THE EFFECTS OF MUSIC THERAPY AND MUSIC EDUCATION ON THE QUALITY OF LIFE OF THE HEALTHY ELDERLY PEOPLE

by

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(Under the Direction of Roy Kennedy)

ABSTRACT

The purpose of this study was to identify optimal strategies of music intervention for contributing to the mental well-being of healthy elderly people. An experimental study was conducted to evaluate the effect of music therapy and music education on three groups of participants: healthy elderly unaccompanied during treatment sessions, healthy elderly accompanied by grandchildren (ages five to seven) during treatment sessions, and a control group. ANOVA and Independent Sample T-test techniques were employed to compare the effects of music activity among the groups, while Paired Sample T-test techniques were employed to test the effects of music activity within groups. The results indicated that the unaccompanied elderly group showed significant improvements on mood, self-esteem, and depression measurements, while the group of elderly accompanied by grandchildren showed improvement only on the mood scale. These results suggest several implications for the area of music therapy and music education, especially with regard to improving the healthy elderly’s self-esteem, depression, and mood as components of successful aging.

INDEX WORDS: Music therapy, Music education, Healthy elderly, Music intervention, Quality of life
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DEDICATION

This dissertation is dedicated to my parents, Dr. Euiyoung Suh, and Youngsook who supported me with heartfelt devotion and love and to my child, Joseph, who is our precious treasure. In addition, I especially would like to thank my husband, Joon, who provided me with encouragement and unfailing support.
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CHAPTER I

INTRODUCTION

As the elderly population in the United States (U.S.) increases, there are growing concerns about their healthcare in the U.S. health industry. During the 2000-2030 period, the elderly population is expected to grow from 6.9% to 12.0% in the U.S., from 15.5% to 24.3% in Europe, from 12.6% to 20.3% in North America, from 6.0% to 12.0% in Asia, and from 5.5% to 11.6% in Latin America and the Caribbean. In the U.S., approximately 35 million people were at least 65 years old in the year 2000, and the numbers are expected to rise to an estimated 71 million by the year 2030 (U.S. Census Bureau, 2008). This growth, both in number and in percentage of the overall population, demands an active and knowledgeable approach by the healthcare community in order to maintain and enhance quality of life for the elderly. It also underlines the necessity of providing cost-effective alternatives to nursing home care, as the need for assisted living residences is expected to rise from 15 to 20% during this time period (Cummings, 2002).

Because of the rising elderly population, there has been increased interest in supporting the quality of life of elderly people through nursing care, social services, medicine, and other areas of health care. As early as 2002, Coffman pointed out that music educators and researchers should focus on effective ways to improve the quality of life for the elderly. Recent researches also suggested that as the life span in America has increased, there is a greater chance of facing healthcare problems such as the loss of physiological, psychological, and social functions (Chan et al., 2006; Chachamovich et al., 2008).
Thus, it is important to establish programs that contribute to the quality of life of the elderly by involving them in daily living activities, physical exercise, and social interactions that provide healthy emotional outlets.

Enhancing the quality of life for the elderly, however, is not built upon a single concept but rather a multidimensional concept that defines health as “a state of complete physical, mental, and social well-being, and not merely an absence of disease” (Constitution of World Health Organization, 2006, p. 2). In addition, the philosophy of social services states that “providing activities that enhance the quality of life for the elderly can be considered an essential indicator of accountability of social services” (Hsieh, 2009, p. 71). The concept of quality of life for the elderly has temporal dimensions as well, including reflections on the past, expectations of the future, evaluations of the present, and the need for cues to strengthen one’s identity. These factors can assist in interpreting and predicating the quality of life for the elderly (Lawton, 2005). Thus, “quality of life is now an established outcome measure for people with dementia” (Hoe, 2009, p. 285). Lawton (1994) developed a conceptual framework of quality of life for people who have dementia including the domains of psychological well-being, behavioral competence, care environment, and perceived quality. Thus, long-term care facilities, social workers, and nursing assistants have an essential role in discovering and promoting these quality of life domains for the elderly.

At the same time, many researchers have also investigated the importance and benefits of music activities for the elderly, using a variety of music therapy practices that have physical, cognitive, neurophysiological, and psychological outcomes for Alzheimer’s Dementia (AD) patients (Brotons & Picket-Cooper, 1994; Gerdner, 2000; Hoe et al., 2009; Pollack, 1992). Music therapy is a therapeutic tool which may enhance the social, psychological, intellectual, and
cognitive performance, and reduce anxiety, restlessness, and agitation of geriatric clients with dementia disease (Gerdner, 1999). Furthermore, music is an effective tool to use with elderly people to encourage, stimulate, and give both the elderly people with dementia and the primary caregiver relief and comfort (Tappen, 1994).

In this context, the use of music as therapy may contribute immensely to the quality of life for older people. Hays and Minichiello (2005) stated, “Involvement in music activities may validate memories, give meaning to life, and bring a greater sense of spirituality to the elderly population” (p. 449). Involvement in music therapy activities may also serve as a method by which to evaluate the quality of life of the elderly population by evoking memories through reminiscence activities which can help people cope with stress, adapt to change, and enhance self-esteem (Chao et al., 2006; Clair, 1996). In addition, elderly persons’ involvement in music therapy activities may build and improve their self-identity and social interactions and assist in maintaining feelings related to the quality of life. Hays and Minichiello (2005) insisted on the importance of music experiences and music-related activities in the lives of elderly people with dementia because positive markers of well-being such as life satisfaction and happiness originate from such meaningful experiences.

In particular, although several music education and music therapy researchers have begun to study the effects of quality of life interventions on the elderly with Alzheimer’s disease and dementia, a few music educators and music therapists are beginning to examine the effects of different kinds of music experiences on healthy elderly people as well. Some of the music activities for healthy elderly people include participation in choir, wind bands, piano clubs, and music therapy groups (Meyers, 1990).
For example, in the music therapy setting, Coffman (2002) has reported that participation in both passive and active music therapy groups affects the quality of life for the healthy elderly in the following domains: physical well-being, psychological well-being, and their social relationships with family and peers.

Taking the previous literature into account, the purpose of this research was two-fold. First, this research evaluated the effect of a music therapy and music education experimental condition on healthy elderly people, especially for the three dimensions of quality of life (overall quality of life, self-esteem, and depression) and mood. Second, the effect of the combined music therapy and music education condition was compared among different elderly groups (healthy elderly unaccompanied to treatment sessions, healthy elderly accompanied by grandchildren (ages five to seven) during treatment sessions, and a control group receiving no treatment). In doing so, the research identified and recommended the optimal strategies for healthy elderly people on a long-term service basis. The experimental condition used in this research consisted of a combined music therapy and music education intervention which included choral singing, playing simple percussion instruments, lyric analysis, and movement to music activities. The effect of the music therapy and music education experimental condition was assessed in the format of pretest-posttest evaluations.

Overall, the purpose of this study was to investigate the benefit of musical involvement on the mental well-being of healthy elderly people and to explore how music participation in social settings may be implemented in long-term healthcare services for the healthy elderly.

To operationally investigate the purpose of this study, the following null hypotheses were formulated:
**Null Hypotheses**

(1) There will be no significant differences among the three experimental groups, based on their pretest to posttest gain scores on the quality of life, self-esteem, and levels of depression questionnaires.

(2) There will be no significant differences for the first experimental condition (unaccompanied healthy elderly) based on the pretest to posttest gain scores on the quality of life, self-esteem, and depression questionnaires.

(3) There will be no significant differences for the second experimental condition (healthy elderly accompanied by grandchildren) based on the pretest to posttest gain scores on the quality of life, self-esteem, and depression questionnaires.

(4) There will be no significant differences for the control group (no music intervention) based on the pretest to posttest gain scores on the quality of life, self-esteem, and depression questionnaires.

(5) There will be no significant differences for the experimental groups on their pretest to posttest gain scores on the mood questionnaire.

(6) There will be no significant differences for the first experimental condition (unaccompanied healthy elderly) based on the pretest to posttest gain scores on the mood questionnaire.

(7) There will be no significant differences for the second experimental condition (healthy elderly accompanied by grandchildren) based on the pretest to posttest gain scores on the mood questionnaire.
Need for the Study

Many music education and music therapy researchers have examined the effects of music experience on elderly patients (Ashida, 2000; Hanser & Thomson, 1994; Suzuki, 1998). However, relatively few music educators and music therapists have examined the effects of music on the healthy elderly, even though they can participate in various active and passive music activities such as choir, wind bands, piano clubs, and music therapy groups (Meyers, 1990). These music therapy and music education activities have a positive impact on the healthy elderly’s quality of life (Coffman, 2002).

Purpose of the Study

The purpose of this study was to investigate the effects of musical involvement on the overall quality of life of the healthy elderly. In doing so, this study attempted to determine to what extent the music conditions had positive effects on participants’ mood and the three dimensions of quality of life: overall quality of life, self-esteem, and depression. Moreover, this study also examined how the effects of the music therapy and music education experimental condition differed among three groups: healthy elderly unaccompanied to treatment sessions, healthy elderly accompanied by grandchildren (ages five to seven), and a control group of healthy elderly receiving no treatment.

Definition of Terms

For this research, the following independent and dependent variables were administered and evaluated. The independent variables included in this study were the following:
1) Music therapy and music education: The music activity in this research includes various active and passive music therapy and music education interventions including choral singing, playing simple percussion instruments, lyric analysis, and movement to music activities.

The dependent variables evaluated in this study were the following:

1) Overall quality of life: This research used The World Health Organization Quality of Life questionnaire to measure the participant’s perception of his or her position in life, in relation to physical health, psychological health, social relationships, and environmental factors (World Health Organization, 1995).

2) Self-Esteem: This term refers to a person’s feeling of self-worth and self-acceptance (Smith & Mackie, 2007) The Rosenberg Self-Esteem Survey (RSE) was used to assess the participants’ self-esteem (Rosenberg, 1965).

3) Depression: In this research, depression is defined as a sense of hopelessness, lack of interest in life, sadness, self-criticism, self-blame, slow thinking, poor concentration, appetite, and sleep disturbances in some healthy elderly people as they become older (Diagnostic and Statistical Manual of Mental Disorders, 2013). The Geriatric Depression Scale (GDS) of Sheikh and Yesavage (1986) was used to measure varying levels of the participants’ depression.

4) Mood: This variable was defined as the mood state (emotional feeling) of each participant immediately before and after each music therapy combined with music education session. The mood state of participants was evaluated in order to know how the participants’ mood state varied as a result of the experimental condition.
The responses on the mood questionnaire ranged from “not feeling well” to “greatly elated/inspired.”
CHAPTER II
LITERATURE REVIEW

Overview of Quality of Life in Music Therapy

Aging in a healthy manner is important in order to live a productive life and to maintain good health for older adults. With the increased elderly population in the United States, some empirical research has stressed the importance of quality of life for older people, investigating its aspects in several dimensions: psychological well being, good physical functioning, relationships with others, health, and social activity (Bowling, 1995; Browne et al., 1994). In the professions of music therapy and music education, research that involves older adults in music participation, with a variety of approaches, has been of interest to researchers (Ernst & Emmons, 1992; Ollenberger, 1994). In particular, such approaches have been examined for quality of life in the healthy elderly by having them participate in different music activity approaches (Bruhn, 2002; Coffman, 2002; Cohen, 2002; Meyers, 1990).

Music can enhance the quality of people’s experiences and human relationships both within the person (intrapersonal) and between persons (interpersonal). Indeed, Coffman (1992) emphasized the importance of musical experiences on the quality of life among elderly, and suggested that music therapy researchers need to investigate ways of improving the quality of life among the elderly with various approaches (Coffman, 1982).

Based on a broad spectrum of research, a variety of musical experiences with different music activities is essential in managing psychological well-being and improving the quality of life for the healthy elderly (Carr, 2008; Coffman, 1982). These quality-of-life experiences may
also be affected by participation in music activities, which play a role in alleviating stress and tension. Nordenfelt (1993) suggests that people can feel joy and satisfaction in expressing themselves through participation in music activities, and that such involvement enhances the quality of life. Furthermore, the quality of physical health may be affected by environmental factors, including material status and financial security. In addition, maintaining an active social life, in which senior citizens participate in new activities and make new friends, affects the quality of life for the healthy elderly. In fact, opportunities for social interactions for the elderly are most often available by participating in continuing educational classes (Flanagan, 1982).

The Meaning of Aging and Perceived Quality of Life

The term “quality of life” is defined in several ways. First, it has complex and multi-dimensional aspects comprising four domains: well-being, functional status, socioeconomic status, and self esteem. Four domains of quality of life can be interrelated with the integration of these domains and used for the ultimate measure of care outcomes (Lee, Chan, & Mok, 2010). The quality of life also has objective and subjective elements. Objective elements refer to a person’s experiential life such as their general health, functional, and socio-economic level. Subjective elements refer to something related to the personal feeling and experience, such as life-satisfaction, and self esteem (George & Bearon, 1980). Finally, quality of life is defined as an individual's perception of his or her position in life, within the context of the culture and value system in which he or she lives, and in relation to his or her goals, expectations, standards, and concerns (World Health Organization, 1995).

Quality of life is closely related to “successful aging” and “active aging.” The concept of active aging has factors in common with that of successful aging (Bowling, 1993, 2006, 2007).
Rowe and Kahn (1997) identified three main components of successful aging: absence of and low risk of disease, a high level of psychological and physical function, and continued engagement in hobbies and other interests in order to maintain activities, and life satisfaction. Thus, successful aging is enhanced from the outset by using music activities in order to retain social, mental, and physical health. Active aging refers to “the ability to be physically active,” and to “participate in social, economic, cultural, spiritual, and civic affairs” (WHO, 2002, p. 12). Research on active aging has focused on a broader range of activities such as “continuing to participate in society, maintaining the social, mental, and physical health that enables the maintenance of dignity, self-efficacy, and age-friendly physical environments which facilitate autonomy and independence” (Bowling, 2008, p. 294). Thus, successful aging and quality of life can be considered as “states of being,” and the concepts of active aging overlap with the most important component of successful aging and quality of life in order to enhance quality of life and mental and physical well-being (Bowling, 2008; Walker, 2002).

Self esteem

Self-esteem refers to the degree to which people feel positive or negative about themselves and their self-acceptance, self-respect, and self worth. In addition, self-esteem is the principal aspect of psychological well-being and is essential for successful and satisfying aging (Rosenberg, 1979). Low self-esteem is strongly related to a negative life experience including the death of a family member or loved one during adulthood, or lack of social relationships, which may cause depression as well (Fitch, 1970; Tennen & Hershberger, 1987).

Westerhof (2012) stated that, “A youthful age identity and positive personal experiences of aging were related to identity processes and self-esteem” (p. 1). Identifying with people of
younger ages and continuing a more positive experience of aging can lead to higher levels of self esteem (Westerhof, et al., 2012). Thus, a positive experience of aging leads to higher subjective levels of well being including self esteem, and better physical functioning in later life (Wurm, Tesch-Römer, & Tomasik, 2007).

Music is a nonthreatening medium, which allows people to engage in imaginative play and may prevent negative experiences in later life. Thus, participating in music activities can enhance the quality of life by promoting positive self esteem (Hays, & Minichiello, 2005). Some music therapy studies have suggested that reminiscence therapy can help people adapt, and improve self esteem, socialization, and life satisfaction as well as reducing depression, and sadness by recalling and reviewing past experiences, feelings, and thoughts. (Chao, 2006; Clair, 1996; Hays & Minichiello, 2005; Wang, 2004). Wang (2004) has adapted the theoretical foundation for reminiscence therapy from Erickson’s developmental theory and Butler’s life review process. In the final stage of human development, Erickson (1963) compared states of ego integrity versus despair and noted that if the elderly improve their ego-integrity, a sense of satisfaction with life and its meaning and significance is successfully fulfilled. Based on Erickson’s theory, Butler (1963) has created a universal mental process, in life review that shows ego-integrity achieved through recalling past events; thus, life review provides the elderly with an important sense of continuity and facilitates adaptation in their life.

Depression in Older Adults

Depressive symptoms are characterized as sadness, low mood, pessimism, self-criticism and self-blame, retardation or agitation, slow thinking, poor concentration, lack of appetite, and sleep disturbances. Depression is one of the most common mental illnesses in older adults.
Twenty percent of older American adults experienced symptoms of depression in 2004 (American Psychological Association, 2004). In fact, the greatest risk to mental and physical health for elderly people in long-term care resident is depression. Researchers reported that more than 26 percent of nursing home residents experience mild to severe depression (Ryden, Pearson, Kaas, & Hanscom, 1999). If symptoms of depression are not treated, they lead to a variety of negative outcomes in the elderly population such as loss of life satisfaction, psychosocial well-being, and quality of life (Mosher-Ashley & Lemay, 2001; Ranzijn, Keeves, Lusycz, & Feather, 1998; Rogers, 1999; Wong, Heiby, Kameoka, & Dubanoski, 1999). Therefore, researchers recommended that elderly people should be provided with a well-equipped environment that allows them to balance independence and well-being with daily living and recreational activities (Onishi, et al., 2006).

Depression can result in the decline of physical function, severe emotional pain, and risk of death in the elderly population. In addition, depression affects the level of functional activity of daily living skills and cognitive functioning (Steffens, 2009). Research studies have shown significant improvements, however, in behavioral and depressive symptoms of elderly clients that participated in music therapy groups where active involvement was required of the participants.

Several music researchers have reported the benefits of active music therapy approaches on the depression and anxiety levels of elderly clients using a variety of music therapy activities, including singing, instrumental playing, musical improvisation, song-writing, movement to music activities (Choi, Lee, & Lim, 2008; Guétin, et al., 2009), and Dance Movement Therapy (DMT) which combined music, exercise, and sensory stimulation activities (Nauert & Johnson, 2011).
Music approaches for quality of life, self-esteem, and depression

In the research literature concerning the quality of life of elderly people with or without illness, there are many claims of music’s effects on psychological well-being, such as depression, self-esteem, and quality of life, which include various music therapy and music education approaches including: listening to music, music and relaxation activities, lyric analysis, and instrument playing. There are, however, few studies on the effects of music on reminiscence skills of the elderly (Ashida, 2000; Bonny, 1980; Choi, Lee, & Lim, 2008; Clair, 1996; Laukka, 2007; Wang, 2004).

Music Therapy Literature

Several studies have used music therapy as a treatment intervention for elderly people with depression. For example, music therapy interventions that emphasize reminiscence techniques have been shown to alleviate depressive symptoms in elderly patients with and without dementia (Ashida, 2000; Hanser & Thomson, 1994; Suzuki, 1998). As elderly people remember music from the past, it can help them recall past memories associated with the music of their formative years. The ability of music to stimulate such emotions associated with memories of the elderly person’s formative years makes reminiscence techniques in music therapy treatment very effective in enhancing the quality of life of elderly persons. Furthermore, the nonthreatening quality of music activities may assist the elderly population in expressing their emotions and feelings and listening to music may improve their cognitive functioning, emotional feeling states, and overall mood (Chan, 2009; Sarkamo, Tervaniemi, & Laitinen, 2008).
Closer scrutiny of music therapy activities provides further evidence of the positive effects of music participation on the quality of life for the healthy elderly. For example, Hahn’s study (2010) used an induction process to enhance elderly clients’ participation in music therapy interventions by having them listen to music first and then join in more active musical activities. The induction process seemed to make the participants feel more comfortable, relaxed and willing to take part in the later activities, which required more physical activity and cognitive problem solving skills. Although no direct cause and effect data were collected, this process of induction and subsequent in-depth involvement of senior citizens may be correlated with their ability to develop new hobbies, appreciate new aspects of one’s culture, and to improve one’s physical and cognitive functioning.

Passive Music Activities

With regard to the use of passive music activities with the elderly population, several studies have investigated how listening to music affects the brain. Listening to music is one of the most common leisure activities among the elderly and can be a frequent source of positive emotions. Laukka (2007) reported that listening to music affects the emotional states of older people and can be used as an aid to regulate mood, self-esteem, and group cohesion.

In addition, physiological and neurological studies of the brain’s responses to music listening have shown positive effects on the emotional states and moods of young people and the elderly as well. For example, the neuronal learning and readjustment responses of brain cells stimulated by sound and music stimuli were shown to have positive and lasting effects on college students and senior citizens. During their investigations of the neurological and physiological responses to music, Lundqvist, Carlsson, Hilmersson, and Juslin (2009) investigated two basic
questions: can music evoke emotional responses in the listener (the emotivist position) and if so, can listeners perceive or identify specific emotions portrayed by the music (the cognitivist position). Similar to previous studies, the results of this study showed that happy music (fast tempo, high sound level, and major mode) induced more zygomatic muscle activity of the face (the ability to smile), lower finger temperature, greater skin conductance, and less sadness than sad music (slow tempo, low sound level, and minor mode). In addition, Blood, Zatorre, Bermudez and Evans (1999) investigated cerebral blood flow (CBF) in correlation with emotional responses to pleasant and unpleasant music (consonance vs. dissonance) using positron emission tomography (PET). This study demonstrated that high levels of dissonance was significantly correlated with negative reactions such as unpleasant, tense, irritated, annoying, and angry emotions, and that perceptions of consonant sounds were correlated with positive reactions such as pleasant, relaxed, non-irritated, un-annoyed, and calm emotions. Thus, these studies suggested that the act of listening to music has a strong effect on emotional response, independent of social interaction.

Reminiscence Therapy

In the reminiscence therapy literature, several studies exist concerning the use of reminiscence therapy on the mental well-being and quality of life of elderly people with or without dementia. For example, in Ashida’s music therapy study (2000), which included the use of reminiscence therapy techniques, the therapist asked each participant first to play the drum and sing at the beginning of each session in order to greet each participant individually and to assess the mood of each participant. The activities of the reminiscence music therapy sessions included a variety of topics for discussion with the seniors such as what were their usual
activities at home, how much time they spent indoors versus outdoors, what events and hobbies they participated in, and to what extent they traveled out of town and/or on vacations. In addition, the therapist asked the seniors to identify their favorite songs and then selected and used the preferred music of each participant as part of the reminiscence music therapy. The researcher then engaged the seniors listening to their favorite songs on a daily basis and discussed the memories and associated events that were elicited by the songs. The study concluded that after only five days of treatment the reminiscence music therapy was a beneficial technique for the reduction of depressive symptoms in elderly people with dementia. However, the study reported that the positive effects of the treatment were not retained long after the last music therapy sessions were discontinued.

Music and Relaxation Activities

Another type of music therapy intervention that may be effective in alleviating depressive symptoms in the elderly is the use of Guided Imagery and Music (GIM). The use of GIM has yielded positive results as an effective technique in modifying the thoughts, behaviors, self-esteem, and emotions of clients as they listen to classical music coupled with relaxation techniques. Studies that have investigated the effectiveness of the GIM techniques claimed that this type of intervention has positive effects in ameliorating negative psychological states when the treatment is administered over long periods of time. The Guided Imagery and Music (GIM) technique used auditory, sensory, and cognitive stimulation in efforts to induce an altered state of consciousness in clients, which in turn may alleviate their depressive symptoms (Bonny, 1980). In addition, some researchers have used GIM to treat the depressive symptoms of cancer patients and patients with posttraumatic stress disorders as well (Chou & Lin 2006).
Lyric Analysis

Lyric analysis is a primary technique used in reminiscence music therapy activities and gives opportunities for patients to review their own lives through the analysis and discussion of song lyrics. First, the patients are engaged in singing the songs, and then the lyrical content of the songs is analyzed and discussed. In addition, the patients may also participate in the lyric analysis process by playing instruments to accompany their singing. Collectively, these different ways of experiencing and processing the lyrical contents of songs help elderly patients to express their feelings and emotions and to examine important life events by discussing memories associated with the lyrics of songs in a group setting (Wlodarczyk, 2009).

Instrument Playing

Brotons and Picket-Cooper (1994) investigated the preferences of Alzheimer’s Dementia (AD) patients for different types of music activities and found that AD patients preferred instrument playing more often than singing activities. In addition, the researchers suggested several tips for working with patients who have Alzheimer’s in music therapy sessions. First, music therapists may pique the patients’ interests by using a variety of activities that stimulate the different senses and areas of functioning; for example, the therapist may capture the patients’ interest with action songs and varied rhythm instrument activities. Second, music therapists may elicit more accurate patient responses by task analyzing and simplifying activities, thus enabling clients to achieve immediate success in the music therapy groups (Brotons & Picket-Cooper, 1994; Clair & Bernstein, 1990).
Lee, Chan, and Mok (2010) categorized the goals of music therapy interventions for older people into the following eight areas: physical functioning, activity of daily living skills limitations due to physical problems, body pain, general health, vitality, social functioning, emotional problems, and overall mental health. In fact, music therapy has been a very effective treatment intervention for the improvement of physical functioning and improved general health and social and emotional behavior for many patients regardless of age and gender. For example, Thaut developed a technique to assist stroke patients in learning how to walk again called Rhythmic Auditory Stimulation (RAS). The key to this technique is that the rhythmic stimulus serves as a pacemaker or timekeeper, and assists the patients in timing the speed of their footsteps and length of stride to the rhythm of the music (Thaut et al., 1995). In other words, music therapists are able to train stroke patients to walk again by having them walk to prescribe tempos of music.

Music Education

In comparison to the music therapy literature, there are not nearly as many music education studies regarding the participation of older adults in music activities. However, since the number of elderly people now exceeds the number of young people throughout the world, it is time for music educators to investigate the various ways that music education experiences may enhance the quality of life for elderly people. A few studies, however, have indicated that music education for the healthy elderly may improve their health and quality of life.

The results of one such study authored by Darrow, Johnson, and Ollenberger (1994) indicated that choral music for healthy older adults can create an enjoyable environment through social interaction and cooperation in cross-generational choirs with college students. Ernst and
Emmons (1992) have suggested that participation in bands may improve the social, mental, and physical functioning of seniors as well. In addition, these authors have recommended that adult education programs need to expand their course offerings to include different kinds of programs such as orchestras, choruses, and keyboard classes for seniors.

Arts Appreciation

Other research projects have found that there is also a positive correlation between participation in arts appreciation activities and the physical and socio-emotional health of elderly people as well. Some studies have indicated the positive effects of participation in arts appreciation courses for older adults with and without health impairments. The results of such studies have indicated the importance of meaningful opportunities for the elderly population. Positive social interaction has been cited as one of the most important elements of “productive and successful aging” for elderly people as they need and want to join in life enhancing activities and experience friendship and closeness to others (Bruhn, 2002). Thus, musical activities such as listening to music and playing musical instruments allow the elderly population to join in group participation and social interaction and it affects their lives in a productive manner (Boswell, 1992; Bruhn 2002; Carr 2012; Cohen, 2001, 2004).

In another study, Dawn (2010) indicated that group participation in the arts enhances the personal growth and creative expression of older adults. Performing and/or actively making music in groups is an important and meaningful way for seniors to socially interact and such activities give them much pleasure. Since everyone in a musical performance group is responsible for performing their own part, they have individual responsibility for the group’s success and as people participate together, they can see progress and improvement in the group’s
performance, which fosters positive feelings of accomplishment. Music performance activities and general participation in music making with others may meet some basic human needs of the elderly and assist in maintaining and/or improving their psychological and physical well being (Clair, 1996).

Quality of Life

Many studies have suggested the importance of participation in music groups for older people (Cross, 1988; Cohen, Bailey, & Nilsson, 2002). The quality of life for elderly persons may be enhanced regardless of their mental status when they are engaged in music activities such as listening, playing instruments, and singing in a choir (Coffman, 2002; Cohen, Bailey, & Nilsson, 2002). Group music therapy singing activities may include lyrics that address activity of daily living skills for the elderly and choir activities which provide larger venues for social interactions of the elderly people (Bruhn, 2002). In addition, some elderly participants may be interested in taking music lessons on a specific instrument as well. Most elderly people remember and prefer music of their formative years and the music therapist or music educator must take this into consideration when planning music therapy or music education activities for the elderly. In fact, it is necessary for the music therapist or music educator to conduct an assessment of the musical preferences of the elderly clients involved in such groups before such activities begin. In addition, demographic information regarding the age, gender, educational level, and socioeconomic status of the participants and their musical preferences may have an impact on the results of quality of life studies for the elderly as well.
Erikson’s schema of the developmental stages in the first half of life includes six stages, five of which are supposedly achieved by adolescence, leaving only one stage to be attained during adulthood. Unlike Erikson’s developmental stages of life, Cohen (2001) classified and extended four developmental phases in the second half of life and explained each phase with regard to general age categories; for example, when people reach “midlife” they often find themselves involved in a re-evaluation phase of life, which may manifest itself in a more liberating manner of thinking about their journey through life and their accomplishments. This phase may also include a summing up of life’s events thus far and lead a person to set goals for an “encore” in the second half of their lives. According to Cohen, there is plenty of potential for aging adults to achieve new feats during the second half of life. During the developmental phases of the second half of life many individuals may achieve much growth and creative expression by being actively involved in life and helping others. Cohen (2001) has suggested that music therapists can engage older adults in the development of their creative expression and encourage them to do creative work by themselves in the second half of life. Music as a form of entertainment is an excellent way to engage the self and others in creative expression and social interaction (Flanagan, 1982).

In summary, the results of many research studies have established that music therapy is an effective healthcare intervention for elderly people that may already be chronically ill or have dementia or Alzheimer’s Disease. Relatively few studies, however, have investigated the benefits of music therapy and/or music education activities on the quality of life of the healthy elderly population.
Since music therapy has been shown to be an effective intervention for decreasing depression, anxiety, and increasing the quality of life of the elderly population that is already chronically ill it seems logical that music therapy and music education may at the least serve to enhance the quality of life for senior citizens who are still healthy. Furthermore, the involvement of the elderly in musical activities may enhance their motivation, communication, recall of past memories, social interaction, and in general provide seniors with pleasurable activities.

Passive therapy approaches such as reminiscence therapy and music listening have also been found very effective in reducing depressive symptoms for elderly people with and without dementia. Music activities such as music listening, lyric analysis, and reminiscence therapy play an important role in older adults’ perceptions about the quality of their lives (Coffman, 2002). Researchers need to explore many different approaches that may serve as life management strategies which consider the relationship between musical activities and the quality of life, which translates into “successful aging” for the healthy elderly population.
CHAPTER III
HYPOTHESES

Hypotheses

Based on the literature review, which suggests that music therapy and music education activities have positive effects on elderly participants’ quality of life, self-esteem, levels of depression, and emotional mood, the following seven hypotheses were posed to test the effects of different music therapy and music education conditions on the mental well-being and quality of life of healthy elderly people:

H1: There will be significant differences between three different experimental groups (music for the healthy elderly unaccompanied to treatment sessions, music for the healthy elderly accompanied by grandchildren (ages five to seven), and a no-treatment control group), based on the pretest to posttest gain scores on the overall quality of life, self-esteem, and levels of depression questionnaires.

H2: There will be a significant improvement for the first experimental group (music for unaccompanied healthy elderly) based on the pretest to posttest gain scores on overall quality of life, self-esteem, and depression questionnaires.

H3: There will be significant improvement for the second experimental group (music for the healthy elderly accompanied by grandchildren (ages five to seven) based on the pretest to posttest gain scores on overall quality of life, self-esteem, and depression questionnaires.
H4: There will be no significant improvement for the control group (no music intervention) based on the pretest to posttest gain scores on the overall quality of life, self-esteem, and depression questionnaires.

H5: There will be significant differences between the healthy elderly without grandchildren and the healthy elderly with grandchildren (ages five to seven) groups based on their pretest to posttest gain scores on the mood questionnaire.

H6: There will be a significant improvement for the first experimental condition (music group for elderly) based on the pretest to posttest gain scores on the mood question.

H7: There will be significant improvement for the second experimental group (the healthy elderly with grandchildren (ages five to seven) based on the pretest to posttest gain scores on the mood questionnaire.

With reference to the literature review, (Ashida, 2000; Chao, 2006; Clair, 1996; Coffman, 2002; Ernst & Emmons, 1992; Hays & Minichiello, 2005; Laukka, 2007; Nordenfelt, 1993; Wang, 2004), it was proposed that the music therapy and music education experimental conditions used in this research study would improve the participants' psychological well-being on the dependent variables of quality of life, self-esteem, depression, and mood. Moreover, it was proposed that the improvement among the participants in the treatment groups would be significantly different when compared to the participants in the no-music control group, who were not exposed to any music intervention.
In order to test these hypotheses, this research study implemented a music therapy and music education experimental condition, which was administered to a healthy elderly unaccompanied by grandchildren group and a healthy elderly accompanied by grandchildren group. In fact, previous studies have included the healthy elderly as research participants in music therapy and music education classes/sessions (Breheny et al., 2013). For instance, Carr (2008) and Coffman (2002) recruited healthy elderly participants only to examine the effects of several music therapy methods on psychological well-being. In addition, Lin and Harwood (2003), Ruiz and Silverstein (2007), Kam and Nussbaum (2008) and Breheny and her colleagues (2013) recruited elderly participants and their grandchildren to investigate how the grandparent-grandchild relationship might affect the psychological and social well-being of the grandparents. Thus, using music therapy and music education interventions may positively affect an elderly person’s quality of life, self-esteem, levels of depression, and mood.
CHAPTER IV

METHODOLOGY

As noted in Chapter I, experimental research procedures were executed to test seven hypotheses. The researcher implemented three experimental conditions with healthy elderly participants to examine whether music therapy and music education interventions resulted in different outcomes for the experimental groups (i.e., healthy elderly unaccompanied to treatment sessions, healthy elderly accompanied by grandchildren (ages five to seven), and a no-treatment control group) on the participants' quality of life, self-esteem, levels of depression, and mood. Detailed explanations about the participants, the assessment instruments, and procedures are provided in the following sections of the methodology.

Participants

The participants in this study were 41 volunteers, ranging in age from 55 to 80 years, from local churches in a small town in the southeastern United States. The participants were enrolled in one of three experimental groups. Eighteen individuals participated in the healthy elderly only experimental condition, six individuals participated in the healthy elderly accompanied by grandchildren (ages five to seven) experimental condition, and seventeen individuals participated in the no-treatment control condition. Each participant in the study met the following criteria: 1) the participant lived independently, as a single person or with a spouse in the community, rather than in a nursing home or assisted living center, and 2) none of the participants had cognitive impairment or dementia.
Assessment Instruments

The following evaluation instruments were used in this study: (1) a demographic questionnaire was used to gather formation about the participants gender, age, and level of independent living; (2) the World Health Organization’s Quality of Life questionnaire (WHOQOL-BREF) (World Health Organization, 1995), was use to evaluate the overall physical health, psychological well-being, social relationships, and environmental health of the participants; (3) the Rosenberg Self-Esteem Survey, was used to evaluate the global self-esteem of the participants (Rosenberg, 1965); (4) the Geriatric Depression Scale (Short Form; Sheikh & Yesavage, 1986), was used to assess the participants’ level of depression; and (5) the Mood questionnaire, was used to assess the participants’ state of mood. Further details about these measurements include the following:

1) Demographic information: The items in the demographic information asked participants’ for information about their age, gender socioeconomic status, and musical preferences, and current level of music activity.

2) The World Health Organization Quality of Life-BREF (WHOQOL-BREF) questionnaire included 26 items (World Health Organization, 1995). The WHOQOL-BREF has a high reliability and validity for several populations worldwide, and has four broad domains of overall quality of life: physical health, psychological health, social relationships, and environmental factors. All four domains are related to physical health and psychological well-being.

3) The Rosenberg Self-Esteem Survey (RSE) was used to assess the participants’ self-esteem (Rosenberg, 1965). The RSE has 10 items, which uses a Likert scale for simplicity of participants’ responses, and is a highly reliable instrument (alpha = .85).
The Likert responses on the RSE ranged from 1 (completely agree) to 4 (completely disagree).

4) The Geriatric Depression Scale (GDS) was used to measure participants’ levels of depression. The version of the GDS used for this study had 15 items, which is a short form of the GDS that originally included 30 items. The GDS has been shown to yield 92% sensitivity and 89% specificity rates when compared to other geriatric depression diagnostic tests. The reliability of the GDS when used with the institutionalized elderly has yielded an alpha coefficient = .99 and a test-retest reliability = .94 (Lesher, 1986). Sheikh and Yesavage (1986) compared the long and short forms of the GDS for self-rating symptoms of depression for validity. The results showed that both forms are supportive in differentiating depressed from non-depressed adults with a high correlation (r = .84, p < .001) (Sheikh & Yesavage, 1986).

5) The Mood questionnaire was also used as an assessment tool in this research. The research participants were asked to respond to the questions on the Mood questionnaire before and after each music therapy and music education intervention. The mood questionnaire was used to assess any changes in each participant’s mood that might be due to either the music therapy or music education intervention (Eaglely & Chaiken 1993). The Mood questionnaire has a four-point Likert scale for simplicity of participants’ responses. The Likert scale on the Mood questionnaire ranged form 0 (Low, not feeling well) to 4 (Great, elated and inspired).
Procedure

Among the three experimental conditions in this research, the unaccompanied healthy elderly and healthy elderly accompanied by grandchildren (ages five to seven) received either the music therapy combined with music education experimental condition, while the no-treatment control group did not receive any experimental condition. The research participants in all three experimental conditions were assessed before the first music therapy or music education session and again, after the last music therapy or music education session on the dependent variables of quality of life, self-esteem, and depression. The researcher administered the music therapy and music education experimental conditions for a period of six weeks. The participants’ mood was assessed with the mood questionnaire, however, before and after each music therapy and education session. The mood assessment was conducted in order to assess what extent each participants’ mood may have changed from the beginning to the end of each music therapy and education session.

For each experimental group, the protocol for music therapy and music education was as follows:

1. Experimental condition unaccompanied healthy elderly: This group met for 1 hour each week for six weeks to practice preferred songs that represented different styles of music such as religious music, American popular music, and/or patriotic music to engage the participants in active and passive music activities. In the passive listening activities, the participants listened to the preferred music of the clients for the purposes of evoking a particular mood and/or other associated (referential) feeling or meaning in response to the music. Live music performed by the therapist and/or recorded music was used for these purposes. After participating in passive listening music experiences, the participants were
encouraged to discuss and share their feelings in response to the music with regard to the 
mood of the music and the associated memories (referential meanings) that the music 
may have invoked. In addition, the participants participated in choral singing and singing 
while playing musical instruments as well. The researcher led the choral singing activities, 
while a pianist played the choral accompaniment. The researcher taught the participants 
their singing parts (bass, tenor, alto and soprano) in sectional rehearsal style and then had 
all of the participants sing their parts together in a typical choral rehearsal method.

Therapeutic Instrumental Music Playing (TIMP) was also used as a music 
therapy technique for the healthy elderly participants. The researcher used “easy to play 
percussion instruments” such as frame drums, paddle drums, floor drums, metallophones, 
tambourines, and egg shakers. The participants sang the songs in choir and had the 
opportunity to play repeated rhythms and/or simple melodies with the percussion 
instruments as they sang along with their peers in the group. In addition, the participants 
were presented with opportunities for individual self-expression by playing instrumental 
solo parts that were arranged by the researcher as part of the choral accompaniment.

2. Experimental group of healthy elderly accompanied by grandchildren (ages five to 
seven): The same protocol that was implemented for the unaccompanied healthy elderly 
experimental condition was implemented for the healthy elderly accompanied by 
grandchildren experimental condition. However, the researcher had to customize the 
music and songs used in the unaccompanied healthy elderly condition in order to meet 
the grandchildren’s musical preferences.
3. Control group: Among the total of 41 participants in this research, 17 participants were randomly assigned to the control group, which received no music therapy or music education intervention. Mood was not measured in this group due to the no-music intervention. The quality of life, self-esteem, and depression dependent variables were measured at the beginning of the six-week interval, as the pretest, and again at the end of the six-week period as a posttest. Additionally, the researcher administered the demographic questionnaire to all the participants at the beginning of the six-week period to gather information about the participants’ age, gender, music preferences, and current musical activity in social groups and/or individual music-making activity level.
CHAPTER V

RESULTS

As explained in Chapter IV, 41 participants signed informed consent forms prior to the beginning of the study and participated in the experimental conditions. Among them, 18 participated in the unaccompanied healthy elderly group, 6 participated in the healthy elderly accompanied by grandchildren (ages five to seven) group, and 17 participated in the no-treatment control group. Before analyzing the data to test the seven hypotheses posed in this research, a preliminary analysis was conducted for the participants’ demographic information.

Participants’ Demographic information

Analysis of the demographic data was completed in order to determine if the potential participants' met the criteria to be included in the study. The analysis of the demographic data was done in order to determine (1) whether the participants were a representative sample for the healthy elderly and (2) whether the demographic information among the three experimental groups was consistent or not.
Table 1

Basic Demographic Information

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-60</td>
<td>9</td>
<td>22.0%</td>
</tr>
<tr>
<td>61-70</td>
<td>23</td>
<td>56.1%</td>
</tr>
<tr>
<td>71-80</td>
<td>8</td>
<td>19.5%</td>
</tr>
<tr>
<td>More than 80</td>
<td>1</td>
<td>2.4%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>9</td>
<td>22%</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>78%</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>Married</td>
<td>30</td>
<td>73%</td>
</tr>
<tr>
<td>Widowed</td>
<td>5</td>
<td>12%</td>
</tr>
<tr>
<td>Divorced</td>
<td>5</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>9</td>
<td>22%</td>
</tr>
<tr>
<td>College</td>
<td>15</td>
<td>36%</td>
</tr>
<tr>
<td>Graduate</td>
<td>11</td>
<td>27%</td>
</tr>
<tr>
<td>Doctorate</td>
<td>6</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Living Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>8</td>
<td>20%</td>
</tr>
<tr>
<td>With spouse</td>
<td>29</td>
<td>71%</td>
</tr>
<tr>
<td>With children</td>
<td>2</td>
<td>5%</td>
</tr>
<tr>
<td>With other family members</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td>With roommate</td>
<td>1</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Primary Source of Economic Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>30</td>
<td>75%</td>
</tr>
<tr>
<td>Comprehensive Social Security assistance</td>
<td>7</td>
<td>17.50%</td>
</tr>
<tr>
<td>Family support</td>
<td>3</td>
<td>7.50%</td>
</tr>
<tr>
<td><strong>Frequency of Hospital or Doctor Visits per Month</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once</td>
<td>20</td>
<td>47.6%</td>
</tr>
<tr>
<td>Twice</td>
<td>12</td>
<td>28.6%</td>
</tr>
<tr>
<td>Three times</td>
<td>7</td>
<td>16.7%</td>
</tr>
<tr>
<td>Five times</td>
<td>1</td>
<td>2.5%</td>
</tr>
</tbody>
</table>
As shown in Table 1, the majority of all participants (78%) were more than 60 years old. The participants’ ages ranged from 55 to 82 years, with a mean value of 66.02 years old (SD = 6.27). Seventy three percent of all participants were married, and 78% of the participants had an academic degree higher than a bachelor’s degree. More than 70% of all participants lived with their spouse and were financially self-sufficient. Their average frequency of doctor or hospital visits per month was 1.75 (SD = 1.27).

Based on these facts, the subjects in this study sufficiently represented the characteristics of the “healthy elderly” population. Specifically taking the participants’ age and economic status into account, their average age was more than 65 years old, and the majority of the participants had a sufficient income to support themselves without needing any support from other family members or comprehensive social security assistance. In addition, with regard to educational accomplishments, all of the participants in the study had more than a high school education, and nearly half of them (42%) had either a master’s (27%) or doctoral (15%) degree. The average number of medical visits per month for the participants was not high considering their age, and most of their reasons for visiting the doctor were for regularly scheduled medical checkups. Thus, it can be concluded that the majority of participants in this study were generally self-sufficient, well-educated, healthy elderly adults living with their spouse.

Furthermore, additional analysis was conducted with the demographic information to determine if there were any significant differences among the research participants in the three experimental groups. For this purpose, age, frequency of hospital/doctor visits, and economic status were examined among the experimental groups in order to determine if the participants met the definition of the “healthy elderly.”
As shown in Table 2, the average age of participants was about 65 years. Regarding the age difference among the participants in the experimental condition, the average age of the music group for the elderly was 66.83 ($SD = 6.13$) and the average age of the participants in the healthy elderly with grandchildren was 67.17 ($SD = 2.99$). The average age of participants in the no-treatment control condition was 64.76 ($SD = 7.26$).

When the mean ages of the participants in the three experimental groups were compared with a One-way Analysis of Variance (ANOVA) statistical test, the average ages among participants in the three experimental groups were not significantly different ($F (2, 38) = .58, p > .05$).

Table 3

Participants’ Average Hospital/Doctor Visits per Month by Experimental Group

<table>
<thead>
<tr>
<th>Experimental Groups</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music group for elderly</td>
<td>18</td>
<td>1.94</td>
<td>1.00</td>
</tr>
<tr>
<td>Music group for elderly with grandchildren</td>
<td>6</td>
<td>1.63</td>
<td>0.89</td>
</tr>
<tr>
<td>Control group</td>
<td>17</td>
<td>1.50</td>
<td>0.84</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>1.75</td>
<td>0.93</td>
</tr>
</tbody>
</table>
Similarly, the average frequency of participants’ monthly hospital/doctor visits was also compared among the experimental groups. As described in Table 3, each group’s average frequency of monthly hospital visits ranged from 1.50 to 1.94, which seems to be quite consistent. The result of a One-way ANOVA test indicated that the average frequency was not significantly different among participants in the three experimental groups ($F (2, 37) = .75, p > .05$).

Table 4

<table>
<thead>
<tr>
<th>Primary Source of Financial Support by Experimental Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Security</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Music group for unaccompanied elderly</td>
</tr>
<tr>
<td>Music group for elderly with grandchildren</td>
</tr>
<tr>
<td>Control group</td>
</tr>
</tbody>
</table>

As presented in Table 4, the participants’ economic status was compared among the three experimental conditions. Self-support was the most frequently cited primary means of support, followed by comprehensive social security assistance and family support.

Indeed, according to the chi-square test for the cross-tabulation, the proportional balance was not significantly different between the experimental groups ($\chi^2 (4) = 2.015, p > .05$).

Finally, based on the results above, it was concluded that the participants were a representative sample for the healthy elderly and the demographic information among the three experimental conditions was not significantly different. Thus, the subjects in this study sufficiently represented the healthy elderly population, and this representativeness was not differentiated among the three experimental groups.
Hypotheses Testing

Hypothesis 1 Test: As previously described in Chapter III, Hypothesis 1 was proposed as follows:

H1: There will be significant differences among the three experimental groups which include the following: the music therapy and music education experimental condition for the healthy elderly not accompanied to the sessions, the therapy and music education experimental condition for the healthy elderly accompanied by grandchildren (ages five to seven), and the no-music control condition, based on their pretest to posttest gain scores on overall quality of life, self-esteem, and levels of depression questionnaires.

In other words, the hypothesis predicted that the music therapy and music education experimental conditions would have significant effects on the participants' overall quality of life, self-esteem, and levels of depression, whereas the no treatment control condition would not yield any positive effects on the dependent variables.

Table 5

Mean and Univariate F-value Differences on Dependent Variables between Experimental Groups

<table>
<thead>
<tr>
<th>Experimental Conditions</th>
<th>Self-esteem</th>
<th>Depression</th>
<th>QOL-physical health</th>
<th>QOL-psychological health</th>
<th>QOL-social relationship</th>
<th>QOL-environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music group for unaccompanied elderly</td>
<td>3.22 (4.01)</td>
<td>1.22 (2.37)</td>
<td>.13 (.36)</td>
<td>.11 (.39)</td>
<td>.09 (.65)</td>
<td>.04 (.39)</td>
</tr>
<tr>
<td>Music group for elderly with grandchildren</td>
<td>.83 (2.99)</td>
<td>-.33 (.82)</td>
<td>.14 (.29)</td>
<td>.03 (.13)</td>
<td>.25 (.27)</td>
<td>.04 (.18)</td>
</tr>
<tr>
<td>Control group</td>
<td>.00 (1.70)</td>
<td>.18 (.88)</td>
<td>.05 (.37)</td>
<td>-.04 (.31)</td>
<td>.18 (.58)</td>
<td>.13 (.25)</td>
</tr>
<tr>
<td>Univariate F-value</td>
<td>4.92*</td>
<td>2.60#</td>
<td>.26</td>
<td>.90</td>
<td>.20</td>
<td>.19</td>
</tr>
</tbody>
</table>

Note:
QOL = Quality of Life, Univariate d.f. = 2/38,  *p<.10, *p<.05
Table 5 represents the participants' gain scores on the quality of life, self-esteem, and levels of depression. Regarding the mean differences among the experimental conditions, the healthy elderly only group had higher gain scores than the healthy elderly with grandchildren group across the dependent variables. Multiple one-way ANOVA results, however, indicated a significant main effect for self-esteem only ($F(2, 38) = 4.92, p < .05$), and closely approached the significance level for depression ($F(2, 38) = 2.60, p < .10$).

Additionally, for these two dependent variables, Leven’s test of homogeneity of variances was greater than the $p > .05$ level. Thus, the mean differences in sample variances occurred based on the equal variances in the population (see Levene, 1960), indicating that the results of the one-way ANOVA tests were valid for these two dependent variables.
Table 6

Post-hoc Comparisons of Gain Scores between Experimental Groups

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Group Difference</th>
<th>Mean Difference</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Music group for unaccompanied elderly</td>
<td>3.22</td>
<td>3.13**</td>
</tr>
<tr>
<td></td>
<td>- Control group</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music group for unaccompanied elderly</td>
<td>2.39</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>-0.83</td>
<td>-0.84</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td>Music group for unaccompanied elderly</td>
<td>1.05</td>
<td>1.71#</td>
</tr>
<tr>
<td></td>
<td>- Control group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>Music group for unaccompanied elderly</td>
<td>1.56</td>
<td>1.56</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>0.51</td>
<td>1.24</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QOL</td>
<td>Music group for unaccompanied elderly</td>
<td>0.08</td>
<td>0.62</td>
</tr>
<tr>
<td>physical health</td>
<td>- Control group</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music group for unaccompanied elderly</td>
<td>-0.02</td>
<td>-0.10</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>-0.09</td>
<td>-0.55</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QOL</td>
<td>Music group for unaccompanied elderly</td>
<td>0.15</td>
<td>1.26</td>
</tr>
<tr>
<td>psychological</td>
<td>- Control group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>health</td>
<td>Music group for unaccompanied elderly</td>
<td>0.08</td>
<td>0.51</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>-0.07</td>
<td>-0.51</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QOL</td>
<td>Music group for unaccompanied elderly</td>
<td>-0.08</td>
<td>-0.40</td>
</tr>
<tr>
<td>social relationship</td>
<td>- Control group</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music group for unaccompanied elderly</td>
<td>-0.16</td>
<td>-0.57</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>-0.07</td>
<td>-0.30</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QOL</td>
<td>Music group for unaccompanied elderly</td>
<td>-0.01</td>
<td>-0.02</td>
</tr>
<tr>
<td>environment</td>
<td>- Control group</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music group for unaccompanied elderly</td>
<td>-0.08</td>
<td>-0.49</td>
</tr>
<tr>
<td></td>
<td>- Music group for elderly with grandchildren</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control group</td>
<td>-0.08</td>
<td>-0.85</td>
</tr>
</tbody>
</table>

Note:
QOL = Quality of Life, *p<.10, **p<.01
Based on the ANOVA results above, post hoc comparisons of gain scores were also conducted between experimental groups. For these post hoc tests, Independent Sample T-Tests were employed, as the test is quite robust to small sample sizes and violations of normality (see Moore, 2007; Kuzma and Bohnenblust 2005; Student, 1908). As described in Table 6, the post hoc tests were statistically significant only on the comparison of self-esteem gain scores between the healthy elderly music therapy and music education condition and the no-treatment control group (Δ = 3.22, t = 3.13, p < .001). The unaccompanied healthy elderly condition, however, had higher self-esteem gain scores than the no-treatment control condition as well. The post-hoc comparison of means for these two groups also closely approached the level of significance on the depression gain scores (Δ = 1.05, t = 1.71, p < .10). Other than these two comparisons, post-hoc comparisons did not result in significant differences among the experimental conditions. Thus, H1 was partially supported in favor of the healthy elderly music therapy and music education condition gain scores in comparison to the no-treatment control condition on the self-esteem and depression variables.

Hypothesis 2 Test: Hypothesis 2 predicted the following:

H2: There will be a significant improvement for the first experimental group (music therapy and music education for the elderly unaccompanied to the treatment sessions) based on the pretest to posttest gain scores on overall quality of life, self-esteem, and depression questionnaires.

It was proposed that the music therapy condition for the unaccompanied healthy elderly condition would yield significant effects on the dependent variables of quality of life, self-esteem, and depression.
To test H2, Paired Sample T-tests were conducted to compare the participants’ pretest and posttest gain scores on each dependent variable.

Table 7 presents the mean differences of the dependent variables between pretest gain scores and posttest gain scores for the experimental condition of the unaccompanied healthy elderly people.

Table 7
Comparisons of Pretest and Posttest-Gain Scores on the Dependent Variables for the Music Group for Unaccompanied Elderly

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Mean Difference between Pretest and Posttest-Gain Scores</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>3.22</td>
<td>3.41**</td>
</tr>
<tr>
<td>Depression</td>
<td>-1.22</td>
<td>-2.19*</td>
</tr>
<tr>
<td>QOL - physical health</td>
<td>0.13</td>
<td>1.51</td>
</tr>
<tr>
<td>QOL - psychological health</td>
<td>0.11</td>
<td>1.22</td>
</tr>
<tr>
<td>QOL - social relationships</td>
<td>0.09</td>
<td>.61</td>
</tr>
<tr>
<td>QOL - environment</td>
<td>0.04</td>
<td>.45</td>
</tr>
</tbody>
</table>

Note:
QOL = Quality of Life, *p<.05, **p<.01

According to the results, the difference between the pretest and posttest gain score means was significant for self-esteem ($\Delta = 3.22, t = 3.41, p < .01$) and depression ($\Delta = -1.22, t = -2.19, p < .05$). Therefore, the music therapy intervention for this experimental condition resulted in significant improvements on the participants' self-esteem and depression. The pretest to posttest gain scores on the four domains of overall quality of life (physical health, psychological health, social relationships, and environment), however, did not result in significant improvements. Thus, Hypothesis 2 was only partially supported.
Hypothesis 3 Test: Similar to Hypothesis 2, Hypothesis 3 predicted the following:

H3: There will be significant improvement for the second experimental condition (the healthy elderly accompanied by grandchildren (ages five to seven) based on the pretest to posttest gain scores on overall quality of life, self-esteem, and depression questionnaires.

It was proposed that the music therapy and music education experimental condition for the elderly accompanied by grandchildren (ages five to seven) group would result in significant effects on overall quality of life, self-esteem, and depression levels. H2 was tested with Paired Sample T-tests to compare participants’ pretest and posttest gain scores on these dependent variables.

Table 8
Comparisons between Pre- and Post- Gain Scores of Dependent Variables in the Music Group with Grandchildren

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Mean Difference between Pre- and Post-Gain Scores</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>0.83</td>
<td>0.68</td>
</tr>
<tr>
<td>Depression</td>
<td>0.33</td>
<td>1.00</td>
</tr>
<tr>
<td>QOL - physical health</td>
<td>0.14</td>
<td>1.22</td>
</tr>
<tr>
<td>QOL - psychological health</td>
<td>0.11</td>
<td>0.54</td>
</tr>
<tr>
<td>QOL - social relationship</td>
<td>0.25</td>
<td>2.24*</td>
</tr>
<tr>
<td>QOL - environment</td>
<td>0.13</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Table 8 presents the pretest to posttest gain score means for the healthy elderly accompanied by grandchildren (ages five to seven) group. Based on these results, the difference from pretest to posttest gain score means was not statistically significant across all of the dependent variables.
The social relationship domain of quality of life was the only dependent variable that approached the significance level ($\Delta = 0.25$, $t = 2.24$, $p < .10$). Thus, H3 was rejected.

*Hypothesis 4 Test:* In contrast to Hypotheses 2 and 3, Hypothesis 4 predicted the following:

H4: There will be no significant improvement for the control group (no music intervention) based on the pretest to posttest gain scores on the quality of life, self-esteem, and depression questionnaires.

It was proposed that there would be no significant differences on pretest to posttest gain score means on the overall quality of life, self-esteem, and depression levels of the no-treatment control condition. Table 9 represents the gain score mean differences of the dependent variables for the no-treatment control group.

Table 9

Comparisons between Pretest and Posttest Gain Scores of Dependent Variables in the Control Group

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Mean Difference between Pre-and Post-Gain Scores</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Depression</td>
<td>-0.18</td>
<td>-0.82</td>
</tr>
<tr>
<td>QOL - physical health</td>
<td>0.50</td>
<td>0.56</td>
</tr>
<tr>
<td>QOL - psychological health</td>
<td>-0.39</td>
<td>-0.52</td>
</tr>
<tr>
<td>QOL - social relationship</td>
<td>0.18</td>
<td>1.26</td>
</tr>
<tr>
<td>QOL – environment</td>
<td>0.05</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Note:*  
QOL = Quality of Life
Based on the results of the pretest to posttest gain score means, there were no significant differences across all of the dependent variables. Therefore, the overall quality of life, self-esteem, and depression levels of the participants in the no-treatment control group were not significantly changed from pretest to posttest. Thus, H4 was fully supported.

_Hypothesis 5 Test:_ Hypothesis 5 was proposed as follows:

H5: There will be significant differences between the unaccompanied healthy elderly group and the healthy elderly accompanied by grandchildren (ages five to seven) group based on their pretest to posttest gain score means for the dependent variable of mood.

It was proposed that the gain score means of the dependent variables would be significantly different between the unaccompanied healthy elderly group and the healthy elderly accompanied by grandchildren group. To test H5, an Independent Samples T-test was conducted to compare the gain score means on mood between the two experimental groups.

Table 10 presents the mean difference of the gain scores and the t-test score for mood between the experimental groups.

Table 10
Comparisons between Pre- and Post-Gain Scores of Mood Between the Two Experimental Groups

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Mean of Gain Scores</th>
<th>Mean Difference</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music group for unaccompanied elderly</td>
<td>5.78 (3.00)</td>
<td>4.61</td>
<td>5.67***</td>
</tr>
<tr>
<td>Music group for elderly with grandchildren</td>
<td>1.17 (0.98)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:***p<.001
The $t$-test analysis of pretest to posttest gain scores between the healthy elderly only
group and the healthy elderly with grandchildren group was significant on the dependent variable
of mood ($\Delta = 4.61, t = 5.67, p < .001$). Therefore, the unaccompanied healthy elderly group
experienced a significantly better increase in mood than the elderly group accompanied by
grandchildren.

Thus, H5 was supported, and the effect of the music therapy and music education
experimental condition was more effective for the unaccompanied healthy elderly condition.

_Hypothesis 6 Test:_ Regarding the participants’ mood, Hypothesis 6 predicted the
following:

H6: There will be a significant improvement from the pretest to posttest for the first
experimental group (the unaccompanied healthy elderly) on the dependent variable of
mood.

It was proposed that the music therapy and music education experimental condition
would yield significantly positive effects on their mood scores. To test H6, Paired Sample T-tests
were conducted to compare the participants’ pretest to posttest gain scores on their mood during
the music therapy/music education experimental condition. Table 11 presents the mean
difference between pretest and posttest gain scores on the dependent variable of mood for the
unaccompanied healthy elderly group.
Table 11

Comparisons between Pretest and Posttest Gain Scores on Mood for the Unaccompanied Healthy Elderly Group

<table>
<thead>
<tr>
<th>Timing of Measurement</th>
<th>Mean of Gain Scores</th>
<th>Mean Difference</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>19.33 (3.69)</td>
<td>5.78</td>
<td>8.17***</td>
</tr>
<tr>
<td>Posttest</td>
<td>25.11 (4.82)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: ***p<.001

The paired t test analysis on the pretest to posttest gain score means was significant (Δ = 5.78, t = 8.17, p < .001). Therefore, implementation of the music therapy/music education experimental condition resulted in a significant improvement of the unaccompanied healthy elderly participants' mood. Thus, H6 was fully supported.

Hypothesis 7 Test: Similar to Hypothesis 6, Hypothesis 7 predicted the following:

H7: There will be significant improvement for the second experimental group (the healthy elderly accompanied by grandchildren (ages five to seven) based on the pretest to posttest gain scores on the dependent variable of mood.

It was proposed that implementation of the music therapy/music education experimental condition for the healthy elderly group accompanied by grandchildren would yield a significantly positive effect on the grandparents’ mood. H7 was also tested using Paired Sample T-tests to compare the participants’ pretest to posttest gain score means on mood. Table 12 represents the pretest to posttest gain score means on mood for the healthy elderly accompanied by grandchildren group.
Table 12

Comparisons Between Pre- and Post-Gain Scores of Emotional Mood in the Music Group of Elderly Accompanied by Grandchildren

<table>
<thead>
<tr>
<th>Timing of Measurement</th>
<th>Mean of Gain Scores</th>
<th>Mean Difference</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>14.33 (4.56)</td>
<td>1.17</td>
<td>2.91*</td>
</tr>
<tr>
<td>Posttest</td>
<td>15.17 (4.36)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note:* *p<.05

The results of the paired t-test analysis indicated that the pretest to posttest gain score means were significantly different on the dependent variable of mood for the healthy elderly accompanied by grandchildren group (Δ = 1.17, t = 2.91, p < .05). Therefore, the mood of the healthy elderly accompanied by grandchildren group was significantly improved as a result of the music therapy/music education experimental condition. Thus, H7 was fully supported.
Chapter VI

SUMMARY AND DISCUSSION

This research was executed to test the effects of a combined music therapy and music education experimental condition on healthy elderly persons’ quality of life. Specifically, by employing several psychometric assessments representing the quality of life, this experiment tested the effects of music therapy and music education activities on the healthy elderly in several ways. First, the study evaluated the effects of an integrated music therapy and music education experimental condition on the overall quality of life, self-esteem, depression, and mood of the research participants. Second, this study compared the effects of the music therapy and music education experimental condition on the dependent variables of overall quality of life, self-esteem, depression, and mood among the three different groups: the healthy elderly unaccompanied to treatment sessions, the healthy elderly accompanied by grandchildren (ages five to seven), and a no-treatment control group. In doing so, the overall purpose of this study was to identify and recommend the optimal strategies of a combined music therapy and music education intervention for healthy elderly people. To accomplish the overall and specific research purposes, the following seven hypotheses were proposed:

(1) H1 was posed to compare the effects of music therapy and education on overall quality of life, self-esteem, and depression between experimental groups.
(2) H2, H3, and H4 were proposed to test the effects of music therapy and music education on the overall quality of life, self-esteem, and depression for each individual experimental group.

(3) H5 was proposed to compare the effects of the music therapy and music education experimental condition on mood among the experimental groups.

(4) H6 and H7 were proposed to test the effects of the music therapy and music education on mood for each experimental group.

To test these hypotheses, this research conducted an experiment with three different participant groups. These groups were the healthy elderly unaccompanied to treatment sessions, healthy elderly accompanied by grandchildren (ages five to seven), and a no-music control group. For each group, the effects of music therapy and music education were measured with a pretest/posttest design. ANOVA and Independent Sample T-test techniques were employed to compare the effects of the music therapy and music education experimental condition between the groups, while Paired Sample T-test techniques were employed to test the effects of music activity within groups.

Summary of the Major Findings of the Experiment

Among the three different groups of the healthy elderly, H1 predicted that the music therapy and education experimental conditions would yield significantly different effects on self-esteem, depression, and overall quality of life. Moreover, H2 and H3 predicted that the music therapy and music education experimental conditions would also produce significant effects within groups, while H4 predicted that the no-treatment music control group would produce no effects.
As a result, improved self-esteem and depression levels were found in the unaccompanied healthy elderly group in comparison to the other groups.

When the effects were analyzed within groups, the music conditions showed significantly positive effects on self-esteem and depression of the unaccompanied healthy elderly group, but did not have any significant effects on the other groups.

H5 predicted that the music therapy and music education experimental condition would yield significantly different effects between the unaccompanied healthy elderly and the healthy elderly accompanied by grandchildren (ages five to seven) groups. Hence, H6 and H7 predicted that the music therapy and education experimental conditions would produce positive improvements in mood in both treatment groups. The results indicated that the improvement of mood in the unaccompanied healthy elderly group was significantly better than the mood scores for the healthy elderly accompanied by grandchildren group, although both groups showed improvement on the dependent variable of mood.

Implications of the Results

Based on the results of hypotheses testing, the findings of this research provide several important implications for participation of the healthy elderly people in both music therapy and education activities. These implications are organized and discussed below.

First, the most important finding in this research is that the use of a combined music therapy and education experimental condition was most beneficial for the unaccompanied healthy elderly group, especially with regard to mood, self-esteem, and depression. Although the music therapy and music education condition increased the levels of mood for both of the treatment groups, the improvement in levels of self-esteem and depression were significant only
for the unaccompanied healthy elderly only group. Considering that self-esteem and depression represent individuals’ overall health and quality of life (see Eagly & Chaiken, 1993; Clements-Cortes, 2014), an interpretation of these results may be that the increased levels of mood in the healthy-elderly may be related to the levels of self-esteem and depression of participants. Thus it is interesting to note in this study that the unaccompanied healthy elderly group achieved improvement across the dependent variables of self-esteem, depression, and mood.

Discussion

With regard to the positive effects of music interventions on the attitudes of the elderly, several previous studies provided findings that attitudes of the elderly people may be related to their overall health. Darrow et al. (1994) reported that intergenerational choral singing improved older persons’ cross-age attitudes toward younger participants. Clements-Cortes (2014) found that choir sessions over 16 weeks improved mood, energy, and happiness of patients with dementia. Choi et al. (2008) also found that playing instruments and singing contributed to reduction of depression and anxiety of psychiatric patients.

This research study, however, makes a unique contribution to the current music therapy research literature in two ways. First, this experiment recruited only healthy elderly individuals as research participants, while previous studies recruited research participants with a focus on elderly participants’ specific diseases (Clements-Cortes, 2014; Choi et al., 2008). This research, however, suggests that the interventions of music therapy and music education may be useful as life management strategies, which may assist the healthy elderly in maintaining a successful aging process through improved levels of mood, self-esteem, and depression.
Moreover, the second unique contribution of this study is the combined use of a music therapy and music education intervention in efforts to maintain and/or improve the quality of life for healthy elderly participants. Music therapy was used as a therapeutic method and music education was used as an educational method for the healthy elderly in this research. Although previous studies also employed different music therapy methods (Choi et al., 2008; Clements-Cortes, 2014), few studies attempted to include a music education experimental condition in their music therapy intervention programs.

Even though Darrow et al. (1994) tested the effect of choral singing as a music education intervention, the researchers only observed the change of cross-age attitudes of the elderly participants and college student participants towards one another. In this study, however, the music therapy and music education experimental condition had a significantly positive effect on dependent variables that may be related to the attitudes of elderly participants with regard to successful aging. Indeed, during each session, all participants had opportunities to explore their inner states of mind and to review their own lives through creative music therapy and education approaches, such as lyric analysis, song discussion, instrument playing, and choral singing in a group setting. The participants listened to their favorite songs and expressed their preferences for the music and lyrics that had associated memories from their formative years during the song lyric discussions.

After each music session was finished, most of the participants commented on their love of playing instruments and choral singing. The participants indicated that playing instruments (music therapy) and choral singing activities (music education) were the activities that best affected their mood. In fact, the participants listed the following adjectives as descriptive of moods that were associated with playing instruments and choral singing activities: pleasure,
delight, inspired, fun, comfort, and meaningful. Many participants also mentioned that they loved the choral singing activities because they had opportunities to recall significant memories and moments with loved ones. In addition, the participants mentioned that playing instruments and singing activities created an enjoyable atmosphere through interacting socially with peers. Thus, the music intervention including music therapy and music education together was useful in improving mood, self-esteem, and depression of the healthy elderly as these interventions provided different psychological benefits such as happiness and life satisfaction (also see Menec, 2003; Colin et al, 2009). Whether music therapy or music education interventions were used, several researchers have indicated that music improved elderly participants mental well-being when it was connected with the persons past life experiences, memories of personal events, and the meaning of their lives (Hays & Minichiello, 2005; Cooke et al., 2010).

**Recommendations**

This research found that the music therapy and music education experimental condition did not have a significant effect on the participants’ overall quality of life in any of the groups. Actually, these insignificant results were also found in some other studies testing the effects of music therapy methods (Sole et al., 2010; Mot et al., 2010). These studies reported that music therapy and music education interventions increased the participants’ overall quality of life, but the benefit was not statistically significant. Considering these findings, several possible reasons may be considered for the insignificant effect of music therapy and education on the overall quality of life.

First, since the participants already had a high level of overall quality of life, the effects of music therapy and music education participation may have been somewhat limited. Indeed,
according to the data in this study (Sole et al., 2010), the mean value of the participants’ overall quality of life was more than 4.00 across the groups. Thus, this ceiling effect may have caused the analyses of pretest to posttest gain score comparisons to be insignificant. Second, the insignificant effects may have been due to the short duration (six weeks of music therapy/music education sessions) of the intervention. Thus, future studies may need to extend the length of music therapy and music education intervention in order to more thoroughly investigate their effects on the quality of life for the healthy elderly.

Furthermore, the results in this study indicated that the music therapy/music education sessions were not as effective for the healthy elderly accompanied by grandchildren (ages five to seven) group in comparison to the unaccompanied healthy elderly group. Except for improvement in the mood variable, there were no significant beneficial effects on self-esteem, depression, and quality of life for the healthy elderly with grandchildren group. Thus, the inclusion of grandchildren with the healthy elderly in a combined music therapy and music education experimental condition is not recommended as a result of this study. Indeed, previous studies have indicated that grandparents may experience physical and emotional hardships while taking care of grandchildren (Minkler et al., 1997; Szinovacz et al., 1999; Strawbridge et al., 1997). One plausible explanation may be that it is difficult for grandparents and grandchildren to maintain their concentration on music tasks during a combined music therapy and music education intervention.

Additionally, the healthy elderly accompanied by grandchildren group also had the following difficulties and limitations. First, due to the small sample size in this group, a replication study is needed with more participants to confirm the results.
Second, the insignificant results may also be due to the necessary alterations in the selection of songs and instrument playing activities in order to accommodate the developmental levels of the grandchildren.

Although the same music therapy and music education methods for both the unaccompanied healthy elderly and the healthy elderly accompanied by grandchildren groups, it was necessary to customize the music song plan for the healthy elderly with grandchildren, so that the grandchildren would be actively engaged for the entire duration of the sessions. As the musical preference for the participants is the most important factor for the benefit of music therapy (Standley, 1986), this may have affected the results for the healthy elderly accompanied by grandchildren group. Therefore, in future studies music therapists need to consider the musical preferences for both the grandparents and grandchildren, or consider recruiting older participants (e.g., the elderly’s sons, daughters, or teenage grandchildren), thereby narrowing the generational gap and making it easier to find common music preferences.

In conclusion, this research suggests that music therapy and music education for the healthy elderly may improve their levels of mood, self-esteem, and depression. In addition, music therapy and music education interventions are especially suggested for unaccompanied healthy elderly participants. Regardless of the therapeutic or educational intent of such interventions, music can help the healthy elderly to express and share their emotions and feelings through listening, playing, and choral singing, which may in turn contribute to the enhancement of their self-esteem, depression, and mood, as components of successful aging. Thus, being engaged in music activities can help the healthy elderly by promoting their mental health and wellness through their music experiences with other people.
REFERENCES


*Journal of Personality and Social Psychology, 16*, 311-315


*Journal of Poetry Therapy. 22* (3), 133-139.


APPENDIX A
RECRUITMENT LETTER

Dear Participant:

I am a professor in the Department of Music Education at The University of Georgia and I would like to invite you to participate in a study that is entitled “the effects music therapy and music education on the quality of life of the healthy elderly people.” The purpose of this study is to see how much you may enjoy participating in a music group.

The only requirements for your participation in this study are that you are not living in a nursing home or retirement community and that you do not have dementia or Alzheimer’s disease and that you are willing to participate in the music activities.

You will participate in singing songs and playing simple percussion instruments for about 45 minutes each week, for eight consecutive weeks. We only need for you to fill out answers on some questionnaires concerning your enjoyment of the music groups before the music activities begin and at the end of the eight-weeks.

If you would like to participate in this research study please contact me at this email address: rkenndey@uga.edu or call me at (706) 765-4809.
Your involvement in the study is voluntary, and you may choose not to participate or to stop at any time without penalty or loss of benefits to which you are otherwise entitled. Your identity, and the information that you provide on the questionnaires will be held as confidential information in my files at The University of Georgia. The results of the research study may be published, but your name will not be used.

The findings from this project may provide information on the benefits of participating in music groups for you and others in the healthy elderly population. If you feel tired during any of the music activities you may ask to rest or be excused from the group during that activity.

If you have any questions about this research project, please feel free to call me, Dr. Roy Kennedy, at (706) 765-4809 or send an e-mail to me at the following email address: rkenney@uga.edu. Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 629 Boyd GSRC, Athens, Georgia 30602; telephone (706) 542-3199; email address irb@uga.edu.

Thank you for your consideration! Please keep this letter for your records.

Sincerely,
Dr. Roy Kennedy
Director of Music Therapy
The University of Georgia
CONSENT LETTER

I, __________________________________________ agree to participate in a research study titled “the effects of music therapy and music education on the quality of life of the healthy elderly people” conducted by NaeJeong Suh from the Department of Music Education at the University of Georgia (706) 542-2801 under the direction of Dr. John R. Kennedy, Department of Music Education, University of Georgia. I understand that my participation is voluntary. I can refuse to participate or stop taking part at any time without giving any reason, and without penalty or loss of benefits to which I am otherwise entitled. I can ask to have all of the information about me returned to me, removed from the research records, or destroyed.

The reason for this study is to test different types of music activities to find out if senior citizens enjoy them and benefit from them. If I volunteer to take part in this study, I will be asked to do the following things:

1) Answer questions about my health, age, gender, social activities and musical preferences which will take about 1 hour at two different times during the study

2) Participate in singing activities in a choir group, for 1 hour each week, for 6 weeks

3) Participate in a music therapy group, for 1 hour each week, for 6 weeks. During the music therapy groups I will be asked to participate by playing simple percussion
instruments, singing familiar songs and participating in movement to music activities. The movement to music activities will not be difficult and I may remain seated for the movement activities if necessary.

The benefits for me are that the different music activities may help me understand and learn new ways to spend my leisure time and enjoy my life to the fullest. The researchers also hope to learn more about the effectiveness of different music activities for senior citizens.

No risk is expected but I may experience some discomfort or stress during the movement to music activities and/or singing activities. The risks of my participation in the singing and movement to music activities include the unlikely possibilities that I may feel discomfort in moving some muscles or joint pain and I could feel fatigued, faint, or dizzy during the movement to music activities. These risks will be reduced in the following ways: at any time I feel discomfort during singing or movement to music activities I will stop participating and take a seat. The researchers will always have a chair available for me and I may sit down and rest at any time I choose during the music activities.

No individually-identifiable information about me, or provided by me during the research will be shared with others without my written permission, except if it is necessary to protect my welfare (for example, if I were injured and need physician care) or if required by law. I will be assigned an identifying number and this number will be used on all of the questionnaires I fill out. In order to make this study a valid one, some information about my participation or the study will be withheld until completion of the study. The investigator will answer any further questions
about the research, now or during the course of the project. I give my permission for the researchers to release the information I will provide on the questionnaires to be used in publications that may be made available to the public. Circle one YES/NO Initial ______.

I understand that I am agreeing by my signature on this form to take part in this research project and understand that I will receive a signed copy of this consent form for my records.

Name of Researcher: ___________________________ Signature: ___________________________ Date: ________________
Telephone: ___________________________
Email: ___________________________

Name of Participant: ___________________________ Signature: ___________________________ Date: ________________

Please sing both copies, keep one and return one to the researcher. Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 629 Boyd Graduate Studies Research Center, Athens, Georgia 30602; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu.
I give my consent for my child ___________________________ to participate in the research
titled, "The Effects of Music Therapy and Music Education on the Quality of Life of the
Healthy Elderly,” which is being conducted by Nae Jeong Suh (706 714-2169), under the
direction of Dr. Roy Kennedy (706 542-2801), the Director of Music Therapy, at The University
of Georgia. I understand that this participation is entirely voluntary; I or my child can withdraw
consent at any time without penalty or loss of benefits to which we are otherwise entitled. If I
decide to withdraw my child from the study, the information that can be identified as theirs will
be kept as part of the study and may continue to be analyzed, unless I make a written request to
remove, return, or destroy the information.

1. The reason for the research is to investigate how musical involvement may benefit the quality
   of life of healthy elderly people and how including structured play with grandchildren, in the
   context of the music activities, may or may not affect the grandparents quality of life as a
   result of participating in the music activities.

2. The benefits that my child may expect from the research are: having a good opportunity to
   have a structured play time with grandparents while singing songs and playing simple
   percussion instruments.

3. The procedures are as follows: The research project will take place over a period of six weeks.
   During that time, the researchers will be collecting data by asking the grand parent
participants to respond to several questionnaires. I understand that the researchers will only ask my child to respond to 2 questions: 1) Did you enjoy the music time with your grandparents? Please circle Yes or No; 2) What did you enjoy the most about the music time with your grandparents?

4. No discomforts or stresses are foreseen.

5. No risks are foreseen. My child's participation is voluntary. I understand that my child will be given alternative, equivalent exercises if he/she does not consent to participation. My child will not be graded on his/her participation in the music activities.

6. The results of this participation will be confidential, and will not be released in any individually identifiable form without the prior consent of myself, and my child, unless otherwise required by law.

7. After the data for this study has been analyzed, my child’s name will be removed from all of the research documents used in this study and any information about my child will be identified only by an assigned number.

8. In order to make this study a valid one, some information about my child’s participation or the study will be withheld until completion of the study.

9. The researchers will answer any further questions about the research, now or during the course of the project, and can be reached by phone at 706-542-2801.

Please sign both copies of this form. Keep one and return the other to the investigators.

Your Child's Name: ________________________________

Your Signature: ________________________________ Date ______

Your Printed Name: ________________________________
Signature of Researcher: ___________________________ Date ________

Printed Name of Researcher: ___________________________

If you have any questions or concerns regarding your child’s rights as a research participant in this study, you may contact the Institutional Review Board (IRB) Chairperson at 706.542.3199 or irb@uga.edu.
1. What is your gender?
   _____Male
   _____Female

2. What is your age?

3. What is your marital status?
   _____Now married
   _____Widowed
   _____Divorced
   _____Separated
   _____Never married

4. What is your education level?
   _____No schooling completed
   _____High School diploma
   _____College diploma
   _____Graduate degree
   _____Doctorate degree

5. What is your economic status
   _____Comprehensive Social Security Assistance
6. What are your living arrangements?
   _____ I live alone
   _____ I live with my children or grandchildren
   _____ I live with other relatives
   _____ I have a roommate
   _____ I live with spouse

7. How often do you visit the hospital or doctor’s office each month?
   _____ 1-3 times a month
   _____ more than 4 times a month
   _____ less than 1 time per month
   _____ 2 times per year
   _____ other, please specify

8. Do you enjoy listening to music or playing musical instruments? If so, when do you listen to music and what type of musical instrument do you play?
   _____ Yes
   _____ No

9. Are you currently participating in any music activities? If so, in which type of group are you participating?
   _____ Yes
   _____ No
10. What type of music do you prefer?
   _____ Classical music
   _____ Popular, Country, Rock, Jazz
   _____ Patriotic music
   _____ Hymns or religious music
   _____ Broadway musicals
   _____ Other, please specify

11. How often do you listen to or play music?
   _____ Every day
   _____ Every Other day of the week
   _____ Once a week
   _____ Once every two weeks
   _____ Once a month
   _____ Less than once a month

12. Do you share music listening or music making experiences with others? If so, please describe the type of experiences that you share.
   _____ By yourself
   _____ With others
   _____ With a group
APPENDIX C (continued)

ROSENBERG SELF-ESTEEM SURVEY

The scale is a ten item Likert scale with items answered on a four point scale - from strongly agree to strongly disagree. The original sample for which the scale was developed consisted of 5,024 High School Juniors and Seniors from 10 randomly selected schools in New York State.

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. If you strongly disagree, circle SD.

1. On the whole, I am satisfied with myself.  
2.* At times, I think I am no good at all.  
3. I feel that I have a number of good qualities.  
4. I am able to do things as well as most other people.  
5.* I feel I do not have much to be proud of.  
6.* I certainly feel useless at times.  
7. I feel that I’m a person of worth, at least on an equal plane with others.  
8.* I wish I could have more respect for myself.  
9.* All in all, I am inclined to feel that I am a failure.  
10. I take a positive attitude toward myself.

Scoring: SA=3, A=2, D=1, SD=0. Items with an asterisk are reverse scored, that is, SA=0, A=1, D=2, SD=3. Sum the scores for the 10 items. The higher the score, the higher the self esteem.

The scale may be used without explicit permission. The author's family, however, would like to be kept informed of its use:

The Morris Rosenberg Foundation c/o Department of Sociology University of Maryland 2112 Art/Soc Building College Park, MD 20742-1315
APPENDIX C (continued)

THE GERIATRIC’S DEPRESSION SCALE

Name: ____________________________ Date: ____________________________

**Instructions:** Choose the best answer for how you felt over the past week. Note: when asking the patient to complete the form, provide the self-rated form (included on the following page).

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Answer</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Are you basically satisfied with your life?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Have you dropped many of your activities and interests?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Do you feel that your life is empty?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Do you often get bored?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Are you in good spirits most of the time?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Are you afraid that something bad is going to happen to you?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Do you feel happy most of the time?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Do you often feel helpless?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Do you prefer to stay at home, rather than going out and doing new things?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Do you feel you have more problems with memory than most people?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Do you think it is wonderful to be alive?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Do you feel pretty worthless the way you are now?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Do you feel full of energy?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Do you feel that your situation is hopeless?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Do you think that most people are better off than you are?</td>
<td>YES / NO</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**

(Sheikh & Yesavage, 1986)
APPENDIX C (continued)

WORLD HEALTH ORGANIZATION’S QUALITY OF LIFE QUESTIONNAIRE

WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last four weeks.

<table>
<thead>
<tr>
<th></th>
<th>Very poor</th>
<th>Poor</th>
<th>Neither poor nor good</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How would you rate your quality of life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. How satisfied are you with your health?</td>
<td>Very dissatisfied</td>
<td>Dissatisfied</td>
<td>Neither satisfied nor dissatisfied</td>
<td>Satisfied</td>
<td>Very satisfied</td>
</tr>
</tbody>
</table>
The following questions ask about **how much** you have experienced certain things in the last four weeks.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>An extreme amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>To what extent do you feel that physical pain prevents you from do?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>How much do you need any medical treatment to function in your daily life?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>How much do you enjoy life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>To what extent do you feel your life to be meaningful?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>How well are you able to concentrate?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>How safe do you feel in your daily life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>How healthy is your physical environment?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Mostly</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>Do you have enough energy for everyday life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>Are you able to accept your bodily appearance?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12.</td>
<td>Have you enough money to meet your needs?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13.</td>
<td>How available to you is the information that you need in your day-to-day life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14.</td>
<td>To what extent do you have the opportunity for leisure activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15.</td>
<td>How well are you able to get around?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16.</td>
<td>How satisfied are you with your sleep?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>17.</td>
<td>How satisfied are you with your ability to perform your daily living activities?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>18.</td>
<td>How satisfied are you with your capacity for work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>How satisfied are you with yourself?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>How satisfied are you with your personal relationships?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>How satisfied are you with your sex life?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>How satisfied are you with the support you get from your friends?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>How satisfied are you with the conditions of your living place?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>How satisfied are you with your access to health services?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>How satisfied are you with your transport?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following question refers to how often you have felt or experienced certain things in the last four weeks.

**Do you have any comments about the assessment?**

*The following table should be completed after the interview is finished*

<table>
<thead>
<tr>
<th>26.</th>
<th>How often do you have negative feelings such as blue mood, despair, anxiety, depression?</th>
<th>Never</th>
<th>Seldom</th>
<th>Quite often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Please write your NAME here ______________________________________

**Before the Music Therapy Session Begins**

1. How is your mood at this moment?

Please circle 1 of the following answers and write a 1-2 sentence statement that describes how you are feeling at this very moment.

1) Low, not feeling well
2) Okay, but not great
3) Good, generally happy
4) Great, elated and inspired

**After the Music Therapy Session is Over**

2. How is your mood at this moment?

Please circle 1 of the following answers and **write a 1-2 sentence** statement that describes how you are feeling at this very moment.

1) Low, not feeling well
2) Okay, but not great
3) Good, generally happy
4) Great, elated and inspired

3. Which activity do you like the best today? Why?