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The Effect of Art Therapy on Cognitive Performance Among Ethnically Diverse Older Adults

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THE EFFECT OF ART THERAPY ON COGNITIVE PERFORMANCE AMONG ETHNICALLY DIVERSE OLDER ADULTS

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ABSTRACT

The population of ethnically diverse older adults in the US is rapidly growing, and reports of cognitive impairments, such as those caused by Alzheimer’s disease, are becoming more prevalent. This investigation explored whether art therapy could provide cognitive benefits among an ethnically diverse (N = 133), particularly Latino/Hispanic, population of older adults who are often excluded from research on aging and cognition. Within the study, five art therapists, each in distinct cities throughout three US states, provided art therapy to individuals aged 55 years and older at facilities such as community centers, adult daycare, assisted living, and skilled nursing facilities. Data were collected from therapist notes and reports, attendance records, demographic questionnaires, pretests, and posttests. Both objective and subjective assessments were employed during the pre- and posttest sessions. Assessments were chosen based on their validity, reliability, and the availability of previous research demonstrating the efficacy of their use. Seventeen art therapy studies provided the basis for the methodology of this study.

An objective assessment was used to evaluate changes in cognitive performance among participants. Two statistical analyses were applied to assessment data: a t-test and a univariate linear regression. In both analyses, the experimental group exhibited significantly improved cognitive performance. Results from the t-test analysis showed that the mean change in scores among experimental group members was significantly greater than the control group (t = 1.68; p = .048). The univariate analysis revealed that cognitive performance showed statistically significant improvement among the experimental group members as compared with the control group (t = 2.44; p = .017). The results indicated that art therapy as a treatment provided a medium effect size (d = .064).

Cognitive functioning improved significantly among the experimental group as compared to the control group following 10 weeks of art therapy. Other findings suggested that subjective cognitive performance improved, though not significantly, and that treatment factors such as session duration and art-therapy-approach were significantly correlated with changes in cognitive performance.
CHAPTER ONE
Introduction

Art therapy is considered to be a hybrid profession by some theorists, as it began in psychiatry and then merged with art education (Vick, 2003). The field of art therapy has been described as dynamic in both its delivery and treatment outcomes, and although the clinical practice of art therapy primarily deals with emotional expressivity, cognitive rehabilitation has been a documented goal with populations such as older adults (De Petrillo & Winner, 2005; Malchiodi, 2006; Rubin, 2001; Stewart, 2004).

In the US, older adult cognitive performance has become a public health priority as cognitive impairment is thought to be symptomatic of the early stages of Alzheimer’s disease (AD), the most common form of dementia (Alzheimer’s Association, 2010b). AD is characterized by plaques and tangles in the brain; in advanced stages of AD, the cortex decreases in size, damaging areas involved in thinking, planning, and remembering (Alzheimer’s Association, 2010b). AD is widespread, incurable, and eventually fatal (Alzheimer’s Association, 2010b).

Cognitive impairment and AD develop as a result of genetic, environmental, lifestyle, and medical factors (Alzheimer’s Association, 2010b). This research focused on environmental and lifestyle factors, such as social isolation, low education, a lack of mental stimulation, stress, and emotional distress. The investigation explored whether art therapy could improve cognitive performance among an ethnically diverse population, particularly Latino/Hispanic, of older adults.

Cognitive training (CT) is increasingly used to address cognitive performance among the elderly; in a concerted effort to reduce growing rates of AD, researchers and clinicians have developed techniques for cognitive training programs to include puzzles, reading and verbal drills, and reasoning exercises (Elias & Wagster, 2007; Sitzer, Twamley, & Jeste, 2006). CT is beneficial in the improvement of cognitive performance (e.g., memory, concentration, and/or coordination) and is a regimented therapy that usually takes place in a clinical or laboratory setting. Research shows that CT has improved cognitive abilities for up to five years following the initial training with up to 40% of individuals returning to normal cognitive functioning.
(Willis et al., 2006). However, much of the research on CT lacks substantial inclusion of minority older adults. Traditional talk therapy, upon which CT is based, emphasizes verbal communication and literacy, and may not be the ideal modality for ethnically diverse older adults who often have English as a second language, lower levels of education, and lower literacy rates (Mungas, Reed, Farias, & Decarli, 2009; Woolhisser-Stallings, 2010). Art is said to be a culturally imbued aspect of all societies (Anderson & Milbrandt, 2005). With a lesser emphasis on verbal communication and literacy, art therapy may provide a culturally relevant therapeutic approach to working with ethnically diverse older adults (Link, Mokdad, Stackhouse, & Flowers, 2006; Woolhisser-Stallings, 2010).

Studies have shown that cultural competency in treatment often determines the effectiveness of therapeutic interventions; however, cultural competency is said to be lacking in many therapeutic settings and attrition rates for minority members in traditional therapy are quite high (Dingfelder, 2005; Schuerholz-Lehr, 2007). Current research suggests that Hispanic/Latino older adults underuse available mental health services because such services often are not culturally compatible (Dingfelder, 2005; Gallagher-Thompson, Solano, Coon, & Area, 2003). A modality of CT that is non-traditional in format may offer minority older adults a more accessible venue for cognitive rehabilitation. By addressing the environmental and lifestyle causes of cognitive impairment, art therapy has been shown to enhance cognitive performance, and benefit patients with dementia (Abraham, 2004; Alders, 2009; Cohen, 2006; Hannemann, 2006; Stewart, 2004; Zeltzer, Stanley, & Melo, 2003).

Currently, there is a lack of art therapy research that includes minority older adults. Minority membership within the profession of art therapy is limited, and as a result, outcome research on art therapy with ethnically diverse older adults is lacking (Calisch, 2003; Hamilton, Hinks, & Petticrew, 2003; Linesch & Carnay, 2005). Previous art therapy research on cognitive performance and older adults has been further limited by reliance on anecdotal evidence, non-randomized designs, and small sample sizes (Slayton, Archer, & Kaplan, 2010). By using an experimental-control group design with a moderate sample size of ethnically diverse older adults, this study sought to address this gap in research within the field of art therapy.
Purpose

The purpose of this study was to evaluate the efficacy of art therapy in improving cognitive performance among ethnically diverse older adults. The research included diverse groups of eligible older adults, diverse settings, and culturally-laden techniques. The following section provides an overview of information pertaining to the older adults identified for inclusion in the study as well as the planned format and approach of the therapy.

Inclusion of Diverse Groups

Ethnically diverse older adults perceive cognitive impairment and AD symptoms in ways that are culture-specific (Alzheimer’s Association, 2010a; Borrayo, Goldwaser, Vacha-Haase, & Hepburn, 2007). For example, among Hispanic older adults, AD symptoms may be stigmatized as representing evidence of “sangre mala” or “bad blood,” which would reflect poorly on family members who share the same blood line. Culture-specific trends in seeking care, as well as perceptions, beliefs, values, and feelings toward aging and cognitive impairment, were all factors for consideration in this study as ethnically diverse older adults were specifically sought for inclusion in the research.

By 2030, Baby Boomers of all ethnicities (i.e., 70 million individuals) will be at least 65 years old and cultural considerations for addressing older adult cognitive impairment will be increasingly necessary (Alzheimer’s Association, 2010a). Prevalence differs according to ethnicity, and rates of AD are expected to rise dramatically as ethnically diverse populations continue to increase (Minckler, 2008). Figures 1 and 2 illustrate this expected change in demographics. In Figure 1, the y-axis represents the prevalence rate of AD by ethnicity as reported in the 2010 report, Alzheimer’s disease Facts and Figures (Alzheimer’s Association, 2010a). Findings show that the prevalence in the White population was 9.6% as compared to 12.7% in African Americans, 14% in Hispanics, and 8.1% in Asian Americans.

In Figure 2, the projected increase in the minority population is shown for 2050. In 2010, the population was 80% White, 9% African American, 7% Hispanic, and 4% Asian/other racial and ethnic groups. In contrast, by 2050 Whites will decrease to 59% of the population while the African American population will increase to 12%, Hispanics will increase to 20%, and Asian/other racial and ethnic groups will increase to 9% (Alzheimer’s Association, 2010a).
Among those 65 and older, the AD prevalence rate for African Americans is second to that of Hispanics. However, among people aged 55 to 64 years old, African Americans/Blacks experience the highest prevalence rate of AD when compared to individuals from other ethnic
groups as well as an earlier onset of symptoms. In the United States, the Black older adult population is expected to triple by 2050 and account for 11% of the elderly population (Minckler, 2008). As this population increases, prevalence rates for cognitive impairment and AD are expected to increase accordingly (Administration on Aging, 2011). Research shows that environmental factors and lifestyle play a substantial role in cognitive impairment for African American individuals. Much like other minority older adults, African Americans tend to be diagnosed at a later stage of Alzheimer’s disease, which limits the effectiveness of the many treatments currently available (Alzheimer’s Association, 2010a).

In contrast, the Asian older adult (i.e., 65 and older) population has the lowest reported prevalence rate for AD; however, it is unclear whether estimates of prevalence are accurate since Asians typically experience the longest duration of delayed diagnosis. AD prevalence rates for the Asian population are expected to triple as this population is expected to undergo a five-fold increase by 2050 and account for 8.6% of the elderly population (Administration on Aging, 2011). Asians, like many minority older adults, rely on folk wisdom and healing, disregarding Western healthcare due to tradition, language barriers, and strong taboos regarding illness, death, hospitals, and family problems (Jones, Chow, & Gatz, 2006; Mahoney, Cloutterbuck, Neary, & Zhan, 2005). Among Asians, AD is perceived as a form of mental illness and is therefore considered shameful for the older adult as well as the entire family (Alzheimer’s Association, 2010a).

Likewise, tradition, language, and shame are barriers for formally addressing cognitive impairment among Hispanic older adults, the largest minority group within the United States (U.S. Census Bureau, 2010). The Hispanic population has grown by more than 60% in the last decade, and in 2010, the Hispanic older adult population made up 7% of the total US population (Administration on Aging, 2011). By 2050, the Hispanic elderly population is expected to jump to 19.8%, and researchers predict that Hispanics will soon be the largest elderly minority group (Administration on Aging, 2011). By 2030, one in five individuals is expected to be over 65, and one in three is expected to be Hispanic (U.S. Census Bureau, 2009). In 2010, Hispanic adults aged 65 and older experienced the highest prevalence rate (Alzheimer’s Association, 2010a). In 2050, the number of older adults with AD from all ethnicities will quadruple, whereas the
number of Hispanic older adults suffering from AD is predicted to undergo a six-fold increase (Alzheimer’s Association, 2002). Although older adults from all ethnic backgrounds were included in the current study, there was an active recruitment effort to enlist Hispanic/Latino participants given their projected growth as a population.

**Inclusion of Older Adults**

To be eligible for inclusion in the current study, older adults were required to be over 55 years of age. Although the majority of participants were expected to be over 65, providing a cutoff age of 55 aimed to increase the likelihood that minority older adults with less severe but present cognitive impairment would be included. Older adults with early impairment are more likely to benefit from therapy, as cognitive impairment is treatable when identified early and minorities commonly have an earlier onset of symptoms (Alzheimer’s Association, 2010a).

Determining the degree of cognitive impairment among participants at the time of pretest was an additional aim of the study, since many minority older adults with AD go without an accurate diagnosis (Alzheimer’s Association, 2010a; Vega & Lopez, 2001). Within traditional clinic settings, identifying minority older adults with cognitive impairment is impeded by language barriers, cultural differences, and acculturation levels (Alzheimer’s Association, 2010a; Parker & Philip, 2004; Rivera Mindt et al., 2008). Minority older adult clients present a linguistic and cultural challenge to today’s mental healthcare providers (Antshel, 2002; Manly et al., 2008).

In order to determine eligibility at the onset of the study, participants were provided with the Clock Drawing Test (CDT), a test that typically takes less than five minutes to administer and is considered to be culture-free and non-threatening in nature (Parker & Philip, 2004; Kim & Chey, 2010). The CDT is frequently used by medical professionals as an assessment for cognitive impairment, as scores have shown parallels with fMRI brain scans and lower CDT scores are significantly correlated with brain atrophy and shrinkage associated with AD (Parker & Philip, 2004; Samton et al., 2005). The directions of the CDT are simply to draw a clock, include all of the numbers, and set the hands at ten past eleven.

**Appeal of Culturally-Laden Techniques**

Another purpose of this study was to implement non-traditional techniques that are culturally laden and culturally competent. Non-traditional approaches have demonstrated
successful results in improving cognitive performance (Park, Gutches, Meade, & Stine-Morrow, 2007; Tsai, Yang, Lan, & Chen, 2008). Research suggests that many ethnically diverse older adults share a collectivistic culture and prefer informal alternatives to therapy, such as community-based care and traditional folk healing approaches (Connell, Scott Roberts, & McLaughlin, 2007; Wood & Alberta, 2009). Much of the documented folk healing among Asian, African American, and Latino cultures incorporate the creation and use of art, such as in the form of images and pictorial symbolism (Graham et al., 2005).

Many Latinos hold a relationship-based worldview that is central to their cultural identity and associate mental illness with losing connectedness to the world (Comas-Dias, 2006; O’Bryant, Humphreys, Schiffer, & Sutker, 2007). Latino folk artwork often reflects themes of social connections, identity, and cohesive communities; folk healing practices among Latinos are said to promote a sense of belonging (Comas-Dias, 2006). For instance, much of Mexico’s public art centers on the idea of “Mexicanness” or Mexicanidad (Franquiz & Brochin-Ceballos, 2006). Similarly, African American folk art within the US is said to establish social status and appeal to a collective sensibility (Metcafi, 2010). Asians have used folk art within their communities in the form of symbolic imagery (e.g., dragons) and have a tradition of ascribing culturally significant meanings (e.g., enhanced health) to images and symbols.

During the current research, art therapists engaged ethnically diverse participants by linking their artwork to their personal experiences, including using social, historical, and cultural contexts as the basis of conversations (Wadeson, 2000). Artwork is said to naturally contain information pertaining to a sense of self, a sense of place, and a sense of community, thus possibly facilitating themes on interconnectedness and culture in therapy (Anderson & Milbrandt, 2005).

Comas-Dias (2006) described the differences in psychosocial needs in therapy: whereas individualistic persons may require a mode of therapy that is verbal, works through, and effects change by externalizing (moving from the unconscious to the conscious), collectivistic persons frequently require a therapeutic mode that values holism (using meditation, contemplation, imagery, and other connective states), acknowledges nonverbal and indirect communication, and affects change by internalizing (moving from
the conscious to the unconscious) (Tamura and Lau, 1992). In particular, collectivistic clients require therapeutic techniques that honor and address the mind–body connection. (p. 439)

In this way, art therapy may appeal to a collectivistic mindset. Many art therapists hold the perspective that the “healing power” of art comes through the process and creation of the artwork itself (McNiff, 1992). The purpose of this research was to implement art therapy according to theorists who described the art-making process and products as a “mind-body bridge,” and as an indication of cognitive stimulation and progression (Hass-Cohen, 2003; Lusebrink, 1991; Lusebrink & McGuigan, 1989).

**Justification of the Study**

The following section provides the justification for conducting this investigation. Information is outlined according to key features of the research and includes theories of aging, cognitive plasticity, ethnic minority statistics and research, and education trends among older adults. The section concludes with a description of art therapy formats and a rationale for the use of art therapy as a means of making CT more accessible to ethnically diverse older adults.

**Cognitive Plasticity**

Technology has enabled researchers to verify that cognitive impairments in aging populations may be caused by the deterioration of brain cells (Stern, 2009). Through the use of positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) machines, researchers have realized that cognitive functioning can be positively influenced by a number of factors, and especially through mental stimulation (Stern, 2009).

The hippocampus area of the cortex is responsible for the formation of new brain cells, and with stimulation, its density and mass may be increased or preserved, thereby continuing cell generation well into old age (K. Diamond, 2000). This capability of the brain to regenerate is referred to as neuroplasticity (Alzheimer’s Association, 2010b; K. Diamond, 2000; Grady, 2008). CT is founded on research demonstrating that the brain is “plastic” and able to undergo neurogenesis in a process of “sprouting” new connections between brain cells, particularly within the hippocampus (Stern, 2009).

Exposure to an enriched environment (e.g., a reference to the promotion of physical
activity, socialization, and problem solving) leads to an increase in new neurons, or neurogenesis, and a substantial improvement in cognitive performance (Kempermann, Gast, & Gage, 2002; Studenski et al., 2006). Physical activity (e.g., manually creating art), problem solving (e.g., deciding on color), and socialization (e.g., describing artwork made) are all naturally incorporated into art therapy sessions, creating an enriched environment that increases the likelihood of neurogenesis (Alders, 2009; K. Diamond, 2000; Guillot et al., 2009; Riley, 2004). The increase in socialization resulting from art therapy can be explained as follows: (a) art objects aid in communication and provide a point of reference during socializing (Abraham, 2004; Malchiodi, 2006; Østergaard, 2008); (b) older adult art therapy participants can show friends and family their artwork, increasing discussions that may in turn increase interest and motivation for continued socialization (Thoman, Sansone, & Pasupathi, 2007); and (c) social interaction engages diverse cognitive resources and distinct brain areas, and facilitates improved cognitive functioning (Glei et al., 2005; Ybarra et al., 2008).

By stimulating various regions of the brain and simultaneously enhancing mood, art therapy may provoke such plasticity reactions within the brain (Hass-Cohen & Carr, 2008). According to Perry (2008), an internationally-recognized authority on brain development, art therapy is rehabilitative because it involves experiences that are: (a) relevant and appropriately matched to developmental needs; (b) pleasurable and therefore rewarding; (c) repetitive in creative tasks as well as rhythmic in the technical movements required, thus resonating with and stimulating neural patterns; and (d) respectful toward people, their families, and cultures through the creation of art that elicits cultural expression (Perry, 2008).

During art therapy, the use of colors, textures, and malleable materials stimulates areas of the brain located within the limbic system (Hass-Cohen & Carr, 2008), which is associated with the hippocampus and emotional regulation (Stern, 2009). Artistic expression in a therapeutic environment can potentially improve memory by providing opportunities for emotional regulation and increased mental activity (Riley, 2004). Through art-making, art therapy requires an integration of higher cortical thinking, such as planning, focused attention, and problem solving, and increases the likelihood of cognitive health (Hass-Cohen & Carr, 2008). Researchers and theorists now believe that engaging mental activities such as in art therapy may stimulate the
brain in a way that increases an individual’s cognitive reserve, allowing that individual to compensate for and overcome neural changes associated with cognitive decline (Calero & Navarro, 2007; Craik et al., 2007; Hass-Cohen & Carr, 2008).

**Aging Demographics**

Researchers estimate that more than 20% of the 39 million individuals in the US over the age of 65 are afflicted with cognitive impairment (Plassman et al., 2008; Rodgers, Ofstedal, & Herzog, 2003; U.S. Census Bureau, 2009). Although severe cognitive impairment is not a part of the normal aging process, age is a risk factor for the types of cognitive impairment that may lead to AD.

A diagnosis of cognitive impairment does not mean that an individual will experience AD (Manly et al., 2008). At early stages, cognitive impairment is reversible. Preventative therapy and/or early intervention therapy can delay the onset of AD symptoms, and have the potential to reduce AD prevalence by one-third (Alzheimer’s Association, 2010b; Larrieu et al., 2002). Conversely, studies show that individuals with untreated cognitive impairment are 2.8 times more at-risk for AD (Manly et al., 2008).

Within the US, overall costs related to AD total more than $110 billion per year with $20 billion resulting from expenses among family members or caregivers (e.g., lost wages and retirement benefits; Alzheimer’s Association, 2010a). Techniques targeting the rehabilitation of cognitive impairment and thereby delaying or preventing AD would save hundreds of thousands of dollars for caregivers and would enable affected individuals to live out their lives at home (Alzheimer’s Association, 2010a). As the cost of healthcare in the United States continues to rise, cost-effective prevention and rehabilitation programs are becoming increasingly important (Alzheimer’s Association, 2010a). In general, the cost of implementing a rehabilitative intervention such as art therapy is less than the cost of administering psychotropic drugs on an ongoing basis (Stewart, 2004). Furthermore, findings show that psychotropic medication is not a culturally compatible approach to treating ethnically diverse older adults (Miranda & Cooper, 2004). When given the choice, many minorities are more likely to want counseling and less likely to want medication than are Caucasians (Miranda & Cooper, 2004). Some studies have found that segments of minority populations are even averse to taking medication (Hodgkin,
Volpe-Vartanian, & Alegria, 2007). In a recent study, one-third of minority patients receiving medication were reading at or below the sixth grade level (i.e., low literacy), resulting in difficulty understanding prescription medication warning labels (Davis et al., 2006).

Additional research on non-pharmaceutical interventions with minority older adults and cognitive performance outcomes is needed. Minority older adults are a largely neglected segment of the population in terms of mental healthcare (Zuckerman et al., 2008). Studies show that African American and Latino/Hispanic older adults are much more likely to develop AD than Caucasian older adults regardless of age (Manly et al., 2008). Latinos/Hispanics, African Americans, and Asians tend to stay home and be cared for by family, and older Asian adults often delay treatment by as long as eight or nine years after the onset of symptoms, significantly reducing their chances for cognitive rehabilitation (Alzheimer’s Association, 2010a; Mahoney et al., 2005).

**Non-Traditional Format**

Illiteracy is highest among minority older adults, yet is also a criteria commonly used to exclude participants from cognitive-training-affiliated research, even though illiteracy and low educational achievement have been shown to be strong risk factors for AD (Kim & Chey, 2010; Sitzer et al., 2006). Such factors hinder minority older adults’ access to cognitive rehabilitation (Hinton et al., 2010). The creation of art may be a culturally inclusive, non-traditional approach to providing cognitive stimulation. While traditional CT requires literacy for word drills and puzzles, art therapy does not. Educational, historical, cultural, and other contextual factors do not rule out “neural processes that arise in the empathetic understanding of visual artworks” (Freedberg & Gallese, 2007, p. 197).

Researchers have pinpointed that culture significantly affects an individual’s experience of the aging process; for instance, among minorities, culture affects whether treatment is sought for symptoms of cognitive impairment, and research demonstrates that minority clients underuse available mental health services because such services often are not culturally compatible (Dingfelder, 2005; Gallagher-Thompson et al., 2003; Jackson, Antonucci, Brown, Daatland, & Sellers, 2008). Researchers are beginning to “focus on the aging process through a cultural lens” and are realizing that “[the] changing racial and ethnic minority population will represent unique
groups of individuals” with unique mental health needs (Jackson et al., 2008, p. 225).

One multicultural approach for work with minority older adults includes the involvement of family members throughout the treatment process. The frequency with which ethnic minorities care for their aging relatives at home has been attributed to cultural traditions as well as patterns of distrust with the healthcare system (Armstrong et al., 2006). Consequently, recent CT research has emphasized the need for more “user-friendly” interventions with minorities, and results suggest that researchers need to develop effective collaborations with ethnically diverse communities so that interventions can be designed and implemented within homes and minority communities (Gallagher-Thompson et al., 2003). Psychotherapy has an associated stigma among elderly minority groups; however, in previous research, art therapy was described by minority older adults as “art classes,” regardless of in-depth explanations of the therapeutic nature of the session (McElroy, Warren, & Jones, 2006). This association to “art class” rather than to “therapy” may make art therapy a more appealing option for cognitive rehabilitation (Alders, 2009; Hocoy, 2002), and the creation of art may facilitate the communication of feelings that older adults hold about their aging experiences (Abraham, 2004; Basting, 2006; Mendez, 2004; Miller & Hou, 2004; Rhoads, 2009; Silver, 1993).

Research suggests that art therapy may additionally increase social support and address cultural concerns, both of which are relevant goals when treating minority older adults (Malchiodi, 2006; Wadeson, 2000). These characteristics of art therapy may be beneficial to ethnically diverse older adult cognitive performance outcomes (Hass-Cohen & Hass-Cohen, 2008). Art products created during art therapy can be taken home to share with family members, and art shows can be hosted in minority communities to encourage family unity rather than perpetuate stigma and family division as a result of cognitive impairment (Calisch, 2003).

**Philosophical Assumptions**

Numerous philosophical stances describe art as a cognitive process. However, this research highlights philosophical viewpoints which propose that art serves the purpose of integrating diverse aspects of cognition while also serving as a “barometer of culture...reflecting the sum of a society’s deepest philosophical values” (Marder-Kamhi & Torres, 2000; Rand, 1971, p. 129). The related philosophical assumptions presented herein propose that images in
artistic depictions represent first-level concepts across all cultures and can therefore stimulate mental faculties (Campbell, 1999; Torres & Kamhi, 2000). This perspective provides a framework for this study since art therapy was investigated as a means to enhance cognitive capacity and improve cognitive performance.

**Philosophy: Art as Cognition**

Philosophical perspectives relevant to this research drew on 1950s studies of perception, memory, and concept-formation which took place during the cognitive revolution in psychology (Campbell, 1999). The ideas formulated during this revolution ultimately changed professional beliefs about cognition (G. Miller, 2003). Like cognitivists of the past and present, philosophers during this time contended that individuals can improve cognitive functioning through pre-determined strategies (Campbell, 1999). Such philosophers shared with psychologists an interest in human knowledge and thought and addressed cognitive capacity (i.e., the amount of information the brain is capable of retaining) in much the same way that cognitive training studies do today (Campbell, 1999).

The philosopher, Ayn Rand wrote on the relationship between art and cognition, and believed in the concept of *cognitive economy*. She argued that art provides an efficient means for processing and conveying information (Campbell, 1999). In Rand’s view, art demonstrates an instinctual human cognitive and emotional need to concretely perceive reality, and thereby provides dynamic mental stimulation. She argued, much like cognitivists of today, that insufficient mental stimulation impairs the brain’s efficiency (Rand, 1966).

Modern CT programs are based on a similar theory of the importance of mental stimulation and typically structure therapeutic sessions in order to enhance levels of mental stimulation (Sitzer et al., 2006). Today, CT typically includes a set number of sessions (e.g., 10) that incorporate cognitive strategies aimed at stimulating the brain in ways that elicit verbal/episodic memory, inductive reasoning, and visual search and identification (Boron, Turiano, Willis, & Schaie, 2007; Willis et al., 2006). These three areas of stimulation are believed to be most effective for enhancing cognitive capacity and cognitive performance. Table 1 draws a parallel between CT, philosophies on art as cognition, and art therapy.
<table>
<thead>
<tr>
<th>Stimulated Area</th>
<th>Cognitive Training</th>
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<th>Art Therapy</th>
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<td>Episodic memory</td>
<td>Remembering details of stories</td>
<td>Identifying/embedding autobiographical information in art</td>
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<td></td>
<td></td>
<td>Solving problems of “concept-formation” by isolating and integrating content within images</td>
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<td></td>
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<td>Inuctive reasoning</td>
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<td>Visual search and</td>
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<td>identification</td>
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**Verbal episodic memory.** Episodic memory directly relates to factual information, such as events, times, places, and emotions (Tulving, 2002). Episodic memory is an ability valued within society and includes autobiographical information; older adults with an intact episodic memory system are able to answer questions such as: Where are you right now? Where were you yesterday in the afternoon? (Tulving, 2002). During CT, episodic memory is stimulated through reading, drills, and structured tasks (Sitzer et al., 2006). When evaluating cognitive performance and diagnosing AD, clinicians (e.g., doctors, psychiatrists, therapists) evaluate an older adult’s episodic knowledge regarding person, place, time, and situation (Becker, 2000).

From a philosophical perspective, visual art may facilitate a heightened consciousness of autobiographical information and make the information directly perceivable (Marder-Kamhi & Torres, 2000; Torres & Kamhi, 2000). Art makes abstract but meaningful information from memories tangible and provides a source for “constant [mental] activity, [through] a constant stream of changing sensory stimuli” (Campbell, 1999, p. 111). Similarly, theories of art therapy describe art-making as a source of sensory stimulation, while therapy in a group setting provides an opportunity for components of the artwork to be identified, named, and defined in terms of their placement and relationships (Hass-Cohen & Carr, 2008; Rubin, 2001). Thus, artwork discussed in a group context requires verbal episodic memory, a skill that is often targeted in CT.
**Inductive reasoning.** Inductive reasoning involves the cognitive process of making inferences based upon observed patterns; it is associated with higher order executive functioning and is considered to be an indicator of levels of intelligence and fluid information processing (Boron et al., 2007). The earliest declines in cognitive ability among the elderly are usually associated with reasoning (Singer, Verhaeghen, Ghisletta, Lindenberger, & Baltes, 2003). CT programs place emphasis upon inductive reasoning because it is a skill needed during daily living, problem solving, and learning (Boron et al., 2007; Van Gerven, 2002). To train inductive reasoning in clinical sessions, older adults are asked to form a conclusion based on incomplete or partial information (Sitzer et al., 2006). For example, an older adult may be asked to list the next item in a series of items or to anticipate what will happen next in a storyline (Boron et al., 2007).

Discarding the irrelevant and highlighting the essential is a core skill necessary for inductive reasoning (Boron et al., 2007). Discarding the irrelevant is exactly what artists do: by isolating the essential characteristics of images and integrating them within a single composition, an artist performs *concept-formation* (Binswanger, 1988). From a philosophical view, an artist thinks through or reasons what would make sense for a particular depiction, thus utilizing inductive reasoning on an intricate level. Similarly, art therapy is said to engage reasoning through a process of higher order thinking and intricate problem solving (Hass-Cohen & Carr, 2008). Art therapy aims to foster creativity through artistic ability, which is associated with improved information processing and sustained levels of healthy cortical (brain) thickness (Jung et al., 2010; Stewart, 2004).

**Visual search and identification.** Visual search and identification exercises are common aspects of CT; for example, a participant may be shown an object for a very brief period and then asked to find that object among several objects (Ueno et al., 2009; Willis et al., 2006). Learning - such as in CT - is enhanced through visualizations, and visual associations have been found to improve encoding and recall capacities, as well as speed of processing (Caine & Caine, 2006; Van Gerven, 2002; Willis et al., 2006).

Philosophical viewpoints relevant to this research hold that visual perception is the foundation of cognition (Binswanger, 1988). For Ayn Rand, identifiable visuals, which appeal to perception, are a basic requirement in art. Rand believed that a work of art has to be
representational: “if art does not present an intelligible subject, it ceases to be art” (Rand, 1971, p. 45). Rand argued that a state of heightened consciousness facilitates the visual identification of meaningful characteristics in art, and contended that art “teaches man how to use his consciousness” (Rand, 1971, p. 45).

Art therapy often incorporates exercises of choice, interpretation, and meaning construction to cultivate visual search and identification skills in a practical and straightforward manner (Malchiodi, 2006). A participant may be asked to scan an artistic representation for objects that are recognizable and personally meaningful; for instance, during collage-making, the participant may be asked to select autobiographical images, make unique visual connections between these images, and select complementary shapes or colors.

**Art Therapy**

From the philosophical perspective influenced by cognitivists, art therapy may offer cognitive stimulation which could yield similar benefits as CT programs. In art therapy, meaning (i.e., the inner, symbolic, true interpretation, or message) is created from meaningless elements and materials through symbolic representation (Malchiodi, 2006). Questions such as “what might happen next or who is in the picture?” are answered by engaging memory, logic, and inductive reasoning (Boron et al., 2007; B. Miller, Yener, & Akdal, 2005). Visual perception during art therapy depends on cognitive skills and an individual’s ability to visualize and maintain mental imagery, both of which are central to functional memory (Vanlierde & Wanet-Defalque, 2005). Additionally, visual search and identification skills are cultivated in that the individual may be asked to scan the artistic representation for objects that are recognizable.

**Emotions**

Art therapists often go beyond cognitive goals to address emotional goals as well; emotion is not typically a factor in CT sessions. During the cognitive revolution and thereafter, cognitive psychologists were reluctant to take emotions into consideration since measuring feelings in research was viewed as problematic (G. Miller, 2003). Rand believed that emotions were “not tools of cognition” (Rand, 1966, p. 55), but rather a product of what has been thought or is currently being thought (Binswanger, 1988). Emotions arise when values and judgments are ascribed to thoughts and ideas, while art arises from a desire to explore personal thoughts and
ideas (Rand, 1966).

Values and judgments are relevant to art; for this reason, philosophical perspectives hold that depictions (such as of episodic memory) in art need not be accurate according to objective standards (Binswanger, 1988). Fictional elements may be of greater importance because “[accuracy] represents things as they are, while [art may] represent them as they might be and ought to be” (Rand, 1971, p. 123). An artist may depict a scene that feels “more real than it is in reality” (Rand, 1971, p. 47) since art is a “selective re-creation of reality” that “brings man’s concepts [and values] to the perceptual level of his consciousness and allows him to grasp them directly” (Rand, 1969, p. 45). Additionally, the pleasurable components of art include: “… a moment of rest, a moment to gain fuel to move farther. Art gives . . . that fuel; the pleasure of contemplating the objectified reality of one’s own sense of life is the pleasure of feeling what it would be like to live in one’s ideal world” (Binswanger, 1988; Rand, 1971, p. 38).

Research Questions and Hypothesis

This research assessed the efficacy of art therapy in the improvement of cognitive performance among ethnically diverse older adults. It was hypothesized that a) cognitive performance would improve following 10 weeks of art therapy, b) attendance would positively correlate with cognitive evaluation test scores, and c) the results of each cognitive test would be correlated.

The following primary research question was explored: Will cognitive performance among ethnically diverse older adults improve significantly following attendance in 10 weeks of art therapy? Additionally, the following secondary research questions were explored: Will art therapy attendance be positively correlated with cognitive evaluation test scores? Will cognitive performance outcome scores for each of the two tests be correlated?

Definition of Terms

Alzheimer’s disease: Alzheimer’s disease (AD) is the most common form of dementia and is believed to be caused by the deterioration of brain cells (Alzheimer’s Association, 2010b). The term Alzheimer’s disease describes a phenomenon in which the brain’s cortex decreases in size, damaging areas involved in thinking, planning, and remembering; this includes the hippocampus area of the cortex which is responsible for the formation of new memories.
Art-as-Therapy: The use of art alongside traditional medicine in order to treat varying conditions is based on beliefs concerning the connection between mental and physical health (Hass-Cohen, 2003; McNiff, 1992). Therapists with an art-as-therapy perspective believe that the “healing power” of art is in the process and creation of the artwork itself (McNiff, 1992).

Art Psychotherapy: Art psychotherapy tends to place emphasis on art products. Because drawings tend to elicit subjective responses (Silver, 1993), they are considered helpful to communication (Malchiodi, 2006; Østergaard, 2008; Wadeson, 2000). Art products have a long (albeit controversial) tradition of use in diagnostic assessments and as silent testimonials in instances when a client has a limited vocabulary, a disorder inhibiting verbalization, or a difficulty or resistance to vocalizing thoughts and feelings (Mendez, 2004; Miller & Hou, 2004; Rubin, 2001).

Art Therapy: Art Therapy is the mental health profession that uses the creative process of art-making to improve the physical, mental and emotional well-being of individuals of all ages and cultural backgrounds. Art Therapy is an integration of the fields of human development and visual art (e.g., drawing, painting, sculpture, and other art forms; American Art Therapy Association [AATA], 2005).

Assisted Living Facilities: Facilities that provide housing, food services, and personal services for elderly or disabled adults who require supervision or assistance with the activities of daily living.

Cognitive Functioning/Performance: The term cognitive functioning or cognitive performance refers to a range of mental operations such as the ability to learn and remember information, organize or plan for present and future events, direct attention as required, understand and use language appropriately for effective communication, and accurately perceive and interact with the environment through fine and gross motor coordination (Alzheimer’s Association, 2010b).

Cognitive Reserve Theory: A theory based in neuroscience and founded on the belief that the brain is capable of regenerating itself, allowing for mental compensation of neural changes associated with cognitive decline (Stern, 2009).
**Cognitive Performance Outcome Scores:** Within this study, outcome scores were used to determine improvements in cognitive performance. Outcome scores were defined as the difference in pretest and posttest scores when pretest scores were subtracted from those of posttests. Positive differences indicate improvement.

**Cognitive Training (CT):** An umbrella term that encompasses non-pharmacological interventions designed to improve cognitive functioning in the elderly (Sitzer et al., 2006).

**Cultural Competency:** The U.S. Department of Health and Human Services Office of Minority Health (OMH) defines cultural competency as a set of behaviors, attitudes, and policies that enable effective work in cross-cultural situations (American Psychological Association, 2010; OMH, 2005).

**Latino/Hispanic:** For the purposes of this study, the terms *ethnically diverse* and *Latino* will be used interchangeably. The U.S. Census Bureau (2009) employs the term Hispanic in reference to persons who trace their origin or descent to Mexico, Puerto Rico, Cuba, Central or South America, or Spain; however, there are widespread regional differences in usage. The term Hispanic is used more frequently in Eastern regions, while the term Latino is used more so in Western regions (Talamantes, Lindeman, & Mouton, 2010). The use of the terms Hispanic and Latino in literature is mainly attributed to the diversity among the subgroups of Mexican American, Cuban American, and Puerto Rican populations (U.S. Census Bureau, 2009).

**Dementia:** A group of symptoms (not a specific disease) caused by various disorders that affect the brain. Dementia symptoms may include loss of the ability to solve problems or control emotions, personality change, and memory loss.

**Dendrites:** Short branching fibers that extend from the cell body of a neuron. These fibers increase the surface area available for receiving information and may grow or retract in the mature nervous system. This plastic behavior is more common in an enriched environment.

**Ethnically Diverse:** This term refers to the differences between people of many cultural groups that co-exist within a greater culture. The term also implies a medium to large population of several different ethnicities or cultures in any given situation rather than a large majority of one ethnicity and a minority of one or several others (U.S. Census Bureau, 2009).

**Neuroplasticity:** A term that refers to the phenomenon of increased neuron production
after exposure to rigorous but calming mental stimulation (Kempermann et al., 2002).

**Older Adult:** Within the scope of this paper, the term older adult will be used in reference to individuals who fall within the age bracket of 65 or older, but will also refer to individuals 55 and older in order to accommodate the demographics of ethnically diverse participants.

**Race:** For the purposes of this research, race and ethnicity are considered distinct identities. In the U.S. Census, respondents are categorized by membership in one of two ethnicities, either Hispanic or Latino or Not Hispanic or Latino; however, a Caucasian could be in either category. Whereas ethnicity is a reference to culture, race refers to a common ancestry, distinguished by physical characteristics such as hair type, color of eyes and skin, or stature. Principal races are Caucasian, Asian, and African American (U.S. Census Bureau, 2009).

**Brief Overview of the Study**

This study explored art therapy as a means of providing dynamic mental stimulation to ethnically diverse older adults. Multiple samples of ethnically diverse older adults participating in art therapy sessions were included in the study. Several art therapists were recruited to provide therapy in different states within the US. The states included were those with high concentrations of minorities as well as states with predominantly Caucasian older adults. Therapeutic art-making sessions were provided to an assigned group of older adults over a 10-week period in order to provide dynamic mental, emotional, social, and communal engagement. Participants were pre- and posttested with culturally sensitive and non-threatening measures of cognitive performance. Two types of measures were included: a self-report and an objective measure. The study evaluated self-perceived cognitive ability as well as performance-based cognitive ability.

A pilot study (Alders, 2009) was used as a model for this investigation. In the pilot study, art therapy was provided over a 10-week period, and evaluated using a quasi-experimental, pretest/posttest quantitative design (N = 24). The validity of findings in the pilot study was limited due to participant self-selection in either the control or experimental group. This dissertation study improved the research design so that participants did not assign themselves to either group. Matching was used for group assignment.

**Conclusion**

The demographics of the aging population in the US are rapidly changing as ethnically
diverse groups continue to grow. Prevalence of AD is higher among minority older adults, yet neither CT research nor art therapy research have adequately included diverse groups of older adults. By providing art-based interventions tailored to diverse older adults, this study aimed to present a CT intervention that was culturally competent.

Previous literature indicates that art therapy can enhance the cognitive well-being of older adults. This research sought to improve upon previous art therapy studies by including minority older adults and exploring whether art therapy could improve cognitive performance among ethnically diverse older adults. It was hypothesized that cognitive performance would improve as a result of 10 weeks of art therapy sessions.
CHAPTER TWO

Background and Review of the Literature

In this literature review information related to the use of art therapy as a CT method with ethnically diverse older adults is presented. The chapter is organized around key topics concerning cognitive impairment, interventions for cognitive impairment, minority older adults, art therapy, and future research. First, cognitive impairment is described in terms of the population at highest risk (e.g., individuals over 65) and US prevalence rates. The relationship between cognitive impairment and AD is also explained through a description of the trajectory of cognitive impairment from minor deficits in memory, concentration, and coordination, to the transition into AD. Although the prevalence and trajectory of cognitive impairment are alarming, there is still much to be learned about cognitive impairment; a historical perspective on cognitive impairment definitions is provided to illustrate the development of scientific understanding. Physiological changes within the brain during stages of cognitive impairment are described, as well as the complexity of causal factors.

Next, in consideration of the factors affecting cognitive performance, two distinct categories are outlined: genetic versus lifestyle. For this research, lifestyle factors correlated with cognitive impairment are of primary interest since genetic factors are often the focus of medication regimens. Lifestyle can be addressed through psychosocial techniques, such as art therapy. This chapter provides information that pertains to common interventions, their effectiveness, and the populations that they benefit most. Although CT is presented as the predominant non-pharmacological, psychosocial approach researched to date, new findings relating to leisure, creativity, and the arts have been included to express the potential of culturally related methods as additional modes of intervention.

Following the description of interventions is an account of current literature on ethnically diverse older adults. Minority older adults differ from majority groups in cognitive impairment symptoms, prevalence, and age of onset. Minority older adults also have shown distinct responses to clinical interventions; reasons for this are explained. Current research reveals the lack of cultural compatibility between minority older adults and typical clinical interventions. With this foundation of outlined need, a rationale is provided for why art therapy should be
researched further as a possible cognitive impairment treatment for ethnically diverse older adults.

The chapter concludes with information on art therapy, including relevant theories and a description of programs. In theory, art therapy may provide the culturally relevant mental stimulation needed to promote CT and treat cognitive impairment; however, art therapy research lacks adequate sample sizes, control groups, and diverse participants. Overcoming these deficiencies and providing care to minorities with cognitive impairment in an outcome-based study would supplement current research. A range of art therapy research is presented throughout the final section of the chapter and is followed by research methods that may improve art therapy research.

**Cognitive Functioning and Impairment**

The decline of some cognitive abilities, such as information-processing speed, learning rate, selective attention, and word-finding, is part of the normal aging process; such decline does not impede daily functioning unless there is an onset of mild cognitive impairment (MCI) or other neurological disorders (American Psychological Association, 2010; Rodgers et al., 2003). Older adults (i.e., those over 65) are at the highest risk for MCI (Administration on Aging, 2000). In 2009, the older adult population reached 39.6 million, representing 12.9% of the total US population. By 2030, the population of older adults is expected to more than double (Administration on Aging, 2006). As the number of older adults increases, the prevalence of cognitive impairment will likely also increase unless appropriate preventions and interventions are implemented (Alzheimer’s Association, 2010b).

Research on both older adults and the frequency of cognitive impairment has increased in recent years. Plassman et al. (2008) conducted the first large-scale prevalence study on older adults with cognitive impairment in the US: drawing from a stratified random subsample of 1,770 older adults from all regions of the country, the researchers were able to estimate that 22.2% (about 5.4 million) of individuals in the US aged 71 years or older have cognitive impairment. This means that more than one in five older adults has cognitive impairment; many of whom are unaware of the significance of their symptoms. To date, no other comparable estimates of the number of older adults with cognitive impairment in the US are available.
Mild Cognitive Impairment (MCI)

The concept of cognitive impairment has evolved considerably over the past four decades. Petersen and Negash (2008) summarized the progression in a review of the literature: the first attempt to conceptualize cognitive impairment dated back to 1962, when Kral used the term *benign senescent forgetfulness*. This was followed by the term *age-associated memory impairment* used by the National Institute of Mental Health in 1986 (Petersen & Negash, 2008). MCI is a recent term used to describe the stage between normal aging and AD (Manly et al., 2008).

Classifications for MCI have since been developed and one common classification distinguishes amnestic from non-amnestic forms of MCI. Amnestic MCI is characterized by memory impairment and often precedes AD. Non-amnestic forms of MCI commonly relate to impairment in executive functioning (e.g., Parkinson’s disease; Petersen, 2011). Within this study, the term cognitive impairment refers to amnestic MCI. Language disturbance (e.g., difficulty with sentence formation), attentional deficit (e.g., difficulty following conversations), and deterioration in visuospatial skills (e.g., disorientation and an inability to appropriately utilize fine/gross motor skills) are all associated with amnestic MCI and were addressed within this study (Gauthier et al., 2006). Predicting and preventing the progression of amnestic MCI to AD has gained attention from researchers (Plassman et al., 2008; Gauthier et al., 2006). The differing presentations of symptoms and outcomes of MCI imply varying causes and may ultimately provide diverse opportunities for prevention strategies (Plassman et al., 2008).

Although no single cause of amnestic MCI has been identified, consistent physiological changes associated with MCI indicate possible factors contributing to its development: reduced blood flow through brain blood vessels, shrinkage of the hippocampus, enlargement of the brain’s fluid-filled spaces, abnormal clumps of beta-amyloid protein or plaques and tangles, and reduced use of glucose (Alzheimer’s Association, 2010a; Grady, 2008; See Figure 3). Such changes may begin 10 to 20 years before symptoms become evident; plaques and tangles commonly develop first in the entorhinal cortex and later in the hippocampus, leading to neuron inefficiency, an inability of cells to communicate with one another, and eventual brain cell death (Alzheimer’s Association, 2010a). As neurons die, brain regions shrink (Alzheimer’s...
In the case of MCI and AD, cell death occurs from the inside out, beginning in the innermost region of the brain (entorhinal cortex) and spreading to the outer cortex (Alzheimer’s Association, 2010a; Grady, 2008).

Figure 3. Plaques and tangles on neurons within the entorhinal cortex and hippocampus. (The above illustration was compiled by the author from free public domain vector clipart and public domain photos edited with drawing software).

The many factors believed to affect the onset and progression of MCI among older adults fall into two broad categories: lifestyle and genetics (Alzheimer’s Association 2010b). The presence of an apolipoprotein E (APOE) gene, low education level, limited socialization, diet, depression, stress and anxiety, diabetes, hypertension, and the use of anticholinergic drugs all have been found to contribute to or be associated with the development of MCI and AD (Gauthier et al., 2006).

The speculated causes of MCI and AD are interconnected. For instance, evidence suggests that the health of the brain is closely linked to vascular health, which is affected by psychosocial factors, such as stress, emotional well-being, and physical activity, as well as
genetic factors (Gauthier et al., 2006). Additionally, some pharmaceutical treatment methods that address psychosocial factors can further impact cognitive functioning. For example, antidepressant medications (e.g., anticholinergic medication) have been shown to cause cognitive impairment (Carnahan, 2010). Older adults cannot control their genetic predisposition for diabetes or cardiovascular disease, but they may be able to avoid certain medications while addressing psychosocial factors (e.g., stress, depression, anxiety) and thereby enhance lifestyle and brain health (e.g., having an intricate social network, engaging in intellectual curiosity and mental stimulation; Alzheimer’s Association, 2010b).

**Low education and mental stimulation.** Before 1960, the brain was considered immutable and incapable of new cell growth. However, by 1964, researchers realized that the brain responds to enriched environmental input, such as education (Mungas et al., 2009). Individuals with low levels of education are more likely to experience cognitive impairment with an earlier onset of symptoms (Lievre, Alley, & Crimmins, 2008). Education and learning have been found to produce a cognitive reserve (Stern, 2009) within the brain that better enables individuals to cope with the aging process (Roe, Xiong, Miller, & Morris, 2007).

Environmental enrichment can affect the structure of the brain at any age; as a result, physiological differences are noticeable within the brain among lesser educated versus highly educated individuals, such as in the hippocampus (M. Diamond, 2001). Research shows that a more educated individual has larger hippocampus than a lesser educated individual (M. Diamond, 2001).

Without consistent stimulation, the hippocampus region deteriorates, losing mass and density as well as the ability to generate new brain cells (Czeh & Lucassen, 2007). When this occurs, individuals are at a greater risk for showing signs of cognitive decline, especially in language abilities and short-term memory (M. Diamond, 2001). Currently, a growing body of research suggests that active cognitive stimulation may inhibit the age-related cognitive decline associated with AD (Perneczky et al., 2009; University of California, 2007).

**Stress.** Within the brain, cortisol levels are a well-known marker of stress (Gauthier et al., 2006). In low levels, cortisol works with norepinephrine (i.e., brain adrenaline) to create memories connected with emotional events; with long-term exposure, however, cortisol has a
neurotoxic effect and impairs learning and memory recall (Caine & Caine, 2006; Gauthier et al., 2006). Research indicates that high levels of stress can lead to loss of neurons, particularly in the hippocampus region of the brain (Rothman & Mattson, 2010).

Older adults may be more sensitive to stress than younger adults and experience various types of stressors specific to aging, such as changes in lifestyle and financial status after retirement; death of relatives, loved ones, or close friends; and worries concerning dependence (D. Miller & O’Callaghan, 2005; Rothman & Mattson, 2010; Silver, 1999). These stressors can have a detrimental impact on cognitive functioning.

A distinct stressor for older adults is a self-consciousness about their cognitive capacities; many worry about “losing their marbles” regardless of whether they exhibit symptoms of decline (D. Miller & O’Callaghan, 2005). Subjective memory complaints in older adults are common and are often linked to stress, depression, and/or personality traits (Butters, Becker, Nebes, Zmuda, & Reynolds, 2000; Tsai et al., 2008). Older adults with high confidence in their cognitive abilities have been shown to produce minor errors during cognitive performance tasks, whereas those with lower confidence produce extreme errors. Beliefs about memory performance have been shown to be emotionally charged and self-consciousness regarding cognitive capacities is an indication of stress as well as a source of stress (Potter, Grealy, & O’Connor, 2009).

As reported by Gauthier et al. (2006), there is an increase in cortisol concentrations among older adults with subjective memory complaints. Additionally, Gauthier et al. found the likelihood of cognitive impairment in people with subjective memory complaints to be five times greater than that of similarly aged individuals without such complaints. Beliefs about cognitive functioning may be a self-fulfilling prophecy due to the release of cortisol during times of worry and stress (Gauthier et al., 2006).

**Emotions and socialization.** Stress is related to emotional expressivity; the concealing of emotion in ongoing social settings (e.g., home environments with family) has been identified as a stressor that can trigger cognitive impairment and is linked with degraded memory, communication, and problem solving among older adults (Richards, 2004). Studies show that emotional gratification, feedback, and expressivity, as well as enhanced mood during group
settings, may protect against cognitive impairment (Gray, Braver, & Raichle, 2002).

Mood and socialization are interconnected; for instance, older adults experiencing depression are less likely to socialize (Gilley, Wilson, Bienias, Bennett, & Evans, 2004). Studies have shown that socializing has a protective influence on cognitive function among the elderly (Crooks, Lubben, Petitti, Little, & Chiu, 2008; S. Cummings, 2003). Social interaction engages diverse cognitive resources and distinct brain areas, and thereby facilitates cognitive health as well as substantial improvement in behavioral and cognitive performance (Kempermann et al., 2002; Ybarra et al., 2008). However, with aging often comes the loss of loved ones, which can demotivate older adults to join in social situations as well as provoke bouts of depression.

Although socialization can promote cognitive performance, psychosocial factors such as depression can impede an older adult’s desire to socialize and are therefore a significant problem (S. Cummings, 2003). Aging is itself a risk factor for depression, and depression is one of the most common reasons older adults enter a long-term care facility (Cole & Dendukuri, 2003). Depression affects up to 30% of people over the age of 65 and severely impedes long-term cognitive health (Butters et al., 2000; Greaves & Farbus, 2006). Studies have shown that depression can lead to cognitive deficits such as decreased executive ability, processing speed, and effortful attention (Gilley et al., 2004). Depression may ultimately lead to the early stages of AD (Baune, Suslow, Engelien, Arolt, & Berger, 2006; Butters et al., 2000), and is further compounded by self-isolation and a lack of socialization common in those suffering from depression; depression treatment through group therapy has been correlated with improved cognitive performance (Cooper, Gonzalez, Joseph, & Rost, 2003; Gray et al., 2002).

**Prescription medication.** Primary care physicians often prescribe anti-depressants known as anticholinergics (i.e., drugs that inhibit parasympathetic nervous system responses) to older adults; although these medications are intended to alleviate aging-related symptoms such as pain, depression, sleeplessness and anxiety, they actually increase an individual’s risk of developing cognitive impairment (Carnahan, 2010; Indiana University School of Medicine, 2010). In a recent publication entitled *How to Manage Your Patient’s Dementia by Discontinuing Medications*, Carnahan (2010) explained that when assessing cognitive impairment, it is important to address medications as a possible cause.
With regard to older adults, fewer medications and structured therapy may be the most beneficial treatment modalities (Carnahan, 2010). Patients who receive medications to enhance cognition are often also taking anticholinergic medications, negating cognitive benefits and furthering impeding cognition (Indiana University School of Medicine, 2010). One third of older adults who have a primary care physician are currently taking some form of anticholinergic drug, and most healthcare providers do not recognize the potential detriment of these medications on cognitive functioning (Roe, Anderson, & Spivack, 2002).

**Interventions for Cognitive Impairment**

AD is expected to cost $20 trillion over the next 40 years (Administration on Aging, 2006; Alzheimer’s Association, 2010a). Prevention and treatment are being researched at an increasing rate, and treatment options for older adults suffering from cognitive impairment include two broadly defined approaches: pharmacological versus non-pharmacological (Alzheimer’s Association, 2010b; Small, Rabins, & Barry, 1999).

**Medication**

Although clinical trials are still being conducted globally, no pharmaceutical interventions have demonstrated conclusive effectiveness for MCI (Gauthier et al., 2006; Petersen, 2005); consequently, the Food and Drug Administration has not approved the use of drugs to treat cognitive impairment. Drugs known as acetylcholinesterase inhibitors (AChIs) have been demonstrated to improve AD symptoms (Mehta, Yin, Resendez, & Yaffe, 2005; Petersen, 2005). Physicians who are convinced that an older adult is showing signs of cognitive impairment akin to AD may initiate AD therapy early through prescription medication (Petersen, 2005).

**Cognitive Training**

Interventions such as cognitive rehabilitation and CT have yielded encouraging results (Elias & Wagster, 2007). CT has proven capable of cognitive enhancement (e.g., improved memory and a sense of personal control) that can continue for up to five years following the initial training intervention (Willis et al., 2006; Wolinsky et al., 2009). In a recent large-scale randomized control trial, results indicated that CT delayed cognitive and functional decline in older adults (Ball et al., 2002). Similarly, most of the research on the effects of CT on MCI has
reported increased performance following training on objective measures of memory (Sitzer et al., 2006). However, randomized methods are not the standard in CT research, the majority of studies have limited power, and much of the research to date includes uncontrolled studies (Belleville, 2008; Gauthier et al., 2006).

**Compensatory strategies.** Cognitive training strategies fall into two categories: compensatory and restorative. Compensatory strategies teach new ways of working around cognitive deficits, such as mnemonic devices to remember forgotten words or phrases (Sitzer et al., 2006). Compensatory interventions often parallel education approaches and seek to enhance three areas of cognitive performance: memory (verbal episodic memory), reasoning (inductive reasoning), or speed of processing (visual search and identification; Sitzer et al., 2006). Selection of these targeted areas is based on the following: (a) the early decline of memory, reasoning, and speed of processing (e.g., by the age of mid-60); (b) the association of these abilities with activities critical for independent living (e.g., taking medications, managing finances, shopping, telephone usage, household management, transportation, driving, and meal preparation); and (c) the demonstrated effectiveness of interventions on these areas (Jobe et al., 2001; Willis et al., 2006).

Ball et al. (2002) elaborated on the approach for each targeted area in CT. For verbal episodic memory, participants were taught strategies for memory tasks, such as remembering new words, as well as tasks related to cognitive activities of everyday life, such as recalling a shopping list. For reasoning, older adults were taught strategies that focused on the ability to solve problems in a serial pattern, such as identifying the pattern in a letter or number series, or understanding everyday patterns, such as prescription drug dosing or travel schedules. Finally, for speed of processing, strategies focused on visual search skills and the ability to quickly identify and locate visual information (Ball et al., 2002).

**Restorative strategies.** Restorative strategies provide non-specific cognitive stimulation and, in many studies, have demonstrated the greatest overall effect on cognitive function (J. Serrano, Latorre, Gatz, & Montanes, 2004; Pittiglio, 2000; Sitzer et al., 2006). Reminiscence is a restorative strategy wherein older adults draw on episodic memory while recalling and sharing stories about their life and their past (Butler, 1980; Woods, Spector, Jones, Orrell, & Davies,
2009; Woolhiser-Stallings, 2010; Yamagami, Oosawa, Ito, & Yamaguchi, 2007). In one study, 43 randomly assigned older adults aged 65 to 93 years old who were not diagnosed with dementia experienced significant cognitive improvement following four weeks of guided reminiscence. In addition to being a part of regimented therapy, reminiscence is an activity that older adults practice naturally during social, therapeutic, and recreational activities.

**Recreational Activity**

Physical activity, social engagement, and mentally stimulating pursuits can all reduce the risk of cognitive decline and AD (Alzheimer’s Association, 2010b; Scarmeas, Levy, Tang, Manly, & Stern, 2001). Even so, among older adults, most leisure time is not spent in recreational activities, as only 25% of older adults participate in activity programs (American Psychological Association, 2010). For older adults in programs (e.g., at clinics or community centers), recreational therapists structure leisure time to serve a rehabilitative purpose (American Therapeutic Recreational Association, 2010). Leisure activity can involve both physical and mental domains, and recreational therapy engages fine and gross motor skills as well as problem solving and reasoning. Research suggests that engagement in intellectually stimulating leisure activities may reduce the risk of various forms of cognitive impairment, thereby presenting the potential to challenge the decline of physical and mental abilities in old age (Alzheimer’s Association, 2010b; Scarmeas et al., 2001).

David Snowdon (2001) is widely cited as the conductor of the first longitudinal evaluation of the effects of leisure, lifestyle, and activity on cognitive functioning. The study was entitled Aging With Grace (Lemonick & Park, 2001). The study investigated the lifestyles of 678 nuns, their social and activity involvement, and the onset of diseases related to the aging process, such as cognitive impairment and AD. Data were collected from convent archives spanning 60 years, and recorded the daily activities, annual medical examinations, and postmortem autopsies that showed the absence or presence of plaques and tangles associated with cognitive impairment and AD. Research findings suggested that a physically active lifestyle coupled with consistent, dynamic mental stimulation decreased the likelihood of cognitive impairment throughout the aging process (Lemonick & Park, 2001).
Creativity and Aging

Research shows that the brain’s response to activity and leisure is sensitive to novelty (M. Diamond, 2001). Experiments have revealed that brain cortical thickness with an 80-day exposure to enrichment through learning and activity was not as great as during a 30-day exposure; it is possible that over time the enrichment becomes monotonous, or less novel, and its effectiveness decreases (M. Diamond, 2001). Creativity is a way in which older adults can engage in routine day-to-day activities in novel ways (Weisberg, 2010); some theorists believe that creativity is a repetitious process wherein the “world [is] mentally constructed in many different ways” (Schunk, 2007, p. 287). Through the combination and reorganization of previous experiences, creativity enables the mind to engage in multiple knowledge domains (Bracey, 2001). Through the manifestation of technical skill, divergent thinking, and original achievement, creative behavior is said to epitomize adaptability, an essential skill for today’s older adults (Fisher, 1999; Jung et al., 2010; Weisberg, 2010).

Creativity and aging have been the focus of research at George Washington University. In a community-based multisite national study, Cohen (2006) investigated the impact of cultural programs (e.g., painting, jewelry making, and pottery) on the general and mental health of persons aged 65 and over. With a sample of over 300 older adults, this was the first large-scale creativity and arts study to use an experimental design. The study demonstrated that creative behavior enhances overall functioning, health, and quality of life among older adults (Cohen, 2006).

Art-based, creative, and cognitive tasks may include techniques from counseling and other psychological contexts (Rubin, 2001). For instance, older adults in art therapy may use memories from their past to create art during sessions. Practitioners (i.e., art therapists) may ask older adult clients to visualize and describe a specific positive memory from their childhood; afterwards, clients may be asked to recreate the memory using the art materials present, emphasizing their favorite aspects of the memory with vibrant colors (Huit, 2003; Rubin, 2001; Smucker, 2010). By incorporating positive emotional information, research shows that creative tasks benefit cognitive performance (Labar & Cabeza, 2006; Scheibe & Blanchard-Fields, 2009; Silvia, 2005).
Emotion-Focused Interventions

In a meta-analysis of 96 studies, researchers found considerable overlap of risk factors for both cognitive and emotional disorders, and determined that future studies should address cognitive and emotional health simultaneously (Hendrie et al., 2006). This conclusion supported Davidson’s (2003) findings, which used fMRI technology to demonstrate that emotion and emotional regulation trigger neural receptors in both the hippocampus and the prefrontal cortex (PFC). The hippocampus is critical to an individual’s ability to remember ongoing life experiences (e.g., during episodic memory); it resides in the limbic system (i.e., the emotion center) of the brain and systematically exchanges synaptic transmissions with the prefrontal cortex, which controls higher cognitive functions such as planning, complex cognition, decision-making, and social behavior (Davidson, 2003; Stern, 2009). The overlap between emotional and cognitive functioning provides important considerations for targeting memory (Davidson, 2003; Stern, 2009).

Many researchers firmly hold that cognitive interventions are ineffective for clients with emotional distress if that distress is not addressed during the intervention. Specifically, a study by Mateer, Sira, and O’Connell (2005) reviewed the literature concerning the impact of interventions (e.g., emotion-focused vs. cognitive) on clients with impaired cognition. The researchers determined that emotion-focused treatments may be more effective than cognitive interventions for clients with combined emotional distress and cognitive impairment. The study revealed that emotion-focused treatments facilitate therapeutic conversations about participants’ feelings on cognitive difficulties throughout the interventions (Mateer et al., 2005).

Art Therapy

Art therapy is an emotion-focused treatment and a growing field in the care and maintenance of persons with cognitive impairment (Mihailidis et al. 2010). In an overview of non-pharmacological approaches to dementia, art therapy was described as a treatment expected to improve the cognitive functioning of older adults by stabilizing their emotions (Masazumi, Yuko, & Shin, 2004). Activities such as drawing and painting provide individuals with the opportunity for self-expression, decision-making, and other cognitive skills (Harlan, 1993; Kaplan, 2000; Serrano, Allegri, Martelli, Taragano, & Rinalli, 2005; Silvia, 2005). Furthermore,
art therapy in clinical settings has been thought to bring a sense of humanization and emotional comfort to modern healthcare institutions (Pratt, 2004).

Seventeen emotion-focused art therapy articles were reviewed as a part of the current study that included qualitative, case study, and quantitative designs. In one such article, a descriptive study, the non-verbal communication, sensory exploration, and self-reflective activity in art therapy were documented as allowing older adults with cognitive impairment to become emotionally expressive and thereby bypass some of their cognitive deficits (Kahn-Denis, 1997). Outcome-based and case study reports on art therapy interventions with nursing home residents indicated that participants showed significant improvement in measures of self-esteem as well as reduced depression and anxiety (Doric-Henry, 1997; Jonas-Simpson & Mitchell, 2005). Similarly, in a case study, the benefits of group art therapy were evaluated during 15, 90-minute, weekly sessions in a nursing home. The participants all faced a variety of physical and cognitive challenges. The emotion-focused approach, which also addressed cognitive performance, was described as addressing cognitive and emotional needs simultaneously (Tramer, 2008).

In a quantitative research study conducted by Rusted, Sheppard, and Waller (2006), emotional and cognitive needs improved as a result of art therapy. The researchers used a multi-center, pretest/posttest design and implemented art therapy for one hour per week for 40 weeks to a randomized experimental group that comprised individuals with dementia. The principal aim of this study was to test the premise that participation in art therapy groups would lead to positive changes in both mood and cognition. Measures of depression, mood, sociability, and physical involvement were evaluated six times throughout the 40 weeks. In order to isolate the impact of art therapy, the researchers compared art therapy with activity groups (e.g., recreational therapy). The art therapy interventions were not described in detail, but some techniques were highlighted through vignettes; with access to a variety of art materials, participants created artwork with therapeutic connections to previous life experiences. Although time spent in art therapy sessions versus activity groups was comparable, art therapy sessions produced longer lasting and more dramatic cognitive performance benefits (e.g., significant correlation between emotional expressivity and enhanced cognition and mood) as compared to recreational activities (Rusted et al., 2006).
Ethnically Diverse Older Adults

The minority older adult population is growing faster than the older adult population as a whole, at a 2:3 ratio (American Psychological Association, 2010; Minckler, 2008). In 2009, 19.9% of persons 65 or older were minorities: 8.3% were African Americans, 7.0% were Latinos/Hispanics, and 3.4% were Asians (Administration on Aging, 2011). By 2030, minority persons are projected to represent up to 25% of older adults.

According to Chen, Kim, Moon, and Merriam (2008), an analysis of literature on older adults in education journals from 1980 to 2006, including 93 articles in five adult education journals, revealed that older adults are largely portrayed as a homogeneous group, with few cognitive or physical limitations. This portrayal is inaccurate and demonstrates a current lack of literature that appropriately addresses the diversity of older adults. Although education can ameliorate cognitive impairment, there has been little research including minority older adults, education, and its relationship to cognitive impairment.

Cognitive Impairment

Despite evidence that MCI may be more prevalent in minorities, some studies have found that cognitive impairment is undiagnosed or misdiagnosed among African Americans, Latinos, and other minorities (Zuckerman et al., 2008). Most researchers agree, however, that minority groups have an earlier onset of cognitive impairment and are often diagnosed with cognitive impairment in later stages, seeking treatment only after severe cognitive decline has developed (National Hispanic Counsel on Aging, 2007; National Institute on Aging, 2005). Few longitudinal studies of MCI have been conducted among elderly people from diverse racial or ethnic groups. Findings reveal that minorities are less likely than Whites to be recruited for mental health-based research (Bistricky, Mackin, Chu, & Areán, 2010). Thus, cognitive impairment and the benefits of interventions with minority older adults remain unclear due to insufficient research (McDougall et al., 2010).

Several studies suggested that cognitive impairment may be experienced differently according to ethnicity. For instance, cognitive impairment prevalence is lowest among Asians as compared to Whites and other ethnicities, but goes undiagnosed for the longest duration. Latinos have the earliest onset of cognitive impairment symptoms, and African Americans live the
longest with the most severe MCI symptoms (Administration on Aging, 2011). In one of the few large-scale US studies including substantial percentages of minorities, Manly et al. (2008) evaluated rates of cognitive impairment among ethnically and linguistically diverse older adults ($N = 2,364$). The mean age of the participants was 76.1 years, and they had an average of 10.0 years of education. Twenty-eight percent of participants were White, 32.6% were Black, and 39.0% were Hispanic; no Asians were included in the study. Compared with White subjects, older adults who identified themselves as Black or Hispanic were at a greater risk for MCI; however, Hispanic participants had the highest attrition rate (15%), which may have influenced the results.

**Education**

Significant educational differences exist among racial and ethnic groups (See Table 2). In 2008, over 60% of Black older adults had a high school diploma as compared to 83.1% of White older adults. Twelve percent of Blacks had a bachelor’s degree or higher as compared with approximately 22% of Whites. Also in 2008, 74% of Asian older adults had a high school diploma, while 32% had a bachelor’s degree or higher. In contrast, only about 46% of Hispanic older adults had finished high school, and only 9% held a bachelor’s degree or higher (Administration on Aging, 2011). Hispanic American elderly have lower levels of formal education and literacy rates than individuals from other ethnic groups, while one-out-of every 10 Hispanic older adults has no formal education, and over half of Hispanics have eight or fewer years of schooling (National Hispanic Coalition on Aging, 2009; Alzheimer’s Association, 2002).

Table 2

*Differences in Education among Older Adults*

<table>
<thead>
<tr>
<th>Ethnicity/Race</th>
<th>High School Diploma</th>
<th>Bachelor’s Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>83%</td>
<td>22%</td>
</tr>
<tr>
<td>Black</td>
<td>60%</td>
<td>12%</td>
</tr>
<tr>
<td>Asian</td>
<td>74%</td>
<td>32%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>46%</td>
<td>9%</td>
</tr>
</tbody>
</table>

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Emotional Distress and Stress

Research shows that minority older adults report higher levels of stress throughout their lifetimes, and subsequently experience higher levels of depression than older adults from other ethnic groups (Consedine & Magai, 2002; Miranda, 2003). Stressors such as immigration, low socioeconomic status, declining health, high levels of family responsibility (e.g., caring for the aging at home), and social discrimination all contribute to higher levels of stress among minorities (Turner & Avison, 2003).

Immigration is a highly stressful experience: leaving a previous country of origin can lead to feelings of cultural isolation, and some minority individuals attempt to preserve familiarity by maintaining practices relating to their previous country of origin, thus never fully acculturating (Link et al., 2006; Talamantes et al., 2010). Acculturative stress is the stress associated with immigration and has frequently been associated with depression and low social interest (González, Haan, & Hinton, 2001; Talamantes et al., 2010). Such stress has been shown to have a lifelong influence on psychological adjustment, decision-making abilities, occupational functioning, overall physical and mental health, and engagement in leisure activities (Talamantes et al., 2010).

Activities and Leisure

According to a U.S. Department of Health and Human Services (2000) study, members of ethnic minority groups engage in leisure activities less frequently than the rest of the population. Research suggests that minorities are less likely to participate in leisure activities due to lower socioeconomic status, various cultural values, discrimination, and fear of harassment (Marshall, et al., 2007).

Crespo, Smit, Carter-Pokras, and Andersen (2001) found that engagement in leisure activity was associated with acculturation whereas less acculturated older adults are more likely to remain sedentary. Low acculturation levels can result in distinct barriers to recreation. For example, Asian older adult immigrants experience language barriers, a lack of social support, and a collapse of family-oriented relationships that can impede participation in leisure activities (Kim, Park, & Heo, 2010). Similar barriers also affect Hispanic older adults. One-third of US Latino older adults speak English poorly or not at all (Morales & Hanson, 2005). Without
English proficiency, older adults are deemed *linguistically-isolated*; a term used by the U.S. Census Bureau (2009) in reference to those living in a household where no person aged 14 or older speaks English well. Within the US, nearly 67% of Hispanic/Latinos and approximately 27% of Asians are linguistically isolated (Talamantes et al., 2010; U.S. Census Bureau, 2009). This isolation limits social engagement and leisure participation, as well as access to formal mental healthcare for cognitive impairment.

**Response to Typical Interventions**

Presently, reports on minority older adult responsiveness to interventions may be biased: current reports rely on small numbers of minority older adults who (a) participate in mental health outcome research, and (b) have access to regular medical care. Minorities have the lowest participation rates in mental health outcome research and the highest attrition rates (Rose, 2005). Furthermore, recent statistics for the total US population aged 65 or older showed that over 7.5% of Hispanic respondents reported that they had no usual source of medical care, and 20.7% reported that they were not satisfied with the quality of the healthcare they received because of cultural incompatibilities (Administration on Aging, 2011; U.S. Census Bureau, 2010). Sixteen percent of Blacks reported that they or a family member regularly went without needed medical care. No reports were presented on Asian older adult access to medical care (Administration on Aging, 2011). For these reasons, reported rates of responsiveness to interventions may be skewed. With that understood, the following information pertains to reported responses to interventions among minorities.

**Pharmaceutical interventions.** Minority older adults are reported to receive Medicaid at a higher frequency than are White older adults; however, up to 40% of psychiatrists do not accept Medicaid (American Psychological Association, 2010). In a recent survey conducted by Zuckerman et al. (2008), nearly 30% of White older adults reported using pharmaceutical interventions for cognitive impairment as compared to approximately 20% of Blacks and 17% of Hispanics; Asians were not surveyed. The study also suggested that minorities diagnosed with cognitive impairment may have less access than Whites to anti-dementia medications (Zuckerman et al., 2008).

In addition to receiving limited psychiatric care, minority older adults comply with
medication prescriptions less frequently than do older adults from other ethnicities. In a study by Mehta et al. (2005) investigating adherence to acetylcholinesterase inhibitors (AChIs) among more than 2,500 ethnically diverse patients, results revealed that minority older adults had a 40% lower rate of AChI use than did White older adults (Mehta et al., 2005). In a similar study conducted by Ayalon and Areán (2004), the researchers explored both intentional non-adherence to medication (e.g., altering dosage based on self-perceived functioning) and unintentional non-adherence (e.g., forgetting to take prescribed medication). Among the minority participants, intentional non-adherence was associated with concerns about the side effects of medications, the stigma associated with medications, and the attribution of lesser importance to mental health related medications than other medications. Unintentional non-adherence was associated with greater levels of cognitive impairment.

**Therapeutic interventions.** A number of minority older adults use ethnic and traditional approaches to augment Western healthcare (Zuckerman et al., 2008). Minority older people may not find Western medical conclusions to be in-line with their belief systems and may therefore be wary (Cooper et al., 2003; Graham et al., 2005; Miranda, 2003). Results from a national survey conducted by Connell et al. (2007) documented notable differences in knowledge, awareness, and cultural beliefs about cognitive impairment and AD: Black and Hispanic respondents were significantly more likely to believe AD to be a normal part of aging and to not seek care as a result (Ayalon & Areán, 2004; Connell et al., 2007). Below is an outline of Western approaches that are commonly used for older adults as well as a discussion of minority older adult receptivity.

**Cognitive training.** The vast majority of participants in CT research are Caucasian women aged 65 and over (Sitzer et al., 2006). McDougall (2004) expected that “the recruitment of minority elders into cognitive aging studies will continue to challenge researchers” (p. 331). Nonetheless, preliminary research suggests that minorities do benefit from CT and that the benefits from the memory training differ by race. In a study conducted by McDougall et al. (2010), findings demonstrated that Black and Hispanic participants often made greater improvements than older adults in other ethnicities in cognitive performance outcomes; both Blacks and Hispanics performed better than Whites on visual memory, and Blacks performed
better overall on instrumental activities of daily living (McDougall et al., 2010). The reasons for this remain unclear.

Researchers at the University of California successfully included minority older adults in a CT study (Aranda, Villa, Trejo, Ramirez, & Ranney, 2003). The authors realized that in order to effectively include minority adults, active community outreach, rather than clinic-based or advertising-based approaches, was needed. Other strategies included hiring and training bicultural and bilingual recruiters and staff, providing transportation for older adults, and offering in-home cognitive screening and services (Hinton et al., 2010).

**Caregiver involvement.** Living at home is more common among minority older adults than among White older adults; the percentage of Hispanic older persons living with relatives is almost twice that of White older adults; approximately 84% of Asians live with family members in old age; and approximately 62% of Blacks live with family caregivers (Administration on Aging, 2011; Aranda et al., 2003; Borrayo, Goldwaser, Vacha-Haase, & Hepburn, 2007). The involvement of caregivers in treatment planning has shown to be an effective aspect of interventions for ethnically diverse older adults (Chow, Auh, Scharlach, Lehning, & Goldstein, 2010).

According to Talamantes et al. (2010), family caregivers may accept cognitive impairment as a normal sign of aging and manage severe, untreated symptoms within the family. Minority caregivers often endure high levels of stress and tolerate higher levels of impairment than is the case in Caucasian families (Alzheimer’s Association, 2002). Long-term stress may even put minority caregivers at a higher risk for cognitive decline, enhancing the likelihood of generational cycles of cognitive impairment (Alzheimer’s Association, 2002; Rothman & Mattson, 2010).

Aranda et al. (2003) demonstrated that caring for someone at home with a dementing illness may have debilitating consequences; caregivers exhibit increased rates of depression, physical illness, psychotropic medication use, social isolation, decreased quality of life, sleep problems, and decreased immune function. Morano and Bravo (2002) found that if culturally sensitive interventions were available, caregivers would be provided with the opportunity to gain an increased understanding, improve coping skills, and provide care to their older adult family
members in ways that address cognitive impairments earlier and thus more effectively.

In a study conducted via phone interview, Chow et al. (2010) examined racial and ethnic variations in the support caregivers received. Over 1,640 randomly selected respondents who provided care to someone aged 50 or over were included. Black, Asian, Hispanic/Latino, and White caregivers were compared. Whereas White caregivers were most likely to receive help from formal sources (e.g., clinics), Asian and Hispanic caregivers were most likely to receive help from informal sources only (e.g., alternative care and herbal supplement experts). Black caregivers were the only group to consistently rely on a combination of formal and informal support. Researchers concluded that developing culturally appropriate caregiver support was needed.

Art therapy. Art therapy sessions can be brought to older persons in their homes, community day programs, and religious institutions in order to involve their caregivers (Callanan, 1994; Sezaki & Bloomgarden, 2000). In a review of art therapy literature, only 41% of studies with older adults included minorities, and often the research used a case study approach: in several instances, only a single minority participant was included. Nevertheless, numerous art therapy studies have sufficiently included minority older adults.

The pilot study conducted by the current researcher in 2009 included 24 Hispanic older adults (after attrition) and addressed emotional expressivity and cognitive functioning. Participants were recruited from a senior center and were provided with 10 weekly, 90-minute art therapy sessions. The majority of the Hispanic participants were from Puerto Rico, the rest from Argentina, Cuba, Dominican Republic, and Venezuela; the researcher and volunteers were bilingual. Attendance in art therapy was correlated with improved cognitive performance. At the end of the study, participants asked for art therapy to continue, suggesting that art therapy may be a compatible and preferable approach among Hispanic older adults (Alders, 2009).

Another art therapy study that prioritized the inclusion of minority older adults was conducted by Johnson and Sullivan-Marx (2006). Based on two case studies, their research suggested that art therapy enhanced mental and physical health among the urban African American community. The results indicated that story-telling is a value held by African American older adults and can be incorporated into art therapy sessions. Although clients were
facing declines in cognition, health, and communication, they were able to use art in order to share life stories. Art therapy facilitated the staff and the family in “seeing” the client “through the lens of their own life story” (Johnson & Sullivan-Marx, 2006, p. 317), thereby enhancing the quality of care provided.

Similarly, in a Korea-based case study conducted in 2008 by Kim, Kim, Lee, and Chun, art therapy was used as a means to address stroke-related cognitive impairment in an Asian female participant. The study included twice weekly 40-minute art therapy sessions for 10 weeks. Tasks included drawing common objects, such as clocks, houses, and trees, as well as self-portraits or drawings of family members. Other tasks included drawing figures after viewing pictures of houses or portraits, finding hidden or different figures in a drawing, drawing with a three-point perspective, and making objects out of clay. Researchers sought to improve spatial perception, color recognition, shape recognition, size comparison of objects, induction of emotion, and socialization. Results from psychological tests conducted before and after art therapy treatment showed improved scores in visual perception, cognition, and emotional functioning.

Recent art therapy studies in Japan have attempted to quantify neural responses that occur during expressive art-making with Asian older adults (Belkofer & Konopka, 2008). In a 2003 study by Kimura et al., EEGs (i.e., the recording of electrical activity along the scalp produced by the firing of neurons within the brain) were recorded with 21 scalp electrodes for five minutes before, during, and after creative art therapy in five patients with dementia and 10 normal subjects. The study noted a substantial decrease in neuronal instability after art therapy and suggested that art therapy may be an effective treatment for cognitive impairment (Kimura et al., 2003).

In a related study by Musha, Kimura, Kaneko, Nishida, and Sekine (2000), 41 Asian older adults were chosen out of a group of 118 experiencing cognitive impairment. They received one year of art therapy treatment. The researchers used EEGs during art therapy to track changes in state of mind, such as mental stress, depression, joy, and relaxation, to see how the patients responded to the therapy. Joy was the most common response to the sessions. The study demonstrated that joy in art therapy was associated with stabilization or improvement in
cognition (as determined by MMSE scores) in 85% of participants.

**Art Therapy as a Treatment of Choice**

Two theorists shaped the art therapy method used in this investigation: Vija Lusebrink and Noah Hass-Cohen. Lusebrink, a prominent theorist in the field of art therapy, developed the Expressive Therapies Continuum (ETC), which has been applied as a fundamental art therapy theory (Hinz, 2009; Kagin & Lusebrink, 1978). This theory aims to facilitate art therapists’ clinical decision-making by providing an understanding of cerebral activity during creative experiences, and helps to explain why older adults may benefit cognitively from art therapy (Hinz, 2009; Kagin & Lusebrink, 1978). In her 2004 publication, Lusebrink explained that:

> Art therapy is an action-oriented therapy. . . . Visual expressions involve complex sensory information from the parietal lobes that is forwarded, along with emotional input from the limbic area, to the prefrontal cortex with its regulatory functions. (p. 170)

ETC is based on the idea that information is processed by the brain on three hierarchical levels of knowledge: (a) kinesthetic/sensory, (b) perceptual/affective, and (c) cognitive/symbolic. ETC offers a system of charting art-making across these three levels in order to assist clients in creating art with an increased level of complexity, thereby systematically stimulating corresponding brain structures and functions (Lusebrink, 2004).

Art Therapy Relational Neuroscience Principles (ATR-N) is a similar framework in that it addresses art therapy, neuroscience, and older adults. Developed by Hass-Cohen (2003), ATR-N is a system of six principals that present art therapists with information on the neurobiology of emotion, cognition, and behavior. ATR-N is based on findings that automatic responses of the autonomous nervous system can be placed under conscious control (Farah & Feinberg, 2000). The purpose of ATR-N is to help art therapists understand the neurological underpinnings that occur during a given session in order to fine-tune art-making interventions (Hass-Cohen & Carr, 2008). Through ATR-N, art therapists can teach clients to synchronize bodily functions (e.g., breathing and eye movements) with activities during art-making to enhance the therapeutic effect of the session (Hass-Cohen & Carr, 2008). For instance, an art therapist may direct a client to listen to music and create a scribble-drawing while breathing in rhythm to the beat.

Both Lusebrink and Hass-Cohen suggested that art-making and subsequent imagery were
a *mind-body bridge* (Hass-Cohen, 2003; Lusebrink, 1991; Lusebrink & McGuigan, 1989). They theorized that when clients observe their art in paused intervals as it is being made, emotional and cognitive self-regulation are increased (Hass-Cohen, 2003; Lusebrink, 2004). Similarly, the authors explored how the human brain is capable of registering, monitoring, and representing its own functioning, especially during art-making (Hass-Cohen, 2003; Lusebrink, 2004). Together, their theories underscore the perspective and approach taken in many art therapy programs and research studies to address cognitive performance in older adults.

Almost all programs related to art therapy, even those addressing cognition, prioritize expressivity, emotional regulation, and mood. One underlying assumption of art therapy is that art-making enhances mood by way of facilitated emotional expressivity (De Petrillo & Winner, 2005). Art therapy has been shown to increase clients’ experience of comfort during therapy sessions, and participants who completed artwork during treatment reported more enjoyment, a higher likelihood to continue with the treatment, and a desire to recommend the treatment to family and friends (Pizarro, 2004; Riley, 2004). Additionally, in a study by Herman and Larkey (2006) targeting the Latino population, art-based activities resulted in a statistically significant increase in motivation to enroll in psycho-educational mental health services.

Although many minority older adults have little or no experience in using art materials or in expressing themselves visually, art therapy can be a means of group involvement and pleasure (Stewart, 2004). Prior interest and ability in art are not necessary for older adults to experience the benefits associated with art-making. Research (both quantitative and qualitative) with older adults suffering from AD has demonstrated that those with cognitive impairment can successfully produce meaningful and expressive artwork even when language and executive skills have declined or are limited (J. L. Cummings, Miller, Christensen, & Cherry, 2008; De Petrillo & Winner, 2005; Mell, Howard, & Miller, 2003).

The benefits of art-making are in its expressive components, not in the visual-motor act of mark-making; copying meaningless forms has shown not to provide the same benefits as creative art-making (De Petrillo & Winner, 2005). A pilot study conducted by Rentz (2002) exemplified the benefits of expressivity in a program called Memories in the Making©, which encourages self-expression through the visual arts. This research study implemented art sessions
at adult daycare and nursing home sites; participants took part in art programming weekly, using paints to express themselves with colorful visual images on paper or fabric (Kinney & Rentz, 2005; Rentz, 2002). The sample included 12 individuals in the early and middle stages of AD. All participants engaged in Memories in the Making©, and results were compared to participation in more traditional adult day center activities (e.g., current events and crafts). According to a staff-developed observation tool that evaluated seven domains of wellness, individuals in expressive art programming demonstrated “more interest, sustained attention, pleasure, self-esteem, and normalcy” (Kinney & Rentz, 2005, p. 220).

**Emotion-Focused Outcomes**

Reports on art therapy interventions within the US and abroad indicate that participants from a variety of ethnicities showed significantly reduced depression following participation in art therapy (Jonas-Simpson & Mitchell, 2005; Doric Henry, 1997). Research conducted by Japanese researcher Eiko (2006) documented that art therapy can be effectively used with Asian older adults experiencing depression and cognitive impairment. In a similar study conducted in Japan, technologically advanced spectral analysis techniques were used to assess the emotions experienced by older adult Asian clients during art therapy. Kenji et al. (2003) demonstrated that heightened emotion-based brain activity during art therapy was correlated with enhanced cognitive performance, and art therapy was associated with increased neuron activity (Kenji et al., 2003). Based on these findings, the researchers stated that future research was warranted on art therapy as a preventative measure for dementia (Kenji et al., 2003).

The pilot study for this dissertation also included structured art therapy that was emotion-focused. For example, sessions included topics on family, love, religion, memory, and goodbyes, which allowed for emotional content, values, judgments, and perspectives to be discussed in a group setting (Alders, 2009). The emotional topics that emerged from the sessions ranged from experiences of domestic abuse, alcoholism, a fear of going to Hell, a fear of God’s wrath, severe poverty, life regrets, loss and grieving, pride of loved ones, life adventures, nostalgia of farm life, and new found love within the community center (Alders, 2009). Such disclosures were addressed and explored based on the group’s level of comfort. The numerous emotional reactions and disclosures throughout the sessions may have positively affected the outcome of cognitive
performance test scores, indicating enhanced cognitive performance (Alders, 2009).

**Reminiscence**

Art therapy with older adults often includes restorative CT techniques, such as reminiscence. In a recent survey study, art therapists reported that when minority older adults depicted pictures of their country of origin, they had the opportunity to engage in life review and reminiscence while also staying connected with their culture (Bermudez & ter Maat, 2006). In a qualitative study by Woolhiser-Stallings (2010), art therapy interventions used collages as a medium for personal reminiscence, self-expression, and the recovery of dignity and control. The interventions involved completing a collage with pictures selected from a box of miscellaneous, precut magazine images and writing about each image. Participants were first directed to make a collage of things they liked and then to make a collage about themselves. Based on subjective observations, the researcher concluded that collage may facilitate reminiscence because it may be perceived as less threatening than other media or techniques that require drawing ability. Further, sifting through and selecting pictures in a group setting can stimulate memories as well as encourage clients to tell their life stories (Woolhiser-Stallings, 2010).

**Problems with Art Therapy Research**

Art therapists argue that creating emotion-based artwork has the combined benefit of providing mental stimulation and alleviating emotional stressors (Hass-Cohen & Carr, 2008; Malchiodi, 2006). Although there have been attempts to test the effects of art therapy on cognitive performance among the elderly, there remains a dearth of solid research (De Petrillo & Winner, 2005). Art therapists are said to “lack the practical, theory-building, and institutional research foundations which would enhance, clarify and build the theoretical underpinnings of art therapy” (Deaver, 2003, p. 26). Currently, there is only a small body of quantifiable data to support the claim that art therapy is an effective treatment method (Reynolds, Nabors, & Quinlan, 2000; Slayton et al., 2010).

In a review of 35 studies, Slayton et al. (2010) sought to identify research that upheld a high standard; only one quantitative outcome study related to older adults. That study was conducted by Rusted et al. (2006) and represented the only clinical trial by an art therapist that implemented random assignment with older adults and demonstrated clear evidence of the
cognitive and emotional benefits of art therapy groups. In the review, Slayton et al. found distinct areas in which art therapy research can improve:

There is a lack of standardized reporting and utilization of control groups, and a tendency to use anecdotal case material to demonstrate treatment outcomes rather than measured results. Often, poor or only vague descriptions of the treatment interventions are provided, which makes it difficult or impossible to determine the study procedures. Finally, studies that mix interventions prevent an examination of which intervention led to the changes reported. (p. 116)

For the literature review conducted herein, 17 art therapy articles on cognitive performance among older adults were analyzed (see Table 3). Nine studies (53% of the articles reviewed) were either case studies or qualitative in nature. Eight articles (47% of the studies) were found to be quantitative in nature. Eighteen percent employed randomization, and of that 18%, two of the three studies (12%) provided art-based treatment and “therapy” without a trained art therapist. Rusted et al. (2006) were the only researchers to apply randomization and utilize art therapists; however, their attrition rates were high and they used biased measures (e.g. case notes, assessments with no established validity/reliability, and self-reports).

Twelve of the 17 art therapy studies (71%) made no mention of the participant gender and/or ethnicity. Although minorities may have been included in these studies, a lack of reporting makes confirmation difficult. Furthermore, many of the studies neglected to describe the art therapy interventions and techniques utilized. Materials were typically mentioned and occasionally a vignette was included, but a description of the overarching structure, approach, or format of the art therapy sessions was lacking in eight (47%) of the studies. In several studies that did describe the intervention, multi-modal approaches, rather than exclusively art therapy approaches, were used and included music, meditation, writing, and other creative tasks. Whether art therapy was the agent of change was difficult to determine in 18% of the studies.

Tables 3 and 4 were created with data pulled from the 17 reviewed articles on older adults, the arts, and cognitive and emotional well-being. The tables include those articles found to be most relevant to this dissertation topic and study. Table 3 highlights the characteristics, methodology, and design aspects of each article. Table 4 includes a composite of the 17 articles’
problem area(s) as described by Slayton et al. (2010).

Table 3
Outline of Studies: Areas for Improvement

<table>
<thead>
<tr>
<th>Author; Year</th>
<th>Sample</th>
<th>Length</th>
<th>Characteristics</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2000)</td>
<td>Females Ethnicity-no report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n (2000)</td>
<td>2-F, 1-M Ethnicity-no report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musha et al.</td>
<td>N = 41</td>
<td>1 year frequency-no report</td>
<td>Setting: Community workshops. Material: Multi-modal, 2-D and 3-D. Focus: Enhanced emotional state. Assessments: Emotion Spectrum Analysis Method, MMSE and family questionnaire. Outcome: Majority of art therapy participants demonstrated neuronal responses of joy and enhanced cognitive functioning.</td>
<td>Demographics not reported. Art therapy intervention not described in depth. ESAM validity questionable.</td>
</tr>
<tr>
<td>Seifert and</td>
<td>N = 7</td>
<td>1 hr, 2x a wk, 3 yrs</td>
<td>Setting: Residential facility. Material: 2-D. Focus: Exploring complexity and symmetry. Assessment: Formal elements of artwork analyzed and recorded; Qualitative. Outcome: Significant correlations suggest art therapy products can provide valuable information about changes in perceptual and cognitive function.</td>
<td>Demographics not reported. Conclusions drawn from small sample. No art therapist.</td>
</tr>
<tr>
<td>Baker (2002)</td>
<td>6-F, 1-M Ethnicity-no report</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(continued)
<table>
<thead>
<tr>
<th>Author; Year</th>
<th>Sample</th>
<th>Length</th>
<th>Characteristics</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rentz (2002)</td>
<td><em>N</em> = 41&lt;br&gt; Ethnicity-no report.&lt;br&gt; Gender - no report.</td>
<td>1 hr, 1x a wk, 6 wks</td>
<td><strong>Setting:</strong> Day and nursing home sites.&lt;br&gt; <strong>Material:</strong> Paint on paper or fabric.&lt;br&gt; <strong>Focus:</strong> Self-expression.&lt;br&gt; <strong>Assessment:</strong> Staff developed; affect and self-esteem.&lt;br&gt; <strong>Outcome:</strong> Preliminary data suggest art contributed to positive affect, self-esteem, and well-being.</td>
<td>No art therapist. No randomization. Non-validated measures. Conducted as a pilot study. Demographics not reported.</td>
</tr>
<tr>
<td>Stewart (2004)</td>
<td><em>N</em> = 4&lt;br&gt; 3-F, 1-M&lt;br&gt; Ethnicity-no report</td>
<td>No report</td>
<td><strong>Setting:</strong> Nursing home. <strong>Materials:</strong> 2-D and 3-D. <strong>Focus:</strong> Communication and self-expression.&lt;br&gt; <strong>Assessment:</strong> Qualitative; interventions explained in-depth.&lt;br&gt; <strong>Outcome:</strong> Anecdotal evidence of active social and emotional engagement.</td>
<td>Demographics not reported. Small sample/Case study.</td>
</tr>
<tr>
<td>Kinney and Rentz (2005)</td>
<td><em>N</em> = 12&lt;br&gt; 7-F, 5-M&lt;br&gt; Ethnicity: 5-Black&lt;br&gt; 7-White</td>
<td>40 min; 1x a wk, 5 wks</td>
<td><strong>Setting:</strong> Adult Day Center. <strong>Material:</strong> Paint on paper or fabric.&lt;br&gt; <strong>Focus:</strong> Self-expression.&lt;br&gt; <strong>Assessment:</strong> Observation tool- 7 domains of wellness.&lt;br&gt; <strong>Outcome:</strong> Significantly more interest, sustained attention, pleasure, self-esteem, and normalcy during art-making.</td>
<td>No randomization; Used non-validated measures. Small sample.</td>
</tr>
<tr>
<td>Cohen (2006)</td>
<td><em>N</em> = 300&lt;br&gt; 90-minority&lt;br&gt; Gender and ethnicity-no report</td>
<td>1x a wk; 18 mo.</td>
<td><strong>Setting:</strong> Community-based. <strong>Material:</strong> Multi-modal.&lt;br&gt; <strong>Focus:</strong> Health, functioning, well-being.&lt;br&gt; <strong>Assessment:</strong> 5 questionnaires, objective and subjective. Randomization employed.&lt;br&gt; <strong>Outcome:</strong> Evidence to suggest health benefits and disease prevention through the arts.</td>
<td>Not conducted by an art therapist. Combined interventions. Demographics not reported.</td>
</tr>
<tr>
<td>McElroy et al. (2006)</td>
<td><em>N</em> = 5&lt;br&gt; 3-F, 2-M&lt;br&gt; Ethnicity-no report</td>
<td>60-80 min; 1x a wk, 8 wks</td>
<td><strong>Setting:</strong> Home-based qualitative study. <strong>Material:</strong> 2-D, 3-D. <strong>Focus:</strong> Benefit of home AT.&lt;br&gt; <strong>Assessment:</strong> Qualitative, Interpretative Phenomenological Analysis.&lt;br&gt; <strong>Outcome:</strong> Anecdotal evidence for art therapy in home environment.</td>
<td>Non-directive approach- not culturally sensitive. Inconsistent attendance. Demographics not reported.</td>
</tr>
<tr>
<td>Eiko (2006)</td>
<td><em>N</em> = 1&lt;br&gt; Gender-F&lt;br&gt; Ethnicity-no report</td>
<td>30 min; 1x wk for 7 mo.</td>
<td><strong>Setting:</strong> Adult Day Center. <strong>Material:</strong> 2-D.&lt;br&gt; <strong>Focus:</strong> Methods for MCI w/depression.&lt;br&gt; <strong>Assessment:</strong> Qualitative; interventions explained in-depth.&lt;br&gt; <strong>Outcome:</strong> Anecdotal evidence to suggest that art therapy can be effectively used with older adults experiencing depression and cognitive impairments.</td>
<td>Demographics not reported. Small samples or case studies.</td>
</tr>
</tbody>
</table>
Table 3 (continued)

**Outline of Studies: Areas for Improvement**

<table>
<thead>
<tr>
<th>Author; Year</th>
<th>Sample</th>
<th>Length</th>
<th>Characteristics</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson and Sullivan-Marx (2006)</td>
<td>( N = 2 ) Ethnicity and gender: Black-F</td>
<td>No report</td>
<td><strong>Setting</strong>: Community home-based care. <strong>Material</strong>: 2-D. <strong>Focus</strong>: Emotional needs and developmental tasks. <strong>Assessment</strong>: Qualitative; interventions explained in-depth. <strong>Outcome</strong>: Anecdotal evidence to support art therapy in addressing developmental tasks of the elderly in a culturally competent manner.</td>
<td>Small sample/case study. No report of art therapy frequency or duration.</td>
</tr>
<tr>
<td>Rusted et al. (2006)</td>
<td>( N = 45 ) (21 after attrition) 31-F, 14-M</td>
<td>1 hr, 1x a wk, 40 wks</td>
<td><strong>Setting</strong>: Residential Facilities. <strong>Materials</strong>: 2-D and 3-D. <strong>Focus</strong>: Mood and cognition. <strong>Assessment</strong>: 8 objective and subjective measures; randomization employed. <strong>Outcome</strong>: Evidence of art therapy’s benefit to mental alertness, sociability, physical and social engagement in clients with dementia.</td>
<td>High attrition rate (47%). Biased ratings. Small sample size. Predominantly female. Demographics not reported.</td>
</tr>
<tr>
<td>Cohen et al. (2007)</td>
<td>( N = 166 ) 131-F, 35-M, 12-minority</td>
<td>1 hr, 1x a wk, 12 mo.</td>
<td><strong>Setting</strong>: Community-based. <strong>Material</strong>: Multi-modal. <strong>Focus</strong>: Health, functioning, well-being. <strong>Assessment</strong>: Assessment questionnaires and self-reported measures. Randomization employed. <strong>Outcome</strong>: Intervention group reported a higher overall rating of physical health, fewer doctor visits, less medication use, fewer instances of falls, and fewer other health problems than the comparison group.</td>
<td>Not conducted by an art therapist. Combined interventions-impossible to determine agent for positive change.</td>
</tr>
<tr>
<td>Tramer (2008)</td>
<td>( N = 12 ) Gender and ethnicity: 1 Black-M, 11 White-F</td>
<td>90 min 1x a wk; 15 wks</td>
<td><strong>Setting</strong>: Nursing home. <strong>Material</strong>: Paper; 2-D materials. <strong>Focus</strong>: Dexterity, socialization, self-esteem, reminiscing, decision-making. <strong>Assessment</strong>: Qualitative; interventions explained in-depth. <strong>Outcome</strong>: Anecdotal evidence suggests that art therapy benefits emotional and cognitive well-being.</td>
<td>Small sample/Case study. Predominantly female.</td>
</tr>
<tr>
<td>Woolhisser-Stallings (2010)</td>
<td>( N = 3 ) 2-F, 1-M</td>
<td>1 hr, 1x a wk, 2 wks</td>
<td><strong>Setting</strong>: Home-based qualitative study; <strong>Material</strong>: Collage. <strong>Focus</strong>: Reminiscence. <strong>Assessment</strong>: observation, case notes, Magazine Photo Collage. <strong>Outcome</strong>: Anecdotal evidence for collage as means of reminiscence, self-expression and communication.</td>
<td>Limited reliability/validity of assessment used. No report on duration of session. Demographics not reported.</td>
</tr>
</tbody>
</table>
Table 3 (continued)

**Outline of Studies: Areas for Improvement**

<table>
<thead>
<tr>
<th>Author; Year</th>
<th>Sample</th>
<th>Length</th>
<th>Characteristics</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity: Hispanic</td>
<td></td>
<td></td>
<td>1x a wk; 10 wks</td>
<td></td>
</tr>
<tr>
<td>15-F, 9-M</td>
<td></td>
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</tbody>
</table>

Table 4 presents a summary of the issues noted in the studies listed in Table 3.

Table 4

**Summary: Areas for Improvement**

<table>
<thead>
<tr>
<th>Problem</th>
<th>AT Older Adult Studies</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of standardized reporting</td>
<td>No report of sample ethnicities and/or gender percentage</td>
<td>71%</td>
</tr>
<tr>
<td>No utilization of control groups</td>
<td>Did not employ randomization or use control</td>
<td>82%</td>
</tr>
<tr>
<td>Reliance on anecdotal material</td>
<td>Small samples or case studies</td>
<td>65%</td>
</tr>
<tr>
<td>Vague descriptions of treatment</td>
<td>Poor descriptions of therapeutic content</td>
<td>47%</td>
</tr>
<tr>
<td>Reliance on biases measures</td>
<td>Self-reports only or non-reliable/non-validated measures</td>
<td>59%</td>
</tr>
</tbody>
</table>

Future art therapy research may be able to improve upon pre-established designs and methodologies by addressing the areas indicated as problematic by Slayton et al. (2010). The necessary steps include: (a) ensuring standardized reporting by including the demographic information of the participants, (b) employing randomization and utilizing control groups in order to limit bias and confounding variables, (c) conducting quantitative art therapy studies to avoid reliance on anecdotal material, (d) describing interventions and art therapy treatment approaches sufficiently in order to clarify the agent of change within the study, and (e) using a combination of measures to evaluate the change that occurred as a result of art therapy.

Measuring the effect of art therapy on cognitive performance is complex. CT studies have
encountered similar problems, relying on self-reports or subjective assessment; however, many CT studies have employed a combination of several cognitive performance measurements effectively (Sitzer et al., 2006). Art therapy may benefit from using the same type of measurements used in CT studies.

**Assessments**

When assessing outcomes, Willis et al. (2006) reported that CT research should include both a self-report and performance-based objective measures; while objective measures correspond with evaluations conducted in clinical settings, self-reports on everyday functioning are conceptually complex and may represent the real benefits of CT. In CT treatment, participants know they are undergoing cognitive training; as a result, the effects of training on self-reported functioning could reflect personal beliefs and self-perception which could, in turn, affect objective cognitive performances (Willis et al., 2006). As a result, self-reports and objective measures are described as complementary and equally necessary.

**Self-Report**

Although self-reports are subject to bias due to factors such as personality and motivated misreporting, they consistently reflect changes in cognitive processes as well as attitudes and adaptations to old age (Osborne & Overbay, 2004; Rabbit, Maylor, McInnes, Bent, & Moore, 2006). The pilot study (Alders, 2009) evaluated self-perceived efficacy; when assessing the experimental group’s performance, a curvilinear trend was present in the self-report results \((N = 14, p = .000, R^2 = 0.723)\). This trend indicated that art therapy enhanced self-perception of cognitive performance only up to a point. Those with the highest attendance rates reported a higher frequency of cognitive failure (Alders, 2009).
Although the older adults were learning a tacit skill (i.e., art-making) during art therapy in the pilot study, the primary purpose was to provide dynamic mental stimulation and facilitate emotional expressivity. During the sessions, older adults were reminded that keeping the mind active is good for the brain. It is possible that the participants equated their perceived artistic ability with how they would be evaluated in terms of cognitive functioning. In this way, learning trends may have affected self-perceived efficacy (Alders, 2009).

According to Howell (1982), learners pass through stages of competency and progress from unconscious incompetency to conscious incompetency. During conscious incompetency, learners become aware of what they do not know or cannot do. This stage negatively affects perceived self-efficacy yet marks progress in skill acquisition and learning. The minority older adult participants regularly evaluated their artwork in terms of whether they exhibited skill. The demonstrated skill levels varied throughout the 10 sessions as participants experimented with new materials, subject matter, and levels of expressivity. Stages of competency (Howell, 1982; Schoonenboom, Tattersall, Miao, Stefanov, & Aleksieva-Petrova, 2008) paralleled the documented decrease in perceived self-efficacy as demonstrated by the CFQ results (Alders, 2009).

Dittmann-Kohli, Lachman, Kliegl, and Baltes (1991) found that although CT enhanced
cognitive performance, the training had no impact on perceived competence or on everyday self-efficacy beliefs. Because subjective assessments of efficacy and utility affect motivation, persistence, and choice of tasks (Bandura, 1993), it is desirable that CT leads not only to increases in performance but also to positive changes in self-conceptions (Dittmann-Kohli et al., 1991).

**Drawing Tasks**

Signs of cognitive impairment, such as motor neglect, perseveration, and disinhibition, may be noted as graphic indicators in assessment and provide early detection of changes in cognitive abilities (Kleiner-Fisman, Black, & Lang, 2003; Musha et al., 2000). Art-based assessments have been deemed highly effective for clients with low education levels and illiteracy or with limited verbal capabilities (Maurer & Prvulovic, 2004). In a qualitative and quantitative analysis by Maurer and Prvulovic (2004), artwork created during the progression of AD provided insight into the patients’ cognitive world regarding misperceptions and spatial deficits. While viewing artwork, researchers and clinicians “see the world through the patients’ eyes,” and by doing so, art enables a better understanding of visuospatial and cognitive changes (Maurer & Prvulovic, 2004).

The Clock Drawing Test (CDT) is an art-based neurological assessment that represents an objective measure of cognitive performance; it has been used by neurologists for decades to study changes in cognitive functioning. The CDT requires an individual to draw a clock at a specific time (e.g., 11:10). One study conducted by Samton et al. (2005) compared the CDT to the Mini Mental Status Exam (MMSE), the most widely used objective cognitive screening test. The results indicated that the two tests measured different aspects of cognitive impairment. A retrospective review of records performed by Samton et al. suggested that the CDT may be more effective than the MMSE when assessing an older adult’s ability to live independently. The authors concluded that the CDT may be a quick and effective way to assess cognitive functioning and is perhaps superior to MMSE in predicting an older adult’s ability to live independently (Samton et al., 2005).

There is a strong correlation between CDT scores and brain health, or conversely, atrophy. Figure 5 and Figure 6 (reprinted with permission) illustrate the connection between
neuroimaging and CDT results; higher levels of brain atrophy are associated with a lower CDT score and lower levels of atrophy are associated with a higher CDT score (Samton et al., 2005). Figure 5 illustrates the brain and clock drawing of an 80 year-old woman with normal cognitive functioning (Samton et al., 2005, p. 537). In contrast, Figure 6 illustrates the brain and clock drawing of an 84 year-old man with severe cognitive impairment (Samton et al., 2005, p. 538).

Figure 5. Clock Drawing Test score of 4.

Figure 6. Clock Drawing Test score of 0.

The pilot study conducted by this researcher used the CDT to assess cognitive
functioning. Because the CDT is illustrative, one of the test results has been included here. During the CDT, participants were asked, in Spanish, to draw a clock and indicate 11:10 as the time. Three volunteers blindly and independently rated each of the CDT tests. Rater percentage of agreement was 88% (Alders, 2009).

Participant A attended eight art therapy sessions. Her score improved by nearly two points according to the scores given by the three raters. Participant A often watched other participants and imitated their use of the materials. She was inventive with design elements in her work and often created artwork depicting her family members and memories from her native country (Alders, 2009). Participant A’s test results (See Figure 7) illustrate the positive changes in visuospatial ability (a necessary skill for optimal cognitive functioning) that can occur as a result of art therapy. Participant A initially struggled with conceptualizing the availability of space in the lower half of the clock, which suggests abnormal cognitive functioning. After the sessions, Participant A demonstrated visuospatial abilities that suggested adequate cognitive functioning (Alders, 2009).

<table>
<thead>
<tr>
<th>Pre-test score: 5</th>
<th>Post-test score: 6.67</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Clock Drawing" /></td>
<td><img src="image2" alt="Clock Drawing" /></td>
</tr>
</tbody>
</table>

*Figure 7. Participant A: CDT pre- and posttest scores.*

**Conclusion**

The prevalence of MCI is rising as the older adult population increases, and factors related to MCI, such as age of cognitive impairment onset and presentation of symptoms, differ
according to ethnicity. Among the many factors that affect cognitive performance, lifestyle factors can be addressed without medication. Psychosocial approaches, such as CT, can address the early onset of cognitive impairment and possibly reverse the progression of deficit. Minority older adults have unique and culturally-based mental health needs, and they generally prefer psychosocial methods over medication. Multicultural psychosocial approaches have not been extensively researched, and in order to address the rising population of ethnically diverse older adults, such approaches for treating cognitive impairment are needed. This review of the literature revealed ways to improve research on the use of art therapy with ethnically diverse older adults: the inclusion of adequate sample sizes of ethnically diverse older adults, robust research designs, and detailed information about the art therapy programs are all necessary.

Art therapy may be a worthwhile treatment to explore when addressing cognitive impairment among ethnically diverse older adults because it incorporates restorative CT techniques (e.g., reminiscence), employs compensatory strategies (e.g., stimulating episodic memory), addresses emotions, and is culturally sensitive. Recent art therapy research suggests that art-making can stimulate the brain in dynamic ways, provide culturally compatible care, yield products that inform about cognitive functioning, and enhance the overall functioning of ethnically diverse older adults. Art therapy’s overall effect on cognition is still speculative, however, as it is under-researched. The four areas of art therapy research that are consistently problematic include: (a) a lack of standardized reporting of interventions used, analyses employed, and sample demographics; (b) underutilization of control groups; (c) the use of multimodal approaches; and (d) the omission of various ethnic groups.

To validate claims that art therapy enhances cognitive performance, future research studies must address the four deficits noted above. The current research sought to standardize the reporting of interventions used, analyses employed, and sample demographics, while also employing the use of a control group, implementing only art therapy interventions, and including ethnically diverse elderly participants.
CHAPTER THREE

Methods

In this chapter, an overview of the methodology employed during the current study is provided. The design of the study was modeled upon the pilot study conducted by this researcher (Alders, 2009). The treatment intervention consisted of art therapy provided to ethnically diverse older adults at seven locations, once a week, for 10 weeks. This research explored whether art therapy could improve cognitive performance among ethnically diverse older adults. In order to evaluate cognitive functioning, two tests were administered as pre- and post-intervention evaluations: the Clock Drawing Test (CDT) and the Cognitive Failures Questionnaire (CFQ). Participant demographic information was also collected.

Research Question and Hypothesis

Although previous literature has indicated that art therapy enhances the cognitive and emotional well-being of the elderly population, there is a lack of research incorporating ethnically diverse, specifically Latino/Hispanic, older adults in art therapy. This study expanded upon previous literature by addressing the following research hypotheses: (a) cognitive performance would improve as a result of 10 weeks of art therapy sessions, (b) attendance would positively and significantly correlate with cognitive evaluation test scores, and (c) pre- and posttest results would be significantly correlated. The corresponding primary research question was, Will cognitive evaluation test scores among ethnically diverse older adults improve significantly following 10 weeks of art therapy sessions? Additionally, the following secondary research questions were explored: Will art therapy attendance be correlated with cognitive evaluation test scores? Will cognitive performance outcome scores for each of the two tests be correlated?

The research design used within the study was quasi-experimental. Control and experimental groups were established through matching: each participant in the experimental group was paired with an equivalent in the control group, a technique aimed to emulate the conditions of a within-subjects design.

Art Therapists and Sites

Participants were selected as a convenience sample. In order to include participants from
a variety of locations, this researcher aimed to recruit multiple therapists and posted an announcement of the study with instructions on how to participate (See Appendix J) on the professional networking site, LinkedIn in 2010. Fifteen art therapists demonstrated interest in participating in the study. However, not all submitted the information requested in the announcement and were, therefore, not considered. Priority was given to therapists who explicitly followed the directions in the LinkedIn post and who worked with larger quantities of older adults from ethnically diverse backgrounds.

Four art therapists were selected to be included in this study and were sent consent forms (See Appendix H). These therapists had access to 50 or more older adults. Of the four art therapists, three returned the necessary consents.

After returning the necessary documentation, the three therapists were included in the IRB proposal. One of the three therapists was unable to continue with the data collection prior to pre-testing, and two additional therapists were added to the original two. At the time of pre-testing, there were once again four therapists recruited for the study – five including this researcher.

The recruited therapists lived in three states: Missouri, New Jersey, and Florida. Therapists’ sites corresponded with their place of employment. The only exception was this researcher, who selected sites specifically for the research study sessions. Sites were identified by consulting with healthcare providers (e.g., doctors, therapists) within the area. After corresponding with the administrators at these sites and visiting several of the locations, this researcher selected three sites based on the quality of care provided to older adults, administrator receptivity to the research, and the population size of the older adults served. Sites with larger population sizes were given preference.

The four recruited therapists provided art therapy at one location each. This researcher (the fifth therapist) provided sessions at three locations. The sites included a range of facilities, such as community centers, retirement centers, assisted living facilities, skilled nursing homes, and adult daycare centers. The array of facilities enabled a variety of older adults to participate. A sign-up sheet was provided at each of the locations, allowing older adults to express their interest in art therapy. Participants or their guardians completed informed consent forms (See Appendices
G) and were then assigned to either the control or experimental group.

**Inclusion Criteria**

Participation was voluntary. Older adults indicated interest by signing up to be a part of the study. Participants were required to be at least 55 years of age, and both male and female participants were included. Initially, all interested individuals were randomly assigned to either the control or experimental group. This method dissatisfied the site administrators, as randomization did not accommodate the many differences among participants. In order to accommodate conflicting personalities, preferences, appointments, and availabilities among participants, therapists, and administrators, matching was the final technique used to establish experimental and control groups at each site.

The ideal sample size for this study was calculated using G*Power, a general analysis program used to estimate sample size. Information for the analysis was based on the pilot study. Given the results of the analysis, the study sought to include approximately 100 total participants to account for attrition. G*Power estimated that approximately 72 participants would be needed. An over-sampling amount of 30% was added to account for the attrition-rate experienced during the pilot study, and 94 became the estimate. Table 5 shows the number of participants per location needed in order to achieve approximately 100 participants. This number was based on therapist reports of participant availability.

Table 5

*Participants per Location*

<table>
<thead>
<tr>
<th>Therapists</th>
<th>Site</th>
<th>Location</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>Retirement Center</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>Skilled Nursing Facility</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>Community Center</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>D</td>
<td>Daycare Center</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>E</td>
<td>Community Center</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>F</td>
<td>Community Center</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>G</td>
<td>Assisted Living Facility</td>
<td>10</td>
</tr>
</tbody>
</table>
Instrumentation

Two instruments and a demographic form were given to participants at pretest. Participants were asked to: (a) complete a demographic form indicating gender, age, country of origin, highest level of education completed, the length of time lived in the USA, the frequency with which they created art, and with whom they lived (See Appendix E); (b) complete a self-report (i.e., Cognitive Failures Questionnaire – CFQ; See Appendix D) concerning the frequency of deficits in the completion of simple everyday tasks, and the frequency of everyday failures in attention, memory, perception, and motor function; and (c) complete the Clock Drawing Test (CDT) to assess cognitive impairment.

The CDT and the CFQ were used as the cognitive performance tests. The neurological CDT has sensitivities up to .86 (i.e., accurately indicates cognitive impairment 86% of the time) and specificity of up to .96 (i.e., does not falsely reveal cognitive impairment 96% of the time; Brodaty & Moore, 1997). There are several versions of the CDT, but all require the client to depict the face of a clock and a particular time (See Appendix E). Variations in the test mainly relate to scoring techniques; there are at least six ways to score the clock. The Sunderland et al. (1989) technique was used for this study as it rates on a 10-point scale rather than a 5-point scale and is therefore considered to be a more sensitive measure of cognitive performance change (Sunderland et al., 1989). The primary benefit of using the CDT for this study is that it is considered culture-free and can be used reliably with minority older adults (Borson et al., 1999; Parker & Philip, 2004).

The second cognitive function evaluative test, the CFQ, measures everyday deficits in attention, perception, memory, and motor coordination (CFQ-Internal validity: 0.91; test-retest reliability rate: 0.82). The CFQ is a 25 question test. It is a self-report and is therefore susceptible to misreporting; however, research has demonstrated that the CFQ effectively indicates self-perceived cognitive functioning, and high scores on the CFQ are considered to be an indicator of increased vulnerability to stress (Wagle, Berrios, & Ho, 1999). Additionally, CFQ scores correlate with measures of depression (i.e., Beck Depression Inventory) and with assessments of psychological well-being (i.e., General Health Questionnaire); low CFQ scores that do not correspond with low objective cognitive performance scores may indicate depression or a risk for
developing depression or social withdrawal (Wagle et al., 1999).

**Materials**

Once participant consents were obtained, therapists were each mailed a box of materials that included art supplies packaged in bundles by week for each of the 10 weeks that corresponded with the protocol session content. Additionally, each therapist was sent a digital camera and a memory card to visually document the participants and their artwork at each session. Consents were obtained to photograph the participants.

Therapists were compensated on a weekly basis for submitting their e-mailed reports, which included attendance details and a brief description of the session. This schedule of compensation was planned to provide ongoing communication between the researcher and the therapists, since the researcher was not located in the same city or state as the therapists. If therapists were late submitting their reports, their check was withheld until they reported attendance and session content.

**Therapy Sessions**

The four recruited therapists were trained by this researcher on informed consent procedures during an online conference call. They were also trained on how to answer participant questions during the informed consent process and throughout the research duration. Following the training, all five therapists obtained informed consent from the participants (See Appendices G and H). All five therapists pretested participants and collected necessary information for the demographic form (See Appendix E). Therapists were advised to provide 90-minute sessions and to follow a weekly protocol so that the therapy was provided consistently within each site.

Table 6 includes the protocol that was implemented to ensure consistency. Goals in line with cognitive rehabilitation were used when developing the directives. Research methods from seven art therapy resources on older adults and cognitive performance were consulted to create the protocol (Alders, 2009; Bermudez & ter Maat, 2006; Couch, 1997; Johnson & Sullivan-Marx, 2006; Sezaki & Bloomgarden, 2000; Tramer, 2008; Woolhiser-Stallings, 2010). The directives included were those that previous research found to be effective. A variety of materials, techniques, and processes were prepared in order to provide diverse opportunities for cognitive stimulation using a combination of compensatory and restorative CT strategies.
Table 6
Session Protocols by Week

<table>
<thead>
<tr>
<th>Week</th>
<th>Directive</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pre-test: CFQ; CDT; Demographic Questionnaire</td>
<td>Assessment</td>
</tr>
<tr>
<td>2</td>
<td>Make a collage of gratitude. Use images to represent experiences and aspects of your life that you are grateful for. Show group members and describe your images.</td>
<td>Visual search and identification, socialization, promote positive mood</td>
</tr>
<tr>
<td>3</td>
<td>“Pick an object” exercise, “what does this object remind you of?” Reminiscence time. Depict that memory with color pencils on paper.</td>
<td>Reminiscence, visual search and identification</td>
</tr>
<tr>
<td>4</td>
<td>Get to know your neighbor: Visual Conversation activity (Liebmann, 1986). In groups of two, select a colored marker. Without talking create an image. Respond in silence to your partners drawing. Discuss the experience.</td>
<td>Increase socialization, practice creative decision-making</td>
</tr>
<tr>
<td>5</td>
<td>Name animals and their characteristics, compare humans/animals, draw an animal that shares a characteristic with you or someone you know. Refer to animal figurines to assist in drawing (from observation).</td>
<td>Inductive reasoning, verbal memory, exercise motor skills</td>
</tr>
<tr>
<td>6</td>
<td>Name types of love, discuss experiences, meditate on a positive memory of love, draw the memory, write a letter to a loved one or make a card with images.</td>
<td>Verbal/episodic memory, managing emotions</td>
</tr>
<tr>
<td>7</td>
<td>Create an autobiographical timeline of your life. Draw a line and list years associated with important memories. Use collage images. What major life events have you experienced? Share in groups of two.</td>
<td>Episodic memory, life review, socialization, visual search and identification</td>
</tr>
<tr>
<td>8</td>
<td>Using plastilene, create a representation of at least one of your family members. Include as many details of your family member as possible. Show your figure to the group. Why did you include the details you did?</td>
<td>Inductive reasoning, exercise motor skills, verbal/episodic memory</td>
</tr>
<tr>
<td>9</td>
<td>After learning about the history of mandalas, use pastels to color a mandala. Use colors that are calming and soothing. Listen to music while creating the mandala.</td>
<td>Encourage creativity, promote enhanced mood, provide learning opportunities</td>
</tr>
<tr>
<td>10</td>
<td>Use sand, shells and watercolors to allow your feelings of a special day you spent at the lake or beach to emerge. What are your memories of this day? What did you do at the beach? Who did you go with? Express these feelings in your art.</td>
<td>Managing emotions, Visual search and identification</td>
</tr>
<tr>
<td>11</td>
<td>On a square piece of cloth glue or sew fabric shapes and designs. Create a representation of your choice. Attach your cloth to other group members to create a quilt. Create a haiku poem about interconnectedness.</td>
<td>Verbal/episodic memory, exercise cognitive skills through multi-step instructions</td>
</tr>
<tr>
<td>12</td>
<td>Posttest: CFQ; CDT</td>
<td>Assessment</td>
</tr>
</tbody>
</table>
Providing art therapists with the protocol and specifying the duration of therapy were all attempts to regiment the treatment; however, this researcher also sought to acknowledge and respect the professional experience of each therapist. The aim of doing so was to decrease the likelihood of therapist attrition. The art therapists were able to make changes as needed to the protocol at their sites, and they were invited to continue providing therapy according to their graduate training and professional experience.

At posttest, therapists were sent an online survey (See Appendix I) with specific questions regarding overall session content, structure, frequency, and duration. At sites with low literacy rates, three assistants were hired to help participants read and complete the necessary forms, pretests, posttests, and demographic questionnaire. The assistants were blind to group assignment, and none were familiar with the purpose of the study. The assistants were required to be bilingual in order to accommodate the needs of the ethnically diverse older adults.

**Data Management**

Upon obtaining consents and administering the demographic questionnaire and pretests, art therapists made secondary copies of the documents and sent the original materials to this researcher. The materials were managed and stored in hard copy, and the data were entered into Excel spreadsheets. Each participant was assigned a number (e.g., 1-133) and a lettered site (e.g. A-E) in order to keep his or her identity confidential in the digital records.

The data corresponding to attendance were handwritten into an attendance chart weekly by the therapists. This attendance record was then e-mailed to the researcher once a week in the form of a scanned JPEG or manually entered in the body of the e-mail. During each session, photographs, videos, and artwork were digitally documented and stored on a memory card by each of the therapists. At the end of the study, the memory cards were mailed to this researcher along with the posttests.

The CDT and CFQ test scores were evaluated by three hired raters who were trained by this researcher in the Sunderland et al. (1989) method. The raters were blind to group assignments and independently rated and scored each test. Percentage of agreement and inter-rater agreement were calculated with ReCal (Reliability Calculator, a free online utility that computes percentage of agreement) using Fleiss’ Kappa and Cohen’s Kappa.
Standard statistical software (SPSS) and online software (Statcrunch) were used for the analysis of data. The significance level (alpha) was set at .05. Results were analyzed using one-tailed $t$-tests. The results of both analyses were compared to determine whether a positive change was experienced by participants. Regression analyses were used to evaluate the relationship between variables of interest, namely attendance and change in cognitive performance test scores. The effect size for each item on both assessments was calculated using Cohen’s $d$.

**Procedures Overview**

1. Sign-up sheets were provided at each of the locations included in this study. This sign-up sheet allowed for interested individuals to express their interest and sign up for art therapy sessions (See Appendices A and B).
2. Before the first session, consent forms were provided to the interested individuals that explained the purpose, duration, and methods of the research study (See Appendices F, G and H).
3. After filling out the consent form, all older adult participants were asked to complete a demographic form (See Appendix E).
4. Before the onset of the art therapy sessions, all participants were asked to complete the CFQ (See Appendix D).
5. Also before the onset of the art therapy sessions, a CDT was administered to all participants.
6. Participants were assigned to either the control or experimental group by matching.
7. The experimental group was provided with art therapy once a week for 10 weeks that included a combination of expressive art-making, art education, learning about art materials, group socialization, and reminiscence.
8. The control group continued to be involved in recreational activities if the site offered them. Participants in the control group socialized or not as they saw fit.
9. Attendance was taken at every session.
10. Therapists e-mailed this researcher a description of the session and attendance each week.
11. Following the 10 sessions, all participants were asked to complete the CFQ for the second time.
12. Also following the last session, a second CDT was administered to all of the participants.
13. In the last session, a debriefing took place that reviewed the purpose and results of the study.
14. The therapists completed a survey, answering questions related to the sessions and participant responses to treatment (See Appendix I).
15. The pre- and posttests were rated.
16. Data were analyzed using statistical software (i.e., SPSS and Statcrunch).

### Conclusions

The pilot study served as a model for the dissertation investigation. Including numerous therapists, providing a pre-established protocol, and using numerous statistical methods were all intended to enhance the quality of the study beyond that of the pilot study. Although a set number of participants could not be precisely anticipated at the onset of the study due to likely attrition, calculating the number of participants needed to achieve significance was possible through the program G*Power.

The methodology addressed the goal of providing the specific information that is deficient within the fields of art therapy, education, and geriatric research. Primarily, the methodology sought to increase the likelihood that ethnically diverse, specifically Latino/Hispanic, older adults would be well-represented within the study. This study sought to incorporate a substantial number of Latino participants to adequately represent the changing US population and to determine whether art therapy could enhance cognitive performance.
CHAPTER FOUR

Results

This investigation explored the use of art therapy as a means of providing cognitive benefits for ethnically diverse older adults. Previous researchers have suggested that ethnically diverse older adults (e.g., Latinos/Hispanics) share a collectivistic culture and prefer informal alternatives to therapy, such as community-based care, which this study sought to provide. Additionally, minority older adults have been a largely neglected population in the CT research community. Studies have found that CT programs significantly improve the cognitive functioning of older adults, but that cultural factors limit minority older adult inclusion in research. For this reason, this study implemented techniques that were rehabilitative as well as culturally competent in order to adequately serve both minority and Caucasian older adults.

In this chapter the results of this 12-week research study that incorporated 10 weeks of art therapy for ethnically diverse older adults is reported. First, demographic and descriptive data are presented in order to establish whether the sample included ethnically diverse older adults from a variety of backgrounds (e.g., education levels and age) as planned, thus determining whether the study adequately represented the US older adult population. Second, demographic factors that significantly correlated with cognitive performance scores are indicated. Third, information related to the treatment is outlined to assess whether participants received the intervention as planned.

The data that resulted from the two cognitive performance tests are presented in order to address the hypotheses and to answer each of the research questions. The hypotheses of this study were: (a) cognitive performance will improve following 10 weeks of art therapy, (b) attendance will positively and significantly correlate with cognitive evaluation test scores, and (c) the two cognitive test results will be significantly correlated. The following research questions were addressed: Will cognitive evaluation test scores among ethnically diverse older adults improve significantly following 10 weeks of art therapy sessions? Will art therapy attendance be correlated with cognitive evaluation test scores? Will cognitive performance outcome scores for each of the two tests be correlated?
Demographics

This section reviews the demographics of the sample included within the study. Factors such as race, ethnicity, age, education, medication use, location, level of functioning, attendance, and attrition all affected the outcome of this study. These factors are described throughout the following sections in order to outline the characteristics of the sample.

Race/Ethnicity

Ethnically diverse older adults were sought for inclusion in this study. The number of participants recruited at pretest totaled 133; after attrition, 91 older adults remained in the study. The following description of the participants pertains to those older adults who were present at posttest: 65% percent were minorities, while 60% were immigrants. The participants represented four ethnic/racial groups: 55% Hispanic, 36% Caucasian, 8% Black (which included Haitian and African American), and 1% American Indian/Indigenous. The following percentages relate to the cultural heritages among the Latino participants: 66% Cuban, 18% Columbian, 6% Nicaraguan, 4% Puerto Rican, 2% Bolivian, 2% Honduran, and 2% American. Table 7 delineates the race/ethnicity of the participants by country of origin. Minority status was a factor found to be significantly correlated with cognitive performance outcome scores during the study.

Table 7

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Country of Origin</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>USA</td>
<td>4</td>
</tr>
<tr>
<td>Black/Hispanic</td>
<td>Cuba; Dominican Republic</td>
<td>2</td>
</tr>
<tr>
<td>Caucasian</td>
<td>Germany; Russia; USA</td>
<td>33</td>
</tr>
<tr>
<td>Haitian</td>
<td>Haiti</td>
<td>1</td>
</tr>
<tr>
<td>Hispanic</td>
<td>Bolivia; Columbia; Cuba; Honduras; Nicaragua; Puerto Rico; USA</td>
<td>50</td>
</tr>
<tr>
<td>American Indian</td>
<td>Costa Rica</td>
<td>1</td>
</tr>
</tbody>
</table>
Age

To be eligible for inclusion in the art therapy research, adults were required to be over 55 years of age. Table 8 presents the age demographics of the participants. The mean age for the control and experimental groups was comparable, and there were no significant differences between the two groups. In the experimental group, the average age of participants was 78: the youngest participant was 57 and the oldest was 95. In the control group, the average age was 76: the youngest participant was also 57 and the oldest was 96. Age was found to be a factor significantly correlated with cognitive performance outcome scores during the study.

Table 8

Summary Statistics Regarding Age

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Average Age</th>
<th>Youngest</th>
<th>Oldest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>36</td>
<td>76.44</td>
<td>57</td>
<td>96</td>
</tr>
<tr>
<td>Experimental</td>
<td>54</td>
<td>77.56</td>
<td>57</td>
<td>95</td>
</tr>
</tbody>
</table>

Location, Level of Functioning, and Attendance

A convenience sample was drawn from therapists willing to participate and who had consistent access to locations serving older adults. Three of the six locations were those where older adults were no longer living independently (i.e., assisted living/skilled nursing facilities, daycare center) and where they had higher levels of cognitive impairment.

The highest attendance rates were documented at the assisted living facility (8.17 sessions) and the adult daycare facility (7.45 sessions). Sites A, C, and E (a retirement home and community centers, respectively) were included in an attempt to increase the inclusion of minority older adults, but they showed poor attendance: a combined average of 5.34 sessions. Table 9 illustrates the attendance trends.
Table 9

*Overview of Experimental Group: Attendance Rates by Site*

<table>
<thead>
<tr>
<th>Site</th>
<th>Type</th>
<th>N</th>
<th>Attendance Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Retirement Home</td>
<td>8</td>
<td>6.13</td>
</tr>
<tr>
<td>B</td>
<td>Skilled Nursing</td>
<td>7</td>
<td>6.14</td>
</tr>
<tr>
<td>C</td>
<td>Community Center</td>
<td>13</td>
<td>5.31</td>
</tr>
<tr>
<td>D</td>
<td>Adult Daycare</td>
<td>10</td>
<td>7.45</td>
</tr>
<tr>
<td>E</td>
<td>Community Center</td>
<td>10</td>
<td>4.6</td>
</tr>
<tr>
<td>G</td>
<td>Assisted Living</td>
<td>6</td>
<td>8.17</td>
</tr>
</tbody>
</table>

Attendance was almost as high among minorities (average of 6.31 sessions) as it was among Caucasians (6.5 sessions). Table 10 outlines the number of sessions attended and demonstrates that, within the experimental group, attendance in art therapy was equally represented among minority and Caucasian participants throughout the study. Neither attendance nor location was found to be a factor significantly correlated with cognitive performance outcome scores.

Table 10

*Race and Attendance among Experimental Group Members*

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>N</th>
<th>Attendance: Mean</th>
<th>Lowest attendance</th>
<th>Highest attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>18</td>
<td>6.50</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Minority</td>
<td>36</td>
<td>6.31</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

**Medication**

Participants were asked at the onset of the study whether they took medication for cognitive impairment symptoms. Comparable numbers of participants in the both the experimental and control group reported taking medication (24.5% in the experimental and 21.6% in the control), and both minorities and Caucasians reported taking medication (27.8% of
minorities and 61.1% of Caucasians). The majority (76%) of participants did not report taking medication for cognitive impairment. There was a significant and negative correlation between medication use and independent status ($r = -0.366; p = .000$), meaning a significant number of participants taking medication were no longer independent. Medication use was not found to be a factor significantly correlated with cognitive performance outcome scores in this study.

**Education**

Differences by race in the number of years of education were noted (See Table 11). The mean years of school-based education among minority participants was nine, while Caucasian older adults reported an average of 13 years (which indicates some college attendance). Within this study, minority older adults were less educated than non-minority older adults, and education was found to be a factor significantly correlated with cognitive performance outcome scores.

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>N</th>
<th>Years of education: Mean</th>
<th>Lowest education</th>
<th>Highest education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>32</td>
<td>12.66</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Minority</td>
<td>58</td>
<td>8.97</td>
<td>0</td>
<td>18</td>
</tr>
</tbody>
</table>

**Attrition**

Before the onset of the study, the ideal number of participants needed for the study was calculated using G*Power, a general analysis program used to estimate sample size. The analysis yielded an estimate that 72 participants would reach statistically significant results based on the effect size of the pilot study. To ensure that at least 72 participants would complete the study, an additional 30% greater number of participants were sought. In total, therapists reported access to 110 older adults, which was 53% higher than the goal of 72 participants. At pretest, the number of included participants surpassed expectations, and 133 participants completed the necessary documentation to be included. In this study there was a 32% attrition rate, at posttest, 91 participants remained in the study. The tables below demonstrate the attrition rates by site as well
as the control and experimental group totals after attrition.

Table 12
Attrition by Site

<table>
<thead>
<tr>
<th>Site</th>
<th>Anticipated</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Attrition</th>
<th>Control Attrition</th>
<th>Experimental Attrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>20</td>
<td>21</td>
<td>13</td>
<td>38%</td>
<td>3/8, 38%</td>
<td>5/13, 38%</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>13</td>
<td>12</td>
<td>8%</td>
<td>0/6, 0%</td>
<td>1/7, 14%</td>
</tr>
<tr>
<td>C</td>
<td>20</td>
<td>30</td>
<td>20</td>
<td>33%</td>
<td>9/17, 53%</td>
<td>1/13, 8%</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>21</td>
<td>18</td>
<td>14%</td>
<td>2/10, 20%</td>
<td>1/11, 9%</td>
</tr>
<tr>
<td>E</td>
<td>10</td>
<td>24</td>
<td>15</td>
<td>37%</td>
<td>5/10, 50%</td>
<td>4/14, 29%</td>
</tr>
<tr>
<td>F</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>100.00%</td>
<td>5/5, 100%</td>
<td>5/5, 100%</td>
</tr>
<tr>
<td>G</td>
<td>20</td>
<td>14</td>
<td>13</td>
<td>7%</td>
<td>0/7, 0%</td>
<td>1/7, 14%</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>133</td>
<td>91</td>
<td>32.00%</td>
<td>24/42, 57%</td>
<td>18/42, 43%</td>
</tr>
</tbody>
</table>

Table 13
Participant Numbers per Group

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>54</td>
</tr>
<tr>
<td>Control</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
</tr>
</tbody>
</table>

Overall, the control group experienced a higher attrition rate (37%) than the experimental group (27%), leaving 54 of 74 older adults in the experimental group and 37 of 59 older adults in the control group. Education, age, and ethnicity were comparable among the older adults who contributed to attrition and those who remained in the study. The attrition rates for Caucasian and minority racial groups were also comparable: 33% (28/86) for minority participants and 30% (14/47) for Caucasian participants. One notable difference pertained to subjective reports of
memory: on average, attrition-group members scored themselves higher (pretest score average: 33) on the CFQ than those who remained in the study and took the posttest (pretest score average: 29).

After attrition, women accounted for 76% of all participants; but there was a comparable attrition rate among men (10/32 or 31%) and women (32/101 or 32%). Of the participants who were absent at posttest and therefore considered in the attrition pool, a higher number were men from the control group. There were 32 men at pretest (16 in each group, control and experimental). Seven men from the control group (44%) and three from the experimental group (19%) were absent at posttest. After attrition, nine men were in the control group and 13 men were in the experimental group for a total of 22 men in the study at posttest. Being male was not found to be a factor significantly correlated with cognitive performance outcome scores in this study.

Treatment Fidelity

This section provides an overview of the factors affecting treatment fidelity as well as factors that impeded the research process. Multiple therapists in a variety of states and cities were recruited for this study, which presented numerous problems, such as therapist attrition and variations with the treatment protocol. The degree to which the participating therapists were faithful to the treatment protocol affected the results of this study.

Therapists

Seven registered art therapists were included throughout the study. All of the therapists specialized in and had clinical experience with older adults.

There was a 43% attrition rate among the therapists. The therapists were recruited based on their expressed interest to a LinkedIn post that described the study and the need for experienced therapists. Of those who responded, therapists who had access to higher numbers of older adults or who worked with ethnically diverse older adults were selected. Information addressing why the attrition rate was so high among therapists is provided within the Discussion chapter.
Table 14

**Therapist Attrition**

<table>
<thead>
<tr>
<th>Therapists</th>
<th>Location</th>
<th>Attrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adult daycare center in Tennessee</td>
<td>Y</td>
</tr>
<tr>
<td>2</td>
<td>Skilled nursing facility in Missouri</td>
<td>N</td>
</tr>
<tr>
<td>3</td>
<td>Rehabilitation center in Delaware</td>
<td>Y</td>
</tr>
<tr>
<td>4</td>
<td>Assisted living facility in New Jersey</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>Adult day care center in Florida</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>Retirement center in Florida</td>
<td>N</td>
</tr>
<tr>
<td>5</td>
<td>Community center in Florida</td>
<td>N</td>
</tr>
<tr>
<td>6</td>
<td>Community center in Florida</td>
<td>Y</td>
</tr>
<tr>
<td>7</td>
<td>Community center in Florida</td>
<td>N</td>
</tr>
</tbody>
</table>

*Note.* Y indicates therapist attrition; N indicates therapist remained in study.

**Protocol compliance.** At the onset of the research, a treatment protocol was distributed to each of the therapists. Goals for cognitive rehabilitation (e.g., verbal episodic memory) were used when developing the art therapy directives, and the session duration was set at 90 minutes to reflect durations used in CT. Although a protocol was prescribed, the art therapists were allowed to make necessary changes to accommodate their site, schedule, and ability.

Compliance with the protocol was assessed following the posttest session; therapists were sent a survey with questions regarding their compliance with the use of the provided directives. To the question, “When providing art therapy to the experimental group, how closely did you follow the therapy protocol?” five out of the six (83%) therapists answered, “I used all of the directives in order and followed them closely.” One therapist reported, “I applied my own style and preferences but used the directives as a guide.” None of the therapists chose the other two response options, which included, “I used some of the directives while also using my own” and “I came up with all new directives.”
After indicating the degree to which they complied with the protocol, therapists were given the opportunity to comment on the usefulness of the session directives. When asked, “Did you feel that having the directives was helpful?” the therapists replied as follows: 66.7% (4/6) answered, “Yes. It made providing therapy much easier. I will reuse the directives;” 33.3% (2/6) answered, “Yes, but some of the directives were not well-received.” One therapist who provided treatment at a skilled nursing facility reported that due to cognitive impairment, “Some of the directives required a level insight and abstract thinking that my residents were unable to achieve.”

**Differences in treatment approach.** Each of the six sites within the study included the art therapy approach preferred by the therapist or deemed by the therapist as most appropriate for the site and participants. At three of the sites, therapists incorporated an art-as-therapy approach, while a combination approach mixing art-as-therapy and art-psychotherapy was employed at the remaining three sites. The choice of art therapy approach was significantly correlated with cognitive performance outcomes; this will be discussed within the section addressing the hypotheses and research questions.

All of the therapists reported that reminiscence, art processing, art education, emotion processing, and socialization were incorporated into their sessions; however, each therapist emphasized these five aspects of the sessions with a different frequency. Figure 8 illustrates the overall frequency with which the therapists incorporated reminiscence, art processing, art education, emotion processing, and socialization over the course of the 10 weeks. On average, socialization was most frequently emphasized, followed by reminiscence and art processing. Emotion processing and art education were emphasized the least, according to the therapists.
Duration of sessions. Therapists reported varying session durations even though the protocol specified 90-minute sessions. When asked for the average session duration over the course of the study, therapists selected the time frame that best matched: 45 minutes, 60 minutes, or 90 minutes. One therapist provided therapy for approximately 45 minutes each week; therapists at two sites provided sessions for approximately 60 minutes each week; and therapists at three sites provided therapy for approximately 90 minutes. Duration of therapy was significantly correlated with cognitive performance. This will be discussed within the section addressing the hypotheses and research questions as well.

Table 15
Duration of Sessions by Site

<table>
<thead>
<tr>
<th>Site</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>60 minutes</td>
</tr>
<tr>
<td>B</td>
<td>45 minutes</td>
</tr>
<tr>
<td>C</td>
<td>90 minutes</td>
</tr>
<tr>
<td>D</td>
<td>90 minutes</td>
</tr>
<tr>
<td>E</td>
<td>90 minutes</td>
</tr>
<tr>
<td>G</td>
<td>60 minutes</td>
</tr>
</tbody>
</table>
Cultural Compatibility

The treatment protocol was created for the art therapists and developed to be culturally competent. The protocol, therapists, and subsequent sessions facilitated effective work in the ongoing cross-cultural situations. Within their groups, throughout the 10 weeks of sessions, participants discussed culturally relevant experiences such as those related to ethnic music, dance, food, and customs, as well as idiomatic expressions and information about their respective countries of origin; for instance, in two of the three sites serving immigrant participants, six of the 10 sessions included at least one (often three or more) participant singing songs, *a capella*, in his or her native language while creating artwork. Occasionally, clients would break out in song when discussing Cuba. One common song was *Cuando me Sali de Cuba*, which became popular in 1965 when immigration out of Cuba was increasing. Three lines of the song are as follows: Cuando salí de Cuba (When I left Cuba) / Dejé mi vida, dejé mi amor (I left my life, I left my love) / Cuando salí de Cuba (When I left Cuba; Luis Aguile, 1976).

**Culturally relevant responses during protocol sessions.** Themes of community, identity, and social connectedness were present in sessions with Latino older adults. Table 16 outlines discussion topics initiated more than once by Latino/Hispanic clients throughout the 10 weeks. Table 16 shows information pulled from therapists’ notes regarding discussion topics and the associated moods of the participants (i.e., positive versus negative).

<table>
<thead>
<tr>
<th>Discussion Topics and Associated Mood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Mood</td>
</tr>
<tr>
<td>Negative Mood</td>
</tr>
<tr>
<td>______________________________________</td>
</tr>
<tr>
<td>Ancestry (indigenous)</td>
</tr>
<tr>
<td>Metaphysical spiritualism</td>
</tr>
<tr>
<td>Concepts relating to psychoneuroimmunology*</td>
</tr>
<tr>
<td>Pride in culture (not country) of origin</td>
</tr>
</tbody>
</table>

(continued)
Table 16 (continued)

Discussion Topics and Associated Mood

<table>
<thead>
<tr>
<th>Positive Mood</th>
<th>Negative Mood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family unit or members currently in US</td>
<td>Feelings of abandonment or guilt of abandoning</td>
</tr>
<tr>
<td>Songs known by heart in mother tongue</td>
<td>Feelings of isolation due to language barrier</td>
</tr>
<tr>
<td>Rural or farm-life experiences</td>
<td>Immigration circumstances</td>
</tr>
<tr>
<td>Desire to improve in art or have art on display</td>
<td>Shame or discrimination by education level</td>
</tr>
<tr>
<td>Romance and first love experiences</td>
<td>Gender roles or machismo</td>
</tr>
</tbody>
</table>

Note. *participants did not directly describe psychoneuroimmunology. Instead discussions included suggestions among participants such as: “If you are ill, draw the diseased organ and meditate while drawing; it will help you get better faster.”

Clients valued socialization during the art therapy sessions. The following poem, written by clients (all Caucasian) as a group during the closing session, demonstrates the value placed on social interactions. This poem was included in the therapist’s notes provided to the researcher.

**Not Alone**

I like my poem because it takes many pieces all together

We all helped each other

Better to work together than alone

Socialization was valued similarly by minorities within the study. Gains in social status and a collective sensibility with regard to respecting talent were noted features of sessions. Below is an excerpt from clinical notes reviewing observations of a Haitian/Black female older adult, “M” who endured continuous open discrimination by the Latino/Hispanic clients. Toward the end of the 10 weeks, M began to willfully overcome the discrimination, used art to demonstrate self-worth, and proudly paraded her artwork around the Latino group members:

Inter-group verbal degradation by ethnicity and socioeconomic demographics could be noted and was immediately redirected . . . A Haitian client, M repeatedly described feeling discriminated against for being Black . . . M explained that she would work in the art therapy groups, but not with the “white people” [a reference to the Caucasian
Latinos]. . . After completing her work, M approached the Caucasian Latino group and proudly showed her artwork. She walked around so that each “White” member could see what she had made. She smiled and self-praised in front of the Latino members; she received praise and positive feedback from several Latino group members in return. The Latino participants praised her talent.

Dynamic socialization, such as that described in the above excerpts, was present throughout the study. Cross cultural exchange was constant and clients shared histories regarding their heritage and personal history. Positive socialization increased throughout the 10 weeks and negative interaction decreased.

Raters

The CDT and CFQ tests scores were evaluated by three professionals (one Caucasian man and two Latino women) who served as raters. The raters were blind to the treatment assignment (i.e., control versus experimental) and independently scored each test. The CDT was rated using the clock drawing interpretation and scoring system described by Sunderland et al. (1989). The raters were trained in this method by this researcher.

Interrater agreement was assessed using Fleiss’Kappa in addition to Cohen’s Kappa because there were more than two raters (See Table 17). In order to accommodate the inter-rater agreement method selected, the data were converted from quantitative scores to nominal rating scores. Scores over 5 indicated normal functioning and were converted to 1. Scores below 5 indicated abnormal functioning and were converted to 0. The percentage of agreement was calculated using ReCal (Reliability Calculator, http://dfreelon.org/utils/recalfront/), an online utility that computes intercoder/interrater reliability.

The percentage of agreement (89.13%) and Cohen’s Kappa ($\kappa = .716$) found within the study are considered a strong agreement, as are the results of the Fleiss’Kappa ($\kappa = .716$); percents between 0.61 and 0.8 are strong levels of agreement (Altman, 1991).
Table 17

Agreements: Interrater Reliability and Percentage of Agreement

<table>
<thead>
<tr>
<th>Percentage of Agreement</th>
<th>Cohen Kappa</th>
<th>Fleiss’ Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>89.13%</td>
<td>0.716</td>
<td>0.716</td>
</tr>
</tbody>
</table>

Hypotheses and Research Questions

Through a quantitative study, this investigation sought to address the following hypotheses: (a) cognitive performance would significantly improve following 10 weeks of art therapy, (b) attendance would positively and significantly correlate with cognitive evaluation test scores, and (c) each of the two cognitive test results (i.e., difference scores) would be significantly correlated. The following section presents the findings related to these hypotheses. The Levene’s Test of Equality of Error was conducted to evaluate the ability to pool variance before each analysis; at pretest, the control group and experimental group were not statistically different from one another. Thus, for all models included within this section, the assumptions for ANCOVA (analysis of covariance) were met.

Hypotheses

The first hypothesis stated that the cognitive performance of older adults would improve as a result of 10 weeks of art therapy sessions; this hypothesis was supported by the findings. The CDT was used as the indicator of improvement in cognitive performance. Two statistical analyses were conducted in order to evaluate the ability to reject the null based on the CDT scores: a $t$-test and a univariate linear regression.

To assess significance with the $t$-test, change in score was determined by finding the difference between the pre- and posttest scores for each of the two groups: control and experimental. The mean of the experimental group was expected to be greater than the mean of the control group (i.e., $\mu_1 =$ mean of experimental group; $\mu_2 =$ mean of control group; $H_0: \mu_1 - \mu_2 = 0; H_A: \mu_1 - \mu_2 > 0$). Results from the $t$-test analysis showed that the mean change in scores among experimental group members was significantly greater than those among the control group ($t = 1.68; p = .048$).
The second analysis, a univariate regression, allowed for controlling CDT pretest scores while using posttest scores as the dependent variable. The univariate analysis (as shown in Table 18) revealed that the experimental group showed statistically significant improvement ($t = 2.44; p = .017$). Taking into account CDT pretest scores, the experimental group had significantly higher (1.08 points higher) mean CDT posttest scores as compared with the control group. These results showed that art therapy as a treatment provided a medium effect size ($d = .567; r = .277$).

Table 18

<table>
<thead>
<tr>
<th>Test</th>
<th>Experimental (N=54)</th>
<th>Control (N=37)</th>
<th>UniAnova Analysis (N=91)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td>%a</td>
</tr>
<tr>
<td>CDT</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>6.66</td>
<td>2.15</td>
<td>7.41</td>
<td>2.3</td>
</tr>
<tr>
<td>CFQ</td>
<td>27.41</td>
<td>15.35</td>
<td>30.24</td>
</tr>
</tbody>
</table>

a % indicates percentage improved  
b alpha was set at .05  
c effect size estimated from Pearson's correlation, r. SPSS provided partial eta squared: .064 for CDT and .003 for CFQ. Cohen's d was also calculated: .576 for CDT and -0.301 for CFQ

The second research hypothesis held that attendance would positively and significantly correlate with cognitive evaluation test scores; this hypothesis was not supported by the findings. The linear regression revealed that there was not a significant correlation between CDT scores and attendance ($r = -0.05; p = .697$) or CFQ scores and attendance ($r = 0.05; p = .702$). Thus, the correlation between CDT scores and attendance was negative.

The third hypothesis held that the test results (i.e., the difference between the pretest scores and the posttest scores) for each of the two tests, CDT and CFQ, would be correlated; this hypothesis was supported by the findings. Summary statistics showed that the correlation between difference scores for the CDT and the difference scores for the CFQ was significant, albeit negative ($r = -0.26; p = .013$).

Research Question One

The first research question was: Will cognitive evaluation test scores among ethnically
diverse older adults improve following attendance in art therapy sessions over the course of 10 weeks? Ethnically diverse older adults, in the context of this study, consisted of Blacks (i.e., Haitian and African Americans), Caucasians, Hispanics, and one American Indian/Indigenous participant. Even among Caucasians, the culture and ethnicity varied (e.g., Russian and German). On average, participants in the experimental group demonstrated improved cognitive performance more frequently than control group for each of the two tests (See Figure 9).

The CDT scores were significantly higher within the experimental group ($t = 2.44; p = .017$); CFQ scores were higher but not significantly ($t = .85; p = .40$). Below are examples of the CDTs from selected participants who showed notable improvements. These clocks were chosen based on the clarity of improvement, irrespective of ethnicity or site; however, all of the examples below are from minority members (i.e., Latino and Black older adults). Summary statistics revealed that minority status was significantly and positively associated with improvements in CDT scores among the experimental group members ($r = .429; p = .001$).
Figure 10. Client “M” in the experimental group improved: pretest score: 4; posttest: 5.

Figure 11. Client “R” in the experimental group improved: pretest score: 4.3; posttest: 7.3.

Figure 12. Client “J” in the experimental group improved: pretest score: 1.7; posttest: 7.7.
In contrast to the CDT, which was a rated cognitive performance measure, the CFQ was a self-report and is considered important for understanding the perceptions and beliefs of older adults regarding their cognitive performance. On average, the experimental group outperformed the control group on CFQ reports, as shown previously in Figure 9, though the scores were not significantly higher.

As with the CDT, a $t$-test for self-reported cognitive performance (CFQ) evaluated the difference in scores between the experimental and control groups ($\mu_1 =$ mean of experimental group; $\mu_2 =$ mean of control group; $H_0: \mu_1 - \mu_2 = 0$; $H_A: \mu_1 - \mu_2 < 0$). Results showed that the experimental group’s scores for the CFQ were not significantly greater than the control group’s scores ($t = .614; p = .729$). The 10 weeks of art therapy sessions did not significantly impact self-perception of cognitive performance.

As with the CDT, a univariate regression was applied for CFQ pretest scores where posttest scores were the dependent variable. Results showed that experimental group members did not experience a significant increase in self-reported cognitive performance ($t = .85; p = .40$).

**Race/ethnicity.** Racial and ethnic minority participants in the study reported less improvement in cognitive performance on the CFQ but outperformed racial majority participants on the CDT. In contrast, Caucasian participants reported more improvement in cognitive performance on the CFQ but did not perform as well as the minority participants on the CDT. Figure 13 below illustrates these results. Differences in pre- and posttest scores for each test were converted into a binomial variable; an improvement was given a 1, and a decrease in score was given a 0 for each participant. Likewise, minorities were given a 1 and Caucasians were given a 0.
Education. At pretest, there was a positive and significant correlation between CDT scores and education ($r = .336; p = .001$) among all participants. After treatment, the correlation between education and CDT scores, regardless of race or ethnicity, was significant, but negative ($r = -.218; p = .039$).

In contrast to the CDT, there was no correlation between education and CFQ scores at pretest ($r = -.005; p = .962$). After treatment, there was a positive and significant correlation between education and CFQ scores among Caucasian older adults ($r = .486; p = .004$); this was not the case for minorities ($r = -0.018; p = .894$). Minorities reported lower cognitive functioning regardless of education level.

Age. When considering all group members, regardless of race or ethnicity, age was not found to be significantly correlated with CDT pretest scores ($r = -0.194; p = .0659$). When grouped by race and ethnicity, CDT pretest scores were negatively and significantly correlated to age among Caucasian older adults ($r = -0.408; p = .0224$) but not among minority older adults ($r = -0.126; p = .3403$). At post-treatment, age was found to be negatively correlated with
improvements in CDT scores ($r = -.209; \ p = .048$). There was a positive correlation between age and CFQ scores; however, this correlation was not significant ($r = .191; \ p = .070$).

**Research Question Two**

The second research question was: Will art therapy attendance be positively correlated with cognitive evaluation test scores? Attendance and performance scores were not significantly and positively correlated (CDT and attendance: $r = -0.05; \ p = .697$; CFQ and attendance: $r = 0.05; \ p = .702$). The results of the univariate regression suggested that attendance affected cognitive performance optimally between three and six sessions, and the therapeutic approach employed by therapists, along with the duration of therapy, affected improvement in cognitive performance more than frequency of attendance. In this study, more sessions did not necessarily yield better performance, but longer session duration and combination approaches did. The correlation between therapy duration and CDT difference scores was significant and positive ($r = .555; \ p < .000$); however, this correlation was not seen with CFQ scores ($r = -.153; \ p = .267$). According to summary statistics, therapeutic approach also affected CDT difference score: a combined art therapy approach, which incorporated both an art-as-therapy and art-psychotherapy approach, resulted in improved CDT scores ($r = .568; \ p < .000$), but not improved CFQ scores ($r = -0.164; \ p = .236$).

Although attendance was not positively correlated with cognitive performance outcomes, there was one exception: Site A showed significant CFQ scores ($t = -4.252; \ p = .018$), which correlated with attendance for experimental group members. This therapist provided art therapy to Caucasian older adults at a community center. The analysis used to explore the data was not univariate; instead a polynomial regression (2-level) was used. With this regression, Site A demonstrated a curvilinear trend (see Figure 14).
Research Question Three

The final research question was: Will cognitive performance outcome scores for each of the two tests be correlated? Considering all participants in both the control and experimental groups, the findings suggested that the better the participants performed on the CDT, the worse they rated their memory on the CFQ subjective measure of cognitive functioning ($r = -2.521; p = .013$). When the data were converted into a binomial variable, expressing 1 for improvement in score and 0 for a decline, the findings showed a distinct relationship (See Figure 15). The experimental group did not show significant scores for a negative correlation ($t = -1.556; p = .126$); however, the analysis for the control group indicated that the negative correlation was significant ($t = -2.410; p = .021$).
A large sample of ethnically diverse older adults was successfully recruited for the study ($N = 133$). The investigation experienced a 32% attrition rate, and 91 participants completed the posttest following 10 weeks of art therapy sessions. Fourteen different ethnicities were represented among the participants, and the older adults from these varied backgrounds responded well to the art therapy sessions. Attendance remained high among minorities and Caucasians alike and the conversation topics in sessions reflected the diversity of the participants. Cross-cultural exchange occurred throughout the 10 weeks of art therapy, and the ethnically diverse older adults shared culture-related experiences, memories, and perspectives in response to the session directives. Furthermore, the main hypothesis of the study was supported by the data: 10 weeks of art therapy resulted in improved cognitive performance. Contrarily, self-perception of cognitive ability did not improve following the treatment, and the CFQ scores were negatively correlated with CDT scores, an interesting and unexpected outcome.

Other outcomes included the findings that age, education, and independent status all influenced participant responsiveness to art therapy as a treatment. Medication use, gender, location, and attendance did not show this same influence within the study. Although attendance
in the pilot study was positively and significantly correlated to cognitive performance, such was not the case in this dissertation study. Findings showed that more sessions did not yield more improvement in cognitive performance. Instead, the duration of therapy and the art therapy approach used by the therapists significantly affected outcomes.

Therapist attrition as well as variations in compliance to the protocol affected the overall design and treatment. The treatment fidelity was not as high as initially desired. Such variations did, however, provide insight into other variables, such as duration of session and type of therapeutic approach, that may influence cognitive performance outcomes. The results of the study are explored further in the discussion chapter to follow. The implications of the results and suggestions for future research and practice are also discussed.
CHAPTER FIVE

Analysis and Conclusions

In this chapter an analysis of the findings is presented and is divided into five sections: (a) findings from the investigation, (b) implications of results according to literature, (c) limitations, (d) suggestions for future researchers, and (e) suggestions for practitioners. The goal of this chapter is to contribute to the practical, theory-building foundations of art therapy with older adults.

Summary of the Study

This research study sought to evaluate the ability of art therapy to improve the cognitive performance of ethnically diverse older adults. The hypotheses of this study were: (a) cognitive performance will improve following 10 weeks of art therapy, (b) attendance will positively and significantly correlate with cognitive evaluation test scores, and (c) each of the cognitive test results will be significantly correlated. Additionally, this study sought to expand upon previous literature by addressing the following research question: Will cognitive performance among ethnically diverse older adults improve significantly following 10 weeks of art therapy sessions? Additionally, the following secondary research questions were explored: Will art therapy attendance be correlated with cognitive evaluation test scores? Will cognitive performance outcome scores for each of the two tests be correlated?

Findings

The results suggested that 10 weeks of art therapy positively affected cognitive functioning but did not positively affect self-perception of cognitive abilities. Attrition rates among minority and non-minority older adults were comparable, which may suggest that CT infused with art therapy is culturally compatible. Finally, the significant correlation between outcome scores and art therapy approach used by therapists suggested that some art therapy approaches (e.g., the combination of art-as-therapy with art psychotherapy) affect cognitive performance more than others (e.g., art-as-therapy alone). Each of these aspects of the study, as well as their implications and suggestions for future research, is explored within this chapter.
Research Questions and Associated Hypotheses

The results of the study provided evidence in support of the first hypothesis: older adults demonstrated improvement in cognitive performance as a result of 10 weeks of art therapy. Both the $t$-test and the univariate regression analyses yielded significant results for the CDT measure of objective cognitive performance. This suggests that art therapy provided cognitive performance benefits among ethnically diverse older adults.

While cognitive performance demonstrated improvement, self-perception did not significantly improve. The lack of significance for the CFQ scores suggests that self-perception is still an area for continued investigation. As described within the literature review, self-perception is complex and is affected by factors such as depression and personality (Willis et al., 2006). The reasons for the slight improvement of self-perception in this study are unclear, though possible causes may relate to the treatment and participant demographics.

Overall, there was no significant improvement in CFQ scores with the exception of one site, Site A, which demonstrated a significant curvilinear trend similar to that in the pilot study. The duplicated results may validate theorized reasons for the curvilinear trend. Both the pilot study site and Site A were community centers where the attendees were living independently; therapists at both sites used art-as-therapy approaches; and the clients at both sites expected art education rather than art therapy regardless of having been informed about the treatment. Therapist One reported that:

...the participants were upset that the sessions were not “art classes.” Some of the participants... thought they would get more advanced art teaching... Some of their comments to the director... were that they thought [the sessions] would be more instructional in relation to learning advanced watercolor techniques, for instance.

The results of the study did not provide evidence in support of the second hypothesis. Attendance did not positively correlate with cognitive evaluation test scores, nor was it correlated with improvements in cognitive performance. The heterogeneity of the study with regard to independent status and ethnicity may have affected this aspect of the study.

Lower functioning older adults may not have received the treatment as planned due to higher levels of cognitive impairment, and minority older adults consistently had issues with
transportation and health that impeded attendance for the entire session duration; minority older adults regularly arrived late to the sessions. At sites with Caucasian older adults, not all sessions lasted for the prescribed 90 minutes; shorter sessions may have decreased the treatment effect.

The results of the study provided evidence in support of the third hypothesis, which held that pre- and posttest results would be correlated. Self-perception (CFQ) and cognitive ability (CDT) did show a correlation, though it was negative: participants with higher gains in cognitive performance reported that their cognitive functioning had worsened.

Lower functioning groups (e.g., participants at the assisted living facilities) were only able to effectively self-report if their cognitive functioning permitted self-monitoring. According to therapist and assistant reports, several older adults with signs of worsening cognitive impairment and more severe MCI reported very little cognitive impairment on the CFQ. This may imply that the older adults with more severe MCI were unaware of their deficits or that their ability to understand the questions was impaired. The inclusion of minorities may have also skewed the results. Minorities had significantly improved CDT scores, but they reported lower cognitive performance. According to therapist notes, minorities experienced high levels of inter-group discrimination; such discrimination is associated with depression and anxiety and, consequently, lower CFQ scores.

**Literature Review and Results**

The results of this study paralleled the literature reviewed; they were affected by demographics, location, education, and medication use. These factors, along with their relationship to the literature, are outlined below.

**Demographics**

The literature showed that among people aged 55 to 64 years old, minorities are more likely than Caucasians to have cognitive impairment as a result of environmental and lifestyle factors (Alzheimer’s Association, 2010a). This was supported by findings in this investigation. The age of Caucasian older adults was negatively and significantly correlated with CDT pretest scores; CDT pretest scores decreased as age increased. Minority CDT pretest scores were low at both ends of the age range. This parallels the literature reviewed and suggests that the minority older adults had an earlier onset of cognitive impairment.
Location

There are few art therapists working with older adults, and even fewer are bilingual. A convenience sample of art therapists was enlisted for this study based on their willingness to participate. Therapist locations included in the research were selected based on the likelihood of a higher inclusion of diverse older adults. The four types of sites included were community centers, daycare centers, retirement homes, and skilled nursing/assisted living facilities.

Adult family care homes for older adults were considered based on compatibility with minority cultural preferences. In adult family care homes, the owner lives in the same house as the residents and provides housing, meals, and personal services that can vary from site to site. The quality of care at the assisted living/adult family care homes was low (Malone, 2011). For this reason, these sites were excluded before the onset of data collection.

Adult daycare is said to provide a protective setting that is as non-institutional as possible (Gitlin, Reever, Dennis, Mathieu, & Hauck, 2006), and this setting was chosen as an alternative to homecare. Based on therapist reports, the adult daycare offered the most structured atmosphere of all of the sites included. This may be due in part to the small size of many adult daycares, the high ratio between older adults to staff, and the highly regimented scheduling. In the adult daycare, sessions started on time with all present participants attending the entire session and without multiple distractions or interruptions. This was not the case at other locations.

Medication

Research findings have suggested that psychotropic medication is not a culturally compatible approach to treating ethnically diverse older adults (Miranda & Cooper, 2004). One reason is that one third of minority patients read at or below the sixth grade level (i.e., low literacy), resulting in difficulty understanding prescription medication warning labels (Davis et al., 2006). Within this study, when asked whether medication was taken for memory, many minority respondents initially answered yes and then explained that their doctor prescribed medication for their diabetes, blood pressure, or other health concerns. Although these health concerns do increase the likelihood of declines in cognitive performance, a prescription for blood pressure, for instance, would not be given by a doctor to treat cognitive impairment. This
confusion may indicate limited or low health literacy among the minority participants (i.e., the participants’ ability to understand health information).

**Education**

Education has been correlated with cognitive performance in later life, and previously published research indicated that there are differences in education among older adults according to ethnicity (Kim & Chey, 2010; Sitzer et al., 2006). In this study, discrepancies in education by race paralleled descriptions found within the literature. On average, minority older adults were less educated than non-minority older adults within this study; education positively and significantly correlated with self-reported cognitive functioning among Caucasians but not among minorities. The literature suggested that subjective memory complaints in older adults are often linked to stress and depression and that mood is an influential factor determining self-perceived health (Ostbye, Krause, Norton, Tschanz, & Sanders, 2006; Pruessner, Lord, Meaney, & Lupien, 2004).

Low self-report scores of minority older adults may have been affected by depression levels or by experienced discrimination and subsequent anxiety. The minority older adults were frequently observed criticizing one another with the term, *mal-educado*, or poorly-educated, insinuating poor social skills and etiquette; *mal-educado* was a term typically attributed to darker skinned individuals.

Previous research results indicated that minority older adults report higher levels of stress and depression than do Caucasian older adults (Talamantes et al., 2010). According to therapist notes, signs of depression were evidenced more frequently among minority older adults. Minority older adults regularly retold the story of their immigration experiences and their tearfulness was typically related to not being able to see family members (e.g., for political reasons, as in the case of immigrants from Cuba).

At pretest, the more educated an individual was, the higher his or her CDT score. The posttest yielded different results, which related to the literature presented in Chapters One and Two. For example, M. Diamond (2001) found that the brain responds to enriched environmental input, which can modify the structure of the brain at any age and enhance performance. Minority older adults improved significantly in cognitive performance despite lower education levels, as
demonstrated by increased CDT scores at posttest. This contrast in education and improvement may have contributed to the reason education was no longer significantly correlated with CDT scores at posttest and why there was a negative correlation between CDT and education after the treatment.

**Treatment and Design Fidelity**

Art therapy was the treatment within this study. Five art therapists were selected to provide the treatment at seven different sites in five cities in Florida, New Jersey, and Mississippi. Each therapist was given a treatment protocol for each of the 10 weeks. Variations in treatment delivery and receipt, attrition rates, and divergences from cognitive training all affected the study.

**Attrition**

This study experienced a 32% attrition rate. At pretest, 133 participants completed the necessary documentation for inclusion. The study had 91 participants at posttest. The literature review in Chapters One and Two revealed that minorities have the lowest participation rate in mental health outcome research and that attrition rates for minority members in traditional therapy are as high as two times the attrition rates of Caucasians (Dingfelder, 2005; Rose, 2005; Schuerholz-Lehr, 2007). This was not the case within this study. Attrition rates for minority and Caucasian older adults were comparable (i.e., 33% and 30%, respectively). The reason for this may be related to the active recruitment effort, the employment of informal alternatives to therapy, or the use of art in ways that may have paralleled traditional folk healing approaches.

Recruitment strategies used in this study were planned according to the example set by researchers at the University of California (Aranda et al., 2003). To effectively include minority adults, active community outreach was used over clinic-based or advertising-based approaches. Other strategies that paralleled the research conducted at the University of California included hiring and training bicultural and bilingual recruiters.

Approximately 75% of all participants were women. Only 25% of participants were men, and attrition among men was noteworthy. Although attrition between the control group and the experimental group was comparable for women, more men were absent at posttest from the control group (44%) than from the experimental group (19%). In the experimental group, two
minority men reported that art therapy was their sole source of socialization. Administrators commented that the art therapy sessions were an incentive for consistent attendance at the community centers, which may explain the higher attrition in the control group.

All of the older adults included in the research expressed an interested in art therapy. Those participants chosen for the control group verbally expressed to the administration and the therapists that they also wanted to attend sessions. There was some resistance among participants in the control group: because of their desire to attend therapy, they may not have had an incentive to be present at posttest. The control group’s reaction may indicate the appeal of the art therapy sessions and the motivation that would be apparent for treatment adherence.

All therapists included in the study were women. The attrition rate exhibited by the therapists was higher than that of the participants; the circumstances of the therapist attrition are described below. A lack of understanding of art therapy, the economy, and time management constraints all contributed to attrition among the therapists.

A lack of understanding of art therapy contributed to the loss of the first therapist, who resided in Memphis, Tennessee. Both the location and the therapist were considered valuable to the study’s diversity of minority older adults: Blacks and African Americans make up 62.6% of Memphis’s population. The therapist described a lack of understanding throughout the area regarding art therapy and concerns among administrators that family members would not want their loved ones to be included in research. Rather than risk conflict with administrators, the therapist stepped down; she ultimately relocated to another area.

After attrition, three remaining therapists (and this researcher) committed to providing the pre- and posttest for older adult participants and to providing art therapy after the approval of the IRB (See Appendix A). In the week before the first training for pretesting and consent collection, one of the therapists was laid off from her position. Thus, the economy negatively impacted therapist participation in the study.

After the second therapist contributed to attrition, the IRB was contacted and two additional therapists were contacted to join the study. Throughout the study, deadlines were established in order to streamline the process of communication and data collection. One of the two therapists added after the human subjects review board/IRB was contacted struggled to meet
deadlines and was unable to provide sessions consistently: the participants went without
treatment for several weeks, and the therapist was unable to provide posttest data. Thus,
inadequate time management also contributed to attrition.

**Fidelity**

Previous art therapy research on cognitive performance and older adults has been limited
by non-randomized designs (Slayton et al., 2010). Although randomization was planned, this
study was not able to employ randomization. Participants at each site had conflicting
appointments (e.g., physical therapy and doctor’s appointments) and schedules (e.g., times of
arrival to site and days typically in attendance) that did not accommodate randomization.
Additionally, participant education, medication use, self-reported cognitive functioning, and
personality all negatively affected the ability to randomize.

**Experimental design.** Instead of randomization, the control and experimental groups
were created through matching. The matched-subject design of this study paralleled approaches
often used in educational research despite being quasi-experimental. Research suggests that there
can be substantial loss of power in matched studies (Martin, Diehr, Perrin, & Koepsell, 1993).
The effect size of this study was medium, which may suggest that the matching in this study was
appropriately based on confounder factors. The factors selected for this study (i.e., pre-test
scores, age, education level, race, and gender) were based on the literature review.

**Experimental versus control group.** At some centers, the control group was involved in
stimulating activities outside of art therapy. At centers where this occurred, the therapists were
asked about the differences between the control group and the experimental group. One therapist
responded:

> . . . the control group seemed to lose focus and structure throughout the study possibly
due to the lack of group cohesiveness. [In the experimental group] when participants did
not show for art therapy sessions, the group was concerned about where they were, if they
would continue, etc. The control group barely seemed to notice anyone’s absence. Also,
there were a few non-participants in the experimental group, but they attended regularly.
In the control group, participants each week varied greatly.

This may represent evidence of facilitated socialization occurring during the art therapy sessions.
The following example highlights the subjective importance of socialization during art therapy. During this study, there were three sites that offered alternative activities to art therapy which could have enhanced cognitive performance (e.g. exercise, word puzzles, music lessons, science club, baking program, trivia, current events, yoga, and gardening). When comparing the cognitive performance outcomes at these three sites, the experimental groups only marginally surpassed the control groups in CDT improvement while demonstrating far greater improvements on the CFQ self-report. In contrast, at the three sites where the only alternative activities for participants included less stimulating activities (e.g. completing children’s coloring books, watching television, or playing bingo), the experimental groups far surpassed the control groups in CDT improvement while demonstrating only slightly higher scores on the CFQ self-report. Art therapy improved objective cognitive performance (CDT scores) regardless of outside stimulating activities. However, subjective cognitive performance (CFQ scores) appeared to be positively affected by a higher frequency of social interaction following art therapy.

At the sites that did not have continuous opportunities to engage in social activities, there were fewer opportunities for social interaction and more opportunities for social withdrawal. There was a lot of “down” time when art therapy was not in session, as other social activities were limited. Participants came to eat lunch, and some played Bingo for example. Most of the participants in the control groups at these sites congregated in groups of three or four while waiting to be served lunch and talked amongst themselves or sat quietly. At these three sites where there was little recreational activity, the majority of the participants served were minorities. Blatant racism and socio-economic class discrimination could be observed at these sites, both of which have been found to contribute to higher levels of stress among minorities (Turner & Avison, 2003). Depression and social isolation are just two of the many factors that could have negatively affected their CFQ self-reports.

The therapists at the sites with stimulating alternative activities reported that the experimental group demonstrated a higher level of social interaction than the control group. Additionally, the continued involvement in activities following art therapy sessions may have ameliorated the effects of depression from social isolation. Therapists documented that experimental group members verbally reported enhanced mood and feelings of social
interconnection which could have positively affected their CFQ self-reports.

Treatment

The art therapy treatment administered in this study paralleled CT research in several ways. Although randomization was the (unrealized) goal of this research, randomized methods are not the standard in CT research. Another facet of the study that paralleled CT research pertains to the self-report. In this study, changes in self-reported cognitive performance (CFQ) were not significant, but rated cognitive performance (CDT) was significant. This aligns with previous research that found CT enhanced cognitive performance but had no impact on perceived competence (Dittmann-Kohli et al., 1991).

A third way that this study paralleled CT research relates to minority performance. In a study conducted by McDougall et al. (2010), Black and Hispanic participants were found to often make greater improvements than Caucasian older adults in cognitive performance outcomes. This was also the case within this study; minority older adults consistently outperformed Caucasian older adults.

Differences between this study and CT exist as well. The majority of CT studies have limited power; the power in this study was medium (.676). Furthermore, much of the CT research to date includes uncontrolled studies (Belleville, 2008; Gauthier et al., 2006). This study included a control.

Participant inclusion is another way that this research differed from traditional CT research. One CT program overview explained that “The recruitment of minority elders into cognitive aging studies will continue to challenge researchers” (McDougall, 2004, p. 331). In this study, minority older adults accounted for 65% of the sample.

Traditionally, CT takes place in a clinical or laboratory setting. This study aligned with “user-friendly” approaches described in more recent CT research. Specifically, researchers at the University of California advocated for active community outreach rather than clinic-based or advertising-based approaches (Aranda et al., 2003). This research followed the suggestions presented in that study.

Approaches

Overall, therapists reported placing the highest priority on socialization and art
processing during the sessions. Still, the art therapy approaches (i.e., art-as-therapy approach, art-psychotherapy approach, or a combined approach) were significantly correlated to cognitive performance outcomes. Possible reasons for this are multifaceted.

Emotion-centered approaches are facilitated through art-as-therapy in alignment with the theory presented by Hass-Cohen and Carr (2008) in *Art Therapy Relational Neuroscience Principles* (described in Chapter 2). From this theoretical perspective, the art-making process facilitates clients’ abilities to synchronize bodily functioning (e.g., breathing and eye movements) with the creative process, thereby positively affecting emotions and cognition (Hass-Cohen & Carr, 2008). Art-as-therapy may address clients’ individual emotional needs and help them to self-monitor nervous system responses; an art-psychotherapy approach focuses on inter-group dynamics and structuring sessions in order to optimize cognitive stimulation based on exhibited ability.

Reviewing the artwork during and after each session was one means of evaluating the cognitive stimulation provided during session. An art-psychotherapy approach provides insight into the patient’s cognitive world and enables a better understanding and stimulation of visuospatial and cognitive skills. Art-psychotherapy approaches align with the theory presented by Lusebrink (2004) in the Expressive Therapies Continuum (ETC; described in Chapter Two).

The ETC within art therapy describes cognitive stimulation through art therapy. ETC aims to facilitate art therapists’ clinical decision-making by framing art-making and brain functioning on three hierarchical levels of knowledge: a) kinesthetic/sensory, b) perceptual/affective, and c) cognitive/symbolic. During this study, each of the ETC hierarchical levels was present within the artwork at all of the sites. Although the frequency of each level differed by site, and not all therapists consistently used this information to adjust session content, clients responded to art therapy sessions by moving across the hierarchical levels. Examples of the hierarchical levels described in ETC are noted below.

**Examples of artwork and corresponding ETC.** The Kinesthetic/Sensory (K/S) level, which represents simple motor expression and corresponding visual manifestations of energy and sensory involvement (Lusebrink, 2010) can be noted in the artwork in Figure 16. In these works, the clients focused on the sensations of colors, the placement of shapes, and the process of
forming lines. The directives that corresponded to the artwork focused primarily on mood enhancement and exercising cognitive skills through multi-step instructions.

Figure 16. Kinesthetic/Sensory (K/S) level artwork.

The Perceptual/Affective (P/A) level focuses on forms and includes figure/ground differentiation. The P/A level can be noted in the artwork in Figure 17. The goals that corresponded with the creation of the artwork below included visual search and identification and inductive reasoning. According to older adult explanations, the placement of images within artwork contains affective and symbolic meaning.
The Cognitive/Symbolic (C/Sy) level emphasizes cognitive operations; during the study participants utilized art-making as a means of symbolic cognitive integration. For instance, during week eight of the study, the clients at the adult daycare site in South Florida engaged fully in the directive, which included creating sculptures of their family members. The artwork from that session demonstrated the inclusion of the symbolic component of the C/Sy level by emphasizing global processing of input from sensory and affective sources, autobiographic memory, and symbolic associations (Lusebrink, 2010).

Several participants chose to create a sculpture of a family member who was still living in their country of origin (i.e., Cuba). Three or more group members expressed sadness about not being able to return home to Cuba because they “would be killed.” One member began to cry about not having seen his sister for 50 years. This sharing provoked one female member, who had remained quiet throughout the session, to create an origami boat without directive. She put her tiny figurine inside of the origami. Many Cubans immigrate to the US by boat, and several group members shared that experience. Group members noticed her addition of the origami boat to the directive and several members verbally expressed interest in making a boat, too. She then taught the group how to make the paper boat. The group members put the sculptures of their family members in their paper boats and some described wanting to set their boats assail in the ocean back to Cuba. The group member who instructed the origami techniques informed the
group members that the paper was strong enough for the boats to be put in water. Several group members stated emphatically that they would sail their boats to Cuba after the session. Figure 18 contains images of the session (consent to use images was obtained).

![Figure 18. Cognitive/Symbolic (C/Sy) level artwork.](image)

**Duration.** Longer sessions with a combined approach were associated with improved cognitive performance; this was supported by previous literature. As part of the normal aging process, some cognitive abilities decline with age, such as information processing speed, learning rate, the ability to filter out irrelevant information through selective attention, and word-finding (American Psychological Association, 2010). Additionally, studies have shown that depression can further slow functioning, including executive ability, processing speed, and effortful attention (Gilley et al., 2004). Shorter therapy sessions may not have provided older adults the extra time they needed.

**Limitations**

This study offers an opportunity to translate research into practice, but there are several limitations that are important to consider. Threats to internal and external validity are outlined below to clarify the potential generalization of the findings and to outline confounding factors that may have affected the observed results.

**Threats to Internal Validity**

Participants at three of the six sites were exposed to cognitive stimulation through a range of activities. The exposure to additional programming makes it difficult to conclude that art therapy alone improved cognitive functioning. Furthermore, some participants attended more
activities outside of art therapy than others at all locations. This was not controlled within the study.

Matching was used instead of randomization. Matching is a quasi-experimental design in that groups are not chosen randomly. This lowers the validity of the study and the generalizability of the results.

Given their lower level of functioning, the dependent older adult participants in the skilled nursing/assisted living facilities may have naturally experienced faster declines in cognitive performance than the independent older adults in the community center. This may be have decreased the power in the study.

**Threats to External Validity**

Although the participants included in the research showed enough variation (e.g., country of origin, race, and ethnicity) to be considered ethnically diverse, the study’s findings mostly pertain to the Latino (predominantly Cuban) and Caucasian populations. The percentages of Asians (0%) and African Americans (8%) were lower than those found in the US population. None of the participants were from Mexico, and Mexican-Americans constitute a significant percentage of ethnically diverse Americans. As a result, the information may be limited in its generalizability.

Multiple therapists who worked with a range of older adult clients were included. After therapist attrition, all therapists included in the study were Caucasian women. Although diversity is limited within the field of art therapy, the study did not accurately represent practicing art therapists. The inclusion of men as well as a variety of therapist ethnicities would be a more accurate representation of art therapists.

**Future Research**

This study provided insight into ways that future research may improve upon existing designs as well as the design of this study. Suggestions regarding data collection, site location, therapist demographics, and further statistical analyses follow. Within this section, suggestions for future research are paired with rationale for the importance of such research. The contribution that each suggestion may offer is highlighted.

This section outlines ways in which this investigation can be improved. Future
researchers have the opportunity to make beneficial changes to this study and its design. In addition to restructuring the data collection, future researchers can run new statistical analyses using this data set to answer new research questions. Researchers may also wish to validate the findings presented in this study and verify the conclusions drawn.

**Reusing this Data Set: Future Data Analysis**

The data that resulted from this study can be described as nested (i.e., the participants in the study were in distinct facilities in varying cities in differing states). In terms of statistics, the older adults may be said to be nested within treatment groups within a facility within a specific city/state. Using the same data set obtained within this study, future researchers may consider re-running statistical analyses to include hierarchical linear modeling (HLM). This analysis will assist in accounting for the multi-level and nested nature of the variables. No additional data collection would be necessary and a re-analysis would provide a foundation for a new study.

**Improvement in Data Collection: Establishing Criteria**

Pre-established criteria were problematic within this study. This study included a variety of locations. As a result, some older adults were not independent and were lower functioning. Originally, a criterion was set that older adults included would need to score at least a 5 on the CDT pretest. These two aims were conflicting. High pretest scores proved to be an unrealistic criterion once the sample demographics were assessed; approximately 30% of the sample did not meet the criteria originally outlined, and modifications were needed. Future researchers may find it more prudent to collect demographic information first, pretest, and then rate pretests before determining criteria for inclusion since attrition or unnecessary exclusion may be much higher than expected. This may mean that the research protocol and the IRB proposal would need to be approved sooner in the research process.

Researchers will want to keep in mind that research participants may not want to be randomized, and randomization may not be accepted in the research context (e.g., among administrators). Providing participants with a sign-up sheet before the onset of the data collection clearly stating that randomization will be applied for group selection may provide a greater likelihood of compliance among those who do sign up. Additionally, if administrators are informed and provided with written information regarding the benefits of randomization before
they agree to participate, they may be more understanding of this requirement within the study. Because randomization may still be rejected among some administrators or participants, oversampling and including approximately 30% more sites than needed at the onset of the study may enhance the likelihood of finding a sufficient number of sites that are willing to employ randomization.

Future researchers may find conducting this study exclusively at adult daycare centers within a single metropolitan area to be more effective in monitoring treatment fidelity throughout the study. This may increase the likelihood that that treatment will be provided and received as intended as well as the likelihood that randomization would be possible. In this study, adult daycare centers had a low attrition rate and high administration involvement; this resulted in consistent start and stop times, regular attendance, and more structured sessions. In contrast, a lot of advocacy on the part of the therapists was required at the community centers to maintain attendance. At the assisted living facilities, the treatment effects of art therapy were limited by the other activities offered by the facility as well as the cognitive deficits characteristics of the population. Given the high minority population at adult daycare centers, this location may also be considered culturally compatible.

**Treatment Factor Validation**

Researchers may find that a further evaluation of the correlation between duration and approach and cognitive functioning may provide the additional information needed to validate findings within this study. The significant correlations of outcome with duration and outcome with art therapy approach were not expected; however, these findings are supported by literature on older adults. A combined approach would more closely parallel cognitive training methods.

During the mandatory weekly e-mails, therapists did not report making variations to time or report their preference in terms of approach. These features of the study were not fully realized until the completion of the study, at which time a survey was sent out. Future researchers may prefer to send this survey at the onset of the investigation and ask questions about each therapist’s approach, typical session time, and typical session protocol. This same survey can be resent to therapists at the mid-point and end of the study as a confirmation of compliance with the treatment protocol provided. Additionally, researchers may choose to seek out the inclusion
of male therapists. The effect of gender on therapist attrition is unclear at this point.

**Suggestions for Practitioners**

Clinical practitioners from a variety of fields who work with older adults may find this research useful. Art therapists, social workers, recreational therapists, and gerontologists can use the information to enhance the well-being of older adults. However, the following suggestions are tailored toward art therapists given the specific context of the study. Suggestions regarding the format of art therapy, inter-group dynamics, and cultural sensitivity are provided.

**Candidacy-Homogeneity**

Practitioners may find it useful to organize a homogenous group of participants at each site location. Homogeneity in terms of age, race, immigration status, cognitive functioning level, physical state, and socioeconomic status may enhance comfort with socializing and engagement in the art therapy directives. Although a diverse group may provide rich opportunities for cultural exchange, obvious differences among participants may prevent enthusiasm for the sessions and increase resistance. Likewise, specific differences among older adults may affect their ability to be equal participants in the sessions. Feelings of isolation within a group context may occur and can be detrimental. In this case, treatment may be delivered but not adequately received, which would be counterproductive for everyone involved.

**Racism**

Homogeneity among minorities is ideal but may not be feasible, and may also produce the unfortunate result of discrimination during sessions. During this study, some members were reluctant to interact with other participants (e.g., for racial reasons) and even declined to complete tandem tasks. When homogeneity is not possible, informing clients of session “rules” at the onset of the treatment and outlining requirements that members refrain from using disparaging references or exerting negative behaviors, such as machismo, may be prudent for practitioners.

**Participation**

Practitioners may be well-advised to screen participants in order to evaluate their likelihood of benefiting from the format of art therapy planned before organizing groups based on interest. Evaluating candidacy is an important step to providing care according to the
treatment goal. An example of this is as follows: Within the study, improved cognitive performance was the treatment goal; participant L exhibited poor eyesight and poor hearing. Throughout the sessions, L was reluctant to make art due to her poor eyesight. She had trouble connecting names to faces in order to develop friendships in the group. Her poor hearing resulted in her reluctance to interact in conversations regarding art or reminiscence. She began to exhibit behaviors that suggested that she felt left out and socially isolated, even though she remained in the group and her attendance was high. She was not an appropriate candidate for group sessions, though she may have improved from one-on-one therapy. Instead, her performance decreased drastically and she appeared depressed in sessions.

**Population Appropriate: Duration and Approach.**

Practitioners may find it prudent to provide longer session durations with a combined art therapy approach. Throughout the therapy, information-processing speed, selective attention, and word-finding were all negatively affected by the aging process. These declines are a normal part of the aging process and do not impede daily functioning. According to therapist notes, multiple cognitive strategies were included in the 90-minute combined approach art therapy sessions. By including additional time, therapists were able to provide a range of stimulation and opportunities to optimize cognitive performance. Additionally, by using graphic indicators to adjust remaining session dynamics, those clients who experienced symptoms of cognitive impairment were targeted for increased stimulation.

During each of the therapy sessions, complex psycho-social issues arose among participants and were addressed within the therapeutic session. Within the study, the art-psychotherapy approach allowed for the bereavement process, cultural issues, discrimination dynamics, and cognitive skills to be appropriately directed and redirected. Likewise, applying an art-as-therapy approach facilitated relaxation, creativity, socialization, and a decrease in stress that may have counteracted the negative cognitive effects of depression, anxiety, and feelings of social isolation. Therapists may find it useful to implement a combined approach during sessions with older adults aimed at enhancing cognitive performance.

**Cultural Sensitivity**

Table 16 in Chapter Four outlined the patterned responses among Latino/Hispanic older
adults and may prove useful to future practitioners. For instance, when topics or images associated with a dysthymic affect arise among this population, the parallel topic associated with a bright affect can be offered by the clinician as a redirect. This is an important task for clinicians when working with older adults. Emotional distress negatively impacts cognitive functioning; thus, reminiscence of positive experiences is more beneficial for cognitive performance than reminiscence of negative memories (Gauthier et al., 2006).

Working with older adults may entail working with ethnically diverse older adults as current population trends continue. Within the study, independent clients had the opportunity to take artwork home, where they showed it to friends and family members and were encouraged to retell the story told in therapy. This was viewed as a multicultural approach to working with minority older adults as it involved family members throughout the treatment process. Encouraging participants to share their work with significant others also opened up conversations about family in a non-threatening way. Within the study, discussing family was an important topic.

Therapists might find it beneficial to ask clients at the onset of therapy with whom they intend to share the artwork. During the study, while discussing family and significant others, clients were able to discuss events important to them in order to feel culturally understood. If clients refer to family members, exploring cultural dynamics may help develop rapport. For instance, during the study one client discussed being alone and not having anyone with whom to share her artwork; this client went on to explain that her husband recently died and how hard that was for her considering all they had been through, including his political imprisonment in Cuba for over 10 years. Another client related to this and brought in a book for the therapist to read about political imprisonment in Cuba and disclosed her own experiences with political imprisonment. Practitioners may find that beginning sessions with conversations about culturally-rich topics, such as family, may prevent feelings of social isolation among clients.

Conclusion

The implementation of this study included four features developed to improve upon previous art therapy research: (a) the use of a larger than average sample size, (b) having a control group, (c) using multiple therapists, and (d) providing information on participant
demographics. However, randomization was not employed and remains an area for improvement in future research studies. Information regarding future clinical and research approaches developed as a result of this study may enhance art therapy work with ethnically diverse older adults aimed at improving cognitive performance. Additionally, suggestions regarding data collection, site location, therapist demographics, and further statistical analyses may provide opportunities for further development of the theory building foundations of art therapy with older adults.

Many of the findings presented from the literature review in Chapters One and Two were supported by the results of this research. By providing a non-pharmaceutical, psychosocial art therapy intervention, numerous environmental and lifestyle factors, such as social isolation, low education, a lack of mental stimulation, and stress/emotion distress, that may cause cognitive impairment were addressed. Minority participants were more vulnerable to these factors than the non-minorities in the study, which correlated with the literature review.

The primary purpose of the study was to explore art therapy as an intervention to improve cognitive functioning among ethnically diverse, and particularly Latino/Hispanic, older adults. The results suggested that art therapy may positively affect cognitive performance. Additionally, the results suggested that art therapy may be a culturally competent therapeutic approach.
APPENDIX A

USE OF HUMAN SUBJECTS IN RESEARCH- APPROVAL MEMORANDUM COPY

Office of the Vice President for Research

Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673 · FAX (850) 644-4392
APPROVAL MEMORANDUM
Date: 1/28/2011

To: Amanda Alders
Dept.: ART EDUCATION

From: Thomas L. Jacobson, Chair
Re: Use of Human Subjects in Research
The Effect of Art Therapy on Cognitive Performance among Ethnically Diverse Older Adults

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 12/08/2010. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 12/7/2011 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations. This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: Marcia Rosal, PhD, Advisor
HSC No. 2010.5384
APPENDIX B
RECRUITING POSTERS: PRE/POSTTEST

¡Aprenda de si mismo!
Learn about yourself!

¿Cómo? How?

1.) Completar un cuestionario/ Complete a questionnaire
2.) Dibuje un reloj/ Draw a clock

¿Cuándo?/ When?

TBA

Será una oportunidad para aprender sobre sus habilidades de memoria, concentración, y coordinación.
This will be an opportunity to learn about your abilities regarding memory, concentration, and coordination.
APPENDIX C
RECRUITING POSTERS: PARTICIPANTS

Taller de Arte Terapia
Art Therapy Workshop

Grupo/ Group: TBA

No es necesario tener habilidades artísticas. Será un momento para relajarse, expresarse y compartir a través de las distintas artes: pintura, escultura y más.
It is not necessary to have artistic abilities. This will be a chance to relax, express yourself, and share through art: painting, sculpture, and more.
**APPENDIX D**

**COGNITIVE FAILURES QUESTIONNAIRE: ENGLISH/SPANISH VERSION**

Reproduced by permission from the British Journal of Clinical Psychology.

Name (printed): _____________________________  Date: ___/___/_____  

<table>
<thead>
<tr>
<th>Questionnaire (Broadbent, Cooper, FitzGerald, &amp; Parkes, 1982)</th>
<th>Very Often</th>
<th>Quite often</th>
<th>Occasionally</th>
<th>Very rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you read something and find you haven’t been thinking about it and must read it again?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2. Do you find you forget why you went from one part of the house to the other?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3. Do you fail to notice signposts on the road?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. Do you find you confuse right and left when giving directions?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5. Do you bump into people?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6. Do you find you forget whether you’ve turned off a light or a fire or locked the door?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7. Do you fail to listen to people’s names when you are meeting them?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8. Do you say something and realize afterwards that it might be taken as insulting?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9. Do you fail to hear people speaking to you when you are doing something else?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10. Do you lose your temper and regret it?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>11. Do you leave important letters unanswered for days?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12. Do you find you forget which way to turn on a road you know well but rarely use?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>13. Do you fail to see what you want in a supermarket (although it’s there)?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>14. Do you find yourself suddenly wondering whether you’ve used a word correctly?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Question</td>
<td>Very Often</td>
<td>Quite often</td>
<td>Occasionally</td>
<td>Very rarely</td>
<td>Never</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------------</td>
<td>-------------</td>
<td>--------------</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>15. Do you have trouble making up your mind?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>16. Do you find you forget appointments?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>17. Do you forget where you put something like a newspaper or a book?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>18. Do you find you accidentally throw away the thing you want and keep what you meant to throw away – as in the example of throwing away the matchbox and putting the used match in your pocket?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>19. Do you daydream when you ought to be listening to something?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>20. Do you find you forget people’s names?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>21. Do you start doing one thing at home and get distracted into doing something else (unintentionally)?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>22. Do you find you can’t quite remember something although it’s “on the tip of your tongue”?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>23. Do you find you forget what you came to the shops to buy?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>24. Do you drop things?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>25. Do you find you can’t think of anything to say?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>N°</td>
<td>Pregunta</td>
<td>Muy a menudo</td>
<td>A Menudo</td>
<td>De vez en cuando</td>
<td>Rara vez</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------</td>
<td>----------</td>
<td>------------------</td>
<td>----------</td>
</tr>
<tr>
<td>1.</td>
<td>¿Lee algo y encuentra que no ha estado pensando en ello y lo debe leer otra vez?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>¿Olvida por qué fue de una parte de la casa a otra?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>¿Le cuesta notar las indicaciones del camino?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>¿Al dirigir, confunde derecha e izquierda?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>¿Mientras camina, choca con otras personas?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td>¿Olvida si ha apagado la luz o el fuego o cerrado la puerta?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>¿Le cuesta poner atención a los nombres de personas cuando les conoce por primera vez?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td>¿Dice algo y después se da cuenta que quizás lo que dijo podría ser interpretado como un insulto?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td>¿Le cuesta oír a personas que hablan con usted cuando está haciendo alguna actividad?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>¿Pierde la paciencia y luego lo lamenta?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>¿Deja de contestar cartas importantes por muchos días?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>¿Mientras conduce un automóvil, olvida para que lado doblar en una calle que conoce bien pero usa rara vez?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>¿Le cuesta encontrar lo que quiere en el supermercado, aunque esté allí?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td>¿Se pregunta a veces si ha utilizado una palabra correctamente?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muy a menudo</td>
<td>A menudo</td>
<td>De vez en cuando</td>
<td>Rara vez</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>--------------</td>
<td>----------</td>
<td>-----------------</td>
<td>----------</td>
</tr>
<tr>
<td>15.</td>
<td>¿Tiene dificultad para tomar decisiones?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>¿Olvida usted las reuniones?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>17.</td>
<td>¿Olvida dónde pone algo como un periódico o un libro?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>18.</td>
<td>¿Tira a la basura accidentalmente las cosas que usted quiere guardar y guarde lo que usted quería tirar – como por ejemplo tirar la caja de cerillas y poner la cerilla usada en su bolsillo?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>19.</td>
<td>¿Sueña despierto cuando debería estar escuchando algo?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>20.</td>
<td>¿Olvida los nombres de las personas?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>21.</td>
<td>¿Empieza a hacer algo en casa y de repente se distrae y comienza a hacer otra cosa (involuntariamente)?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>22.</td>
<td>¿Le cuesta recordar algo aunque este &quot;en la punta de la lengua&quot;?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>23.</td>
<td>¿Olvida para qué cosa vino a comprar a la tienda?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>24.</td>
<td>¿Se le caen las cosas?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>25.</td>
<td>¿Encuentra que no puede pensar en algo que decir?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
APPENDIX E

DEMOGRAPHIC FORM

Demographics/Demografía

Name (Nombre)____________________   Date (Fecha)________________

Age (Edad)____________________   Gender (Sexo)________________

Country of Origin (Pais de Origen)____________________

If not the USA, how long have you lived in the USA? ______________________________
(¿Si tu pais de origen no es Los Estados Unidos, por cuántos años ha vivido en Los Estados Unidos?)

Highest level of education completed: ______________________________
(¿Cuántos años de la escuela cumplió usted?)

Did you need assistance reading this form? ______________________________
(¿Necesitó ayuda en completar este formulario?)

What was your previous occupation?: ______________________________
(¿En que capacidad(es) ha trabajado?)

How often do you create art/ crafts? Circle one:
(¿Con que frecuencia crea arte/ manualidades? Elija una)

Very Often          Often          Sometimes          Rarely          Never
Muy a menudo       A menudo       De vez en cuando   Rara vez       Nunca

Do currently take medication for memory loss, concentration or focus?   Y   N
(Tomas medicamento por la memoria, concentración, o el enfoque?)
APPENDIX F

PARTICIPANT INFORMED CONSENT: ENGLISH/ SPANISH VERSIONS

Florida State University
Department of Art Education
028 WJB
143 Honors Way
PO Box 3061232
Tallahassee, FL  32306-1232

Informed Consent/Confidentiality Agreement
The Use of Art Therapy with the Ethnically Diverse Older Adult Population

Researcher: Amanda Alders- Graduate Student at Florida State University.
Faculty Advisor: Marcia Rosal, PhD

Description: This 10 week study will investigate the use of the Art Therapy with the ethnically diverse elderly population. Prior to participating in the Art Therapy sessions, you will be asked to 1.) complete a few questions about yourself, 2.) fill out a questionnaire, and 3.) draw a clock. When participating in this research study, you will be invited to verbally brain-storm themes in a group, listen to music, paint, sculpt, dance, make up stories/poems and create collages from photographs. Some sessions may be photographed. There will be 10 weeks of art therapy sessions provided during this research duration. At the end of the 10 weeks, you will be asked to once again complete the questionnaire and draw the clock. You are encouraged to read this consent form carefully and to ask the person who presents it any further questions that you may have before making your decision whether or not to participate. This study is being conducted by Amanda Alders, a graduate student from Florida State University.

You are being asked to participate in this study because this study concerns the ethnically diverse older adult population, and in particular, individuals over 55 years of age.

Purpose of Study: The purpose of this study is to investigate the use of the Art Therapy with racially diverse older adults.

Number of Participants: Approximately 100

Risks of Participation: It is possible that you may experience emotional distress, and uncomfortable feelings or thoughts during the Art Therapy sessions. As in all research, there may be unforeseen risks to the participant. If an accident injury occurs, appropriate emergency measures will be taken.

Economic Considerations: The participants will not receive compensation for participating in this study, however, you will be provided with art materials free of cost to enable you to participate in the Art Therapy sessions. There is no cost to participant in this study.

Benefits of Participation: It is possible that you may experience a more relaxed state after having participated in the art therapy sessions.

Alternative to Participation: If you chose not to take part in the art therapy sessions, you will be encouraged to participate in the other activities offered within the facility but which are not part of this research.
Confidentiality of Records: If this research is published, or used in future grant applications, your identity will be kept confidential. I will take all appropriate steps to protect your identity. The results of this research study may be presented at meetings, in publications, and in applications for further grants. However, your name will be kept private.

Contact Persons: For more information concerning this research, or if you feel that your participation has resulted in any emotional or physical discomfort, please contact me

If you have any questions about participant rights as a research subject, or any concerns or complaints, you may contact the primary researcher or the IRB: 2010 Levy Avenue, Suite 276-C, Tallahassee, FL 32306-2742, Ph: (850) 644-8633.

Voluntary Participation: Participation in this study is voluntary. You are free not to participate or to withdraw at any time, for whatever reason. In the event that you do withdraw from this study, the information you have already provided will be kept confidential.

Participation Consent: I have read or have had read to me the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I agree to participate in this study. I have received a copy of this form.

In addition to participating in the study, by signing below I am also giving my permission to: (Check all that apply.)

____ Be photographed during the sessions
____ Have the information from this study used in future publications and presentations.
____ Have my artwork photographed.
____ Have my artwork used in future presentations and publications
____ Have the photos from this study used in future publications and presentations.

Date: ___/___/____

_______________________               _______________________
Participant name (printed)     Participant signature

_______________________               _______________________
Researcher’s Name (printed)     Researcher’s signature
Consentimiento/Acuerdo de Confidencialidad

Investigación: El uso de la Terapia de Arte en la Población de Adultos Mayores

Investigadora: Amanda Alders- estudiante de Terapia de Arte
Tutor de Investigación: Marcia Rosal, PhD

Descripción: Esta investigación de 10 semanas explorará el uso de la Terapia de Arte en la población de adultos mayores. Antes de comenzar la Terapia de Arte, le pediré 1.) contestar preguntas sobre usted, 2.) completar un cuestionario y 3.) dibujar un reloj. A través de las sesiones de la Terapia de Arte, usted tendrá la oportunidad de hablar sobre temas en un contexto grupal, escuchar música, bailar, pintar, crear esculturas, escribir poemas y crear imágenes/collages usando fotografías. Es posible que algunas sesiones serán fotografiadas. Serán 10 sesiones de Terapia de arte una vez a la semana. Al final de los 10 semanas, usted tomará el mismo cuestionario y estar pedido dibujar el mismo reloj de nuevo. Se recomienda que usted lea este formulario de consentimiento con cuidado y pregunte sobre cualquier duda en relación al estudio o este formulario de consentimiento antes de decidir participar o no. Esta investigación será realizada por Amanda Alders, una estudiante del programa doctorado de Terapia de Arte de Florida State University.

Usted ha estado pedido participar en esta investigación porque esta investigación tiene que ver con la población de adultos mayores/ personas de 55 años o mayor y la Terapia de Arte.

El propósito de la investigación: La investigación de la cual estará usted participando tiene relación con el uso de la Terapia de Arte en la población de adultos mayores.

Cantidad de Participantes: Aproximadamente 100

Riesgos de Participación: Es posible que en las sesiones pueden surgir temas personales y sentimientos personales. Como en toda investigación, pueden surgir riesgos imprevistos para el participante. Si cualquier accidente llegase a ocurrir, se tomarán medidas de emergencia apropiadas.

Consideraciones Económicas: Los participantes no recibirán compensación monetaria por participar, sin embargo, usted recibirá materiales de arte sin costo para permitir participación en las sesiones de Terapia de Arte. No tiene ningún costo para usted participar en este estudio de investigación.

Beneficios de Participación: Es posible que usted experimente un estado de relajación durante la Terapia de Arte.

Alternativo de Participación: Si eliges no participar en las sesiones de Terapia de Arte, usted tendrá la oportunidad de participar en otras actividades ofrecidas en la facilidad pero los cuales no son parte de este
Confidencialidad: En caso que esta investigación sea publicada con fines educacionales, su identidad será resguardada con absoluta confidencialidad y su información demográfica será cambiada. En todos los casos, su identidad será protegida.

Personas de Contacto: En caso de alguna duda, pregunta o problema durante el curso de la investigación, o para recibir más información al respecto a esta investigación, por favor contáctese conmigo.

Si usted tiene alguna pregunta referente a sus derechos o quejas sobre la investigación, hable conmigo/ la investigador o llame a la Junta de Revisión Institucional (IRB) al: 2010 Levy Avenue, Suite 276-C, Tallahassee, FL 32306-2742, Ph: (850) 644-8633.

Participación Voluntaria: La participación en esta investigación es voluntaria. Si en cualquier momento durante el proceso de la investigación usted quisiera discontinuar su participación, su requerimiento será respetado y honrado inmediatamente.

Consentimiento de Participación: He leído o alguien me ha leído este formulario de Consentimiento/Acuerdo de confidencialidad y me ha dado la oportunidad de preguntar sobre cualquier duda en relación al estudio o formulario de consentimiento. Aquellas preguntas fueron respondidas de la mejor forma posible según los conocimientos de la investigadora. Estoy conscientemente dando mi consentimiento para ser un participante. He recibido una copia de este formulario de consentimiento.

Además de participar en las sesiones, yo autorizo a Amanda Alders, estudiante del programa de Terapia de Arte de Florida State University, para (indique cual de los siguientes aprueba):

____ Fotografiar las sesiones
____ Fotografiar los trabajos realizados
____ Usar las fotos del arte en publicaciones/presentaciones en el futuro.
____ Usar los materiales en publicaciones/presentaciones educacionales.
____ Usar las fotos de la investigación en publicaciones/presentaciones en el futuro.

Fecha: ___/___/_____

_____________________________            ___________________________  
Nombre del Participante (manuscrito)                      Firma del participante

______________________________                           ___________________________  
Nombre de la Investigadora            Firme de la investigadora
APPENDIX G
GUARDIAN INFORMED CONSENT FORMS: ENGLISH/SPANISH VERSIONS

Florida State University
Department of Art Education
028 WJB
143 Honors Way
PO Box 3061232
Tallahassee, FL 32306-1232

Informed Consent/Confidentiality Agreement
The Use of Art Therapy with the Ethnically Diverse Older Adult Population

Researcher: Amanda Aldera- Graduate Student at Florida State University.
Faculty Advisor: Marcia Rosal, PhD

Explanation of Procedure for Guardian: For those participants who do not hold guardianship of themselves, the term you refers to both the participant and the legal guardian.

Description: This 10 week study will investigate the use of the Art Therapy with the ethnically diverse elderly population. Prior to participating in the Art Therapy sessions, participants will be asked to 1.) complete a few questions about yourself, 2.) fill out a questionnaire, and 3.) draw a clock. When participating in this research study, participant will be invited to verbally brain-storm themes in a group, listen to music, paint, sculpt, dance, make up stories/poems and create collages from photographs. Some sessions may be photographed. There will be 10 weeks of art therapy sessions provided during this research duration. At the end of the 10 weeks, participants will be asked to once again complete the questionnaire and draw the clock. Participants/ guardians are encouraged to read this consent form carefully and to ask the person who presents it any further questions that you/ the participant may have before making your decision whether or not to participate. This study is being conducted by Amanda Alders, a graduate student from Florida State University.

The participant is being asked to participate in this study because this study concerns the ethnically diverse older adult population, and in particular, individuals over 55 years of age.

Purpose of Study: The purpose of this study is to investigate the use of the Art Therapy with ethnically diverse older adults.

Number of Participants: Approximately 100

Risks of Participation: It is possible that the participant may experience emotional distress, and uncomfortable feelings or thoughts during the Art Therapy sessions. As in all research, there may be unforeseen risks to the participant. If an accident injury occurs, appropriate emergency measures will be taken.

Economic Considerations: The participants will not receive compensation for participating in this study, however, all older adults will be provided with art materials free of cost to enable them to participate in the Art Therapy sessions. There is no cost to participant in this study.
**Benefits of Participation:** It is possible that the participant may experience a more relaxed state after having participated in the art therapy sessions.

**Alternative to Participation:** If participants chose not to take part in the art therapy sessions, they will be encouraged to participate in the other activities offered within the facility but which are not part of this research.

**Confidentiality of Records:** If this research is published, or used in future grant applications, participant identity will be kept confidential. I will take all appropriate steps to protect participant identity. The results of this research study may be presented at meetings, in publications, and in applications for further grants. However, participant names will be kept private.

**Contact Persons:** For more information concerning this research, or if you feel that participation has resulted in any emotional or physical discomfort, please contact me.

If you have any questions about participant rights as a research subject, or any concerns or complaints, you may contact the primary researcher or the IRB: 2010 Levy Avenue, Suite 276-C, Tallahassee, FL 32306-2742, Ph: (850) 644-8633.

**Voluntary Participation:** Participation in this study is voluntary. The participant is free not to participate or to withdraw at any time, for whatever reason. In the event that the participant does withdraw from this study, the information he/she has already provided will be kept confidential.

**Participation Consent:** I have read or have had read to me the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I provide consent for participation in this study. I have received a copy of this form.

In addition to participating in the study, by signing below I am also giving my permission for the participant to: (Check all that apply.)

- Be photographed during the sessions
- Have the information from this study used in future publications and presentations.
- Have participant artwork photographed.
- Have participant artwork used in future presentations and publications
- Have the photos from this study used in future publications and presentations.

Participant’s Name: ___________________________        Date: ________________________

Guardian’s Signature: ________________________        Date: ________________________

Investigator’s Signature: ________________________        Date: ________________________
Consentimiento/Acuerdo de Confidencialidad

Investigación: El uso de la Terapia de Arte en la Población de Adultos Mayores

Investigadora: Amanda Alders- estudiante de Terapia de Arte
Tutor de Investigación: Marcia Rosal, PhD

Explanación para guardianes: Para participantes quienes no son guardianes de sí mismos, el término “usted” se refiere al participante y el guardián legal/la persona a cargo.

Descripción: Esta investigación de 10 semanas explorará el uso de la Terapia de Arte en la población de adultos mayores. Antes de comenzar la Terapia de Arte, pediré que participantes 1.) contestar preguntas sobre sí mismos, 2.) completar un cuestionario y 3.) dibujar un reloj. A través de las sesiones de la Terapia de Arte, participantes tendrán la oportunidad de hablar sobre temas en un contexto grupal, escuchar música, bailar, pintar, crear esculturas, escribir poemas y crear imágenes/collages usando fotografías. Es posible que algunas sesiones serán fotografiadas. Serán 10 sesiones de Terapia de arte una vez a la semana. Al final de los 10 semanas, participantes tomarán el mismo cuestionario y estarán pedidos dibujar el mismo reloj de nuevo. Se recomienda que usted lea este formulario de consentimiento con cuidado y pregunte sobre cualquier duda en relación al estudio o este formulario de consentimiento antes de decidir permitir participación o no. Esta investigación será realizada por Amanda Alders, una estudiante del programa doctorado de Terapia de Arte de Florida State University.

El participante ha estado pedido participar en esta investigación porque esta investigación tiene que ver con la población de adultos mayores/ personas de 55 años o mayor y la Terapia de Arte.

El propósito de la investigación: La investigación tiene relación con el uso de la Terapia de Arte en la población de adultos mayores.

Cantidad de Participantes: Aproximadamente 100

Riesgos de Participación: Es posible que en las sesiones pueden surgir temas personales y sentimientos personales. Como en toda investigación, pueden surgir riesgos imprevistos para el participante. Si cualquier accidente llegase a ocurrir, se tomarán medidas de emergencia apropiadas.

Consideraciones Económicas: Los participantes no recibirán compensación monetaria por participar, sin embargo, participantes recibirán materiales de arte sin costo para permitir participación en las sesiones de Terapia de Arte. No tiene ningún costo para usted participar en este estudio de investigación.

Beneficios de Participación: Es posible que participantes experimente un estado de relajación durante la Terapia de Arte.
Alternativo de Participación: Si el participante elige no participar en las sesiones de Terapia de Arte,
tendrá la oportunidad de participar en otras actividades ofrecidas en la facilidad pero los cuales no son parte de este estudio.

Confidencialidad: En caso que esta investigación sea publicada con fines educacionales, la identidad del participante será resguardada con absoluta confidencialidad y su información demográfica será cambiada. En todos los casos, su identidad será protegida.

Personas de Contacto: En caso de alguna duda, pregunta o problema durante el curso de la investigación, o para recibir más información al respecto a esta investigación, por favor contáctese conmigo.

Si usted tiene alguna pregunta referente a sus derechos o quejas sobre la investigación, hable con el investigador o llame a la Junta de Revisión Institucional (IRB) al: 2010 Levy Avenue, Suite 276-C, Tallahassee, FL 32306-2742, Ph: (850) 644-8633.

Participación Voluntaria: La participación en esta investigación es voluntaria. Si en cualquier momento durante el proceso de la investigación el participante quisiera discontinuar su participación, su requerimiento será respetado y honrado inmediatamente.

Consentimiento de Participación: He leído o alguien me ha leído este formulario de Consentimiento/Acuerdo de confidencialidad y me ha dado la oportunidad de preguntar sobre cualquier duda en relación al estudio o formulario de consentimiento. Aquellas preguntas fueron respondidas de la mejor forma posible según los conocimientos de la investigadora. Estoy conscientemente dando mi consentimiento para permitir participación de parte del adulto mayor. He recibido una copia de este formulario de consentimiento.

Además de participar en las sesiones, yo autorizo a Amanda Alders, estudiante del programa de Terapia de Arte de Florida State University, para (indique cual de los siguientes aprueba):

___ Fotografiar las sesiones
___ Fotografiar los trabajos realizados
___ Usar las fotos del arte en publicaciones/presentaciones en el futuro.
___ Usar las materiales en publicaciones/presentaciones educacionales.
___ Usar las fotos de la investigación en publicaciones/presentaciones en el futuro.

El nombre del participante: ___________________________ Date: __________________

Firme del guardián: _______________________________ Date: __________________

Firme de la investigadora: _________________________ Date: __________________
Informed Consent/Confidentiality Agreement

The Use of Art Therapy with the Ethnically Diverse Older Adult Population

Researcher: Amanda Alders- Graduate Student at Florida State University.
Faculty Advisor: Marcia Rosal, PhD

Description: This 10 week study will investigate the use of the Art Therapy with the ethnically diverse elderly population. Prior to providing Art Therapy sessions, you will be asked to assist older adults in filling out a questionnaire, and in drawing a clock. When participating in this research study, you will be invited to facilitate art therapy sessions during which participants verbally brain-storm themes in a group, listen to music, paint, sculpt, make up stories/poems and create collages from photographs. Sessions may be photographed. A research protocol will be provided to you so that you may provide uniform therapy in line with the other therapists. You will be asked to submit information by e-mail and mail regarding the therapy sessions on a weekly basis. There will be 10 weeks of art therapy sessions during this research duration. At the end of the 10 weeks, you will be asked to once again assist older adults in completing the questionnaire and drawing the clock. You are encouraged to read this consent form carefully and to ask the person who presents it any further questions that you may have before making your decision whether or not to participate. This study is being conducted by Amanda Alders, a graduate student from Florida State University.

You are being asked to participate in this study because this study concerns the ethnically diverse older adult population, and in particular, individuals over 55 years of age and you have indicated that you work with this population and that you are willing to participate.

Purpose of Study: The purpose of this study is to investigate the use of the Art Therapy with ethnically diverse older adults.

Number of Participants: Approximately 100

Risks of Participation: It is possible that you may experience emotional distress, and uncomfortable feelings or thoughts while providing the Art Therapy sessions. As in all research, there may be unforeseen risks to the participant. If an accident or injury occurs, appropriate emergency measures will be taken.

Economic Considerations: Therapists will receive compensation ($25 per hour) for participating in this study, and you will be provided with art materials free of cost to enable you to provide Art Therapy sessions. There is no cost to participant in this study.

Benefits of Participation: It is possible that you may develop enhanced professional networking.
opportunities.

**Alternative to Participation:** If you chose not to provide the art therapy sessions, you are asked to inform the researcher as soon as possible.

**Confidentiality of Records:** If this research is published, or used in future grant applications, participant identity will be kept confidential to the extent allowed by law. I will take all appropriate steps to protect participant identity. The results of this research study may be presented at meetings, in publications, and in applications for further grants. However, participant names will be kept private.

**Contact Persons:** For more information concerning this research, or if you feel that participation has resulted in any emotional or physical discomfort, please contact or the IRB at (850) 644-8633.

If you have any questions about participant rights as a research subject, or any concerns or complaints, you may contact the primary researcher or the IRB: 2010 Levy Avenue, Suite 276-C, Tallahassee, FL 32306-2742, Ph: (850) 644-8633.

**Voluntary Participation:** Participation in this study is voluntary. You are free not to participate or to withdraw at any time, for whatever reason. In the event that you do withdraw from this study, the information you have already provided will be kept confidential.

**Participation Consent:** I have read or have had read to me the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I agree to participate in this study. I have received a copy of this form.

In addition to participating in the study, by signing below I am also giving my permission to: (Check all that apply.)

- [ ] Have the information from this study used in future publications and presentations.
- [ ] Have the photos from this study used in future publications and presentations.

Date: ___/___/____

_________________________________________    _______________________
Participant name (printed)               Participant signature

_________________________________________    _______________________
Researcher’s Name (printed)               Researcher’s signature
APPENDIX I

THERAPIST SURVEY

Original sent online.

Thank you so much for being a valuable contributor to this research project. Please take a few minutes and fill out the survey enclosed. Please try to answer with your first reaction.

1. Please provide the following:
   Name:
   State:
   Email Address:

2. Do you consider yourself an:
   art as therapy- therapist
   art psychotherapist
   other
   Other (please specify)

3. Duration of Therapy: Approximately how long did your therapy sessions typically last?
   under 30 minutes
   45 minutes
   60 minutes
   90 minutes
   varied greatly

4. What did the control participants do as an alternative to attending art therapy sessions?

5. What do you think was the main difference between the control group experience and the experimental group? The control group:
   only attended recreation and not art therapy
   attended arts and crafts but not art therapy
   did not have the socialization experience that the art therapy group did
   did not have the same opportunities for emotional expressivity
   did not have reminiscence through art
   other
   Other (please specify)

6. Please comment if you had any noteworthy experiences with control group participants (e.g. they attempted to attend multiple times, and the experimental group had to be reorganized to
allow their participation).

7. When providing art therapy to the experimental group, how closely did you follow the therapy protocol?
   I used all of the directives in order and followed them closely
   I applied my own style and preferences but used the directives as a guide
   I used some of the directives while also using my own
   I came up with all new directives

8. Did you feel that having the directives was helpful?
   Yes. It made providing therapy much easier. I will reuse the directives
   Yes but some of the directives were not well-received
   No. I don't like the structure of predetermined directives
   Other
   Other (please specify)

9. Were emotions processed during the session? If so how?
   Yes.
   Sometimes.
   No.
   If yes or maybe please specify how.

10. To what extent were emotions processed? 1 being rarely, 5 being occasional emotional facilitation, 10 indicates that emotions were processed every session for at least 15 minutes.

11. Did you provide art education in any way during the session? If so, how?
    Yes.
    Sometimes.
    No.
    If yes or sometimes please specify how.

12. To what extent did you teach about art materials/ techniques? 1 being rarely, 5 being occasional education, 10 indicates that education was provided every session for at least 15 minutes.

13. Was socialization facilitated during the session? If so how?
    Yes.
    Sometimes.
    No.
    If yes or sometimes please specify how.
14. To what extent was socialization emphasized? 1 being rarely, 5 being occasional social facilitation, 10 indicates that social interaction was encouraged every session for at least 15 minutes.

15. Were participants encouraged to talk about their artwork? If so, in what way?
   Yes.
   Sometimes.
   No.
   If yes or sometimes please specify how.

16. To what extent were participants encouraged to talk about their artwork? 1 being rarely, 5 being occasional discussion on product/process, 10 indicates that the art was processed every session for at least 15 minutes.

17. Was reminiscence a part of the art therapy session? If so, in what way?
   Yes.
   Sometimes.
   No.
   If yes or sometimes please specify how.

18. To what extent was reminiscence emphasized? 1 being rarely, 5 being occasional reminiscence, 10 indicates that memories were processed every session for at least 15 minutes.

19. Which degree of priority did you place on the following areas? Please limit repetitive rating.

<table>
<thead>
<tr>
<th>Area</th>
<th>rarely prioritized</th>
<th>occasionally prioritized</th>
<th>regularly prioritized</th>
<th>consistently prioritized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reminiscence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processing artwork</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional expression and regulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

20. Did the art therapy clients provide any comments to indicate that they thought the art therapy sessions were valuable for their intended purpose? (i.e. to improve cognition) Did they indicate that the sessions were valuable for an alternate purpose? Please explain.

21. At post-test, was attrition higher than expected? Meaning, did fewer participants complete the
post-test than you expected? If so why?
No. I had almost all of my participants complete the post-test.
Yes. My administrator was unhelpful.
Yes. The clients seemed apprehensive about the post-test.
Yes. Several clients passed away or were out of area.
Other (please specify)

22. Research collaboration is a valuable conference topic and participating in a panel discussion will allow you the opportunity to meet and discuss experiences associated with this research with the other participating therapists. Would you like to be contacted to be on a presentation panel at upcoming AATA conferences?
Yes.
No.
Maybe.
Funded Research Study seeks art therapists currently working with the elderly providing art therapy sessions. This study will provide compensation for detailed information regarding the work that you, as an art therapist, are currently doing with the elderly participants and for participation in an outcome based study. Compensation will total $500 or more for those art therapists selected for the study. If you are interested, please e-mail your resume.

Please include in the e-mail a short description of:

1.) Where you are currently working and how long you have been employed at that location providing art therapy.
2.) A short description of the type of elderly participants with whom you work (e.g. demographic information, dementia type).

If your qualification match what is being sought, within a few months you will be contacted. Deadline to respond to this e-mail: August 31st.

Thank you in advance.
REFERENCES


Basting, A. D. (2006). Arts in dementia care: ‘This is not the end... it’s the end of this chapter.’ *Generations, 30*(1), 16-20.


BIOGRAPHICAL SKETCH

Amanda Alders, MS, ATR, is a practicing art therapist currently residing in Miami, FL, who serves as president-elect of the Florida Art Therapy Association. Ms. Alders has studied, practiced, and taught art therapy internationally. Initially in 2006, Amanda attended the art therapy certificate program, CITA in Mexico City before moving to Rochester, NY, in 2007 to complete her Master’s in Creative Arts Therapy. During her graduate studies, Ms. Alders was awarded the 2007 American Art Therapy Association (AATA) Anniversary award. Following the completion of her Master’s degree, results from Ms. Alders’ Master’s thesis were published in the Art Therapy Journal and she was invited to assist as an art therapy guest lecturer in Hämeenlinna, Finland at the International School at HAMK University. Since then, Ms. Alders has continued to publish and present at national conferences.

Ms. Alders has been active on several national committees, including but not limited to, serving as Chair of the Technology Committee for AATA from 2010-2011. Additionally, from 2009 to 2011, Ms. Alders moderated the Art Therapy Alliance online discussion forum, Art Therapy & Older Adults with Neurogenerative Disorders. Ms. Alders encouraged discussions on art therapy with culturally diverse segments of the elderly population.

During her doctoral studies, Ms. Alders was awarded the Cridderbaugh Scholarship in 2009, the Jessie Lovano-Kerr Scholarship in 2010, and the FSU Research Grant in 2011. Additionally, Ms. Alders served as a Teaching Assistant from 2009-2010, and taught Introduction to Art Therapy (ARE 4930/5930) as well as Art Therapy Assessments (ARE 5552).