study that if a highly cognitively impaired person was placed with someone that had more mental faculties that individual had difficulty staying on task.

Summary

The purpose of this study is to examine the effects of a therapeutic art program on agitation in the demented person, age 65 and older. The importance of understanding the effects of a therapeutic art program will not only provide the research field further data but it will also encourage the use of nonpharmacological therapeutic interventions instead of constant overmedicating for agitated behaviors.

Approximately, 21 million Americans are in need of long term care services and in 2010 there were 5.8 million Americans aged 85 and older. The aggregate costs of care for people age 65 and older with dementia are costing the nation \$200 billion dollars annually (Alzheimer's Association, 2011). It is highly important to continue research on these diseases in hopes to discover new therapies, pharmacologic and nonpharmacologic, to help contain the cost of this disease.

In order to test the hypotheses the methodology was set up as a cross-sectional quasi experimental research design utilizing a pretest/midtest/posttest comparison group. The research participants were divided into three different groups; therapeutic art, reminiscence, and a control group. Once the data was collected the pretest, midtest, and posttest mean scores were tested with the Statistical Package for Social Sciences. The nursing home atmosphere can be a difficult environment to incorporate any type of program. With further research, we can start piecing together what provides the best quality of life for the individuals but also help eliminate unnecessary complexities with staff and administration.

APPENDIX A
INFORMED CONSENT FORM

Informed Consent Form

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: A Proposed Therapeutic Art Program to Diminish Agitation In Elder Care

Principal Investigator: Dr. Stan Ingman, University of North Texas (UNT) Department of Sociology.

Student Investigator: Bonnie Curington, MSW, Doctoral Candidate at the University of North Texas.

Purpose of the Study: You are being asked to participate in a research study which involves participation in a therapeutic art program. A therapeutic art program can provide an outlet to express emotions and serve as a communication tool between people. For the purpose of this study, therapeutic art is defined as using art to stimulate life review by a participant.

Study Procedures: The researcher will be discussing with nursing home staff the observed levels of agitation among the residents, and the staff will complete an agitation inventory for each participating resident. Your participation in this study is completely voluntary and you may stop participating in the class and refrain from answering any or all questions without penalty or explanation. You have an equal chance of being placed in a therapeutic art program, a reminiscence group or a monitoring program. For the purpose of this study, therapeutic art is defined as using art to stimulate life review within the participant, reminiscence is a life review through life driven topics and monitoring is visiting with your loved during the study process. The therapeutic art program class and reminiscence group will meet for 12, 45-60 minute sessions, beginning June 11, 2011 through August 27, 2011.

Foreseeable Risks: The potential risk involved in this study is that your participation may remind you of emotional memories of your past. The program is designed to stimulate recall of happy memories, but if unpleasant memories are presented you have the option to stop your participation at any time.

Benefits to the Subjects or Others: We expect the project to benefit you by decreasing agitation and bringing good memories from your past into your present.

Procedures for Maintaining Confidentiality of Research Records: Your identity will be protected to the fullest extent possible throughout the study. In order to ensure the confidentiality of your responses on the questionnaire, you will be given a number. The researcher will place this number on the questionnaire. The completed questionnaire will be kept in a locked filing cabinet and only the nursing administrator, principal and student investigator and a research coordinator will have access to the completed forms. No names will appear on any study documents and a copy this informed consent

form will be provided for your records. If you request, you will be provided a written summary of the study results upon completion of the study. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

Questions about the Study: If you have any questions about the study, you may contact Dr. Stan Ingman at telephone number XXX-XXX-XXXX or Bonnie Curington at XXX-XXX-XXXX.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

Research Participants' Rights:

Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

Dr. Stan Ingman or Bonnie Curington has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.

You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time. You understand why the study is being conducted and how it will be performed. You understand your rights as a research participant and you voluntarily consent to participate in this study.

You have been told you will receive a copy of this form.

Printed Name of Participant

Signature of Participant

Date

For the Principal Investigator or Designee:

I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

Signature of Principal Investigator or Designee

Date

APPENDIX B
INFORMED CONSENT FORM (GUARDIAN)

Informed Consent Form (Guardian)

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

Title of Study: A Proposed Therapeutic Art Program To Diminish Agitation In Elder Care

Principal Investigator: Dr. Stan Ingman, University of North Texas (UNT) Department of Sociology.

Student Investigator: Bonnie Curington, MSW, Doctoral Candidate at the University of North Texas.

Purpose of the Study: Your loved one is being asked to participate in a research study which involves participation in therapeutic art program. A therapeutic art program can provide an outlet to express emotions and serve as a communication tool between people. For the purpose of this study, therapeutic art is defined as using art to stimulate life review within the participant.

Study Procedures: The researcher will be discussing with nursing home staff the observed levels of agitation and completing a pretest/posttest agitation inventory. A therapeutic art program can provide an outlet to express emotions and serve as a communication tool between people. For the purpose of this study, therapeutic art is defined as using art to stimulate life review within the participant, reminiscence is a life review through life driven topics and monitoring is visiting with your loved during the study process. You should be aware their participation in this study is completely voluntary and they may stop the class and refrain from answering any or all questions without penalty or explanation. Your loved one will have an equal chance of being placed in a therapeutic art program, reminiscence group or a monitoring program. The therapeutic art program class and reminiscence group will meet for 12, 45-60 minute sessions, beginning June 11, 2011 through August 27, 2011.

Foreseeable Risks: The potential risks involved in this study are emotional memories of their past. The program is designed to stimulate recall of happy memories, but if unpleasant memories are presented you have the option to stop your participation at any time.

Benefits to the Subjects or Others: We expect the project to benefit participants by decreasing agitation and bringing good memories from the past into the present.

Procedures for Maintaining Confidentiality of Research Records: Your loved ones identity will be protected to the fullest extent possible throughout the study. In order to ensure the confidentiality of the responses on the agitation inventory a number will be assigned to your loved one. The researcher will place this number on the agitation inventory that will be completed before the classes begin. A computer program will

randomly choose this number. The completed agitation inventory will be kept in a locked filing cabinet and only the clinical administrator, principal and student investigator and a research coordinator will have access. No personal names will appear on any study documents and a copy this informed consent form will be provided for your records. If requested you will be provided written documentation of the studies' results upon completion of the study. The confidentiality of individual information will be maintained in any publications or presentations regarding this study.

Questions about the Study: If you have any questions about the study, you may contact Dr. Stan Ingman at telephone number XXX-XXX-XXXX or Bonnie Curington at XXX-XXX-XXXX.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

Research Participants' Rights:

Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

Dr. Stan Ingman or Bonnie Curington has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.

You understand that your loved one does not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your loved ones participation at any time. You understand why the study is being conducted and how it will be performed.

You understand your loved ones rights as a research participant and you voluntarily consent to participate in this study.

You have been told you will receive a copy of this form.

Printed Name of Participant's Guardian

Printer Name of Participant

Date

Signature of Participant's Guardian

Date

For the Principal Investigator or Designee:

I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

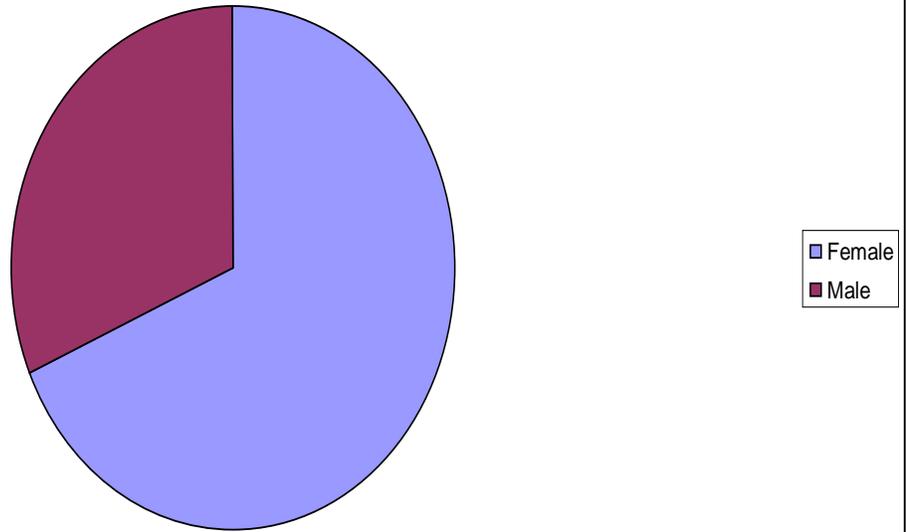
Signature of Principal Investigator or Designee

Date

APPENDIX C

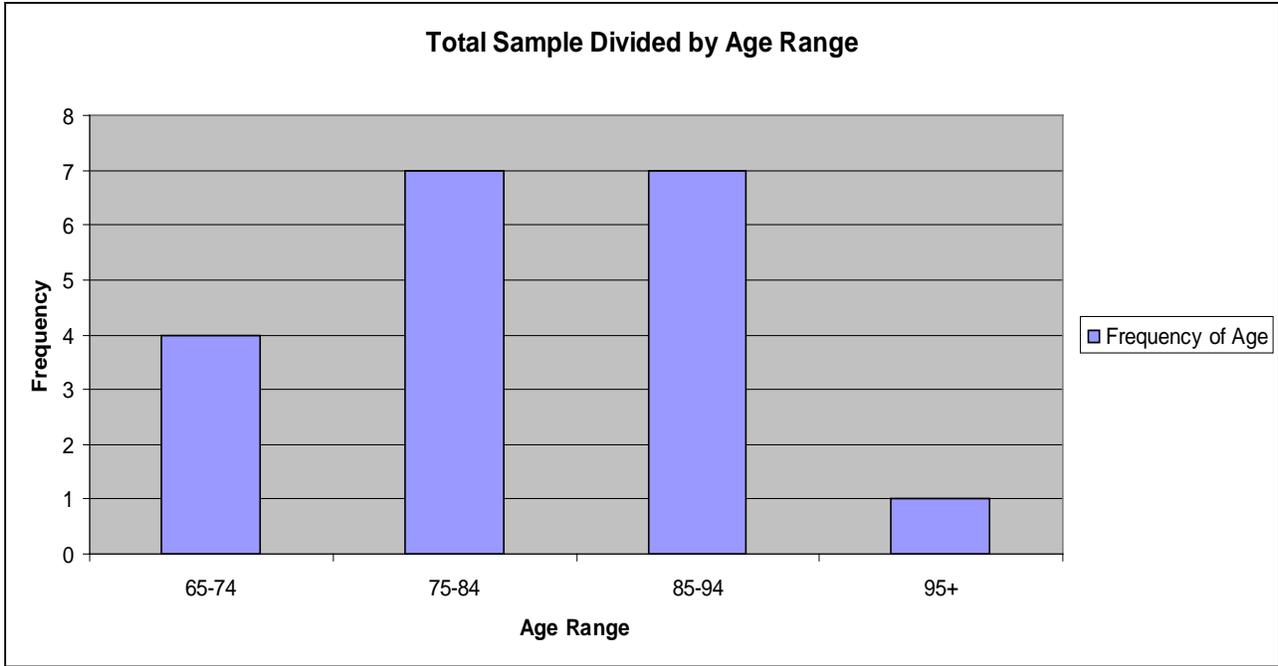
TOTAL # SAMPLE DIVIDED BY MALE AND FEMALE

Total # Sample Divided by Gender



APPENDIX D

TOTAL # SAMPLE DIVIDED BY AGE RANGE



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