

HUYCKE, SUZANNE M., M.S. The Effect of Magic as a Therapeutic Recreation Intervention on the Self-Esteem and Depression of Older Adults in Long-Term Care Facilities. (2014)

Directed by Dr. Charlsena Stone. 65 pp.

Depression and low self-esteem are issues that confront many adults as they age. These concerns are particularly prominent in older adults who move into long-term care facilities, such as assisted living centers or nursing homes. With the increasing number of older adults, it is important to design interventions that can help decrease depression and increase self-esteem levels in this population. This quantitative study used the Rosenberg Self-Esteem Scale (RSE) and the Geriatric Depression Scale (GDS) to explore the potential benefits of a four-week, eight-session magic as a therapeutic recreation intervention program on the self-esteem and depression levels of older adults. Also, the relationship between levels of depression and self-esteem was explored. Though results did not show a statistically significant difference between the control and experimental groups or statistically significant changes from the pre-test to the post-test to the follow-up test for the experimental group, a relationship was shown between self-esteem and depression, specifically with high levels of self-esteem correlating with low levels of depression. Factors that could have impacted the scores, limitations of this study, and directions for future research are discussed.

THE EFFECT OF MAGIC AS A THERAPEUTIC RECREATION INTERVENTION
ON THE SELF-ESTEEM AND DEPRESSION OF OLDER ADULTS
IN LONG-TERM CARE FACILITIES

by

Suzanne M. Huycke

A Thesis Submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Master of Science

Greensboro
2014

Approved by

Committee Chair

Thank you to my committee members for their help and support during my research, and to the faculty of the Community and Therapeutic Recreation Department for their encouragement. Thank you to my friends for keeping the sunshine in my life. Thank you to my family, including my brother Tommy, sister-in-law Kara, and niece Anna for much-needed cheer and reassurance. Finally, thank you to my parents. Without their love and confidence I would not have succeeded.

APPROVAL PAGE

This thesis written by SUZANNE M. HUYCKE has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair _____

Committee Members _____

Date of Acceptance by Committee

Date of Final Oral Examination

TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF FIGURES	vi
CHAPTER	
I. INTRODUCTION	1
II. REVIEW OF THE LITERATURE	3
Depression in Older Adults.....	3
Self-Esteem in Older Adults.....	5
The Relationship between Self-Esteem and Depression in Older Adults.....	6
The Impact of Expressive Therapies on Self-Esteem and Depression.....	8
Magic as a Therapeutic Recreation Intervention	13
Magic and the Self-Determination Theory	17
Research Questions.....	20
III. METHOD	21
Participants.....	21
Measures	22
Procedure	26
Data Analysis.....	30
IV. RESULTS	32
Description of Participants.....	32
Comparison of Sites.....	34
Magic and Self-Esteem.....	34
Magic and Depression.....	36
Correlation between Self-Esteem and Depression.....	38
V. DISCUSSION.....	41
Limitations of the Study.....	44
Future Research Directions.....	44

Recommendations for Therapeutic Recreation Practitioners	46
Conclusion	48
REFERENCES	49
APPENDIX A. UNIVERSITY OF NORTH CAROLINA AT GREENSBORO CONSENT TO ACT AS A HUMAN PARTICIPANT	57
APPENDIX B. ROSENBERG SELF-ESTEEM SCALE	60
APPENDIX C. GERIATRIC DEPRESSION SCALE: SHORT FORM	62
APPENDIX D. CODY'S PREDICTION	63

LIST OF TABLES

	Page
Table 1. Descriptive Statistics for Experimental Group: n = 11	33
Table 2. Descriptive Statistics for Control Group: n = 10	33
Table 3. Number of Experimental Group Participants Who Attended a Specific Quantity of Sessions	33
Table 4. Number of Control Group Participants Who Attended a Specific Quantity of Sessions	34
Table 5. RSE Pre- and Post-Test Mean Scores for Experimental and Control Groups.....	35
Table 6. Pre-Test, Post-Test, and Follow-up RSE Scores for Experimental Group.....	35
Table 7. GDS Pre- and Post-Test Mean Scores for Experimental and Control Groups.....	36
Table 8. Pre-Test, Post-Test, and Follow-up GDS Scores for Experimental Group	37

LIST OF FIGURES

	Page
Figure 1. Pearson Correlation - RSE and GDS Pre-Test Scores.....	38
Figure 2. Pearson Correlation - RSE and GDS Post-Test Scores.....	39
Figure 3. Pearson Correlation - Change Scores.....	40
Figure C1. Sample Card.....	64
Figure C2. Sample Card.....	65

CHAPTER I

INTRODUCTION

Due to increasing life expectancy, therapeutic recreation professionals will serve a growing population of older adults. The number of adults in the United States aged 65+ will increase from 12.4% of the population in the year 2000 to 19% in 2030 (Administration on Aging [AoA], n.d.). By that date, approximately one in five United States residents will be 65 years of age or older (Vincent & Velkoff, 2010), and the total population of adults 65 years of age or older will be greater than 72 million (AoA, n.d.).

Declining health and the need for assistance with activities of daily living cause many older adults to move into long-term care facilities. It is estimated that by 2050, 27 million adults aged 65 years or older will need some form of long-term care, almost doubling the 13 million people needing such care in 2000 (U.S. Department of Health and Human Services & U.S. Department of Labor, 2003). Facilities range from assisted living, where residents receive meals, activity programs, and help with activities of daily living, to nursing homes that include substantial medical care. Approximately 40% of older adults residing in long term care experience depression (Reker, 1997; Waugh, 2006), which can be caused by the move from the family home into a care facility, illness, or other major life changes such as loss of a loved one (National Institute of Mental Health [NIMH], n.d.). Another major risk factor for depression is low self-esteem (Orth, Robins, Trzesniewski, Maes, & Schmitt, 2009; Waugh, 2006) which can

result from deteriorating health, loss of loved ones, decline in finances, and lack of social support (Robins, Tresniewski, Tracy, Gosling, & Potter, 2002), similar to the causes of depression. However, some older adults do not experience depression due to possessing protective factors, one of which is having high self-esteem (Coleman, Aubin, Robinson, Ivani-Chalian, & Briggs, 1993; Waugh, 2006). Therefore, interventions to increase self-esteem are important at this time of life (Orth, Trzesniewski, & Robins, 2010) and may reduce the risk of developing depression.

Few exciting and challenging interventions exist that address the issues of low self-esteem and depression in older adults. Magic as a therapeutic recreation intervention is one possible solution to this problem. During this intervention, older adults learn magic tricks and perform them for their peers and staff members. As they become competent with these new skills, self-esteem - a protective factor against depression - may increase, as indicated in a study by Bedini (2008). Additional research on this topic is needed, and thus the purpose of this study is two-fold: to explore whether magic positively impacts self-esteem and depression in older adults in long-term care facilities, and to determine if there is a relationship between changes in self-esteem and changes in depression.

CHAPTER II

REVIEW OF THE LITERATURE

This research will explore the effect of magic on the self-esteem and depression of older adults in long-term care facilities. Literature pertinent to this topic addresses the themes of self-esteem and depression in older adults, the impact of expressive therapies on self-esteem and depression, the impact of magic on self-esteem and depression, and the self-determination theory (SDT).

Depression in Older Adults

One of the most prevalent conditions coinciding with increased age is depression, especially in older adults who reside in long-term care facilities (Geriatric Mental Health Foundation [GMHF], n.d.; Waugh, 2006). A number of studies have examined the percentage of older adults in long-term care who have depression or exhibit depressive symptoms. The Substance Abuse and Mental Health Services Administration of the U.S. Department of Health and Human Services (SAMHSA, 2011) reported that up to 50% of adults aged 65 and older who reside in nursing homes exhibit depressive symptoms or experience major depression. Teresi, Abrams, Holmes, Ramirez, and Eimicke (2001) assessed the incidence of depression in six New York nursing homes and found that approximately 44% of residents had depression or exhibited depressive symptoms. Reker (1997) and Waugh (2006) reported that approximately 40% of individuals living in assisted living or skilled nursing facilities had depression.

According to the World Health Organization (2013), depression is “characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness and poor concentration” (para. 1). The Diagnostic and Statistical Manual V (2013) lists the following diagnostic criteria for depression: depressed mood most of the time, loss of interest or pleasure in activities, gain/loss of weight and appetite changes, sleeping too much or not enough, slow or restless movements, loss of energy, feelings of worthlessness or guilt, difficulty concentrating or making a decision, and suicide attempt or thinking of death/suicide. An adult who is diagnosed with major depression experiences five or more of these symptoms, one of which must be either depressed mood or loss of interest, almost every day for at least two weeks. These symptoms must significantly impair functioning and not have another origin.

Older adults are at an increased risk of experiencing depression and depressive symptoms due to a variety of factors. Depression is more common in individuals who have been diagnosed with other illnesses (Administration on Aging [AoA], 2010; GMHF, n.d.; NIMH, n.d.; SAMHSA, 2011; Waugh, 2006), and “about 80% of older adults have at least one chronic health condition, and 50% have two or more” (Centers for Disease Control and Prevention, 2012). Use or misuse of medications or other substances also can contribute to depression (NIMH, n.d.; SAMHSA, 2011; Waugh, 2006). Additional risk factors include major life changes, such as loss of a loved one (AoA, 2010; GMHF, n.d.; NIMH, n.d.; SAMHSA, 2011; Waugh, 2006), retirement and/or financial problems (GMHF, n.d.; SAMHSA, 2011; Waugh, 2006), and moving from the family home and/or

into a residential facility (GMHF, n.d; NIMH, n.d.; Waugh, 2006). Another major risk factor for depression identified by multiple researchers is low self-esteem (Brown & Harris, 1989; Orth et al., 2009; Silverstone & Salsali, 2003; Waugh, 2006).

Self-Esteem in Older Adults

Though self-esteem is far from a new concept, there is no single, clear-cut, definitive definition of the term self-esteem. The literature actually supports three different points of view on self-esteem. The term self-esteem can refer to a general feeling about oneself, known as trait or global self-esteem (Brown & Marshall, 2006; Guindon, 2010; Rosenberg, 1965). Self-esteem can also refer to one's feeling of self-worth based on certain events, referred to as state self-esteem (Brown & Marshall, 2006; Guindon, 2010). The third view of self-esteem, known as domain specific self-esteem, is a person's evaluation of his/her specific attributes (Brown & Marshall, 2006; Guindon, 2010). Considering that the Rosenberg-Self Esteem scale, one of the instruments used in this research, measures global self-esteem (Guindon, 2010; Ranzijn, Keeves, Luszcz, & Feather, 1998; Rosenberg, 1965), self-esteem will be defined as global or trait self-esteem from this point forward. The terms self-esteem, global self-esteem, and trait self-esteem will be used synonymously. Thus, self-esteem is defined as a personality variable that represents the way an individual usually feels about him or herself.

Definitive statistics on the number of older adults with low-self esteem are not available due to the multiple definitions of the term. However, a considerable amount of research has been conducted to discover what contributes to low self-esteem. Many of these contributing factors also have been found to be risk factors for depression. Hayslip

(1995) stated that loss of spouse or close friends, loss of physical health, and perceptions of loss of beauty and youth are factors that can contribute to low self-esteem in older adults. Robins et al. (2002) discovered factors such as deteriorating health, loss of loved ones, decline in finances, and lack of social support can lead to low self-esteem. Additional factors that have been identified include increased dependence on others (Coleman, et al., 1993); diminished importance of one's role in the family, organizations, and society (Brownie & Horstmanshof, 2012); and loss of control over living arrangements and lack of privacy (Blondeau, 2009). Furthermore, Richmond and Guindon (2010) stated that low self-esteem in older adults is related to three primary losses. The first primary loss is health, such as onset of disease or loss of sight and hearing. The second primary loss is significant relationships, including loss of a spouse, child, or friend, either due to moving from home into a long-term care facility or death. The third primary loss is work, either from retirement or being fired, which can lead to secondary losses of income and identity. It is important to note a majority of these contributing factors to low self-esteem have also been mentioned in the literature as risk factors for depression.

The Relationship between Self-Esteem and Depression in Older Adults

A number of studies have examined the relationship between self-esteem and depression. Coleman et al. (1993) interviewed older adults and then did follow-up interviews at 10 and 13 year intervals to determine the predictive factors for increased depression and low self-esteem. They found the most significant predictors of depressive symptoms in the follow-up periods were receiving help with household tasks and lack of

hobbies or interests. Other variables associated with increased depression were increased assistance with activities of daily living, reduction in mobility, and greater feelings of loneliness. The same predictors and variables were associated with decreased self-esteem. Additionally, there was an association between low self-esteem on the initial assessment and the emergence of depressive symptoms in the follow-up assessments. Orth et al. (2009) examined data from two longitudinal studies, looking for relationships between self-esteem and depressive symptoms. In the first study, the self-esteem and depression levels of 1,685 participants, aged 18 to 96, were assessed four times over a 9-year period. The 2,479 participants in the second study, aged 18 to 88 years, were assessed three times over a four-year period. In both studies, low self-esteem was a predictor of depressive symptoms.

Some older adults possess psychological, physical, social, and life strengths that serve as protective factors and help them avoid depression (Waugh, 2006). One of these protective factors is high self-esteem (Waugh, 2006). Coleman et al. (1993) found that having high self-esteem was associated with resilience against depression. Mann, Hosman, Schaalma, and de Vries (2004) noted high self-esteem serves as a buffer against stressful life events. Murrell, Meeks, and Walker (1991) interviewed 1,074 adults, aged 55 and over, five times at intervals of six months and concluded that both good health and high self-esteem helped prevent depressed feelings.

Orth et al. (2010) studied the development of self-esteem from young adulthood to old age by interviewing participants aged 25 - 104 every four years for a total of 16 years. They found self-esteem increases during young and middle adulthood, reaches its

peak at about age 60, and then declines in old age. Since old age is a critical time for self-esteem development, the authors felt participation in activities to enhance self-esteem would be important for older adults (Orth et al., 2010). Since high self-esteem has been shown to be a protective factor against depression, the possibility exists that improving self-esteem could help prevent depressive symptoms.

Given the likelihood that improving self-esteem could help prevent depression, older adults should have opportunities to participate in experiences that will enhance their self-esteem. Enhancing self-esteem and reducing depression are essential to the idea of aging well, which incorporates “high levels of physical and psychological function and an active engagement with life” (Brownie & Horstmanshof, 2012, p. 777). To enhance self-esteem, activities should include mediators such as autonomy (Schwartz, 1975), competence (Richmond & Guindon, 2010), and relatedness (AoA, 2010; Blondeau, 2009; Brownie & Horstmanshof, 2012; GMHF, n.d.; Hayslip, 1995; NIMH, n.d.; Richmond and Guindon, 2010; Robins et al., 2002; SAMHSA, 2011; Waugh, 2006). Expressive therapies such as music (Chan, Chan, Mok, & Kwan, 2009; Hanser, 1990), drama (Noice, Noice, & Staines, 2004), and art (deGuzman et al., 2011; Kim, 2013), which will be described in detail below, incorporate these mediators and have been shown to have a positive impact on older adults’ self-esteem and depression.

The Impact of Expressive Therapies on Self-Esteem and Depression

Expressive therapies include visual arts, music, dance, drama, and poetry (Datillo, 2011) as well as magic (Bedini, 2008). Although utilizing different types of expression,

the expressive therapies have been shown to improve the emotional, physical, social, and cognitive functioning of individuals and increase their quality of life (Dattilo, 2011).

A variety of expressive therapies have been shown to increase self-esteem and decrease depression in older adults. Studies by Hanser (1990) and Chan et al. (2009) examined the effects of music as a therapeutic intervention. Hanser (1990) conducted four case studies with depressed older adults in the home environment. Using music of the participant's choice, a music therapist facilitated eight music therapy techniques of varying types of challenge, in which music became a cue for relaxation and reduction of stress. In all four cases, the intervention resulted in improved self-esteem and reduced depression, as measured by the Geriatric Depression Scale, the Brief Symptom Inventory, the Rosenberg Self-Esteem Inventory, and the Beck Depression Inventory. Hanser and Thompson (1994) used the same techniques in another study with 30 depressed, home-bound adults, aged 61 - 86. Participants were randomly assigned to one of three groups: a group that received visits from a music therapist, a group that received written instructions regarding how to implement therapy techniques on their own as well as a weekly phone call from a therapist, or a waiting list control group. Measures included the Geriatric Depression Scale, the Brief Symptom Inventory, the Rosenberg Self-Esteem Scale, the Profile of Mood States - Bipolar Form, and the Beck Depression Inventory. Both intervention groups showed greater improvement on these measures than did the control group, but there was no significant difference between the two intervention groups. The improvements were maintained at a nine-month follow-up.

Chan et al. (2009) explored the effects of music on levels of depression and physiological parameters in adults 60 years of age and older who attended adult day care at a community center. Of the 47 participants, 23 were randomly assigned to the experimental group and 24 to the control group. Each member of the experimental group selected and listened to music for 30 minutes per week for four weeks either at home or at the adult day care center. At weeks three and four, the experimental group's level of depression, as measured by the Geriatric Depression Scale, was lower than the control group's by a statistically significant margin.

Noice et al. (2004) examined the impact of a theater arts program and a visual arts program on older adults' cognitive functioning and mental health, including psychological well-being and self-esteem. The researchers believed immersion in a challenging activity, such as drama, would result in greater improvement on measures of cognitive ability, psychological well-being, and self-esteem than an enjoyable social activity, such as their visual arts class, or no activity at all. One hundred twenty-four older adults were assigned to a theater arts, a visual arts, or a control group for four weeks. Classes were conducted periodically during the span of a year in classrooms at hospital wellness centers. Recruitment of participants was an ongoing process, and as participants were recruited, they were assigned to whatever class was being conducted at the time. The theater arts group participated in exercises in which they experienced acting and became engrossed in drama. The visual arts group interpreted and discussed the intention of the artist using a variety of media. The control group received no treatment. Post-intervention, both treatment groups had a statistically significant increase

in psychological well-being, as measured by Ruff's Psychological Well-Being Scale, while the control group had a very slight decline. The theater group experienced the greatest increase. While not statistically significant, all three groups had slightly higher self-esteem scores post-intervention, as measured by the Rosenberg Self-Esteem Scale, with both experimental groups showing more improvement than the control group. Researchers believed the differences in scores were not statistically significant because all individuals had rather high self-esteem scores on the pre-test measure. However, the fact that scores showed some improvement indicates this intervention has the possibility of increasing self-esteem, and more improvement might be evident if participants did not begin the study with high self-esteem scores.

The effects of art as a therapeutic intervention on older adults also have been evaluated. A qualitative study by de Guzman et al. (2011) examined whether a program of creating traditional Filipino artwork would decrease depression and increase self-esteem in three older, single Filipino women. Participants were selected based on the following criteria: 60 years of age or older, single, living in a long-term care group home, and having the physical and mental ability to perform traditional Filipino art. During the intervention, they were taught the traditional Filipino artwork of puni-making, or leaf-frond folding, and created their own works of art. Structured interviews before the intervention indicated the women were feeling helpless and unsuccessful, and their lives were not worth living. Interviews post-program yielded themes indicating the women experienced increased self-esteem and decreased depression. The three participants were

interested in learning the intervention, enjoyed interacting with the researchers, and felt a sense of accomplishment.

Likewise, Kim (2013) conducted 12 sessions of art as a therapeutic intervention over a 4-week period with 25 older adult Korean-Americans in adult day care programs. Each participant in the experimental group was encouraged to create and share as many works of art as desired. No specific techniques were taught. Participants had control over what type of work to create and choice of sources of inspiration, subject of the work, and what materials to use. The control group participated in their regular program activities. The intervention resulted in a significant improvement in self-esteem and decrease in anxiety in the experimental group when compared to the control group, as measured by the Positive and Negative Affect Schedule, the State-Trait Anxiety Inventory (STAI), and the Rosenberg Self-Esteem Scale.

While each of the expressive therapies used in these studies had its own unique qualities, all had at least one mediator that influenced self-esteem: autonomy (Chan et al., 2009; Hanser, 1990; Hanser & Thompson, 1994; Kim, 2013); competence (deGuzman et al., 2011; Kim, 2013); and relatedness (deGuzman et al., 2011; Hanser and Thompson, 1994; Noice et al., 2004). All of these studies seemed to yield positive outcomes related to self-esteem and/or depression. Their success indicates other expressive therapies, such as magic, might also be effective in increasing participants' self-esteem and reducing depression.

Magic as a Therapeutic Recreation Intervention

During the expressive therapy of magic, participants are taught magic tricks that use everyday materials such as rubber bands, dollar bills, coins, and paper, and possibly formal props. Participants practice the tricks, demonstrate them to peers and staff, and possibly teach them to peers and family members. While few in number, there have been studies that have explored the therapeutic value of this intervention.

Several researchers have examined the effect of magic on goals other than self-esteem and depression, such as recall of information, motivation, understanding, and socialization. A pilot study conducted by Elder, Deviney, MacKinnon, and Dyer (2012) explored the effects of using magic illusions in a college class. Although students were not actually taught magic tricks, magic was used to enhance instruction in the classroom. The pilot test was conducted in two classes, a freshman-level course in entrepreneurship and a junior-level course in Management of Information Systems (MIS). The purpose was to explore whether using illusions in the classroom would help students remember key concepts and increase student satisfaction with the course. Twelve illusions were selected to use in each class. Some were used to emphasize key concepts during lectures while others were used as icebreakers. The students never knew when an illusion would be presented in the class. To assess whether the use of illusion helped students remember key concepts, the researchers compared test scores from the pilot semester, during which the illusions were performed, to test scores from two prior semesters during which illusions were not used. The freshman class test scores increased by 20 percent, from 75% when the illusions were not used to 95% during the pilot program. For the junior

level course, scores also increased. Scores improved from 82.5% when no illusions were used to 92.5% when illusions were utilized. Satisfaction with the course also increased. The freshman class showed an increase in satisfaction from 3.2 on a pre-test to 3.9 on a post-test; the junior level class satisfaction scores improved from 3.75 on the pretest to 4.2 on the post-test. Finally, researchers noted that attendance levels increased when illusions were in place. Prior to the introduction of illusions, the average number of classes missed in the freshman class was 3.1; this number decreased to less than 2 during the semester that illusions were applied. In the junior class, students improved from missing an average of 3.2 classes before illusions were introduced to missing 2.8 during the pilot test. Although this study was not peer reviewed, it provides support for the positive impact magic has on the motivation and cognitive goals of students.

An article by Hart and Walton (2010) reported on the benefits of using magic with hospitalized children and adolescents. Open Heart Magic, a program established in 2003, trains volunteers to perform and teach magic to patients five years of age and older and their families. Goals of the program include providing opportunities for choice and control; increasing self-esteem, self-confidence and empowerment; promoting wellness through humor; improving social interaction; developing feelings of mastery; and stimulating the senses. Before including a child in the program, emotional state, attention span, and alertness are taken into consideration. After volunteer magicians receive extensive training and appropriate information about whom they are visiting, they go to inpatient units, outpatient clinics, dialysis sites, and, periodically, the emergency room to visit patients. Although this article did not report the results of research, it provided

anecdotal examples of successes of the Open Heart Magic program, such as changing an environment of tension and concern to one of relaxation and enjoyment, and distracting the patient from pain.

Green et al. (2013) explored the effect of including magic in a hand-arm bimanual intensive therapy program with the goal of improving activity performance for children with hemiplegia. The Assisting Hand Assessment (AHA) and Children's Hand Experience Questionnaire (CHEQ) were used as primary outcome measures. The AHA measures spontaneous use and performance of an affected hand, while the CHEQ is a measure of independence in typical daily bimanual activities using the affected hand. Twenty-three children with spastic hemiplegia were recruited using a convenience sample of children who were receiving therapy in clinics or development centers in two countries, England and Israel. The children attended one of three two-week camps. Two camps were in England and one camp was in Israel. Camps in both countries used the same magic tricks and implemented them at similar stages during the therapy program. At the end of each camp, the campers put on a magic show. Significant improvements were shown on both the AHA and the CHEQ after the program had been completed.

These three implementations of magic indicate the wide range of benefits magic can have for eclectic populations. Other studies have evaluated the impact of magic on self-esteem and/or depression. Although the participant populations in these studies vary, the goals of the magic interventions make these studies relevant to this research.

Ezell and Klein-Ezell (2003) conducted a study with 26 elementary and secondary school students who had a variety of developmental, behavioral, and physical disabilities.

During one semester, these students were taught magic tricks, practiced in front of a puppet or mirror, performed the tricks for groups of younger children, and finally performed them for their peers. Tricks were individually selected based on participant capabilities. After demonstrating mastery and feeling successful with a trick, the participant was introduced to a new trick. All participants showed improvement on self-esteem and self-confidence at the conclusion of the intervention, as measured by sections of the Student Self-Concept Scale, specifically the Self-Confidence dimension of the Self-Image domain and the Lie Scale. No control group was used in this study.

Levin (2006) used a 6-week magic arts counseling program to increase the self-esteem of six boys, 6 to 18 years of age, residing in a psychiatric hospital. The program was divided into one hour sessions, once a week, for six weeks. During the sessions, participants were taught how to perform different tricks. Other magic-related activities also were done in the program, including designing their own magic phrases and learning about famous magicians. A control group was not used in this study. Participants showed an increase on the Rosenberg Self-Esteem Scale from the beginning to the end of the program. However, these results must be interpreted with caution since the study was not published in a peer reviewed journal and provided limited details regarding the research methodology.

Bedini (2008) presented a case study in which a 10-week program of magic was used to meet individualized treatment goals of nine older adults at an assisted living facility. Therapeutic goals included improving self-esteem, reducing depression, increasing fine motor skills, increasing socialization, and improving memory. At the first

session, researchers put on a show, performing all the tricks they planned to teach to the participants. In subsequent weeks, researchers met with participants in groups of two to seven, twice per week, for 20 to 45 minutes per lesson, to teach participants up to 10 magic tricks. Occasionally facility staff and/or college students assisted with instruction. The instructor first demonstrated the trick, explaining step-by-step how the trick worked, and then assisted each participant in learning the trick. During the sessions, participants could continue to practice tricks learned in previous sessions or work on learning new tricks. No more than one new trick was demonstrated and taught each week. The pace of the sessions was based on participants' ability and desire to progress to new tricks. Researcher observations of participants' behaviors, interactions, and comments, as well as staff comments and reactions, were recorded before, during, and after each session. Additionally, interviews to discuss participant needs were conducted with family members and staff before the start of the program. Staff was also interviewed throughout the study. The observations and interviews conducted throughout the study indicated noteworthy progress toward goals of increased self-esteem, reduced depression, increased fine motor skills, and increased socialization. The only outcome where improvement was not noted was memory. No control group was involved in this study. While these results are promising, the researcher noted quantitative research is needed for confirmation.

Magic and the Self-Determination Theory

The self-determination theory (SDT) is the fundamental theory supporting this research. Developed by Edward L. Deci and Richard M. Ryan, the SDT is a humanistic theory of well-being and motivation. The basic philosophy of the SDT is that people

naturally move toward personal growth and energy, and their environment either encourages or discourages them in these tendencies (Deci, Vallerand, Pelletier, & Ryan, 1991). This philosophy incorporates the assumption that people are naturally intrinsically motivated by values, curiosity, interests, or the activity itself (Deci & Ryan, 1985). For an environment to facilitate personal growth and energy, and thus self-determination, three psychological components need to be present: autonomy, which is the sense of having control over one's life; competence, or the feeling of mastery or succeeding in what you do; and relatedness, which is the feeling of being connected to or belonging with a group (Deci & Ryan, 2000). When an environment or activity presents conditions that support a person experiencing autonomy, competence, and relatedness, the person becomes "self-determined," resulting in that individual achieving personal growth. Evidence of this growth is the person having intrinsic motivation to make choices about life, enhanced performance in the chosen activity, persistence, creativity, and overall well-being (Ryan & Deci, 2000).

The Self-Determination Theory is relevant to this research because the three factors crucial to this theory - relatedness, competence, and autonomy - are often lost by older adults, especially those who move into residential facilities. Loss of relatedness can be experienced due to loss of a loved one or close friends (AoA, 2010; Coleman et al. 1993; GMHF, n.d.; Hayslip 1995; NIMH, n.d.; SAMHSA, 2011; Waugh, 2006), moving from the family home into a residential facility (GMHF, n.d; NIMH, n.d.; Waugh, 2006), lack of social support (Robins et al., 2002), and overall feelings of loneliness (Coleman et al. 1993). Loss of competence comes from lack of hobbies or interests (Coleman et al.

1993), reduction in mobility (Coleman et al. 1993), and loss of health (Hayslip 1995; Richmond & Guindon, 2010; Robins et al., 2002). Loss of autonomy can result from increased dependence on others (Coleman et al., 1993), loss of control over living arrangements (Blondeau, 2009), and diminished importance of one's role in the family, organizations, and society (Brownie & Horstmanshof, 2012). Lack of relatedness, competence, and autonomy can lead to depression and low self-esteem in older adults (Deci & Ryan, 2002). If an older adult can experience an activity that encourages competence, autonomy, and relatedness, that person may re-establish the natural tendencies toward personal growth and energy, become more self-determined, and possibly experience an increase in self-esteem and a decrease in depression.

Magic is an intervention that can create an environment that supports feelings of autonomy, competence, and relatedness. The tricks are at multiple levels of difficulty, so participants with varying skill levels can be successful and feel competent; the participants have choice and control over which tricks they would like to practice; and finally participants' interaction with the facility's CTRS, volunteers, and other participants gives them a feeling of relatedness to the group. By experiencing these three components of competence, autonomy, and relatedness during a magic intervention, older adults could regain their natural tendency toward personal growth and energy and become more self-determined, which possibly could result in an increase in self-esteem and a decrease in depression.

Research Questions

While the outcomes associated with expressive therapies and magic show promise, additional research is necessary to establish magic as an evidence-based practice for increasing self-esteem and decreasing depression among older adults. Therefore, the purpose of this study is to address the following research questions: a) How does participation in an eight session program of magic as a therapeutic recreation intervention impact the self-esteem of older adults, age 65+, living in a long-term care facility?, b) How does participation in an eight session magic as a therapeutic recreation intervention program impact depression levels in older adults, age 65+, living in long-term care?, and c) What is the relationship between the impact on self-esteem and the impact on depression of a program of magic as a therapeutic recreation intervention on older adults, age 65+, living in long-term care? This research will extend the Bedini (2008) study by providing quantitative measures of changes in self-esteem and depression following a magic program.

CHAPTER III

METHOD

Participants

Twenty-four participants were initially recruited for this research. The participants were individuals from two assisted living facilities in Greensboro, North Carolina: Friends Homes West and Spring Arbor of Greensboro. Each facility provides multiple levels of care. Friends Homes West provides independent living residences, assisted living for those who need help with activities of daily living, and skilled nursing care. Spring Arbor offers assisted living and memory care. Participants were recruited from the assisted living facet of each facility, the type of long-term care that is the focus of this study. Friends Homes West has up to 40 residents and Spring Arbor has up to 54 residents in assisted living. The two facilities are very similar in terms of cost, male to female ratio of approximately 30% to 70%, and the types of services available to residents, such as three meals per day, assistance with medical needs and activities of daily living, and activity options. These services are provided by a variety of staff members, including recreational, physical and occupational therapists, nurses and nursing aides, health care counselors, dieticians, and housekeeping staff.

The research design for this study was submitted to the University of North Carolina at Greensboro Institutional Review Board on October 28, 2013. Following revisions, it was approved on January 2, 2014. Before recruiting participants, the

researcher met with the Licensed Recreational Therapist (LRT)/Certified Therapeutic Recreation Specialist (CTRS) on each facility's staff to discuss the study, its purpose, and criteria for participation, which included being age 65+, willingness to participate, having therapeutic goals related to increasing self-esteem and/or decreasing depression as established by the LRT/CTRS, and sufficient cognitive ability to respond to questionnaire items, understand directions for the magic tricks, understand the consent process, and provide informed consent. The participants' cognition was measured using the Mini-Mental State Examination (MMSE) (Folstein, Folstein, & McHugh, 1975). Patients with an MMSE score of 10 or below were excluded due to potential difficulty understanding the consent process and directions for the magic tricks. Level of depression or self-esteem was not a cause for exclusion.

Once a likely pool of participants was identified, the researcher and the LRT/CTRS met with each candidate individually to discuss the program, review a flyer, determine willingness to participate, and review and have the participant sign a consent form (see Appendix A). If the participant did not have the legal authority to sign the consent form, oral consent was recorded, and the participant's legal representative was contacted, informed about the program, and asked to sign the consent form. The same procedure for recruitment was used at both facilities.

Measures

Demographic data, including each participant's name, sex, age, and date of admission to the facility were collected. Demographic data were self-reported by each

participant to the researcher. Each participant was assigned an ID number in order to ensure confidentiality and/or anonymity in research results.

The MMSE was used to determine whether potential participants had sufficient cognitive ability to understand the consent process and participate in the program. The LRT/CTRS at each site administered and scored the MMSE on each of the potential participants before pre-test data were collected, and MMSE scores were given to the researcher. The MMSE contains 11 questions that measure five areas of cognitive functioning, including language, registration, recall, attention and calculation, and orientation (Folstein, Folstein, & McHugh, 1975). Each question is assigned a point value based on the number of answers it requests. For example, one question testing orientation asks “What is the (year), (season), (date), (day), and (month)?” (Folstein, Folstein, & McHugh, 1975, p.196). The person being evaluated can receive up to five points for this question, one for each item answered correctly. The maximum score for the MMSE is 30. A score of 25 to 30 is within normal range; a score from 20 to 25 indicates a mild degree of cognitive impairment; a score from 10 to 20 indicates moderate impairment; and a score from 0 to 10 indicates severe impairment (Folstein, Folstein, & McHugh, 1975). A number of studies have found the MMSE to be a reliable instrument. For example, the test-retest reliability over a 1-day to 8-week interval with older adults without dementia was found to range from 0.64 to 0.85 (Folstein, Folstein, & McHugh, 1975). The MMSE has also been found to correlate with other test of cognitive functioning, such as the Wechsler Adult Intelligence Scale (Folstein, Folstein, & McHugh, 1975). Participants with scores that indicated severe cognitive impairment (10

or less) were excluded from the study due to potential difficulty understanding the consent process and directions for the magic tricks.

The Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) was used to collect pre-test, post-test, and follow-up data at the experimental site and pre-test and post-test data at the control site (see Appendix B). The RSE is a paper questionnaire with ten items designed to assess self-esteem. Participants indicated the degree to which they agreed with each statement on a 4-point Likert scale, ranging from strongly disagree (0) to strongly agree (3). Some of the items are reverse scored, with strongly disagree receiving 3 points and strongly agree receiving 0 points. The RSE includes statements such as “I am able to do things as well as most other people,” and “All in all, I am inclined to feel that I am a failure” (Rosenberg, 1965). The final result is a single score for each participant. The scores range from 0-30, with scores between 15 and 25 indicative of a normal range of self-esteem, scores above 25 signifying high self-esteem, and scores below 15 suggesting low self-esteem (Rosenberg, 1965). The RSE was originally developed for use with adolescents but has been used extensively over time with a variety of populations. Following an item response theory analysis, Gray-Little, Williams, and Hancock (1997) reported that the RSE is a valid and extremely reliable instrument and “deserves its widespread use and continued popularity” (p. 450). In his study with adolescents, Rosenberg found high test-retest reliability, ranging from .82 to .85, and a significant correlation between the RSE and reports by self, peers, and nurses of relevant characteristics such as depression and anxiety (Rosenberg, 1979). In a study of 202 adults with severe mental illness at multiple sites, Salyers et al. (2001) found that

the RSE had a .84 degree of internal consistency and a .80 degree of test-retest reliability in a retest period that averaged two weeks but ranged from 4 to 33 days. The RSE also correlates with other measures of self-esteem, with a -.61 correlation with the MMPI-2 Low Self-Esteem Scale (McCurdy and Kelly, 1997), a correlation of .76 with the Single Item Self-Esteem Scale (Robins, Hendin, & Trzesniewski, 2001), and a correlation of .61 with the Texas School Behavior Inventory (Robins et. al., 2001).

The Short Form of the Geriatric Depression Scale (GDS) (Sheikh & Yesavage, 1986) was used to collect pre-, post-, and follow-up test data for the experimental participants and pre- and post-test data for the control participants to measure the participants' degree of depression (see Appendix B). This form consists of 15 yes or no questions. For some questions, a yes answer indicates depression; for others, a no answer indicates depression. For example, an answer of No to the question "Are you basically satisfied with your life?" indicates depression. The answer of Yes to the question "Do you often feel helpless?" indicates depression. A score of one point is given for each answer chosen that indicates depression. A score of 0 to 5 is considered normal; a score greater than 5 is suggestive of depression; and a score of 10 or greater is almost always indicative of depression (Sheikh & Yesavage, 1986). If a participant's score was 10 or greater at any time during the collection of data, that individual was referred to a mental health professional at the facility. The GDS is a reliable, valid instrument, with a test-retest reliability ranging from .82 - .85, and success in differentiating non-depressed from depressed adults with correlation of $r = .84, p < .001$ (Sheikh & Yesavage, 1986).

Procedure

After participants were recruited, the researcher randomly selected Spring Arbor as the intervention site by picking one of the two facility names out of a hat. Therefore, Friends Homes West served as the control site. Both the intervention site and the control site completed the program in a large group setting in the facility's activity room. The intervention site received eight, one-hour sessions two times a week for four weeks. The program, during which participants learned and practiced magic tricks, was conducted by the researcher with assistance from trained volunteers. The control group continued their normal activities, as scheduled by the LRT/CTRS, but was visited socially twice each week for one hour for four weeks by the researcher and at least two volunteers. The researcher and volunteers simply joined in whatever activity was scheduled and chatted with participants. These visits insured that the social interaction in both control and intervention groups and the participants' familiarity with the researcher were similar, so that the only difference between the two groups was the magic program at the intervention site. Prior to beginning the program, participants from each site met as a group in their respective activity rooms, and the researcher administered the RSE and the GDS to each member of the intervention and control groups. As a result of a scheduling conflict, pre-test data for the control site were collected three weeks after the data collection at the intervention site. Consequently, the visits at Friends Homes West started three weeks after the magic program began at Spring Arbor.

Volunteers were essential to the success of the program. Six graduate students from the Department of Community and Therapeutic Recreation (CTR) at the University

of North Carolina at Greensboro (UNCG) were recruited to help with the research. It was suggested to potential volunteers that helping with this program would give them valuable experience in their chosen field, as well as a way to build their résumés. Before the program began, volunteers were trained by the researcher on how to perform the magic tricks, teach the tricks to participants, and make any necessary adaptations to the tricks. The researcher also reviewed significant information about the participants in the program. Volunteers were given written instructions for each magic trick and a kit of materials so they could practice the tricks on their own. Due to scheduling conflicts, not all volunteers could come to every session. However, a minimum of 2 volunteers, along with the researcher, attended every session at both the experimental and the control sites. Each volunteer signed a statement of confidentiality to insure privacy of the participants. Volunteers did not help with collection of data.

Implementation of the magic program entailed participants learning up to 18 tricks over the eight hour-long sessions. The program took place in the activity room of the facility, where distractions were minimal. One session each week took place in the morning and the other in the afternoon, as suggested by the LRT/CTRS, to accommodate participants having different times of the day when they felt more active and engaged. During each session, the researcher began by performing a magic trick for the participants. After performing the trick, the researcher demonstrated how the trick worked and showed how it was performed step-by-step. Participants were then given written, step-by-step instructions for the trick that was demonstrated, as well as the materials needed to perform the trick. At the first session, participants also received a

bag and folder to keep the supplies provided at each session, so participants could continue to practice the tricks between sessions. After receiving instructions and materials, participants were given time to practice the trick. The researcher and volunteers walked around the group, assisting with the trick if necessary. If participants were having success with the first trick, a second trick was introduced. No more than two tricks were introduced to the entire group at any session. At each subsequent session, the researcher performed each of the tricks that had already been presented as review. If an individual had missed a session and therefore not learned a trick, an opportunity was provided for the participant to learn that trick with the researcher or one of the volunteers.

The pace of instruction at each session was dependent on the participants' ability to learn the tricks. The tricks ranged in difficulty from easy to more challenging, making it possible for participants of all skill levels to be successful at completing several tricks. Some participants chose to continue to practice tricks from previous sessions instead of learning new tricks. However, other participants who quickly mastered the tricks introduced at the session, or who became bored with the tricks they had learned so far, were presented with more challenging tricks that were not introduced to the total group.

An example of a magic trick that successfully engaged participants was Cody's Prediction (Morrison & Alessi, n.d.) (See Appendix D). In this trick, the magician appeared to be able to correctly predict any number from 1-100 freely chosen by a helper. The materials for this trick were seven pre-printed cards designed for the trick. The magician asked a helper to think of a number between 1 and 100. The magician then handed the cards one at a time to the helper, asking if the chosen number was on the card.

The helper responded “yes” or “no” to each card. The order in which the cards were handed to the helper did not matter. The magician sorted the cards into two piles, one for the cards that received a “yes” response, and one for the cards that received a “no” response. After the helper responded to all cards, the magician found the number in the top left corner of each card in the “yes” pile and added those numbers together. The total number was the helper’s chosen number. The participants worked in pairs for this trick. Participants either worked with each other or with a volunteer. Participants took turns, with one person being the magician and the other the helper.

Various adaptations were used to help all participants be successful with this trick. Calculators were given to each participant. If necessary, these could be used to help the participant add up the numbers in the top left corner of each “yes” card to get the final number. Pens and notepads also were given to each participant. The magician could use these materials to add up the numbers, and the helper could use these materials to write down the number he or she wanted the magician to predict, so it would not be forgotten. Additionally, highlighters were available, which could be used to highlight the top left corner of each card, to help the magician remember which numbers needed to be added up. The researcher was prepared with various sizes of cards and calculators, to make it easier for anyone who might be visually impaired to see the numbers on the card or add up the numbers, but this adaptation was not needed.

Immediately after the last magic session, the researcher re-administered the RSE and GDS to the six participants who attended, to collect post-test data. For the five participants who did not attend the last session, post-test data were collected over the next

two weeks. The researcher and the LRT/CTRS set up a separate time during the week after the program to gather data from participants in a group setting. However, two of the participants did not come to this set group time. For those two who did not come to the group time, the researcher set up individual times and went to their rooms to have them complete the post-test measures. All of these meetings were set up as soon as possible after the conclusion of the intervention.

Four weeks after the last magic session, the researcher set up a group session with the LRT/CTRS to collect four week follow-up data for the RSE and GDS. None of the participants wanted to come to the group session just to complete the questionnaires, but they were willing to complete the questionnaires if the researcher came to their individual rooms. Thus, even though the follow-up data were not collected in a group setting, the researcher was able to collect follow-up data from all the participants on the same day.

For the control group, post-test data on the RSE and GDS were collected immediately after the last visit. For seven participants who were not at the last session, data were collected individually in their rooms during the next week. After the study was completed, the control group was offered the magic program for the same duration and with the same set-up as the experimental site. Therefore, the participants in the control group had the opportunity to receive the benefits of the magic intervention. However, there were no data collected for this intervention.

Data Analysis

For participants from both sites, descriptive statistics and frequency counts were run on sex, age, date of admission to the facility (measured in months), number of

sessions attended, and MMSE scores. A one-way ANOVA was run comparing the experimental and control group pre-test scores for both the RSE and the GDS, to see if the groups' scores were statistically different. To assess the first research question, "How does participation in an eight session program of magic as a therapeutic recreation intervention impact the self-esteem of older adults, age 65+, living in a long-term care facility," a mixed ANOVA was run on pre- and post-test RSE scores for both the experimental and control sites, and a one way repeated measures ANOVA was run on pre-, post-, and follow-up RSE scores in the experimental group. To assess the second research question, "How does participation in an eight session magic as a therapeutic recreation intervention program impact depression levels in older adults, age 65+, living in long-term care," a mixed ANOVA was run on pre- and post-test GDS scores for both the experimental and control sites, and a one way repeated measures ANOVA was run on pre-, post-, and follow-up GDS scores for the experimental group. The final research question was, "What is the relationship between the impact on self-esteem and the impact on depression of a program of magic as a therapeutic recreation intervention on older adults, age 65+, living in long-term care?" To assess this question, a Pearson correlation was run to see if there was a relationship between changes in self-esteem and changes in depression. Since cause and effect cannot be determined between changes in self-esteem and changes in depression, the Pearson correlation was used to determine whether increased self-esteem is related to decreased depression. All calculations were done using version 22 of SPSS with an $\alpha=.05$ level of significance.

CHAPTER IV

RESULTS

Description of Participants

A total of 24 participants were recruited for this study. Data for three participants were dropped, resulting in a total of 21 participants, 11 in the experimental group and 10 in the control group. Two participants' data were dropped because they refused to take post-test measures. An additional individual's data were dropped, even though the individual participated in the program, because the MMSE score was indicative of severe impairment. Descriptive statistics were run on all participants from both groups for whom data were collected. For the experimental group, 72.7% were female, and 27.3% were male. Descriptive data for the experimental group, including age, MMSE scores, and length of stay in the facility, can be seen in Table 1 below. For the control group, 90% were female, and 10% were male. Descriptive data for the control group, including age, MMSE scores, and length of stay in the facility, can be seen in Table 2 below. Frequency counts for the number of participants who attended a specific quantity of sessions can be seen in Table 3 for the experimental group and Table 4 for the control group.

Table 1

Descriptive Statistics for Experimental Group: n = 11

Descriptor	Mean	SD	Range
Age	84.00	8.56	27.00
MMSE Score	19.73	4.22	12.00
Length of stay (months)	9.90	8.14	23.00

Table 2

Descriptive Statistics for Control Group: n = 10

Descriptor	Mean	SD	Range
Age	91.30	4.16	14.00
MMSE Score	25.00	3.74	13.00
Length of stay (months)	58.80	67.54	221.00

Table 3

Number of Experimental Group Participants Who Attended a Specific Quantity of Sessions

Number of sessions attended	Number of Participants	%
Two Sessions	2	18.2
Three Sessions	3	27.3
Four Sessions	1	9.1
Five Sessions	1	9.1
Six Sessions	2	18.2
Seven Sessions	1	9.1
Eight Sessions	1	9.1

Table 4

Number of Control Group Participants Who Attended a Specific Quantity of Sessions

Number of Sessions Attended	Number of Participants	%
One Session	2	20.0
Three Sessions	3	30.0
Four Sessions	2	20.0
Five Sessions	1	10.0
Seven Sessions	1	10.0
Eight Sessions	1	10.0

Comparison of Sites

A one-way ANOVA comparing the pre-test RSE scores for the experimental and control sites showed no statistical difference $F(1,19) = 0.39, p > 0.05$. Furthermore, a one-way ANOVA comparing the pre-test GDS scores for the experimental and control sites showed no statistical difference $F(1,19) = 0.02, p > 0.05$. Since the scores for both the RSE and the GDS revealed no statistical difference, the control and experimental groups were similar in terms of their initial levels of self-esteem and depression.

Magic and Self-Esteem

A mixed ANOVA was calculated on the pre- and post-test RSE scores of the experimental and control groups to examine the effects of magic on the self-esteem levels of the experimental group. There was no significant interaction between time and group $F(1,19) = 1.14, p > 0.05$, and no significant difference for the main effect of time $F(1,19) = 0.23, p > 0.05$. Lastly, the main effect comparing the two groups was not significant $F(1,19) = 0.001, p > 0.05$. Table 5 reports the mean pre- and post-test RSE scores as well as standard deviations for the experimental and control groups.

Table 5

RSE Pre- and Post-Test Mean Scores for Experimental and Control Groups

Group	Mean RSE Pre-test Score	Std. Deviation Pre-Test	Mean RSE Post-test Score	Std. Deviation Post-Test	Effect Size
Experimental	22.08	2.70	21.00	4.51	-0.4
Control	21.29	3.05	21.70	3.65	0.13

A one-way repeated measures ANOVA was calculated comparing the RSE scores of the experimental group at three different times: pre-test, post-test, and four-week follow up. No significant effect was found ($F(1,10) = 1.90, p > 0.05$), indicating no significant differences among pre-test ($m = 22.08, sd = 2.70$), post-test ($m = 21.00, sd = 4.51$), and follow up ($m = 20.00, sd = 4.21$). Table 6 reports the individual pre-test, post-test and follow-up scores on the RSE for the experimental group in order from the greatest positive change to the least change.

Table 6

Pre-Test, Post-Test, and Follow-up RSE Scores for Experimental Group

Id Number	RSE Pre-test	RSE Post-test	RSE Follow-up
6	23.00	27.00	23.00
11	26.00	30.00	12.00
4	19.00	21.00	19.00
5	24.00	25.00	25.00
7	17.00	16.00	17.00
10	22.00	20.00	28.00
8	22.00	19.00	18.00
1	21.00	18.00	20.00
3	20.90	17.00	19.00
2	26.00	21.00	20.00
9	22.00	17.00	19.00

Magic and Depression

A mixed ANOVA was conducted to compare pre- and post-test scores on the GDS between the experimental and control groups to determine whether the magic intervention had an impact on the depression levels of the experimental group. No statistically significant differences were found for the main effects or the interaction. The main effect for group ($F(1,19) = 0.42, p > 0.05$), the main effect for time ($F(1,19) = 0.10, p > 0.05$), and the interaction between time and group ($F(1,19) = 0.90, p > 0.05$), all were not significant. Table 7 reports the mean pre- and post-test GDS scores as well as standard deviation for the experimental and control groups.

Table 7

GDS Pre- and Post-Test Mean Scores for Experimental and Control Groups

Group	Mean GDS Pre-test Score	Std. Deviation Pre-Test	Mean GDS Post-test Score	Std. Deviation Post-Test	Effect Size
Experimental	2.30	2.07	1.72	1.61	-0.28
Control	2.34	2.09	2.63	2.02	0.13

A one-way repeated measures ANOVA showed no statistically significant differences while comparing the pre-test, post-test, and four-week follow up scores for the GDS of the experimental group. No significant differences were found between pre-test ($m = 2.30, sd = 2.07$), post-test ($m = 1.72, sd = 1.61$), and follow up ($m = 2.54, sd = 2.29$), as well as no significant overall effect being found ($F(1,10) = 0.19, p > 0.05$).

Table 8 reports the individual pre-test, post-test and follow-up scores on the GDS for the experimental group in order from greatest positive change to least.

Table 8

Pre-Test, Post-Test, and Follow-up GDS Scores for Experimental Group

Id Number	GDS Pre-test	GDS Post-test	GDS Follow up
3	4.26	1.00	4.00
9	4.00	1.00	5.00
6	2.00	0.00	0.00
10	6.00	4.00	7.00
4	3.00	2.00	1.00
1	4.00	3.00	2.00
2	0.00	0.00	0.00
11	1.00	1.00	2.00
8	0.00	1.00	4.00
5	0.00	1.00	0.00
7	1.06	5.00	3.00

Correlation between Self-Esteem and Depression

Three Pearson correlations were run to determine if there was a relationship between self-esteem and depression. Figure 1 shows the correlation between pre-test scores on the RSE and the GDS. This correlation trended toward significance with $r(19) = -.418, p = 0.05$, thus, showing a relationship between higher depression and lower self-esteem levels.

Figure 1

Pearson Correlation - RSE and GDS Pre-Test Scores

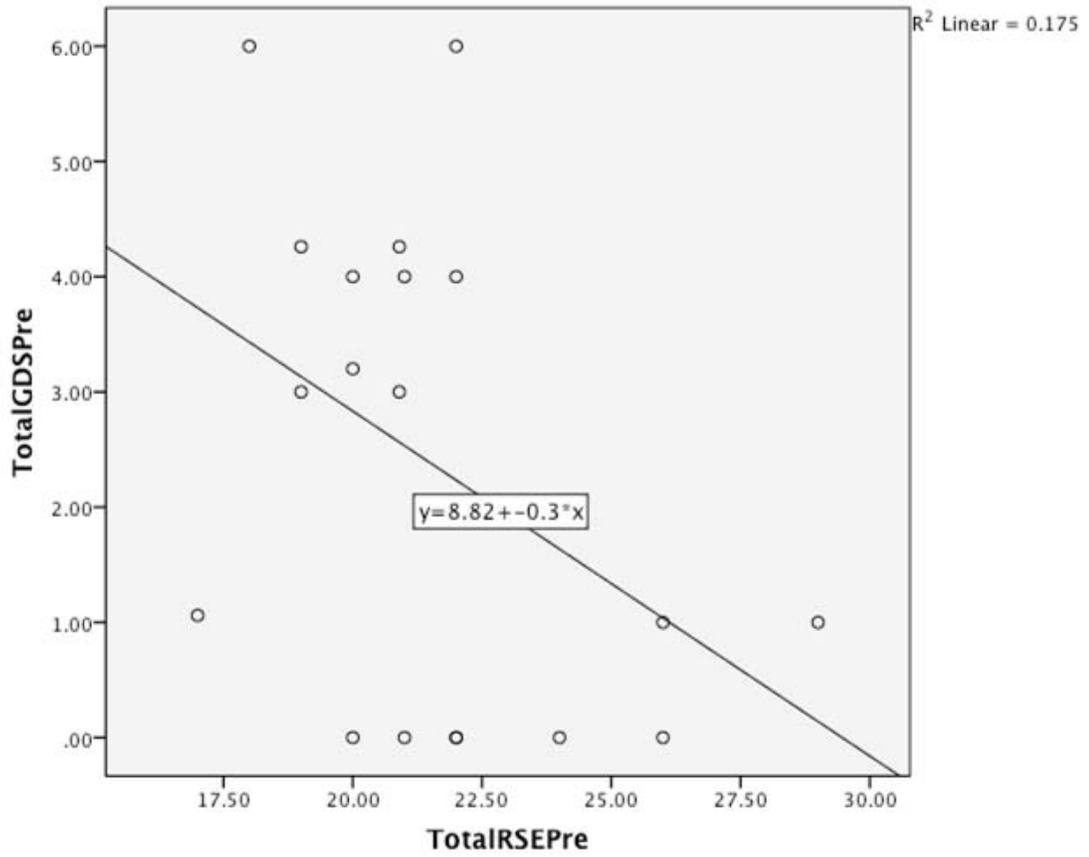


Figure 2 shows the correlation between the post-test scores on the RSE and the GDS: $r(19) = -.254, p = 0.26$. Figure 3 shows the correlation between the change scores on the RSE and the GDS: $r(19) = -.040, p = 0.86$. Though neither of these correlations was significant, the best fit line shows a slight relationship between higher depression scores and lower self-esteem scores.

Figure 2

Pearson Correlation - RSE and GDS Post-Test Scores

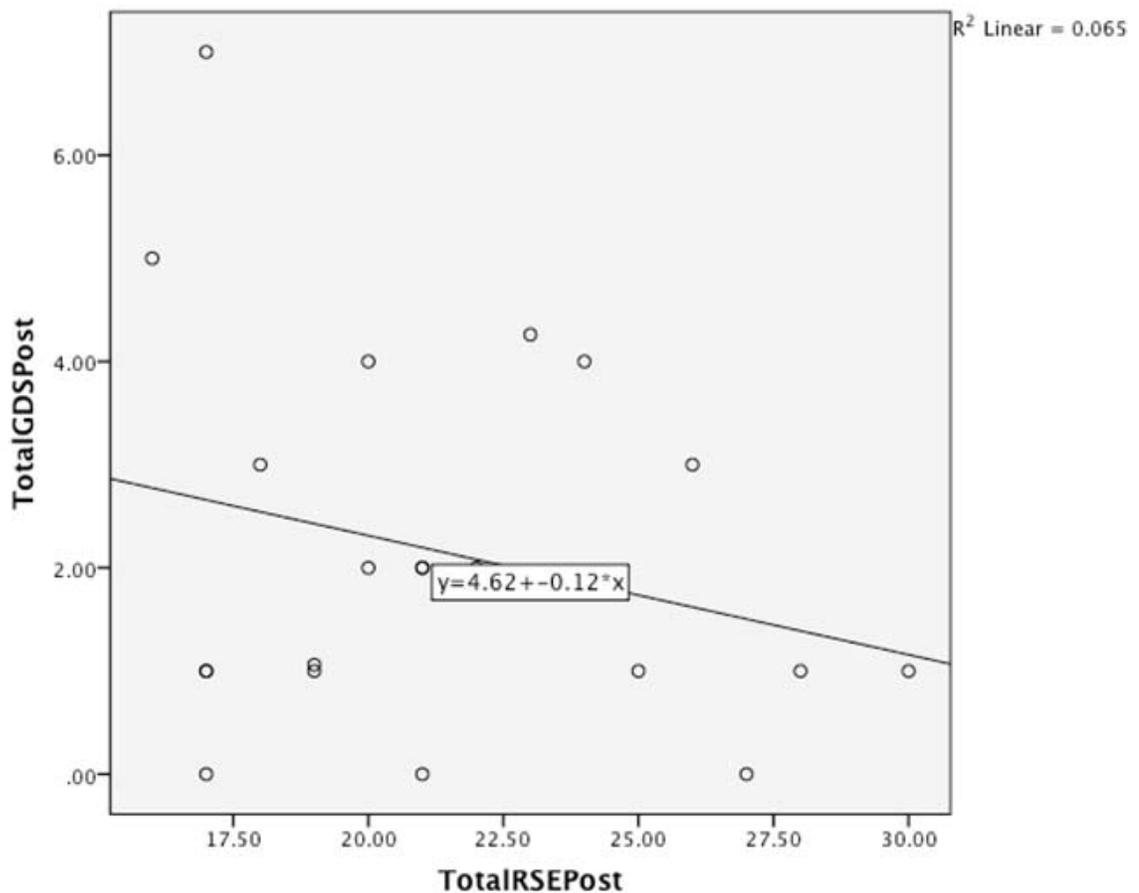
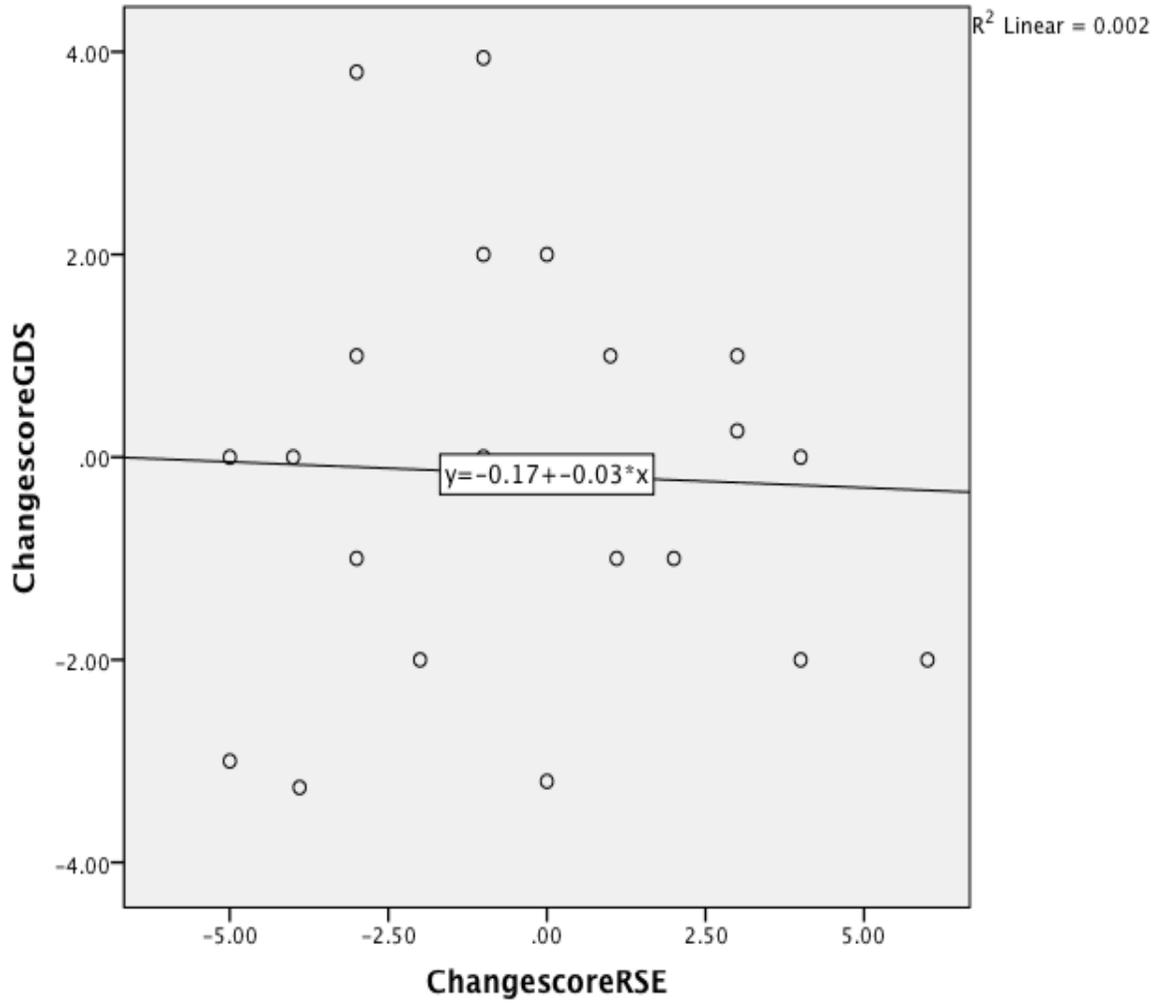


Figure 3

Pearson Correlation - Change Scores



CHAPTER V

DISCUSSION

The purposes of this study were to explore the effect of magic on the self-esteem and depression levels of older adults in long-term care, and to determine whether there was a relationship between changes in self-esteem and changes in depression. There were no statistically significant changes in levels of self-esteem or depression for the experimental group as a whole. However, a majority of the participants' depression levels improved or remained the same. As seen in Table 8, six of the eleven experimental group participants' scores improved, with the greatest improvement being from 4.26 to 1.00. Two participants, both of whom began the intervention with a high score of zero or one, maintained their GDS scores at the post-test and the follow-up test. This improvement or maintenance of a high level GDS score calls for additional research on the impact of magic.

Additionally, the Pearson correlation showed results approaching significance for the relationship between changes in self-esteem and changes in depression, with $p=0.05$. As self-esteem trended up, depression trended down. This result also calls for further research to study magic's impact on improving self-esteem and decreasing depression.

A variety of factors could have contributed to the lack of significant improvement in the RSE and GDS scores of the experimental group, including the brevity of the study, participants already having RSE and GDS scores in the normal range when the

intervention began, the RSE being a measurement of global self-esteem, and the difference in social interaction between control and experimental groups. The brevity of the study may have reduced the impact of the intervention. Eight sessions is quite a small number, especially when there are interruptions in the schedule and problems with attendance. The average number of sessions attended for the experimental group was three sessions. With this low attendance, it was difficult for the program to have much impact on participants who had minimal involvement with it.

It should be noted that almost everyone started the intervention with scores in the normal range on both the RSE and GDS, with RSE pretest scores being relatively high and GDS pretest scores being relatively low. On the RSE, scores between 15 and 25 are indicative of a normal range of self-esteem. As seen in Table 5, the average RSE score for the experimental group was 22.08. Table 6 shows that scores ranged from 17 to 26. On the GDS, a score of 0 to 5 is considered normal. As seen in Table 7, the average GDS score for the experimental group was 2.30. Table 8 shows that scores ranged from 0 to 6, with only one individual reporting a score of 6. Since these initial scores were so high, it is possible that the magic intervention could not have a major impact on them. This is similar to the effect noted by Noice et al. (2004) regarding the impact of an expressive therapy program in theater arts on self-esteem in older adults who had high RSE scores. Possibly the intervention could have had a greater impact on individuals with lower self-esteem and higher depression scores.

As stated previously, for the purposes of this study self-esteem was defined as global self-esteem, which is a general feeling about oneself (Brown & Marshall, 2006;

Guindon, 2010; Rosenberg, 1965). The Rosenberg Self-Esteem Scale measures global self-esteem. It is possible that measuring state self-esteem, which is one's feeling of self-worth based on certain events (Brown & Marshall, 2006; Guindon, 2010), or domain-specific self-esteem, which is a person's evaluation of his or her specific attributes (Brown & Marshall, 2006; Guindon, 2010), might have been more appropriate to this study. The opportunities for exercising freedom of choice, or autonomy, during the magic program might have been better reflected in a measure of state self-esteem. The development of competence in performing magic tricks might have been better reflected in a measure of domain-specific self-esteem. According to the self-determination theory, both autonomy and competence are critical elements for re-establishing tendencies toward personal growth and self-determination, which may result in improved self-esteem.

One element that could have caused the lack of significant difference between the control and experimental groups was the difference in the social interaction between the two groups. The control group was put in place to show that it was magic that impacted self-esteem and depression, not purely social interaction. However, the control group gave evidence that social interaction and relatedness are important facets of magic and should be encouraged. At the control site, the LRT/CTRS was present at almost every session. The recreation therapist (LRT/CTRS) invited participants to sessions, interacted with them during the activity, and created conversations between him and participants, as well as between multiple participants. On occasions when the LRT/CTRS could not be present, another staff member or intern the residents knew came to the session. This

relatedness, which, according to the self-determination theory, is critical for achieving and maintaining the natural tendency toward personal growth and energy, could have helped keep the control group participants' self-esteem high and depression low.

Limitations of the Study

One limitation of the study includes using a small number of participants. A low level of attendance at the magic sessions may also have had a negative impact on this study. In spite of obtaining a commitment to this research from both staff at the experimental site and each individual participant, attendance for some participants was infrequent. Some participants were hesitant to leave their rooms unless asked by a staff member with whom they were familiar; staff members were frequently too busy to help, and during morning sessions they were unavailable due to a regular staff meeting. Additionally, the sequence of sessions was interrupted due to weather cancellations and a special event at the facility about which the researcher was not informed.

Delays in collection of post-test data also were problematic. As mentioned previously, collection of post-test data for individuals who did not attend the last magic session was delayed, which may have impacted their scores.

Future Research Directions

Additional research on the topic of magic is warranted due to positive results on the GDS for a majority of individuals and results of the Pearson correlation showing a relationship between an increase in self-esteem scores and a decrease in depression scores. Since it is not clear why some individuals benefited from the program but others did not, magic should be studied in a variety of settings with different populations in

addition to continuing studies with older adults in long-term care. Studies could be done with people of different ages and socio-economic backgrounds as well as with people having disabilities. Magic could be explored in settings such as schools, behavioral health hospitals, and rehabilitation hospitals. A larger sample size is recommended to produce results that could be generalized to a broader population. A lengthier study or more frequent sessions per week would give the program more time to produce positive results. To resolve attendance issues experienced in this study, magic could be implemented in an established activity group participants are accustomed to attending. Also, a few weeks could be added to the beginning of the program to give the experimenter and volunteers time to get to know and build rapport with the participants. This has the potential to make participants feel more comfortable with the experimenter and volunteers and thus be willing to attend magic sessions when invited by the experimenter or volunteers.

To gather more information about the impact of magic, experimenters should keep track of the mediators of relatedness, competence, and autonomy, which are crucial to the self-determination theory. Relatedness could be measured by noting how frequently participants interact and talk with other participants, volunteers, or staff at the facility. The mediator of competence could be monitored by counting the number of tricks each participant successfully learns. Lastly, autonomy could be measured by noting how often participants exercise their freedom of choice regarding how many and which tricks to learn.

An additional way to gather more information about the impact of magic is to use both quantitative and qualitative approaches. Researchers could administer pre- and post-tests but also keep detailed notes about observations of participants and participant comments, as was done in Bedini's (2008) study. These notes could provide information about participant reactions that might not appear in statistical analysis. As Ezell and Klein-Ezell (2003) noted, receiving confirmation from a participant of a feeling of success enhances quantitative results. Additionally, this information would help researchers be aware of outside factors in participants' lives that could affect self-esteem and depression levels and thus the research, which, as Levin (2006) noted, cannot be ignored.

Recommendations for Therapeutic Recreation Practitioners

Although the results of this study did not show significant improvement in the self-esteem and depression scores of the experimental group following the magic intervention, past research (Bedini, 2008; Ezell & Klein-Ezell, 2003; Levin 2006) supports the possibility that magic can be beneficial to the self-esteem and depression levels of older adults as well as other populations. Practitioners who choose to implement a magic program with older adults in long-term care should consider several strategies to avoid some of the limitations experienced in this study and implement a successful program. First, it is important for the staff members at the facility to be supportive and enthusiastic about the program so they will encourage participation and attendance. To gain their support, a staff orientation should be conducted prior to the start of the program (Bedini 2008) at which they learn about the purpose of the program,

possible benefits, how they can help, and how vital their help is to the program's success. To build their enthusiasm, the practitioner could demonstrate some of the magic tricks and have the staff learn the tricks, so they will see what enjoyable experience participants could have through using magic as a therapeutic intervention. This training may help solve the problem of low level of attendance, because the staff will be more enthusiastic about encouraging participants to be involved in the program.

Practitioners also need to motivate participants to partake fully in the program, so they may receive maximum benefit from the program. Possible ways to motivate participants include putting on a magic show for their friends and family members at the end of the program (Bedini, 2008; Levin, 2006), having an end of program party with awards, and including magic related activities in the program in addition to learning tricks, such as making props: capes, hats, or a personal marquee/insignia (Bedini, 2008; Levin, 2006). Another motivational activity would be observing other magicians by watching videos (Bedini, 2008, Levin, 2006)), taking a field trip to see a magic show, or inviting a magician to perform at the facility. Additionally, it was noted during research that some participants were more engaged in the morning and others in the afternoon. Offering the program twice a day would help accommodate those preferences. By building participant and staff enthusiasm for the program and accommodating participant schedule preferences, the practitioner will make it possible for participants to gain as many benefits from the program as possible.

Conclusion

Magic is an expressive therapy that has the potential to provide an environment that incorporates autonomy, competence, and relatedness. These are the three psychological components necessary to facilitate personal growth and energy, and thus enhance self-determination. Self-determination has the potential to increase self-esteem and reduce depression, which are significant health issues for the growing older adult population in the United States. Although this study did not provide statistically significant results that support magic's impact on self-esteem and depression, positive results for individuals show promise for this intervention to be successful. Additional research is needed to further explore the impact of this intervention. To avoid the limitations of the current study, the researcher suggests studies take place over a longer period of time with a larger group of participants who are highly committed to attendance, and the use of both quantitative and qualitative approaches. Since this study and other studies cited in this research (Bedini, 2008; Ezell & Klein-Ezell, 2003; Levin, 2006) provide supportive evidence of the positive impact of this intervention on individuals of a variety of populations, the researcher recommends that magic be offered as part of a therapeutic recreation program for older adults in long-term care. Those participants who have an interest in magic and choose to participate in the program could achieve the benefits of increased self-esteem and reduced depression achieved by several individuals in this study.

REFERENCES

- Administration on Aging. (n.d.). *Aging statistics*. Retrieved from http://www.aoa.gov/AoARoot/Aging_Statistics/index.aspx
- Administration on Aging (2010). Depression and aging: Treatment works. Retrieved from http://www.aoa.gov/AoARoot/Press_Room/News/2010/Healthy_Tip/21.aspx
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. Washington, D.C: American Psychiatric Association.
- Bedini, L. A. (2008). Magic as a therapeutic intervention with older adults with mild cognitive and physical limitations. *Annual in Therapeutic Recreation, 16*, 159-170.
- Blondeau, D. (2009). La différence: condition of exclusion or of reconnaissance?. *Nursing Philosophy, 10*(1), 34-41. doi:10.1111/j.1466-769X.2008.00381.x
- Brown, G. W., & Harris, T. (1989). Depression. In G. W. Brown & T. Harris (Eds.), *Life events and illness* (pp. 49-89). New York: Guilford Press.
- Brown, J. D., & Marshall, M. A. (2006). The three faces of self-esteem. In M. Kernis (Ed.), *Self-esteem: Issues and answers* (pp. 4-9). New York: Psychology Press.
- Brownie, S., & Horstmanshof, L. (2012). Creating the conditions for self-fulfillment for aged care residents. *Nursing Ethics, 19*(6), 777-786.

- Centers for Disease Control and Prevention (2012). Depression is not a normal part of growing older. Retrieved from <http://www.cdc.gov/aging/mentalhealth/depression.htm>
- Chan, M. F., Chan, E. A., Mok, E., & Kwan, T. F. Y. (2009). Effect of music on depression levels and physiological responses in community-based older adults. *International Journal of Mental Health Nursing, 18*, 285-294. doi:10.1111/j.1447-0349.2009.00614.x
- Coleman, P., Aubin, A., Robinson, M., Ivani-Chalian, C., & Briggs, R. (1993). Predictors of depressive symptoms and low self-esteem in a follow-up study of elderly people over 10 years. *International Journal of Geriatric Psychiatry, 8*(4), 343-349.
- Dattilo, J. (2011). *Facilitation techniques in therapeutic recreation* (2nd ed.). State College, PA: Venture.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York, NY: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.
- Deci, E. L., & Ryan, R. M. (2002). *Handbook of self-determination research*. New York: University of Rochester Press.
- Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *The Educational Psychologist, 26*, 325-346.

- de Guzman, A. B., Satuito, J. B., Satumba, M. E., Segui, D. A., Serquina, F. C., Serrano, L. P., & Sevilla, M. D. (2011). Filipino arts among elders in institutionalized care settings. *Educational Gerontology, 37*(3), 248-261.
doi:10.1080/03601270903534937
- Elder, K. L., Deviney, D. E., MacKinnon, R. J., & Dyer, J. (2012). Using illusions in the classroom: Principles, best practices, and measurement. *Proceedings of Academic and Business Research Institute Conference*, San Antonio, TX.
- Ezell, D., & Klein-Ezell, C. E. (2003). M.A.G.I.C.W.O.R.K.S (Motivating activities geared to instilling confidence – Wonderful opportunities to raise kid’s self-esteem). *Education and Training in Developmental Disabilities, 38*(4), 441-450.
- Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). "Mini-mental state." A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research, 12*(3), 189-98.
- Geriatric Mental Health Foundation (n.d.). Depression in late life: Not a natural part of aging. Retrieved from http://www.gmhfonline.org/gmhf/consumer/factsheets/depression_latelife.html
- Gray-Little, B., Williams, V. S. L., Hancock, T. D. (1997). An item response theory analysis of the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin, 23*(5), 443-451.

- Green, D., Schertz, M., Gordon, A. M., Moore, A., Margalit, T. S., Farquharson, Y., Bashat, D. B., Weinstein, M., Lin, J., & Fattal-Valevski, A. (2013). A multi-site study of functional outcomes following a themed approach to hand-arm bimanual intensive therapy for children with hemiplegia. *Developmental Medicine and Child Neurology*, 55 (6), 527-33.
- Guindon, M. H. (2010). What is self-esteem? In M. H. Guindon (Ed.), *Self-esteem Across the Lifespan* (pp. 3 - 24). New York, NY: Taylor and Francis Group.
- Hanser, S. B. (1990). A music therapy strategy for depressed older adults in the community. *Journal of Applied Gerontology*, 9(3), 283-298.
doi:10.1177/073346489000900304
- Hanser, S. B., & Thompson, L. W. (1994). Effects of a music therapy strategy on depressed older adults. *Journal of Gerontology*, 49(6), 265-269.
- Hart, R., & Walton, M. (2010). Magic as a therapeutic intervention to promote coping in hospitalized pediatric patients. *Pediatric Nursing*, 36 (1), 11-15.
- Hayslip, B. (1993). *Helping older adults cope with loss*. Dallas, TX: TLC Group.
- Kim, S. K. (2013). A randomized, controlled study of the effects of art therapy on older Korean-Americans' healthy aging. *Arts in Psychotherapy*, 40(1), 158-164.
doi:10.1016/j.aip.2012.11.002
- Levin, D. M. (2006). Magic arts counseling: The tricks of illusion as intervention. *Georgia School Counselors Association Journal*, 13, 14-23.

- Mann, M., Hosman, C. M. H., Schaalma, H. P., and de Vries, N. K. (2004). Self-esteem in a broad spectrum approach for health promotion. *Health Education Research, 19*(4), 357-372. doi: 10.1093/her/cyg041
- McCurdy, B., & Kelly, D. B. (1997). Correlations of the MMPI-2 low self-esteem scale with two self-esteem measures. *Psychological Reports, 81*, 826-826. 10.2466/pr0.1997.81.3.826
- Morrison, M., & Alessi, J. M. (n.d.). *Therapeutic Magic*. New Orleans, LA: The Rehabilitation Institute of New Orleans.
- Murrell, S. A., Meeks, S., & Walker, J. (1991). Protective functions of health and self-esteem against depression in older adults facing illness or bereavement. *Psychology and Aging, 6*(3), 352-60.
- National Institute of Mental Health (n.d.). Older adults and depression. Retrieved from <http://www.nimh.nih.gov/health/publications/older-adults-and-depression/index.shtml#pub5>
- Noice, H., Noice, T., & Staines, G. (2004). A short-term intervention to enhance cognitive and affective functioning in older adults. *Journal of Aging and Health, 16*(4), 562–585. doi:10.1177/0898264304265819
- Orth, U., Robins, R. W., Trzesniewski, K. H., Maes, J., & Schmitt, M. (2009). Low self-esteem is a risk factor for depressive symptoms from young adulthood to old age. *Journal of Abnormal Psychology, 118*(3), 472-478. doi:10.1037/a0015922

- Orth, U., Trzesniewski, K.H., & Robins, R.W. (2010). Self-esteem development from young adulthood to old age: A cohort-sequential longitudinal study. *Journal of Personality and Social Psychology*, 98(4), 645-658. doi:10.1037/a0018769
- Ranzijn, R., Keeves, J., Luszcz, M., & Feather, N. T. (1998). The role of self-perceived usefulness and competence in the self-esteem of elderly adults: Confirmatory factor analyses of the Bachman revision of Rosenberg's Self-Esteem Scale. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, 53(2), 96-104.
- Reker, G. T. (1997). Personal meaning, optimism, and choice: Existential predictors of depression in community and institutional elderly. *The Gerontologist*, 37(6), 709-716.
- Richmond, L. J., & Guindon, M. H. (2010). Self-esteem in the third phase of life. In M. H. Guindon (Ed.), *Self-esteem across the lifespan* (pp. 281-293). New York, NY: Taylor and Francis Group.
- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, 27, 151-161.
10.1177/0146167201272002
- Robins, R. W., Trzesniewski, K. H., Tracey, J. L., Gosling, S. D., & Potter, J. (2002). Global self-esteem across the life span. *Psychology & Aging*, 17(3), 423-434.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, N.J: Princeton University Press.

- Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78.
- Salyers, M. P., McHugo, G. J., Cook, J. A., Razzano, L. A., Drake, R. E., & Mueser, K. T. (2001). Reliability of instruments in a cooperative, multisite study: Employment intervention demonstration program. *Mental Health Services Research*, 3(3), 129-39.
- Schwartz, A. N. (1975). An observation on self-esteem as the linchpin of quality of life for the aged. An essay. *The Gerontologist*, 15(5), 470-472.
- Sheikh, J. I., & Yesavage, J. A. (1986). Geriatric Depression Scale (GDS). Recent evidence and development of a shorter version. In T.L. Brink (Ed.), *Clinical gerontology: A guide to assessment and intervention* (pp. 165-173). NY: The Haworth Press, Inc.
- Silverstone, P. H. & Salsali, M. (2003). Low self-esteem and psychiatric patients: Part I: The relationship between low self-esteem and psychiatric diagnosis. *Annals of General Hospital Psychiatry*, 2(1). Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC151271/>

- Substance Abuse and Mental Health Services Administration (2011). *Depression and older adults: Key issues: The treatment of depression in older adults* (HHS Pub. No. SMA-11-4631). Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services.
- Teresi, J., Abrams, R., Holmes, D., Ramirez, M., & Eimicke, J. (2001). Prevalence of depression and depression recognition in nursing homes. *Social Psychiatry and Psychiatric Epidemiology*, 36(12), 613-20.
- U.S. Department of Health and Human Services, & U.S. Department of Labor (2003). The future supply of long-term care workers in relation to the aging baby boom generation: Report to Congress. Washington, DC: Office of the Assistant Secretary for Planning and Evaluation. Retrieved from aspe.hhs.gov/daltcp/reports/ltcwork.pdf
- Vincent, G. K., & Velkoff, V. A. (2010). *The next four decades: The older population in the United States: 2010 to 2050*. Retrieved from http://www.aoa.gov/Aging_Statistics/future_growth/DOCS/p25-1138.pdf
- Waugh, A. (2006). Depression and older people. *Nursing Older People*, 18(8), 27-30.
- World Health Organization. (2013). *Health topics: Depression*. Retrieved from <http://www.who.int/topics/depression/en/>

APPENDIX A

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

CONSENT TO ACT AS A HUMAN PARTICIPANT

Project Title: The Effect of Magic as a Therapeutic Recreation Intervention on the Self - Esteem and Depression of Older Adults in Residential Facilities

Principal Investigator and Faculty Advisor: Suzanne Huycke, Principal Investigator; Dr. Charlsena Stone, Faculty Advisor

Participant's Name: _____

What is the study about?

This is a research project. Your participation is voluntary. This study will investigate the impact of a magic program on the self-esteem and depression of adults 65 years of age or older who live in a long-term care facility.

Why are you asking me?

I would like you to participate in this study because you meet the requirement of being 65 years of age or older, are a resident in this long-term care facility, and do not suffer from memory impairment. The Certified Therapeutic Recreation Specialist at this facility has identified you as an individual who meets these requirements and who may benefit from participation in the magic program. Your cognitive abilities have been confirmed by the Mini Mental State Examination.

What will you ask me to do if I agree to be in the study?

I would like you to participate in a program of eight hour-long sessions of learning and practicing magic tricks, which will take place two times a week for four weeks. Before and after this program, and four weeks after the program ends, I will ask you to complete the Rosenberg Self-Esteem Scale and the Geriatric Depression Scale. Each of these scales will take you a maximum of 20 minutes to complete. It is possible that you could be assigned to a control group. If so, you will complete both scales, then continue your normal activities with visits from a UNCG student or myself twice a week for four weeks, complete both scales again, and then participate in the magic program.

Is there any audio/video recording?

There will be no audio or video recording.

What are the risks to me?

The Institutional Review Board at the University of North Carolina at Greensboro has determined that participation in this study poses minimal risk to participants. During the

study, if there is evidence that you have a high level of depression, you will be referred to a mental health professional or a physician on the facility's staff.

It is possible that you could be embarrassed if you can't complete a magic trick successfully. If that happens, we will adapt the trick for you, or you can move on to a different trick. It is possible that a question on the questionnaires could upset you. If that happens, you do not have to answer the question. If you have arthritis or joint pain, you might be uncomfortable doing some of the tricks. If that happens, we will adapt the trick for you, or you can move on to a different trick.

If you have questions, want more information, or have suggestions, please contact Suzanne Huycke, Principal Investigator, at 703-862-4123 or smhuycke@uncg.edu; or Dr. Charlsena Stone, Faculty Advisor, at cfstone@uncg.edu.

If you have any concerns about your rights, how you are being treated, concerns or complaints about this project or benefits or risks associated with being in this study, please contact the Office of Research Integrity at UNCG toll-free at (855)-251-2351.

Are there any benefits to society as a result of me taking part in this research?

This study may identify a therapeutic recreation intervention that can be used to improve the self-esteem and/or reduce the depression of older adults in long-term care facilities, as well as add to the body of knowledge in the therapeutic recreation discipline.

Are there any benefits to *me* for taking part in this research study?

Although there are no guaranteed benefits to you for participating in this study, you may experience improved self-esteem and/or reduced depression from participation in the magic program.

Will I get paid for being in the study? Will it cost me anything?

There are no costs to you or payments made for participating in this study. You will receive a kit of supplies for performing magic tricks that you will be allowed to keep.

How will you keep my information confidential?

All information obtained in this study is strictly confidential unless disclosure is required by law. You will be assigned an identification number, which will be used on all data collection tools. The list associating your name with your ID number will be kept in a locked file cabinet on the UNCG campus for three years. All hard copies of consent forms and data collection tools will be stored in a separate locked file cabinet on the UNCG campus for three years. Data will be stored on a secure UNCG server for three years. Participants will not be identified by name when data is disseminated. Hard copies will be shredded and electronic data will be erased three years after completion of the study.

What if I want to leave the study?

You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. Choosing not to participate or withdrawing from the study will not affect your relationship with the facility or the care you receive. If you choose to withdraw, you may request that any of your data that has been collected be destroyed unless it is in a de-identifiable state.

What about new information/changes in the study?

If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent by Participant:

By signing this consent form, you are agreeing that you read this document, or have had it read to you, and you fully understand the contents. You are openly willing to consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, or by having an authorized person sign on your behalf, you are agreeing that you are 65 years of age or older, and are agreeing to participate in this study described to you by Suzanne Huycke.

Participant Signature/Legal Authorized Representative:

_____ Date: _____

For participant with a legal authorized representative, verbal consent from participant was obtained on

(date) _____

APPENDIX B

ROSENBERG SELF-ESTEEM SCALE

Directions: Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement by circling strongly agree, agree, disagree, or strongly disagree next to each statement.

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

Rosenberg Self-Esteem Scale Scoring

Scores are calculated as follows:

- For items 1, 2, 4, 6, and 7:
Strongly agree = 3
Agree = 2
Disagree = 1
Strongly disagree = 0
- For items 3, 5, 8, 9, and 10 (which are reversed in valence):
Strongly agree = 0
Agree = 1
Disagree = 2
Strongly disagree = 3

The scale ranges from 0-30. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem.

APPENDIX C

GERIATRIC DEPRESSION SCALE: SHORT FORM

Directions: Choose the best answer for how you have felt over the past week.

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

GDS Scoring

Answers in bold indicate depression. Score 1 point for each bolded answer.
A score greater than 5 points is suggestive of depression.
A score greater or equal to 10 points is almost always indicative of depression.

APPENDIX D

CODY'S PREDICTION

Effect: You will demonstrate the ability to predict any number from 1-100 that a volunteer from the audience has freely chosen.

Secret: Using a set of seven pre-printed cards designed for this trick, add up the numbers on the top left corner of each card on which your volunteer sees the selected number.

Materials: Seven pre-printed cards designed for this trick (See Figures C1 and C2)

Instructions:

- Ask a volunteer to think of a number between 1 and 100 for you to predict.
- Hand the cards one at a time to the volunteer, asking if the chosen number is on the card. The response should be “yes” or “no” to each card.
- The order in which the cards are handed to the volunteer does not matter.
- Sort the cards into two piles, one for the cards that receive a “yes” response and one for the cards that receive a “no” response.
- After the helper has responded to all the cards, add the numbers in the top left corner of each “yes” card.
- The total number is the prediction number and should be the number the helper chose.

Adaptations/Variations:

- Adaptations
 - Calculators - help with math
 - Pen and pad of paper - help with math and memory
 - Highlighters - help with memory
 - Various sizes of cards and calculators – help those with visual impairment
- Variations - none

Reference:

Morrison, M., & Alessi, J.M. (n.d.). Cody's prediction. *Therapeutic Magic* (pp. 24–28).

New Orleans, LA: The Rehabilitation Institute of New Orleans.

Figure C1. Sample Card

1	25	49	73	97
3	27	51	75	99
5	29	53	77	
7	31	55	79	
9	33	57	81	
11	35	59	83	
13	37	61	85	
15	39	63	87	
17	41	65	89	
19	43	67	91	
21	45	69	93	
23	47	71	95	

Figure C2. Sample Card

32	44	56	100	
33	45	57		
34	46	58		
35	47	59		
36	48	60		
37	49	61		
38	50	62		
39	51	63		
40	52	96		
41	53	97		
42	54	98		
43	55	99		