EFFECT OF CARD PLAY ON PERCEIVED LIFE SATISFACTION

AND SELF ESTEEM OF OLDER ADULTS

by

Mark V. Saunders

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School of Health, Physical Education and Recreation.

Master's Thesis Committee:

_____ Advisor/Chairperson

Dr. Barbara A. Hawkins, Re.D.

_____ Member

Bruce B. Hronek, M.L.S.

_____ Member

Dr. Lynn M. Jamieson, Re.D.

Dedication

To my parents, sisters, and brothers:

their love, encouragement, and support have helped to shape the person that I am.

ACKNOWLEDGEMENTS

To all of the people that helped to make this thesis come to fruition I owe my most heartfelt thanks and appreciation. My deepest acknowledgement and gratitude goes to my academic advisor, mentor, and friend Dr. Barbara A. Hawkins. If it were not for Dr. Barb's belief and encouragement in my ability to achieve a successful academic career, none of my academic accomplishments would have been possible. More than anyone, Dr. Hawkins has been an unwavering source of insight, support, and guidance in the development, implementation, and completion of this thesis. My gratitude, appreciation, and thanks go to my committee members, Dr. Lynn Jamieson and Professor Bruce Hronek. Dr. Jamieson and Professor Hronek were instrumental in helping to guide the development of the thesis to be more inclusive, to cover areas pertinent to the subject matter of the thesis that I had not considered. I hold immense admiration and respect for each and every one of my master's thesis committee members, through their kindness, understanding, hard work, and dedication, they have shown me the key to a rewarding and successful life.

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School of Health, Physical Education, and Recreation

Announcing the Thesis Defense Meeting of Mark V. Saunders

for the Degree of Master of Science

in the Department of Recreation, Park, and Tourism Studies

May 11, 2010, 10:00am, HPER 125

TITLE: EFFECT OF CARD PLAY ON PERCEIVED LIFE SATISFACTION AND SELF-ESTEEM OF OLDER ADULTS

STATEMENT OF THE PROBLEM: The problem of this study was to (a) assess the effect of playing cards on the level of perception of life satisfaction and self-esteem in older adults and (b) determine if there was any difference in the perceived level of life satisfaction and self-esteem between older adults who played cards with other people compared with those who played cards on a computer.

PURPOSE OF THE STUDY: The purpose of this study was to examine a potentially cost effective way to improve the level of perception of life satisfaction and self-esteem of the older adult.

METHODS: Single-subject repeated measures A-B-A design was used for the three phase experiment. Data were collected from all subjects across a total of six weeks. Phase (A) was the establishment of the baseline before the start of treatment phase (B). Subjects in the study were tested with two measurement instruments of Life Satisfaction and Self-Esteem before treatment of card play on the computer or face-to-face card play, were administered. Midpoint and end-treatment tests were given at the second and fourth weeks. These two testing sessions measured phase (B), the treatment phase of the experiment. Two weeks after the treatment phase, tests were given as the post-treatment (A) last phase of the experiment, measuring the subjects post treatment return to baseline. Data analysis: data collected from the four testing periods were entered into a Microsoft 2007 Excel file. Individual and combined trend line charts were generated for descriptive analysis, interpretation, and explanation of the trend lines across times of testing.

Committee in Charge

Dr. Barbara A. Hawkins, Re.D., Department of Recreation, Park, and Tourism Studies

Bruce B. Hronek, M.L.S., Department of Recreation, Park, and Tourism Studies

Dr. Lynn M. Jamieson, Re.D., Department of Recreation, Park, and Tourism Studies

Approved: _____

Barbara A. Hawkins, Re.D.

May 2010

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CHAPTER 1

INTRODUCTION

The baby boom that occurred in the United States during the middle of the last century has come of age. More accurate and important, the baby boomer population is reaching old age. As a result, older Americans are one of the fastest growing segments of our population and are expected to "double in the next several decades" (Elavsky, McAuley, Motl, Konopack, Marquez, Diener et al., 2005, p. 138).This increase has been predicted to have two major consequences; 1) more people are expected to be in need of health care, and 2) anticipated rising health care costs. It is, therefore, logical that health care professionals look for low cost ways to improve the health of older adults in order to ease a conceivably heavy financial burden on the health care system. Previous studies have shown, although not conclusively, that there is a strong relationship between engagement in a leisure activity and improved physical and mental health status (Coleman & Iso-Ahola, 1993).

If doing a simple inexpensive leisure activity, such as playing a game of cards is correlated with improved mental and physical well-being, then it is possible to anticipate that this type of leisure activity may be useful in helping to curb health care costs. There is a need for improving the maintenance of good physical and mental health in our older adult population. Implementing cost saving interventions that hold the potential to improve the physical and mental well-being of older adults may be one approach for containing some of the exorbitant expenses associated with poor physical and mental health of the older adult.

Statement of the Problem

The problem of this study was to (a) assess the effect of playing cards on the level of perceived life satisfaction and self-esteem in older adults and (b) determine if there was any difference in the perceived level of life satisfaction and self-esteem between older adults who played cards with other people compared with those who played cards on a computer.

Purpose of the Study

The purpose of this study was to examine a potentially effective way to improve the perception of the life satisfaction and self-esteem of older adults. There have been several pieces of literature published and studies conducted that suggest a strong correlation between the performance of an activity and improved mental and physical health (Bastone & Filho, 2004; Bengtson, & Schaie, 1999; Elavsky et al., 2005; Lampinen, 2006; Lohmann, 1980; McAuley, Doerksen, Morris, Motl, Hu, Wojcicki et al., 2008; Menec, 2003; Moody, 2010; Nilsson, 2006; Saxena, Van Ommerin, Tang, & Armstrong, 2005).

Research findings have indicated that "leisure activities have health promoting benefits among the elderly, including decreased risk for dementia, cardiovascular diseases and decreased mortality. There is also a relation between leisure and life satisfaction and well-being" (Nilsson, Lofgren, Fischer, & Bernspang, 2006, p. 391). If engagement in an activity can lead to a better sense of life satisfaction and self-esteem, then it is possible that this positive increase in the perception of self-esteem and life satisfaction may promote improved overall health status. Improved mental and physical

health in the older adult may translate to cost savings for the individual, health care provider, and society.

Need for the Study

There are information gaps concerning many aspects of studying the effects of activity on the perception of life satisfaction and self-esteem. Level, frequency, and duration of activity involvement are variables that have not been investigated to the fullest possible extent. The hypothesis behind this research is that the more one is active in a regular regimen of physical activity, the higher is the perception of well-being. This hypothesis may not be entirely valid especially with respect to older adults and their activity preferences. Some older adults may prefer to engage in less physical activities such as reading a book or performing volunteer work rather than engage in a regimen of physical exercise.

There is a lack of research concerning the effects of sedentary activity on the perception of life satisfaction and self-esteem. Menec (2003) investigated the effects of normal everyday activities on measures of successful aging. In this study the researcher explored a wide range of household tasks including non-physically active tasks. The study results suggested that "greater overall activity relates to greater happiness and function and reduced mortality. Whereas more solitary activities were related to only happiness" (Menec, 2003, p. 74). Results indicated that physical activities such as doing household chores may produce improved mental and physical function and increased longevity; whereas, solitary activities such as reading a book may only have a psychological benefit. These findings provided support for the current study hypothesis

that playing a game of cards with other people or on the computer, a nonphysical activity, may have a positive effect on the perception of life satisfaction and self-esteem.

There is a need to find out what minimal amount of nonphysical activity will create a positive effect on an older person's perception of self-esteem and life satisfaction. Many older adults confined to a wheel chair or a nursing home bed cannot participate in regular physical activity. By determining the minimum effective level of engagement in nonphysical activity on the improvement of the perception of life satisfaction and self-esteem, health care providers for older adults may enact beneficial interventions for the less ambulatory patient.

Delimitations

The study was delimited to the following factors:

1. Selection of subjects included older adults residing at or frequenting two local agencies that provide health care and services to senior citizens: Bell Trace Senior Living Community in Bloomington, Indiana and Area 10 Agency on Aging at the Endwright Center in Ellettsville, Indiana.

2. Criteria for qualifying for participation in the study were:

    a. Older adults of any ethnicity or gender,

    b. Age range 60 to 90 years,

    c. Ability to learn a game of cards either using a standard deck of cards or a game of cards on the computer,

    d. Ability to complete pencil questionnaires, and

    e. Willingness to participate for the entire length of the study.

3. The study had three phases of data collection. The first stage (A) was the establishment of the baseline before the commencement of the treatment stage (B). Return to baseline (A) was the third phase of data collection. First phase of the study: the Life Satisfaction Scale (LSS; Lohmann, 1980), and the Coopersmith Self-Esteem Inventory (CSEI adult form, 1975, 2002); along with a ten question demographic survey were administered to the selected subjects at each facility at the beginning of the study before treatment. Thus establishing each subject's baseline level of perception of the two psychological parameters. During the second phase of the study, the subjects received the treatment of either card play with others or card play on a laptop computer. The participants were again tested with the same two psychological test instruments at the midpoint of two weeks of treatment and at the end point of treatment after the fourth week. At the third phase of the study, two weeks after the treatment ended, the life satisfaction and self-esteem tests were given to the participants to measure post treatment return to the baseline condition. Data were collected, compiled, and entered into the Microsoft Excel statistical program. Microsoft Excel trend line charts were generated for explanation and interpretation of the test score data.

4. The independent variable/treatment condition for the study was playing cards either in the form of playing cards on a computer or with other people.

5. The dependent variables were perceived life satisfaction and self-esteem of the subjects in the study. Two test instruments were used for the measurement of the dependent variables for the study: The Life Satisfaction Scale, (LSS;

Lohmann, 1980), and the adult form of the Coopersmith Self-Esteem Inventory (CSEI adult form, 1975, 2002).

6. Testing procedures to measure the dependent variables followed the A-B-A single subject design methodology. Phase (A): testing of participants prior to the treatment phase of playing cards on the computer or face to face card playing to establish the baseline condition. Phase (B): mid treatment and end-treatment testing given at the second and fourth weeks. Phase (A): return to baseline two weeks after the treatment was concluded during which the two measurements of life satisfaction and self-esteem were administered as post-treatment measurement of return to baseline.

7. Special equipment required included laptop computers with card games installed for older adults to access and eight decks of standard playing cards.

8. Each participant in the study was given a copy of Hoyle's official rules on the game of Hearts, and either (a) instructed on how to play the card game of Hearts with other people or (b) taught how to access and play the card game of Hearts on the computer.

9. The study was conducted over a 6 week period, commencing in the early autumn of 2009. The execution of the study occurred during the time of the year when summer familial obligations were minimized and the weather was still warm, thus helping to ensure maximum participation.

Limitations

The study considered the following limitations:

1. Subjects may have tried to please the researcher and answer questions as to how they thought the researcher would want the questions answered. Therefore, the results of the tests could be skewed and validity of the study compromised.

2. The consistency of people getting together to play cards with others or on the computer varied, thus possibly affecting the study results.

3. Subjects may have lost interest in either playing games on the computer or with other people, thus influencing the results of the study.

4. The level of understanding how to play computer and face-to-face card games varied and may have impeded personal participation.

5. A personality conflict between two subjects happened at one of the meeting centers during the study, which could possibly have affected the outcome of the study for these participants.

6. Activities that the subjects engage in other than playing cards may have affected the outcome of the study.

Assumptions

The primary assumptions of this study were:

1. Social and physical activity has been positively correlated with a better quality of life for older adults.

2. Feelings and emotions in people are hard to describe, categorize, and measure; therefore, obtaining reliable results is difficult.

3. Older adults have varying degrees of mental ability; therefore, their level of understanding how to play the card games and the test questions is uncertain.

4. The Life Satisfaction Scale (LSS) and the Coopersmith Self-Esteem Inventory (CSEI adult form), are reliable and valid instruments.

5. People need to be socially and physically active to have a positive perception of life satisfaction and self-esteem.

Definitions of Key Terms

Activity Theory of Aging:

1. Refers to the old saying "use-it-or-lose-it" approach to life. The theory assumes that activity is one of the basic tenets of human life; people who continue to stay active socially physically, and mentally, will adapt better to aging (Barrow & Smith, 1979).

2. "A social theory of aging that suggests that *successful aging* is characterized by maintaining social roles, activities, and relationships" (*American Psychological Association*, 2007, p. 15).

Life Satisfaction:

1. "Applies to overall condition of the quality of a person's life, as they perceive it. It is the extent to which a person takes pleasure from the activities that constitute everyday life, regards life as meaningful and purposeful, and feels a responsibility for self" (Russell, 1984).

2. "The extent to which a person finds life rich, meaningful, full, or of high

    quality. Numerous standardized measures have been developed to provide an

    index of a person's life satisfaction in comparison to various groups.

    Improved life satisfaction is often a goal of treatment, especially with older

    people" (American Psychological Association , 2007, p. 536).

Self-efficacy:

"An individual's capacity to act effectively to bring about desired results,

especially as perceived by the individual" (*APA dictionary of psychology*, 2007, p.

830).

Self-esteem:

1. "A self-evaluative process by which an individual indicates the degree to

    which he or she feels positive about himself or herself" (Rosenberg, 1989).

2. "A personal judgment of worthiness that is expressed in the attitudes the

    individual holds toward himself. It is a subjective experience which the

    individual conveys to others by verbal reports and other overt expressive

    behavior. The individual need not be aware of his attitudes towards himself,

    but they will nonetheless be expressed in his voice, posture, gestures and

    performance" (Coopersmith, 1981).

Well-being:

"A state of happiness, contentment, low levels of distress, overall good physical

and mental health and attitude, or quality of life" (*American Psychological

Association* , 2007, p. 996).

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

Literature pertaining to the impact that activity engagement has on the perception of well-being in older adults is readily available. This study sought to investigate the effect of card playing on the perception of life satisfaction and self-esteem of older adults. The literature reviewed for the study is arranged according to the following topics: (a) activity theory, (b) social exchange theory and socioemotional selectivity theory, (c) impact of computers and the internet on the well-being of older adults, (d) life satisfaction and self-esteem, (e) levels of activity participation by older adults, (f) importance of activity in older adults, and (g) summary.

Activity Theory

The idea that activity involvement will lead to better mental and physical health is not a new idea and it has received considerable scholarly interest over the years (Hayes, 1986). Based on experience and observation, it appears that there is a positive relationship between activity and better overall health in older adulthood, and therefore, the old saying of "use it or lose it" has face validity. Moody (2010) noted that activity theory supports the idea that the more active people are, the more apt they are to be satisfied with their life.

Activity theory builds on what has been empirically learned from past investigations on the effects of activity on aging; specifically, to understand what has been observed followed by an explanation of the observations. Theory building is a systematic process of integrating earlier empirical discoveries to provide a guide for future investigations and the production of new knowledge (Bengtson, & Schaie, 1999).

Activity theory gives the researcher the basic concepts that lay the groundwork for investigating treatments or interventions that may play a beneficial part in the enhancement and maintenance of the health and happiness of older adults (Reich, Zautra, & Hill, 1987).

The effects of physical activity on the perceived well-being of older adults have been investigated extensively. McAuley, Konopack, Motl, Morris, Doerksen, and Rosengren (2006) collaborated on a study that examined the influences of health status, self-efficacy, and physical activity on the quality of life in 249 older African American and Caucasian women (mean age of 68 years) over a two-year period. The study measured levels of participation in physical activity against measured levels of self-efficacy, mental health status, physical health status, and perceived quality of life. Structural equation modeling was employed to investigate the model fit of the three modes of physical activity and their relationship to quality of life. Statistical findings indicated that the perception of good mental and physical health status was related to life satisfaction, and that older adult women who had better self-efficacy were more active (McAuley, Konopack, Motl, Morris, Doerksen, & Rosengren, 2006).

Similarly, Bastone and Filho (2004) reported evidence that engagement in exercise programs is beneficial to older adult cognitive behavior. The researchers studied the effectiveness of a six-month physical exercise routine on the cognitive and physical functioning of older adults residing in a nursing home. The study involved a group of 40 older adults ranging in age from 60 to 99 who were split into two groups; one group engaged in an exercise program the other group did not participate in the intervention. Before and after the treatment phase, both groups were assessed with two measures of

cognitive function, The Mini-Mental State Examination (MMSE) and the Geriatric

Depression Scale (GDS), and, physical ability measures involving an obstacle course.

The findings from the study indicated a significant improvement for the routine exercise

group on the GDS test and performance on the obstacle course. A decrease in overall

psychological and physical test scores was observed with the group that did not engage in

the six month physical exercise intervention (Bastone & Filho, 2004).

Menec (2003) examined the effect of normal everyday activities on measures

associated with aging well. The author utilized existing data collected from the Aging in

Manitoba (AIM) study, the largest study on aging in Canada. The study assessed

perceived levels of well being in older adults measured in relation to happiness, life

satisfaction, and function measured in relation to physical and cognitive ability. In this

study subject age range was 67-95 years, with a mean age of 75.7 years. The data used

were from interviews about life satisfaction, function, happiness, and mortality taken

during the AIM project in 1990 and 1996. Sample size ranged from 1,208 to 2,291 across

the various sections of the survey dealing with life satisfaction, functional status,

happiness, and mortality. The results of regression analysis indicated that increased

activity levels were significantly related to increased physical function and expressed

happiness in older adults. Menec noted that activity theory stresses the connection

between well-being and activity, especially with respect to perceived quality of life. Her

research provided empirical evidence to support this connection (Menec, 2003).

Research on activity and its effects on older adults provide support for the impact

that leisure activity can have on the promotion of good health (Nilsson, Lofgren, Fischer,

& Bernspang, 2006). The previously described research findings support basic ideas

associated with activity theory; that is, the more an older adult engages in mental, physical, and social activity, the better the chances the person has of leading a happier and healthier later life.

Social Exchange Theory and Socioemotional Selectivity Theory

Social exchange theory originated from a business economic model that described the cost-benefit relationship of reciprocation between the interests of business parties working together (Bengtson, Burgess, & Parrott, 1997). This is a situation where the economic interests of one business entity involved with another business has to be of some financial benefit compared with the costs of doing business with that other business. This economic concept of cost-benefit exchange between business associations was assimilated by sociologists to help explain the social interactions that occur between people (Hooyman & Kiyak, 2008). The idea being that there is a give and take element involved in a social relationship with another person.

The social exchange theory of older adults tries to explain why activity and social interchange usually decrease with increasing age. According to the social exchange theory of aging, being socially withdrawn and isolated is not because of an older person's choice but rather a perceived disproportionate exchange of costs and benefits between the older adult and other people in the community. The perceived equilibrium of exchanges in social interactions between older adults and other people determines personal fulfillment for the older adult. Older adults usually have fewer resources to exercise power in their social relationships, thus their standing in the community wanes as they get older. As a consequence, an older adult has to adapt to the change of having less social interaction and personal exchange with others; at the same time, older adults want

to continue to receive reciprocation from others and remain active in the control of their lives. A familial aspect of social exchange theory can be perceived as a long-term cooperation between generations where parents that gave support and affection to their children will receive emotional and social support in return during their later years (Hooyman & Kiyak, 2008).

One study that investigated the impact of social and productive activities on the health of older adults used data from the "Survey of Health Aging and Retirement in Europe" (SHARE) project. The survey was performed in 2004 with an estimated 22,000 participants from ten European countries, age 50 and older. The study examined the different kinds and quality of productive activities and their affiliation with depression and well-being; the specific activities explored were: care for another, volunteer work, and casual help of others. The quality of social productivity was appraised using the framework of sociological reciprocity exchange theory (Wahrendorf, von dem Knesebeck, & Siegrist, 2006).

Two measures of well-being were implemented for the study. The first measure of well-being was designed to acquire a snap-shot of the perception of well-being in the early years of an older adult; this measure is known as the CASP-12 questionnaire (Control, Autonomy, Self-realization, and Pleasure). The intent of the CASP-12 questionnaire was to identify the areas of quality of life that are peculiar to early older adults. The characterization of early older adulthood is a phase where there is a change from work to retirement, opportunity for diverse social participation, and more personal freedoms. The second measure of well-being was the Center for Epidemiological Studies Depression (CES-D) scale. The CES-D scale is an extensively used instrument for

measuring symptoms of depression in conventional population surveys. Both measures used a four point Likert scale with higher test scores indicating a better sense of well-being for the CASP-12 test, and higher test scores indicating less symptoms of depression for the CES-D scale. Along with the two instruments to measure well-being, the study looked at the demographics of the participants; the demographics examined included: health status, gender, age, income, education, marital status, and retirement status.

After the performance of a descriptive analysis of the data from the survey, multiple linear regression models were implemented to seek convincing correlations between well-being and social productivity. Results of multivariate linear regression analysis affirm the association of well-being to productive activity. This association changes to the amount of perceived quality of the exchange. Perceived reciprocity between high expended effort invested in a task and high received benefits were found to be associated with well-being, high expenditure of effort and low received benefit associated with negative well-being. The study researchers stated the findings indicated a need for improvement in the quality of exchange in socially productive activity to help motivate older adults to want to participate in the community (Wahrendorf, von dem Knesebeck, & Siegrist, 2006).

Another study investigated the costs and benefits of caregiving to older adults by their spouse or adult children using the social exchange theory as the framework for their research. The study used data from a sample of 978 adult children and spousal caregivers to their older adult family members. The study examined the association between gender and caregiver relationships and the costs and benefits of caregiving. The sample was taken from data that were collected for the National Long-Term Survey (NLTCS) in the

form of interviews in 1999. The sample consisted of people that the NLTCS identified as primary caregivers: husbands (n=188), wives (n=253), sons (n=135), and daughters (n=402). The dependent variables were caregiver costs and caregiver benefits. The costs were measured using four questions with a four degree Likert scale. The caregiver cost score was the sum of the four questions with the higher the score the higher the perceived cost. Caregiver benefits were measured with two statements that probed the respondents' perception of life satisfaction associated with their role as caregivers, using a five degree Likert scale. The higher the sum of the responses for each participant indicated higher caregiver benefits (Raschick, 2004).

Data were analyzed with the use of means and standard deviations as descriptors of the dependent and independent variables of each group of caregivers. To assess the initial hypotheses of the study, a two-step hierarchical regression process was implemented to look at the interaction of caregiver relationships and gender as explanatory variables. In the first step, five control variables were entered with relationship and gender. In the second step the interaction between relationship and gender were added. This same two-step process was used for caregiver costs and benefits. The last hypothesis of possible interaction between relationship and gender to the types of helpfulness of recipient care used a three-step hierarchical regression method (Raschick, 2004).

The results reinforced the first hypothesis of the study that caregiving men would experience less costs than caregiving women. The second hypothesis that caregiving men would experience greater benefits than caregiving women was not indicated by the data. The same conclusion was arrived at for the third hypothesis, the data did not support the

hypothesis that adult children caregivers would experience less costs than spousal caregivers. The fourth hypothesis of the study that spousal caregivers would experience less benefit than adult child caregivers was backed up by the findings. The data did not support the fifth hypothesis that caregiving sons, daughters, and husbands would experience less costs compared with caregiving wives, as well as, the sixth and last hypothesis that other caregiver groups would experience less benefit than care giving sons. Women were found to experience more caregiving costs than men and adult children caregivers experienced more benefits than spousal caregivers. The most significant finding of the study centered on the discovery that help from the person receiving health care was central to the caregivers' perception of receiving a benefit from their caregiving efforts. The researchers stated that their study emphasized the significance that the recipient of health care must be helpful in the social exchange that happens between the recipient and the caregiver in order for the caregiver to feel they are benefiting from the care that they are giving to their older adult family member (Raschick, 2004).

Another theory, similar to the social exchange theory in that it is used to explain why social relations of older adults wane as they get older, is the theory of socioemotional selectivity (Baltes & Carstensen, 1999). Socioemotional selectivity theory postulates that a curtailment in the amount of social contacts that an older adult encounters is a reflection of their conscious effort to retain their close social relationships while jettisoning more superficial social relationships. According to the theory, a social network of close emotional social associations is optimum to meeting the needs of older adults. Socioemotional selectivity theory contends that there is a fundamental body of

social aims that serve to motivate social interaction during a persons' entire life (Baltes & Carstensen, 1999). The theory states that there are two main areas of psychosocial objectives: emotional management relating to the meaning involved with a social relationship (short-term), and the seeking of knowledge through information gathering gained through social contacts (long-term), (Carstensen, 1999). These two areas of social motivation are dependent upon perceived cognitive, psychological, and social circumstances of the person. The circumstances are most affected by a perceived measure of relative time that the person thinks that they have left to expend in their life. If time is viewed as being unlimited, longer-term objectives are sought, such as seeking information that is more novel. If time is recognized as being relatively short, as with older adults, shorter-term objectives are pursued; e.g. the consideration of personal feelings through close social contacts rather than the longer range aim of gathering new information (Carstensen, 1999).

Socioemotional selectivity theory tries to understand and explain the social behaviors and social choices that people make over the course of a persons' life. People want to be able to have control of their social and emotional conditions in such a way as to be able to decrease negative consequences, and at the same time, maximize positive outcomes in their choices of social associations. In particular, older adults try to closely manage their emotional atmosphere to better their chances of a positive affect of their close social relationships "which, at the end of their life, may represent the supreme social goal" (Baltes & Carstensen, 1999, p. 216).

A study testing the socioemotional selectivity theory on the motivation of volunteering compared with age, was carried out by researchers Morris Okun and Amy

Schultz in 2003 (Okun & Schultz, 2003). The study surveyed people that had volunteered

for Habitat for Humanity, a non-profit home rehabilitation and construction organization

that helps economically disadvantaged people acquire affordable housing. The survey

was sent by mail to 2000 current and former volunteers of Habitat for Humanity with 523

volunteers returning a completed questionnaire. The questionnaire was composed of three

categories, the first category were questions inquiring about the volunteers' activity with

Habit of Humanity concerning level and length of affiliation. The second category of

inquiry pertained to level of motivation using the Volunteer Functions Inventory (VFI),

the inventory measures expression of humanitarianism related to the act of being a

volunteer using a 7-point Likert scale on level of importance to the question asked. The

VFI has an estimated internal consistency validity coefficient of .80. The third category

of the questionnaire pertained to demographics of the respondents. The respondents' age

breakdown were as follows: people less than 20 years old, 4%; people 20-29 years old,

8%; people age 30-39 years, 20%; 40-49 years of age, 15%; people 50-59 years old, 20%;

age 60-69 years of age, 20%; 70-79 years of age, 15%; and people age 80 or older 3%.

Men made up 54% of the responding volunteers with women volunteers making up the

remaining 46%. The respondents were mostly Caucasian comprising 92% of completed

surveys. More than half of the respondents were married at 64% of the sample. Just over

half of the all of the respondents (58%), were employed with a median education level of

a college degree and a median income of $50,000-$75,000 (Okun & Schultz, 2003).

     Multiple regression analysis of the data acknowledged and supported

socioemotional selectivity theory. That with increasing age, career and understanding

volunteer motivation declines, while social volunteer motivation grows. The results

indicated that motivational factors of values, career enhancement, and career protection were not related to age (2003). The researchers suggested further research is needed to generalize the results to a more diverse population and to investigate how the similarities and differences of age affect the motivation to become a volunteer (Okun & Schultz, 2003).

Social exchange theory and socioemotional theory are two theories of aging that try to explain and understand why older adults have less social interaction as they grow older. The former theory approaches the phenomena of social withdrawal of older adults as a cost-benefit trade off; society perceives older adults as usually having fewer resources to contribute to their social relationships. Consequently, their social standing in the community diminishes as they get older. The older adult's objective with the social exchange theory is to adapt to having less social contacts while maintaining the beneficial close emotional social relationships that are the most fulfilling. The latter theory of socioemotional selectivity purports that a decrease of social contacts that an older adult has is a representation of their conscious effort to retain their close social relationships while sloughing off more casual social associations. With socioemotional theory, the older adult perceives their time as being relatively short thus they seek a small number of close social relationships that convey a positive meaning to meet their emotional needs.

Impact of Computers and the Internet on the Well-Being of Older Adults

Computer use by older adults in the United States is rapidly increasing, in the mid 1990's it was estimated that approximately 2% of people using the internet were 65 and older; in the year 2000 the percentage of older adults leapt to 15%; by the year 2004 this percentage of older adults accessing the internet was 22%, or roughly 8 million people

(Gatto, 2008). This large increase in the percentage of older adults using computers and accessing the internet over the past two decades illustrate the growing impact that technology is having on the older adult population.

Researcher Susan Billipp, M.P.H., conducted a study that examined the effect of interactive computer use on the well-being of older adults (Billipp, 2001). For a participant to be eligible for the study, the following criteria had to be met: 65 years of age or older, good eyesight, no previous experience with computers, and live in a private abode. The study recruited forty older adults that met the criteria of the study. Participants were mostly female (82%), with an average age of 73 years, 90% Caucasian American, 5% African American, and 5% Hispanic. Educational levels of the participants were: 7% not graduating high school, 30% earning a high school diploma, 10% attaining a degree from a junior college, 43% finishing college, and 10% earning post-graduate degrees. Thirty percent of the participants were married, 55% widowed, 4% separated, 4% never married, and 10% divorced. Nurses that helped with the study ranked 77.5% of the people participating in the study as vulnerable, this rating was based on: poverty level, health status, and loss of mobility, income, or a significant other within the last five years prior to the study (Billipp, 2001).

The participants were randomly assigned to a no-computer control group or to one of three computer-use training groups. Nurses helped with the administration of pre and post study testing and paid regular weekly visits to the participants in all four of the groups for three months. The participants that were assigned to a computer-use group were loaned a computer for the duration of the study, the control group were told they would have the use of a computer for 3 months after the completion of the study. The

three computer-use groups were given three levels of computer training. Computer group 1: computer training on the first day of the first weekly visit by the nurse; Computer group 2: weekly computer training by the nurse for the entire length of the study; Computer group 3: computer training during the first week with the participants' husband or wife taking over as computer trainer for the rest of the study; Group 4: weekly visits by the nurse with no computer training (Billipp, 2001).

The study used four instruments to provide subjective data and measure the psychosocial status of the participants. The instruments were: the Geriatric Depression Scale, an instrument used to determine four levels of depression: normal, mild, moderate, and severe with a Chronbach's alpha internal consistency of 0.94; the Rosenberg Self-Esteem Scale measuring feelings of self worth with a Chronbach's alpha internal consistency of 0.74; the Attitude Towards Computers questionnaire, a survey that used six pre-post computer use questions designed to measure change in attitude toward computers by older computer users; and the Nurse Response scale, a survey developed by the researcher of the study to provide an assessment from the nurses to examine whether attitudes of the nurses toward computers were similar within the groups(Billipp, 2001).

Nurses acting as co-investigators were given a one day training session to give instruction on the operation and use of the computers and a standardized method guide for training the participants how to use the computer. The nurses were randomly assigned to the participants of the study. During their first visit to the participants' residence, the nurses administered the depression and self-esteem measures to all of the groups, with the

computer-use groups receiving the attitudes toward computers questionnaire as well. During the last day of the study, the same testing process was performed (Billipp, 2001).

T-Tests were used to find any difference between time spent on the computer and the training level of the three computer-use groups to determine if more computer time was correlated with a change in depression or self-esteem. Fischer Exact tests and T-tests were implemented to look at any association between level of training and pre-post study change in depression and self-esteem. Multiple regression tests were also used to evaluate how strong the relationship was between depression and self-esteem against the different methods of training. The results indicated that there were no significant differences in computer-use time expenditure between the groups. A t-test was used to compare scores of improved self-esteem against scores of worsened self-esteem at the conclusion of the study, the t-test was found not to be significant. However, there was a positive indication between amount of time spent on the computer and improved self-esteem, although this association was not found to be statistically significant. A t-test was utilized that compared the difference of mean computer-use hours to test scores of more depression and test scores of less depression, this t-test was also found to be insignificant (Billipp, 2001).

The researcher stated that the study results did not find any significant improvement in the perception of self-esteem or depression due to the use of a computer over a 3-month period. Despite the insignificance of the statistical results, the study provided indications that interaction with a computer can lessen feelings of depression and improve the perception of self-esteem. Because of the small sample size, the results

are not definitive and could not be generalized to a more diverse and larger population, further study was advocated (Billipp, 2001).

Researchers White, McConnell, Clipp, Branch, Sloane, Pieper, et al. (2002), investigated the psychosocial impact of internet training and access on older adults. The study recruited 100 volunteers from two nursing homes and four congregate housing sites designated for older adult living. Following baseline interviews, the participants were randomly assigned to one of two groups: a control wait list group and an internet training group. The control group was given a small gift in compensation for waiting five months to be trained on how to use a computer and access the internet. The treatment group participants were given nine hours of training on how to use a computer, access the internet, and how to use e-mail over a two-week period. Interviews were executed at pre and post study sessions as well as a demographic survey inquiring about social, functional, and health status to both groups. Of the fifty people assigned to the computer treatment group, a total of 39 participants were trained on the use of a computer and participated for the entire five months of treatment. A total of 45 people out of 50, participated in the control group. The ethnic make-up of the 100 participants was: 2% Hispanic, 15% African American, and 83% Caucasian. Of the 13 demographic questions asked at baseline, there were no statistical differences between the groups. More than 60% of the participants reported that they had no prior computer experience (White et al., 2002).

The following instruments were implemented for the research project. The UCLA Loneliness Scale, consisting of 20 questions using a four point Likert response scale, with higher scores indicating a higher degree of loneliness. The CES-Depression scale, a ten

question survey that used a three-point Likert response scale, with the higher the score the higher symptoms of depression. The Perceived Control of Life Situations instrument, consisting of eight questions using a four-point Likert response scale, higher scores signified more control of life situations. Attitudes toward computers, e-mail, and the internet used a nine question survey with a five-point Likert response scale, with the lower the test score the more agreeable a respondent was to technology. Life Satisfaction was assessed with one question using a five-point Likert response scale ranging from not satisfied to very satisfied. The participants were also asked to account for the amount of hours spent using the computer per week (White et al., 2002).

General differences in baseline attributes were statistically analyzed with the use of a Chi Square test for classification measures and a non-parametric Wilcoxon rank sum test for continuous measures. Scores for the CES-D, UCLA Loneliness, Attitudes Toward Computers, and Perceived Control scales were computed by subtracting the baseline scores from the follow-up scores with the difference analyzed using the Wilcoxon rank sum test. The confidence and life satisfaction questions were ranked as worse, better, or unchanged. The use of Chi Square tests were utilized to assess the traits of the control group against the group that received the treatment. The Wilcoxon test was used to recognize differences in outcome measurements (White et al., 2002).

At the conclusion of the study, 60% of the treatment group maintained their use of the internet. There was a noticeable trend toward less depression and loneliness in the treatment group participants but the result was not statistically significant. The researchers suggested more research is needed to accurately determine which older adults

are more likely to gain from the use of computers and access to the internet (White et al., 2002).

Life Satisfaction and Self-Esteem

Self-esteem and life satisfaction are two commonly used indicators of a person's sense of well-being. As individuals grow older, the need to preserve and maintain good physical and mental health becomes critical to everyday functioning. Engagement in leisure activities may improve a person's sense of self-esteem and life satisfaction, which, in turn, may lead to improved overall health status.

The concept of life satisfaction is related to how an individual assesses and accepts the circumstances of the events that happen to her or him during the course of their life. This assessment is judged against an established set of societal norms understood within the context of their experience. Being satisfied with one's life is associated with the difference between the goals and expectations that a person desires compared to what actually transpires in their life. The perception of life satisfaction from the individual's perspective is their idea of the level of the quality of their life (Aberg, Sidenvall, Hepworth, O'Reilly, & Lithell, 2005). According to theory, the construct of life satisfaction is reasonably stable over time, unless a major life changing event such as divorce or loss of employment should occur (Steger & Kashdan, 2007).

Studies have connected high levels of self-esteem to better job performance, personal sense of well-being, scholastic performance, interpersonal relationships, and coping skills (Baumeister, Campbell, Krueger, & Vohs, 2003). Past research on the concept and influence of self-esteem assumed that the trait was fairly stable in its ability to forecast a person's behavior in the future. Recent studies have questioned this

assumption and assert that self-esteem is influenced by a person's environs, thus

subverting the idea of the long term stability of self-esteem and its ability to make any

future forecast of behavior. Contemporary researchers view the construct of self-esteem

as having a state-like characteristic and that a person's level of self-esteem is constantly

changing in response to events in one's environment (Trzesniewski Donnellan, & Robins,

2003).

Strong inferences to the notion that some kind of activity, either social or

physical, helps to propagate better mental and physical health in older adults appear in

almost every piece of literature examined for this study. McAuley, Jerome, Gerald,

Konopack, and Marquez (2005) examined a group of 174 sedentary older adults who

participated in a physical exercise program over a six month period. Participants

consisted of 125 women and 49 men with a mean age of 66.71 years. To be included in

the study, the older person had to be between the age of 60 and 75 years, physically

healthy, and sedentary. Subjects who met the eligibility criteria were randomly assigned

to one of two treatment groups: a stretch and tone group, and an aerobic activity group.

Levels of physical activity, self-efficacy, and social support were assessed in relation to

negative and positive emotions at baseline. Responses as to how the subjects felt about

their physical activity were measured every two months over the six month study period.

Examination of the data using latent growth curve analysis at the end of the experiment

indicated that the more a subject engaged in physical activity, the more positive feelings

of life satisfaction were reported. The researchers suggested that physical activity is

related with psychological well-being regardless of gender, age, duration of routine, or

design of study (McAuley, Jerome, Gerald, Konopack, & Marquez, 2005).

Elavsky et al. (2005) examined the long-term effects of physical activity in older adults over a period of four years. The researchers studied a group of 174 sedentary older adults, 49 males and 125 females with a mean age of 66.7 years. The subjects entered into a six month randomized exercise program where they were assigned to one of two treatment groups; one group engaged in a walking program, and the second group engaged in a stretching program. Testing involved a battery of physical and mental instruments to establish baseline status before treatment. The subjects were contacted and scheduled for follow up testing one and five years after the end of the six-month intervention to asses change in the baseline measures. Statistical analysis of the data indicated that the one year assessment of self-esteem, self-efficacy, and affect was significantly improved by involvement in structured physical activity. Findings from the five year study showed that a change in physical activity over time was related to improvement in self-esteem and affect. The authors linked physical activity to improved perception of self-esteem and life satisfaction of older adults with the following statement: "Self-esteem has been considered a focal aspect of psychological health, and, as such, has been assessed as a QOL (quality of life) outcome. Higher levels of self-esteem have been associated with greater life satisfaction, and self-esteem has been shown to act as both a determinant and an outcome of physical activity" (Elavsky et al., 2005, p. 138).

Nonphysical leisure activity also has been found to enhance the perception of well-being in older adults. Menec (1997) stated that the benefits of engagement in most leisure activities, like volunteer work or going to cultural events, are well documented. Characteristically, her research concentrated on life satisfaction as an outcome measure

and indicated that engagement in leisure activity relates positively to life satisfaction. Based on the body of evidence in the research literature, it appears that any form of activity, not just physical activity, can potentially be an important factor in maintaining and preserving a positive sense of well-being and a higher mental health status in older adults.

Levels of Activity Participation by Older Adults

Most studies on the benefits of activity for older adults focus on assessing various parameters of physical activity such as frequency, level of intensity, and duration. Of the studies reviewed for this thesis, few investigated what minimal amount of activity would elicit a positive increase in the sense of well-being. In a study by Galper, Trivedi, Barlow, and Dunn (2006) involving 5451 men and 1277 women with ages ranging from 20 to 88 years, levels of regular physical activity in relation to self-reported feelings of well-being and depression were investigated. The researchers used a treadmill to measure and evaluate the participant's level of physical activity and performance. Two types of scales were used to determine the emotional states of the respondents: (a) the Center for Epidemiological Studies Depression Scale (CES-D), which was used to quantify symptoms of depression and (b) the General Well Being Schedule (GWB), which was used to quantify emotional well-being. The findings from the study indicated that both women and men had a positive connection between physical activity and general perceptions of well being, and that an increase in regular physical exercise was associated with improved well-being and a lower incidence of symptoms of depression. Although their research indicated that increased levels of regular physical activity were related to positive perceptions of mental health, the researches stated that: "There are currently

insufficient data suggesting the minimal or optimal levels of habitual physical activity, or

CR fitness, associated with mental health benefits to inform public health policy and

research" (Galper, Trivedi, Barlow, & Dunn, 2006, p. 175).

There are a few studies that have focused on the relationship of daily activities to

well-being by looking at household chores rather than exercise programs and routines. A

study by Reich and colleagues (1987) investigated a group of 60 older adult females and

males with a mean age of 72 for the purpose of assessing the participants' happiness

relative to the completion of a household chore or activity. The investigators used three

instruments to measure perceived quality of life, negative and positive affect, and well-

being. The findings from this study indicated a positive association between satisfaction

with engagement in a household chore and perceived of quality of life. The investigators

alluded to the notion that engagement in any activity, such as playing cards, could have a

beneficial effect on the perception of life satisfaction and self-esteem of older adults:

"There is evidence that small, daily events have an impact on well-being beyond that of

major events, especially given the potential for reduced capacity for activity and coping

with stresses that may accompany increasing age" (Reich, Zautra, & Hill, 1987, p. 116).

Therefore, it was of interest to me to investigate how less ambulatory older adults could

benefit from a minimal amount of activity such as playing cards.

Importance of Activity in Older Adults

Being physically inactive is a modifiable risk factor for an unhealthy older

adulthood. The creation and support of regular activity programs for older adults are

important goals to promote health and decrease the occurrence and severity of several

debilitating diseases (Van der Bij, Laurant, & Wensing, 2002). The promotion and

maintenance of a healthy lifestyle among older adults is the best avenue for curbing increasing and exorbitant health care costs burdening the health care system.

In a review of studies on physical activity and quality of life in older adults, Rajeski and Mihalko (2001) provided evidence to support that older adults who are physically active, will have positive health outcomes. The authors concluded that "physical activity is a viable public health intervention for increasing or maintaining quality of life among older adults" (Rajeski & Mihalko, 2001, p. 23). Overall good mental and physical health in the older adult may help to keep them from becoming institutionalized and dependent on the formal health care system.

Published research findings have demonstrated that leisure activities improve the perception of happiness, improve physical health, decrease the likelihood and risks associated with dementia and mortality of older adults; leisure activity is especially important for older adults in light of the prospect of a greater need for rehabilitation (Nilsson & Fischer, 2006). The importance of engaging in leisure activity by older adults to preserve and maintain overall good health is critical to their ability to be self-sufficient in later life.

Summary

The literature reviewed for this study confirms that there is a relationship among engagement in an activity whether it be social, physical, or leisure activity and improved perception of self-esteem and life satisfaction of older adults. By looking at past investigations of the effects of leisure activity on the quality of life in older adults, future research can build upon the growing body of knowledge to further refine activity theory, social exchange theory, and socioemotional selectivity theory, in an effort to provide

effective health promoting interventions to the older adult. Although the direction of causation as to whether an active lifestyle leads to a positive perception of life satisfaction and self-esteem or if people with a positive perception of life satisfaction and self-esteem leads to an active lifestyle may never be determined, the connection between activity and a positive sense of well-being has been demonstrated by other researchers. Very little data have been collected to determine a minimal threshold for the engagement in an activity that will improve self-esteem and life satisfaction. Establishing such a threshold could be of great benefit to an individual's overall health. Hence, more research is needed to determine if less physical activities can produce the same benefits for older adults in terms of perceived life satisfaction and self-esteem. McAuley and others (2006) echo a similar sentiment by stating that it is important to the issue of public health and aging to continue to unravel the connection between activity and well-being. More research is needed to substantiate the previous findings as well as forge new paths to discovery of the effects of activity engagement on the well-being of older adults.

CHAPTER 3

METHODOLOGY

The problem of this study was to (a) assess the effect of playing cards on the level of perceived life satisfaction and self-esteem in older adults and (b) determine if there is any difference in the perceived level of life satisfaction and self-esteem between older adults who play cards with other people compared with those who play cards on a computer. The execution of the study comprised the following procedural steps: (a) arrangements for conducting the study, (b) study design, (c) selection of study participants, (d) instrumentation, (e) procedures for testing and data gathering, (f) training program, (g) treatment of data, (h) hypotheses, and (i) summary.

Arrangements for Conducting the Study

Administration of the study was contingent upon approval of the Institutional Review Board (IRB) at Indiana University-Bloomington. Once approval was obtained, I contacted the directors of Bell Trace Senior Living Community in Bloomington, Indiana and the Area 10 Agency on Aging at the Endwright Center located in Ellettsville, Indiana. The directors were informed as to the purpose, objectives, and details of the study and asked for permission to conduct the study on their respective premises. Upon written approval to conduct the study by the directors, recruitment of the participants began.

Study Design

The following is a summary of my attempt to implement the originally proposed quantitative research design. Starting in late spring of 2009 and continuing through the summer, I attempted to recruit 32-64 volunteers to participate in the research study at

each of the two test sites to satisfy the required amount of participants needed for a time delayed, treatment-control group experimental design, which was the method initially chosen for the study. I tried several approaches to acquire an adequate pool of older adults that met both the age and ability criteria detailed in the research proposal and the requirements for adequate group size; however, I was unsuccessful in recruiting the necessary number of subjects in order to carry out the planned experimental design. The following is a description of the experimental design that was initially planned for the study.

Subjects in all three groups would receive both measurement tests - the Coopersmith Self Esteem Inventory and the Lohmann Life Satisfaction Scale - three times during the initial phase of the study. The proposed three groups design would have been:

- Group 1, older adults who play cards with other people,
- Group 2, older adults who play cards on the computer, and
- Group 3, older adults who do not play cards for the first phase of the study.

All three groups were to receive the pretreatment testing. Groups one and two would subsequently receive instruction on how to play cards followed by the treatment of the first phase of card play. Group three would not have been given the treatment during the initial phase to serve as a baseline control group. Midway through the treatment of groups one and two, all three groups would again receive administration of both tests. At the end of the treatment of groups one and two, all three groups would have received both tests as a post treatment test. At this point, group three would have been randomly

assigned into two equal groups, one group instructed on computer card games and the other group instructed on a game of cards with others as a delayed equity treatment phase. Group three would have again received pre, mid, and post treatment tests as a double check against the results of the initial phase of the study.

In an effort to generate enough interest by the required number of older adults to participate in the study, I presented informational sessions, posted fliers, had announcements broadcast on three radio stations, ran an announcement in the local newspaper, and made several personal visits to the test sites. Many factors contributed to the lack of acquiring volunteers including: the time of year (late spring/summer), familial obligations, and other competing activities such as vacations and medical appointments. Due to the unavailability of an adequate pool of older adult volunteers to participate in the planned experimental design, the design of the study was revised to a single-subject design.

The single-subject design was selected as an appropriate method for examining the impact of the two treatment approaches (face-to-face card play vs. computer-based card play) on the self-esteem and perceived life satisfaction of older adults. While the single-subject design did not accommodate the power of a group-based (treatment group/control group) cause and effect experimental study, it did allow me to investigate the basic research questions of the study.

Selection of Study Participants

After an adequate pool of prospective study participants were identified that fulfilled the number needed for the single-subject design. Further screening to meet basic eligibility criteria was completed. Eligibility criteria were:

1. Older adults of any ethnicity or gender,

2. Age range 60 to 90 years,

3. Ability to learn a game of cards either using a standard deck of cards or learn to play a game of cards on the computer,

4. Ability to complete pencil questionnaires, and

5. Willingness to participate for the entire length of the study.

The subjects who were selected for the study were randomly assigned to one of two treatment conditions: (a) older adult subjects who played the card game of Hearts individually on a laptop computer, and (b) older adult subjects who played the card game of Hearts in a group with other participants.

Instrumentation

The study used two instruments to measure life satisfaction and self-esteem. Life satisfaction was measured using the Life Satisfaction Scale (LSS) developed by Dr. Nancy Lohmann in 1976. The LSS consists of 32 agree-disagree questions pertaining to how a person feels about his or her present life situation. According to Burlingame and Blaschko (2002), "reliability and validity studies have been conducted on this assessment" and "Dr. Lohmann's Life Satisfaction Scale is considered to be one of the best available" (Burlingame & Blaschko, 2002, p. 299). Reliability has been reported to be in the $r = 0.89$ range.

Self-esteem was measured using the adult form of the Coopersmith Self-Esteem Inventory (CSEI; 1975, 2002). The adult form of the Coopersmith Self-Esteem Inventory "consists of 25 true-false items adapted from the School Short Form. This instrument evaluates attitudes toward self in several respects, including general self, social self, and

self-peers. Validity and reliability are well-documented" (Hebl & Enright, 1993, p. 663).

Reliability has been reported to be in the $r = 0.82$ range.

Procedures for Testing and Data Collection

The subjects in both treatment conditions were administered the Life Satisfaction

Scale and the Coopersmith Self Esteem Inventory four times during the entire course of

the study. Of the commonly used single-subject research designs, the A-B-A design,

"also called a reversal or withdrawal design" (McMillan & Schumacher, 2006, p. 280),

was the best fit for the card play study. The A-B-A labeling represents the condition of

the participant during the three phases of the experiment. The first phase (A) was the

establishment of the baseline before the commencement of the treatment phase (B). The

subjects participating in the study were tested with the two measurement instruments

(i.e., the Coopersmith Self-Esteem Inventory and the Life Satisfaction Scale) before the

treatment of playing cards on the computer or face-to-face card playing were

administered. Timing of testing was crucial to the reliability and validity of the

measurement and interpretation of data, thus testing was conducted every two weeks. The

mid and end-treatment tests were administered at the second and fourth weeks. These two

tests measured phase (B), the treatment phase of the experiment. Two weeks after the

treatment phase was concluded, the life satisfaction and self-esteem tests were again

administered as the post treatment (A) phase of the experiment, measuring the subjects

post treatment return to baseline.

Training Program

The research project enlisted one student to act as a research assistant. The

research assistant was informed of the purpose and objectives of the study prior to the

commencement of the study. Once the participants were assigned to their respective treatment conditions, the research assistant provided instructions on how to play the card game of Hearts either on the computer or with other people. Instruction with the group playing cards on the computer entailed basic operation of a computer, accessing the appropriate program containing the card game, and learning how to play the card game. Instruction of people playing cards with other people involved learning how to play a game of cards using a standard deck of cards. All instruction that involved the research assistant was jointly performed by the researcher and the research assistant with attention to careful oversight by the researcher.

Treatment of Data

Data were collected from all subjects across a total of 6 weeks. The study commenced with pretreatment testing of the participants followed by administration of the treatment conditions to the participants that lasted for 4 weeks and consisted of two card play sessions per week. Execution of the mid-point and end-point testing of the participants was completed at the end of the second and fourth weeks. Post treatment testing was administered two weeks after the end of the treatment phase.

Data analysis consisted of the organization and compilation of the raw data followed by analysis and interpretation of the data that were collected from the administration of the two tests (Coopersmith Self-Esteem and The Life Satisfaction Scale). The data from all of the four testing periods along with the demographic data were entered into a Microsoft 2007 Excel file. Individual and combined trend line charts were generated for descriptive analysis, interpretation, and explanation of the trend lines across times of testing.

Summary

This study explored the perception of life satisfaction and self-esteem of older adults who were engaged in playing cards with others or on the computer using a single subject A-B-A design. Subjects were older adults from two local senior venues – the Endwright Center in Ellettsville, Indiana, and Bell Trace Senior Living Community in Bloomington, Indiana. The A-B-A design was conducted over 6 weeks and data were collected for the two dependent variables once during Phase A, twice during Phase B, and once during the return to baseline Phase A. Data were analyzed using Excel for descriptive statistics and trend line analysis. Based on the need for maintaining good physical and mental health in older adults, the exploration of the effects of low cost activities is relevant to finding ways to help older people live healthier and happier lives. By implementing informed cost saving interventions that increase the physical and mental well being of older adults, the individual and society could be spared some of the excessive costs associated with poor health in the older adult.

CHAPTER 4

RESULTS AND DISCUSSION

This study was developed to assess the effect of the level of perception of life satisfaction and self-esteem in older adults who were engaged in playing cards either individually on the computer or face-to-face with other older adults. The intention was to determine if there is any difference in the perceived level of life satisfaction and self-esteem between older adults who are playing cards with other people compared with those playing cards on a computer. This chapter is organized to present the findings for each participant individually according to test site and treatment condition followed by a grouping of all participants who played cards using the two different treatment conditions–on the computer and face-to-face. The following section of the chapter juxtaposes the scores on each dependent variable according to all participants in each treatment group in order to discern patterns of impact of card play on life satisfaction and self-esteem of older adults.

Test Site Descriptions

Test Site 1

Bell Trace Senior Living Community located in Bloomington Indiana is a retirement facility offering a wide range of assisted living care options to people with disabilities and older adults. The main facility has three floors of apartments with surrounding independent living cottages. Bell Trace offers a variety of social, educational, and recreational programs for their residents, for example, daily excursions into the community for shopping, attending theatrical and musical events as well as regularly scheduled in-house entertainment and educational events. The participants for

the card study conducted at Bell Trace were recruited through two scheduled

informational presentations on the purpose and nature of the card study given by the

researcher, and through the researcher's attendance of a weekly afternoon social function

for five weeks prior to the commencement of the study. A total of eight volunteers

meeting the criteria for participation in the card study were asked to sign an informed

consent form prior to being randomly assigned to one of two treatment groups, either

individual card playing on a laptop computer or face-to-face card playing with other

participants of the study.

Test Site 2

Area 10 Agency on Aging in Ellettsville, Indiana operates the Endwright Center.

The Endwright Center is an older adult community center for people 50 years of age and

older who come to visit the facility from the surrounding rural areas of Owen and

Monroe counties. The center offers individualized exercise programs, arts and humanities

programs, support groups, and special events geared toward the older adult population. I

recruited the participants for the card study that was conducted at the center through

several approaches: by handing out informational fliers during senior day at the Monroe

County Fair 2009, volunteering for the senior games held in August of 2009, running a

public announcement on three local radio stations asking for participants, and placing an

ad in the local newspaper *The Bloomington Herald Times*. A total of eight volunteers

meeting the criteria for participation in the study were asked to sign an informed consent

form prior to being randomly assigned to one of two treatment groups: individual card

playing on a laptop computer or face-to-face card playing with other participants in the

study.

Profiles of Test Site One Computer Card Play Participants

Below are personal profiles for each test site one (Bell Trace) computer participant. Each profile is accompanied with the test scores and trend line charts for life satisfaction and self-esteem for each participant across the six weeks of the study These charts are followed by a comparison of the trend lines of each dependent variable to explain and interpret the participants' perception of life satisfaction and self-esteem.

Mrs. A

Mrs. A is a 79-year-old Caucasian widow. She attended 5-7 years of graduate school.

Mrs. A plays cards with other people about once a week, considers herself to be an average card player, and has had some experience with playing cards on the computer. In this study she had a friendly personality, was in full control of her physical and mental faculties, and she had perfect attendance at the card playing sessions.

Figure 4.1. Mrs. A – Life Satisfaction   Figure 4.2. Mrs. A – Self-Esteem
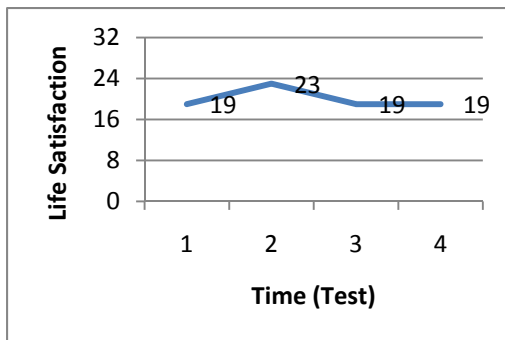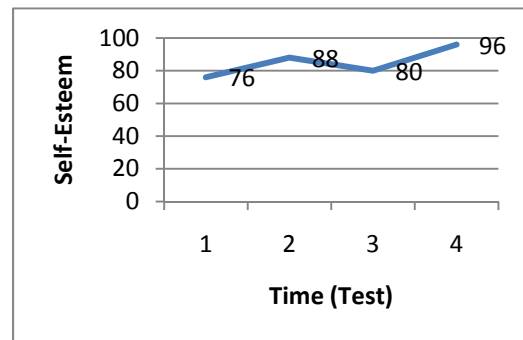
Comparing the results between the two tests of the dependent variables, it appears that Mrs. A made a noticeable positive change in her perception of life satisfaction and self-esteem during the treatment phase. Though the life satisfaction trend line indicates a return to her original baseline score after treatment, her self-esteem trend line suggests a

higher sense of self-esteem after treatment. The two charts noticeably reflect a similar improvement of her sense of the two dependent variables during treatment, but the post treatment scores contradict each other.

Mrs. B

Mrs. B is a married 85-year-old Caucasian woman. She attended primary and secondary school. She is physically handicapped with the onset of Parkinson's disease and relies on a mobility device to get to and from the card play sessions. Mrs. B plays cards with other people more than once a week, every week; she rates herself as being a good card player. Mrs. B has played cards on the computer in the past but not on a regular basis. In this study she had perfect attendance, displayed a pleasant personality, and she was mentally sharp and aware.

Figure 4.3. Mrs. B – Life Satisfaction   Figure 4.4. Mrs. B – Self-Esteem
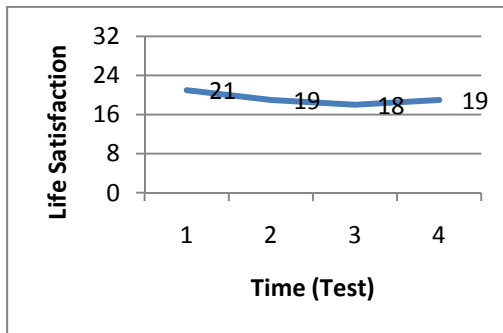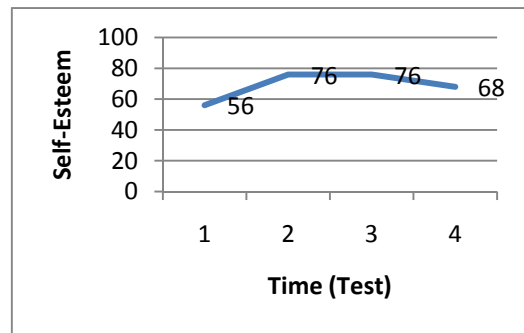
Mrs. B's LS scores started with the baseline score as her highest score; during treatment her scores went down, her last LS score rose slightly but, not back up to the baseline level. Her SE scores are not reflective of the LS scores in the sense that her perception of self-esteem started low, went up during treatment, leveled off, and then went back down but, not as low as her baseline score.

Mrs. G

Mrs. G is an 85-year-old Caucasian widow. She attended a post high school

business/trade school. She plays cards with other people infrequently, about once every

three to six months. She thinks of herself as a good card player and plays cards on the

computer more than once a week. Mrs. G had a friendly personality and was in full

command of her physical and mental faculties. She missed one card play session out of

eight sessions during the study.

Figure 4.5. Mrs. G – Life Satisfaction   Figure 4.6.   Mrs. G – Self-Esteem
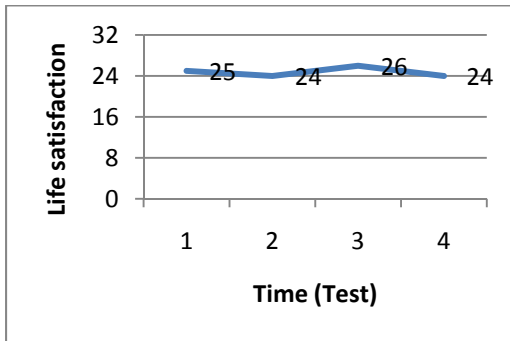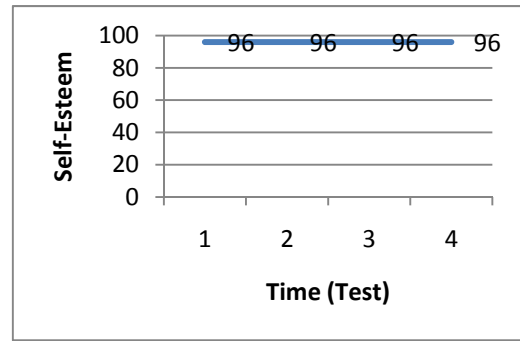
Mrs. G's LS scores indicate a drop in the first part of the treatment phase with an

increase in the positive perception of LS for the second half of the treatment phase. Her

post treatment LS score dropped to below her baseline score. Mrs. G's scores for the SE

dependent variable were all identical showing up on the chart as a straight line. The two

charts do not reflect each other although the LS chart does indicate a slight positive

increase during treatment.

Mrs. H

Mrs. H is an 85-year-old Caucasian widow. She attended 1-4 years of college. She

reported that she plays cards with other people more than once a week and she thinks of

herself as an average card player. She has played cards on the computer in the past, but

reported no current computer card play. Mrs. D had an amiable personality and was in full command of her mental and physical faculties. She started the study late and missed a total of three out of eight sessions.

Figure 4.7. Mrs. H – Life Satisfaction
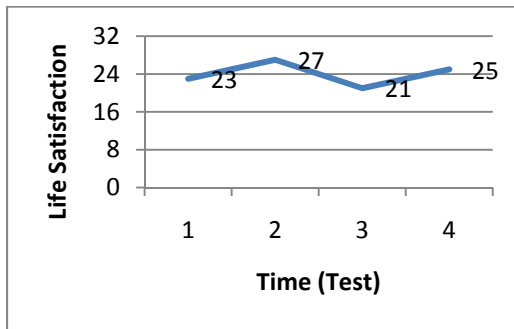
Figure 4.8. Mrs. H – Self-Esteem
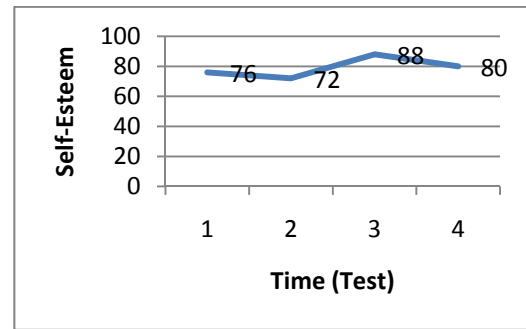
Comparing the two charts, LS and SE strongly resemble each other in that they both show a positive increase during treatment. The two charts differ in that the LS chart shows a positive increase in the first phase of treatment whereas the SE chart shows a positive increase during the second phase of treatment.

The following two pages are the trend line score charts of test site one (Bell Trace) computer players grouped together to compare and interpret their score trends against each other for each of the two dependent variables: life satisfaction and self-esteem.

Test Site One Life Satisfaction Computer Group Test Scores and Trend Lines

Figure 4.9. Mrs. A
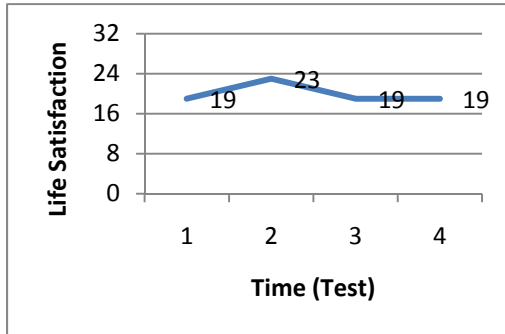
Figure 4.10. Mrs. B
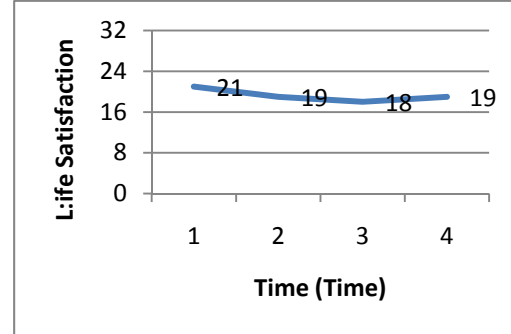
Figure 4.11. Mrs. G
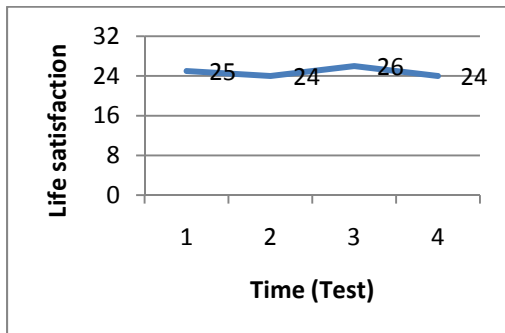
Figure 4.12. Mrs. H
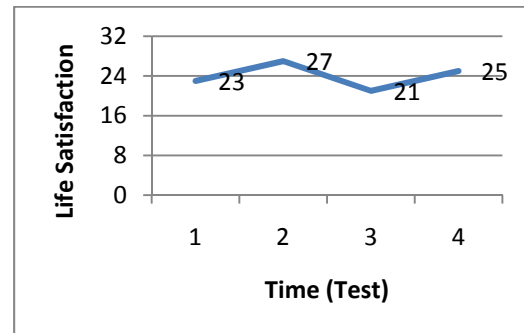
Interpretation of the trend lines across times of testing indicate an increase in the positive perception of life satisfaction in the Bell Trace computer players during the treatment phase of the experiment for three out of four participants: Mrs. A, Mrs. G, and Mrs. H.

Test Site One Self-Esteem Computer Group Test Scores and Trend Lines

Figure 4.13. Mrs. A
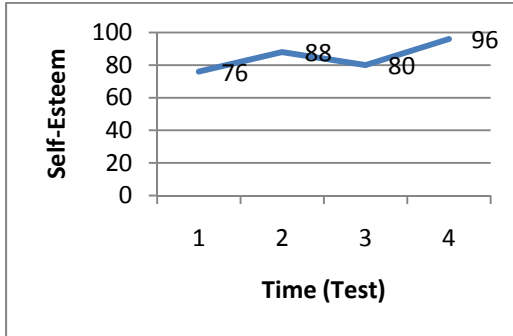
Figure 4.14. Mrs. B
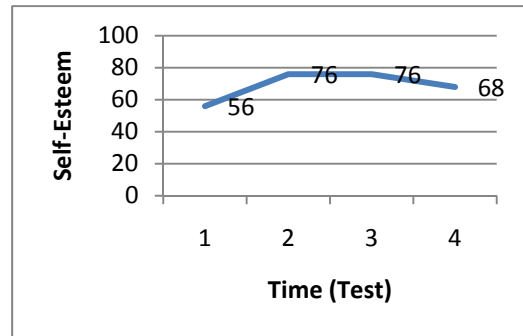
Figure 4.15. Mrs. G
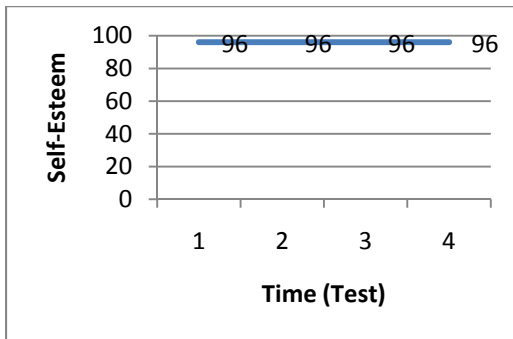
Figure 4.16.   Mrs. H
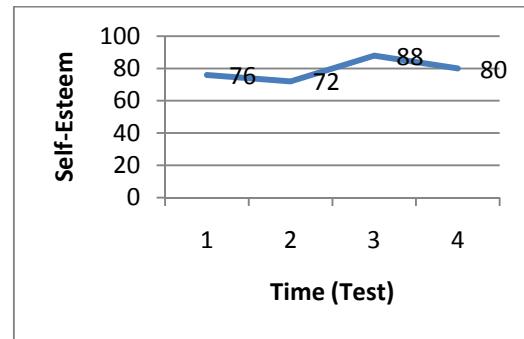
Interpretation of the trend lines across times of testing indicate an increase in the positive perception of self-esteem in the Bell Trace computer players during the treatment phase of the experiment for three out of four participants: Mrs. A, Mrs. B, and Mrs. H.

Profiles of Test Site Two Computer Card Play Participants

Below are the profiles for each test site two (Area 10 Endwright Center) computer

participant. Each profile is accompanied with the test scores and trend line charts for life

satisfaction and self-esteem for the participant across the six weeks of the study, followed

with a visual comparison and interpretation of the participant's perception of both

dependent variables.

Ms. CC

Ms. CC is a divorced 74-year-old Caucasian woman. She attended four years of

college. Mrs. CC rarely plays cards with other people and rates herself as a good card

player. She reported that she had some previous computer experience but does not play

cards on the computer. Mrs. CC displayed a friendly personality and she had perfect

attendance.

Figure 4.17. Ms. CC – Life Satisfaction   Figure 4.18.   Ms. CC – Self-Esteem
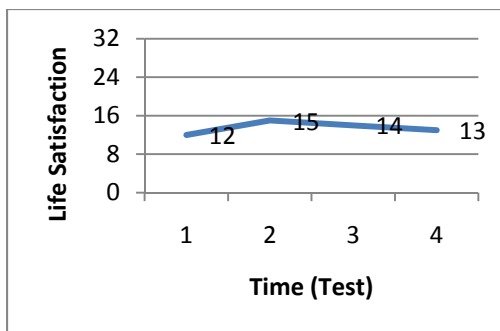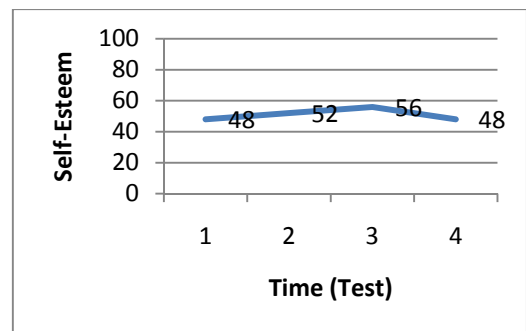
Ms. CC's score charts for both LS and SE are very similar to each other in that

they both show a positive increase in the perception of the dependent variables during the

treatment phase. On the LS chart, the positive increase happens on the first test of the

treatment phase whereas the positive increase of the SE chart happens on the second test

of the treatment phase. Both charts indicate a return to her original baseline scores on the

post treatment tests.

<center>*Ms. DD*</center>

Ms. DD is a single 87-year-old Caucasian woman. She attended a post high-

school business/trade school. Mrs. DD plays cards with other people every week and

rates herself as a good card player. She has previous computer experience but does not

play cards on the computer. This person is very active mentally and socially, she is

involved with hand crafts and she frequently attends social functions at the local older

adult center. Ms. DD had perfect attendance.

Figure 4.19. Ms. DD – Life Satisfaction   Figure 4.20. Ms. DD – Self-Esteem
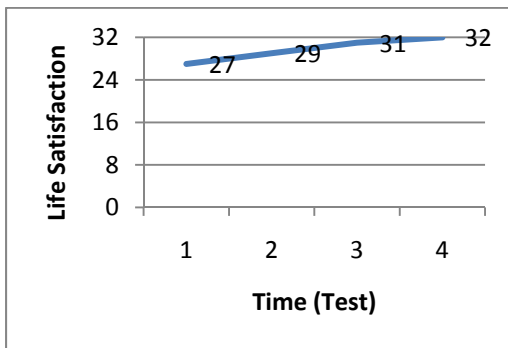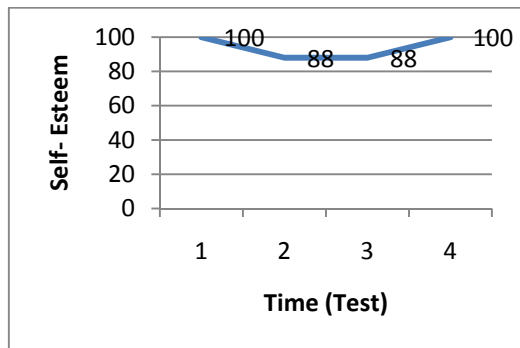
Ms. DD's score trend lines contradict each other. Her LS trend line indicates a

gradual positive increase, whereas her SE trend line indicates a negative effect during the

treatment phase of the study. It is difficult to say why there is such a difference between

the two charts for Ms. DD, the LS chart does show a positive effect during treatment and

the SE chart shows a negative effect during the treatment phase with a return to baseline

after treatment.

<center>49</center>

Ms. EE

Ms. EE is a single 79-year-old Caucasian woman. She attended secondary high-school. Ms. EE reported that she never plays cards with other people and that she has no prior computer experience. Ms. EE seemed apprehensive of doing anything with the computer; she was able to overcome her apprehension to learn how to play cards using the computer. She was pleasant to be around and she missed two sessions.
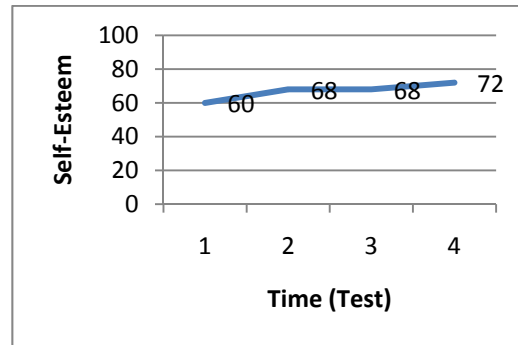
Figure 4.21. Ms. EE – Life Satisfaction   Figure 4.22. Ms. EE – Self-Esteem
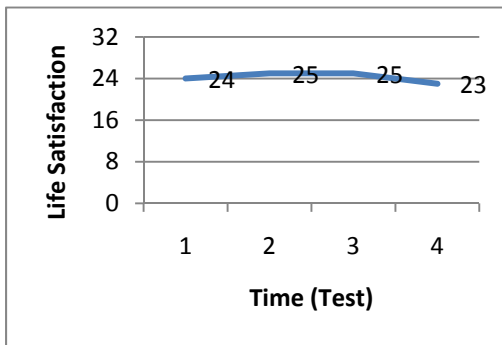
For Ms.EE, her score trend lines are very similar to each other. Ms. EE's LS chart indicates a slight positive increase during treatment and a drop off to below baseline on the post treatment test. Her SE scores show a positive increase during treatment and an increase in the perception of SE on the post treatment test score.

Ms. FF

Ms. FF is a divorced 68–year-old Caucasian woman. She attended secondary high-school. Ms. FF reported that she plays cards with others every week and rates herself as a good card player; she has had very little computer experience. She was pleasant to work with and she had perfect attendance.

Figure 4.23. Ms. FF – Life Satisfaction
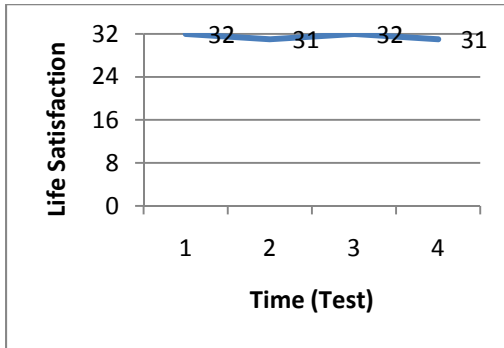
Figure 4.24. Ms. FF – Self-Esteem
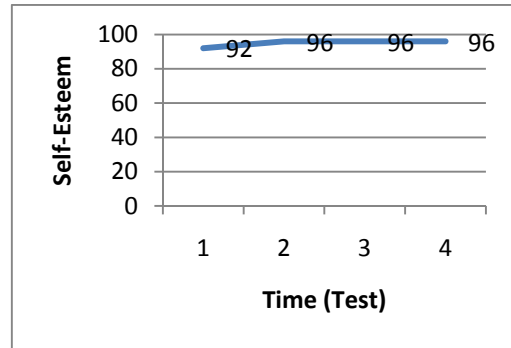
For Ms. FF, her LS and SE scores indicate a slight positive increase in the perception of both dependent variables. Her LS scores go down then up during the treatment phase and then back down on the post treatment test. Ms. FF's SE scores start slightly lower and then rise to a plateau for the remainder of the tests.

The following are the trend line charts of the test site two (Area 10 Endwright Center) computer players grouped together to visually compare and interpret their score trends against each other for each dependent variable.

Test Site Two Computer Group Life Satisfaction Test Scores and Trend Lines

Figure 4.25. Ms. CC
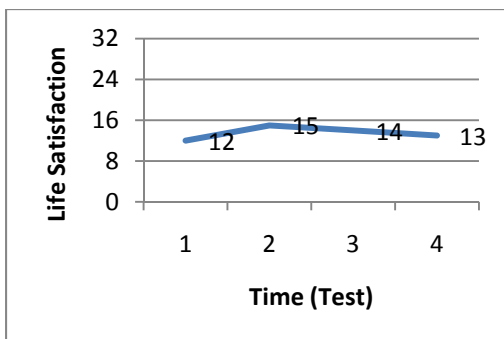
Figure 4.26. Ms. DD
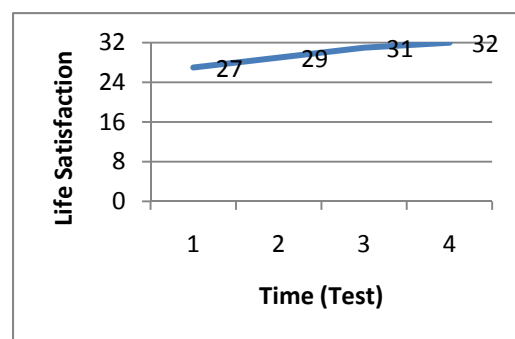
Figure 4.27. Ms. EE
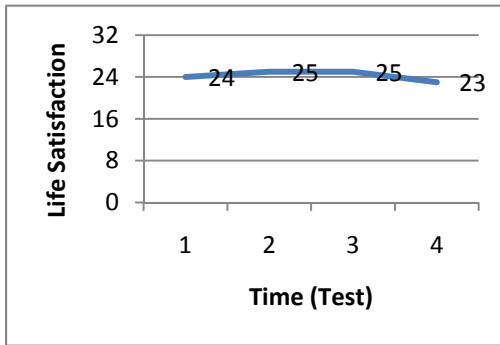
Figure 4.28. Ms. FF
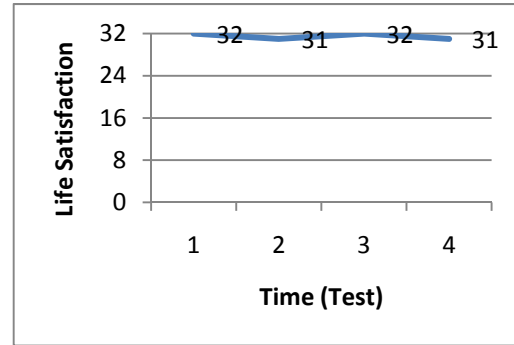
Interpretation of the trend lines across times of testing indicate an increase in the positive perception of Life Satisfaction in the Area 10 Endwright Center computer players during the treatment phase of the experiment for all four of the participants.

Test Site Two Computer Group Self-Esteem Test Scores and Trend Lines
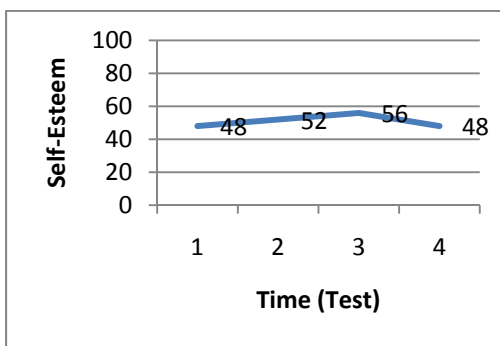
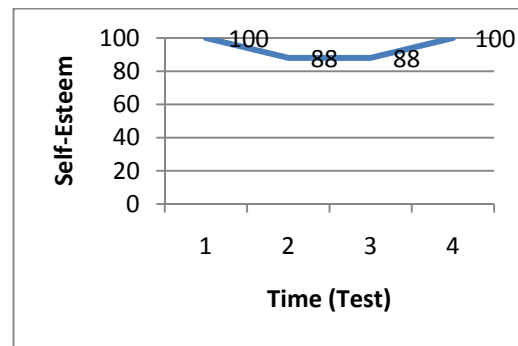Figure 4.29. Ms. CC

Figure 4.30. Ms. DD
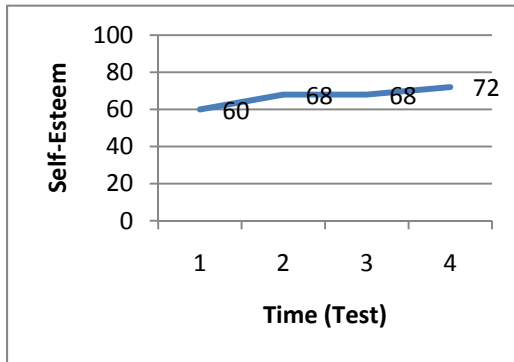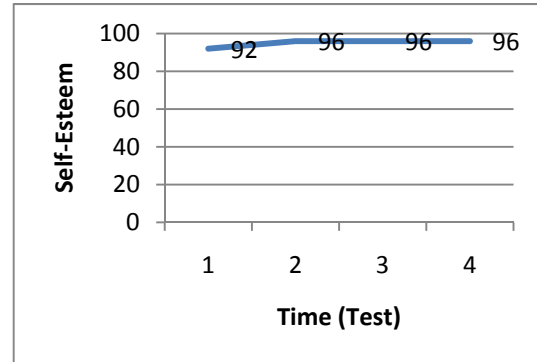
Figure 4.31. Ms. EE

Figure 4.32. Ms. FF

Interpretation of the trend lines across times of testing indicate an increase in the positive perception of Self-Esteem for the Area 10 Endwright computer players during the treatment phase of the experiment for three out of four participants: Ms. CC, Ms. EE, and Ms. FF.

The following charts juxtapose the combined test score trend lines for each dependent variable at each test site to visually compare and interpret the results.

Figure 4.33. *Juxtaposition of test sites one and two computer participant life satisfaction*
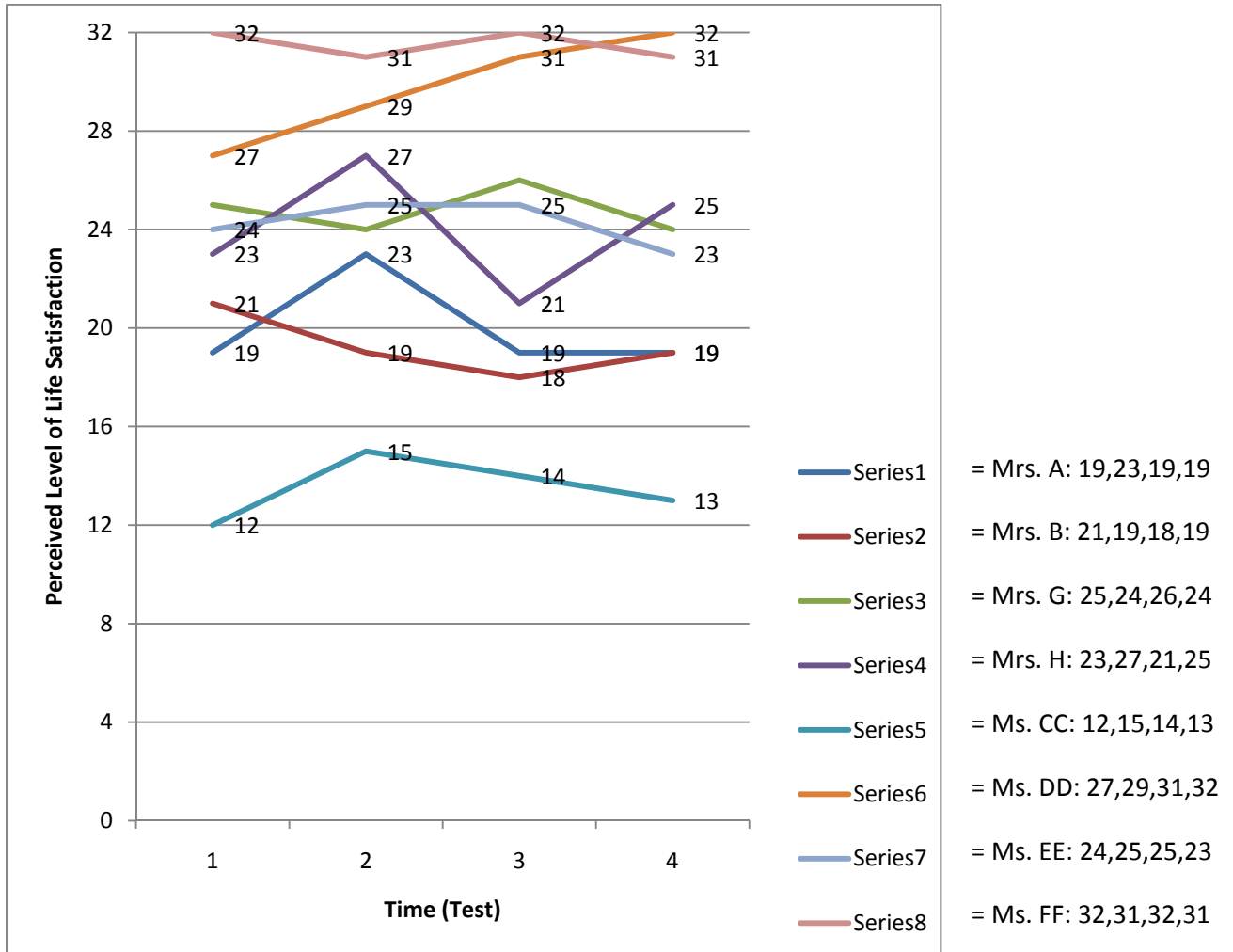
scores

Comparison of the combined life satisfaction scores of computer participants between test sites one and two: Three out of four participants at test site one, and all four participants at test site two, showed an increase in the perception of life satisfaction during the treatment phase of the experiment

Figure 4.34. *Juxtaposition of test sites one and two computer participant self-esteem*
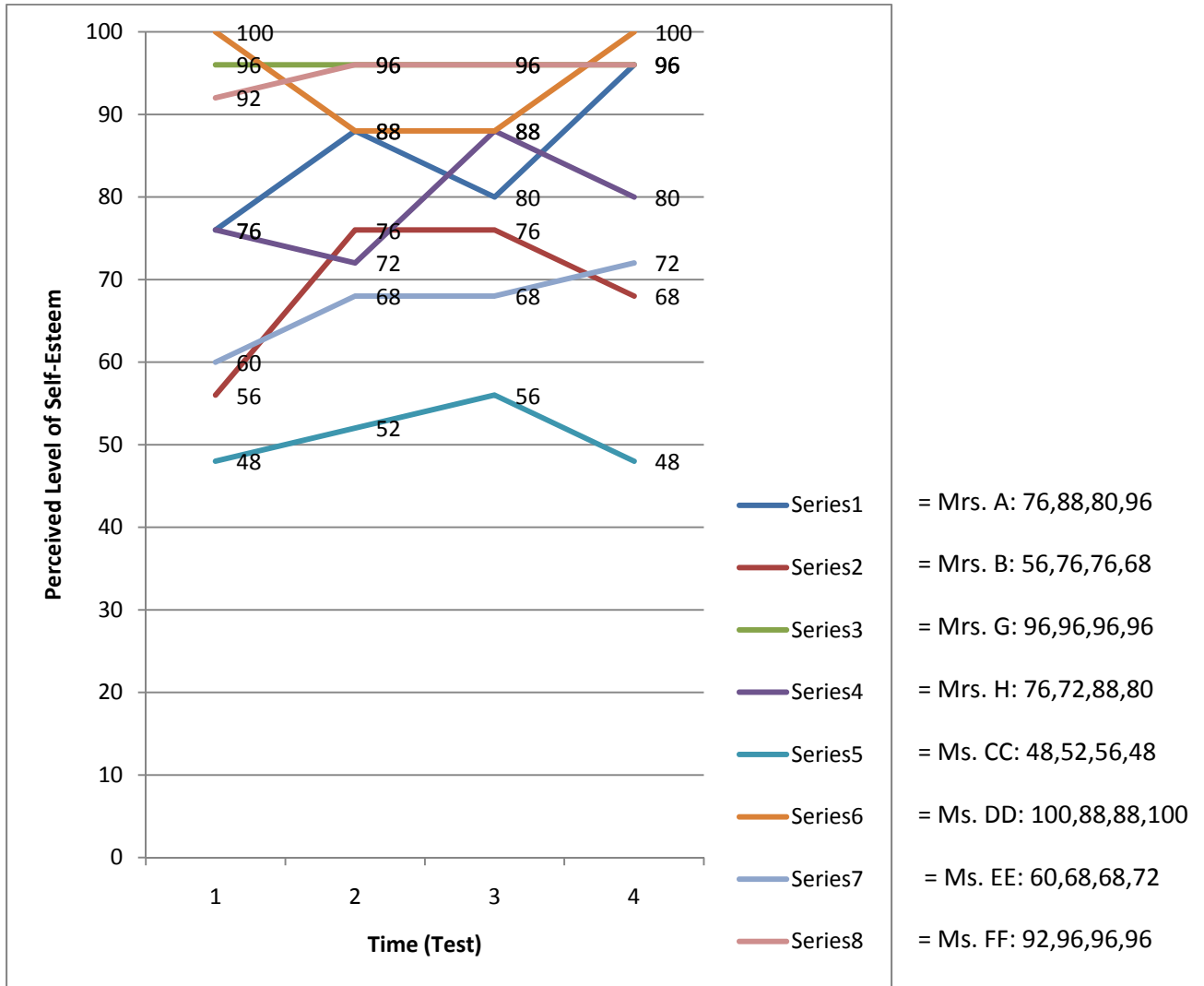
scores

Comparison of the combined self-esteem scores of computer participants between

test sites one and two: Three out of four participants at each test site showed a positive

increase in the perception of self-esteem during the treatment phase of the experiment.

Below are the profiles for each test site one (Bell Trace) face-to-face participant. Each profile is accompanied with the test scores and trend line charts for life satisfaction and self-esteem for the participant across the six weeks of the study, followed with a visual comparison and interpretation of the participant's perception of both dependent variables.

Profiles of Test Site One Face-to-Face Card Play Participants

Mr. C

Mr. C is a married 76-year-old Caucasian male. He has a college education. Mr. C plays cards with other people about once every one to three months and rates himself as an excellent card player. Mr. C has no previous computer card playing experience and does not currently play cards on the computer. Mr. C is relies on a mobility device to get to and from the card play sessions. He is in full command of his mental faculties and at times has a biting sarcastic wit that is expressed in offhand jokes and puns. Mr. C missed one full session and was late or did not complete two other card play sessions.
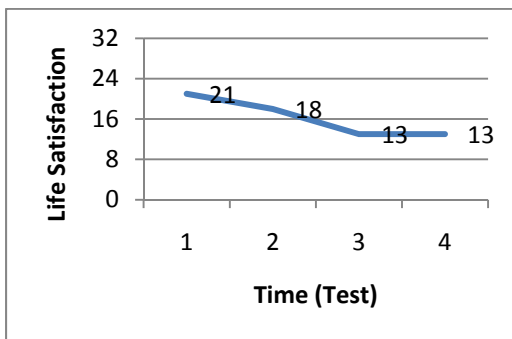
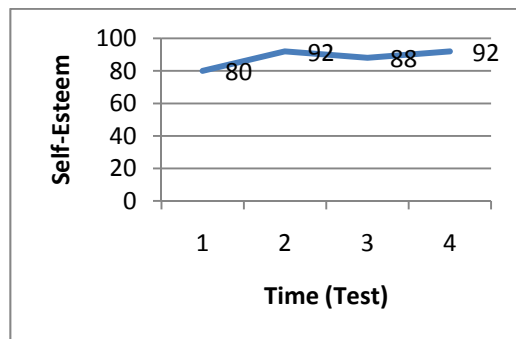Figure 4.35. Mr. C – Life Satisfaction

Figure 4.36. Mr. C – Self-Esteem

The two dependent variable charts for Mr. C contradict each other. The LS chart goes from a pretreatment high and got progressively lower. The SE chart shows a positive increase during the treatment phase with a post treatment score going back up to match the score of the first treatment SE test score. It is difficult to say why the two charts are so different from each other.

Mrs. D

Mrs. D is an 83-year-old Caucasian widow of European descent. She pursued post high-school education and earned her doctorate degree in education. She plays cards with other people infrequently, about once every three to six months. Mrs. D rates her card playing ability as poor and has no previous card playing experience on the computer. Mrs. D has an affable personality and she is in complete control of her physical and mental faculties. She missed one card play session out of a total of eight sessions.

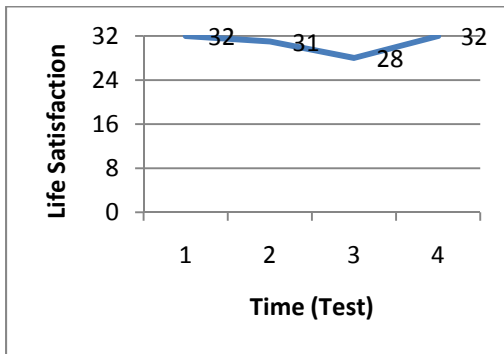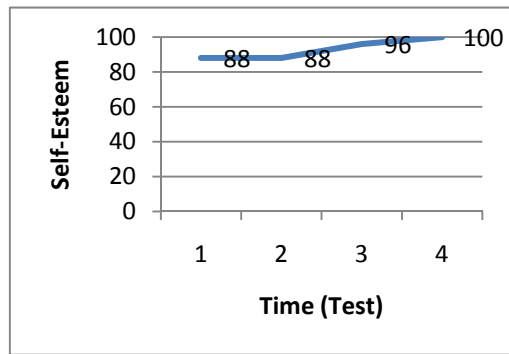Figure 4.37. Mrs. D – Life Satisfaction   Figure 4.38. Mrs. D – Self-Esteem

Mrs. D's LS scores start out high then drop during treatment going back to her original score on the post treatment test. The opposite is indicated on her SE chart; her first test during treatment is the same as her baseline test. Mrs. D then shows a positive increase in SE on the second test during treatment, her post treatment score being the

highest of the four scores. The two charts contradict each other with the LS chart indicating a negative effect during treatment and the SE chart indicating a positive effect during treatment.

Mr. E

Mr. E is an 87-year-old Caucasian widower. He attended a post high-school business/trade school and he was in the military service during WWII. Mr. E plays cards with other people about once every three to six months and rates his card playing ability as average. Mr. E reported that he has never played cards on the computer and has no computer experience. Mr. E displayed a reserved but friendly personality and he missed three sessions out of a total of eight.

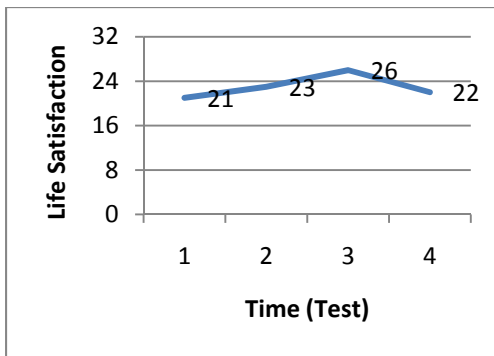Figure 4.39. Mr. E – Life Satisfaction

Figure 4.40.   Mr. E – Self-Esteem
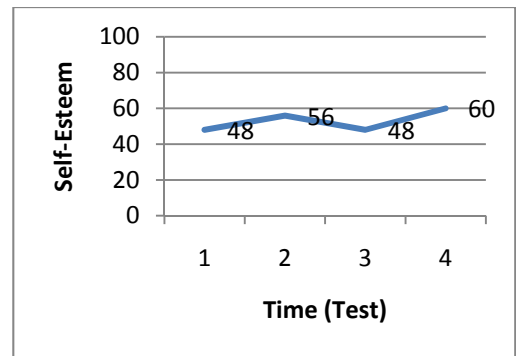
The two charts of LS and SE for Mr. E are similar in that they both show a positive increase in the perception of LS and SE during the treatment phase of the study. The LS chart indicates a consistent rise in LS during treatment with a return close to the baseline score on the post treatment test. The SE chart shows an improvement on the first treatment test score then a lower score for the second treatment test, ending with his highest score for SE on his post treatment test.

Mrs. F

Mrs. F is an 84-year-old Caucasian widow. She attended a post high-school business/trade school. Mrs. F reported that she plays cards about once every three to six months, and rates her card playing ability as poor. She has no previous computer card playing experience. Mrs. F is very personable and seems to be in full control of her mental and physical faculties. Mrs. F missed four sessions out of a total of eight sessions and completed only three test sessions.

Figure 4.41. Mrs. F – Life Satisfaction
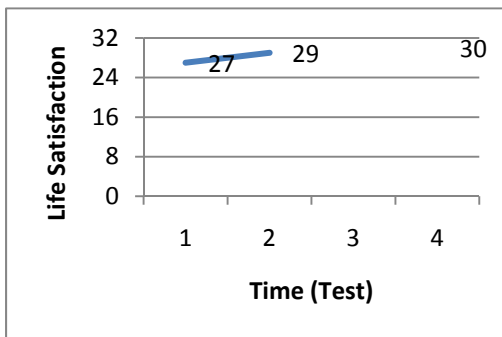
Figure 4.42. Mrs. F – Self-Esteem
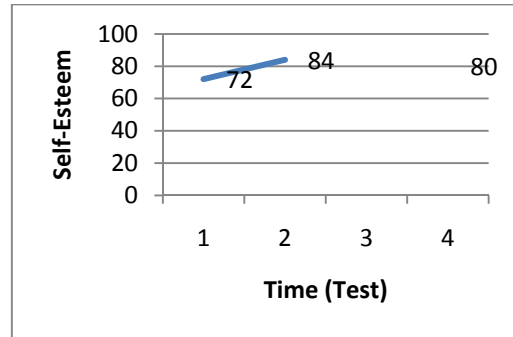
Mrs. F missed the third test session for each dependent variable; her scores indicate a positive increase in both LS and SE. Both test score charts show a rise in the perception of LS and SE during the first half of the treatment phase of the study. Below are the life satisfaction and self-esteem scores for each Bell Trace face-to-face participant across the six weeks of the study to visually compare and interpret their test scores.

Test Site One Face-to-Face Group Card Play Life Satisfaction Scores

Figure 4.43. Mr. C

Figure 4.44. Mrs. D

Figure 4.45. Mr. E

Figure 4.46. Mrs. F (Note: 3rd Test

missed)

Interpretation of the trend lines across times of testing of the above four charts indicate a decrease in the scores on life satisfaction for the Bell Trace face-to-face players during the treatment phase of the experiment for two out of four participants: Mr. C, And Mrs. D.

Test Site One Face-to-Face Group Card Play Self-Esteem Scores

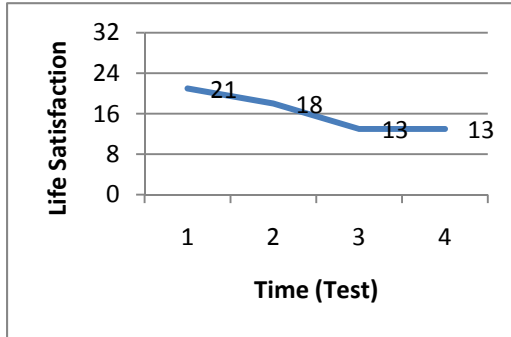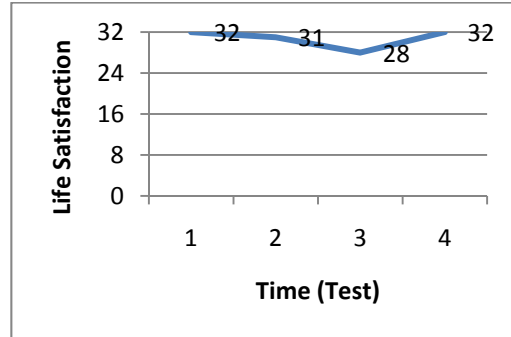Figure 4.47. Mr. C

Figure 4.48. Mrs. D
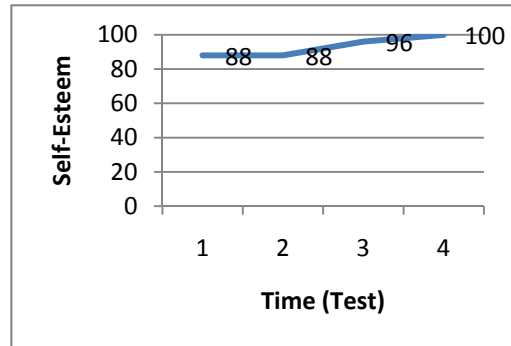
Figure 4.49. Mr. E
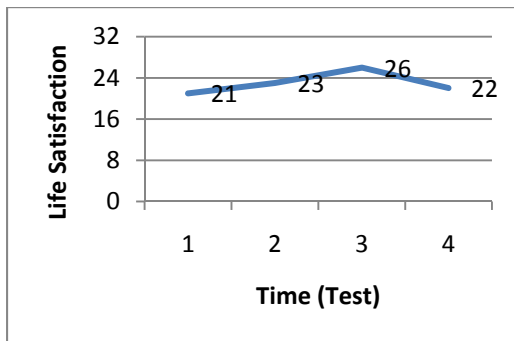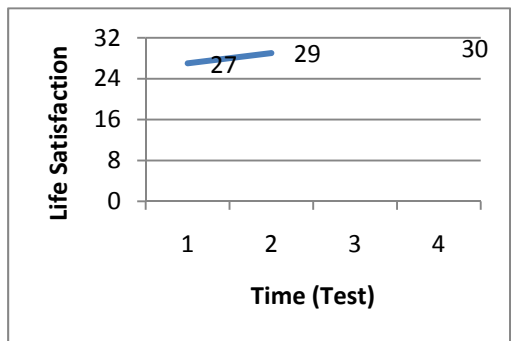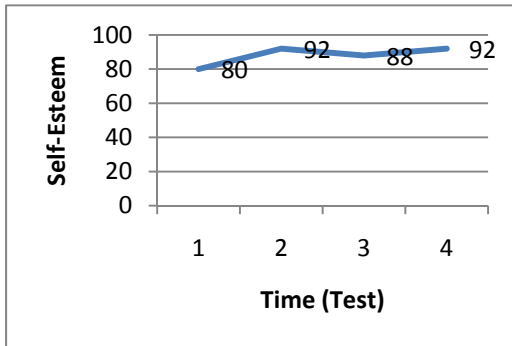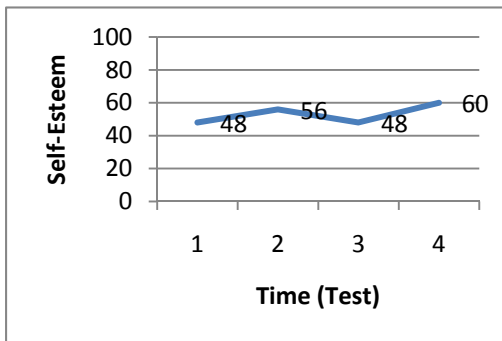

Figure 4.50. Mrs. F: (Note: 3rd Test Missed)
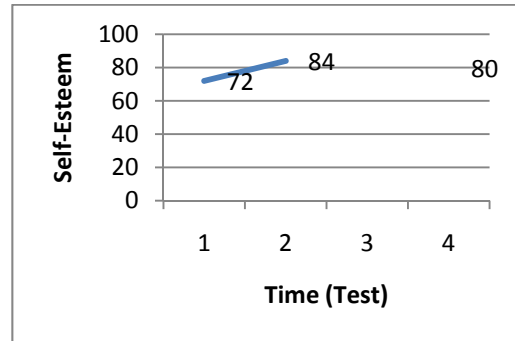
Interpretation of the trend lines across times of testing indicate an increase in the positive perception of self-esteem for the Bell Trace face-to-face card players during the treatment phase of the experiment for three out of the four participants: Mr. C, Mrs. D, and Mr. E.

Profiles of Test Site Two Face-to-Face Card Play Participants

Below are personal profiles for each test site two (Area 10 Endwright Center) face-to-face participant. Each profile is accompanied with the test scores and trend line charts for life satisfaction and self-esteem for the participant across the six weeks of the study, followed with a visual comparison and interpretation of the participant's perception of both dependent variables.

Mrs. AA

Mrs. AA is a married 65-year-old Caucasian woman. She pursued post graduate education and is a nurse practitioner. She plays cards with other players every week, she rates her card play ability as poor. She has some experience with playing cards on the computer and plays often. This person was very pleasant to work with and she missed two out of a total of eight sessions.

Figure 4.51. Mrs. AA – Life Satisfaction   Figure 4.52.   Mrs. AA – Self-Esteem
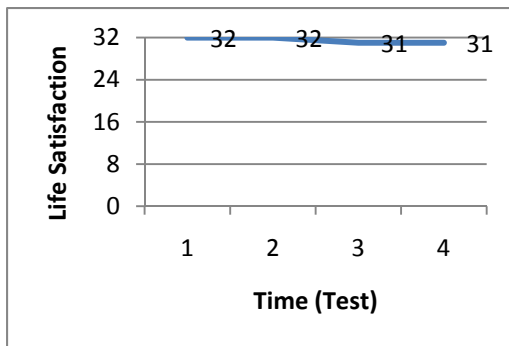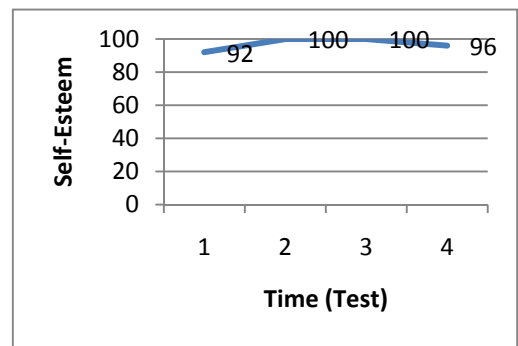
Mrs. AA's LS and SE scores contradict each other. Her LS scores starts high and stay the same for the first two of the four tests, the LS scores go down slightly by a point for the end treatment and post treatment tests. Mrs. AA's test scores for the SE dependent

variable show a positive effect during the treatment phase of the study with a slightly

higher return to baseline SE score for the post treatment test.

Ms. BB

Ms. BB is a single 76-year-old Caucasian female. She attended college for four

years and earned her bachelor's degree. Ms. BB reported that she plays cards about once

every one to three months she rates herself as an average card player. She has previous

computer experience but, does not play cards on the computer. Ms. BB has a friendly

personality and got along with everybody. She had perfect attendance.

Figure 4.53. Ms. BB – Life Satisfaction   Figure 4.54. Ms. BB – Self-Esteem
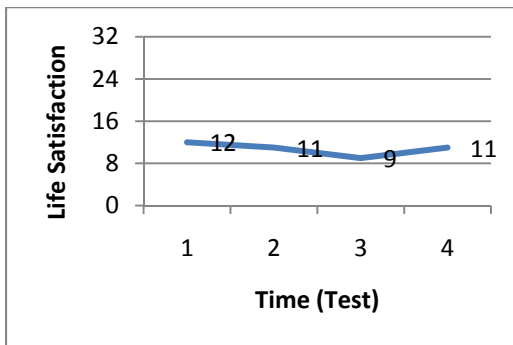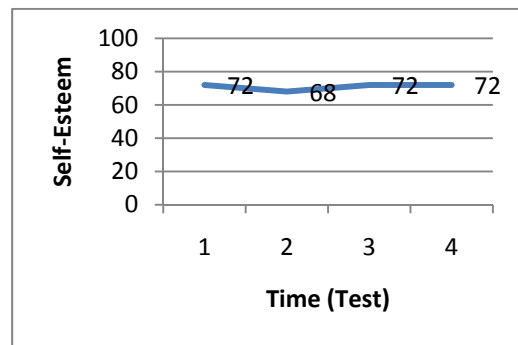
Ms. BB's score charts are similar to each other in that they both show a negative

drop in the test scores during the treatment phase of the study. The drop occurs more

noticeably in the LS chart on the second treatment phase test where the drop in level on

the SE chart is noticed in the first test of the treatment phase.

Mrs. HH

Mrs. HH is a 78-year-old Caucasian widow. She attended a post high-school business/trade school. Mrs. HH reported that she never plays cards with other people and has no computer experience. She rates her card playing ability as poor. She was very nice to work with, and she had perfect attendance.

Figure 4.55. Mrs. HH – Life Satisfaction   Figure 4.56. Mrs. HH – Self-Esteem
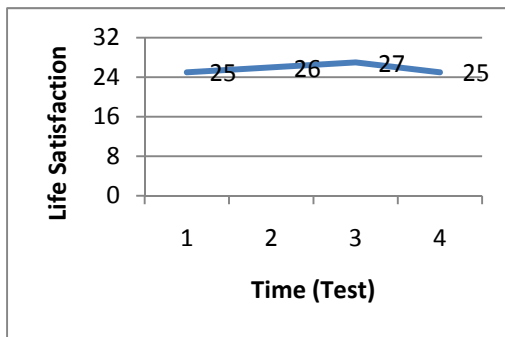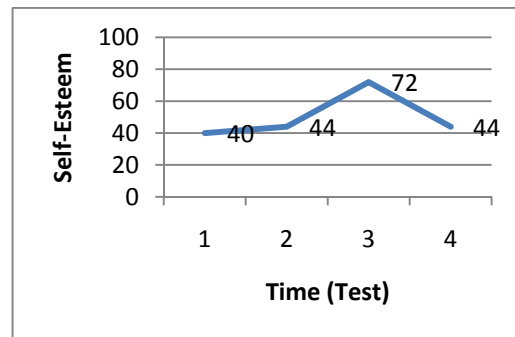
Comparing the two score charts for Mrs. HH they are reflective of each other, showing a positive increase during the treatment phase on both charts. The LS chart is more of a gradual and subtle increase with the last test indicating a return to the baseline level. The SE chart is more noticeable with the second test of the treatment phase showing a pronounced increase, the post treatment test score goes back down to close the pretreatment level.

Mrs. II

Mrs. II is a 76-year-old Caucasian widow. She attended secondary high-school. Mrs. II reported that she plays cards with other people about once every one to three months and that her card playing ability is good. She has very little to no computer card playing experience. This participant had a personality conflict with another participant; the other participant resigned from the study because of the conflict. Mrs. II missed two card sessions out of a total of eight sessions.

Figure 4.57. Mrs. II – Life Satisfaction
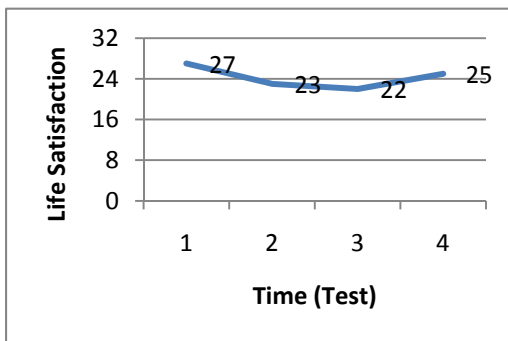
Figure 4.58.   Mrs. II – Self-Esteem
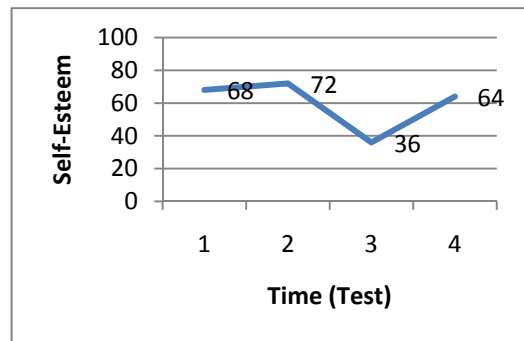
Mrs. II's score charts are similar in that they both show a negative effect during the treatment phase on the two dependent variables. The LS chart shows Mrs. II starting out with a high baseline score, treatment phase scores going lower, and then the post treatment score rising almost back up to baseline. The SE chart is different, showing a positive increase for the first test of the treatment phase then a big drop for the second test of the treatment phase, the post treatment score rises back up to close to the baseline test level.

The following are each test site two (Area 10 Endwright Center) face-to-face card player life satisfaction charts grouped for visual comparison and analysis.

Test Site Two Face-to-Face Group Card Play Life Satisfaction Scores

Figure 4.59.   Mrs. AA
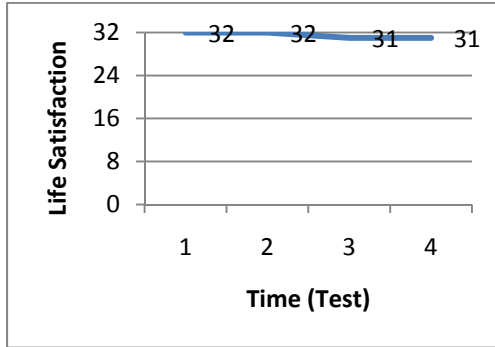
Figure 4.60.   Ms. BB
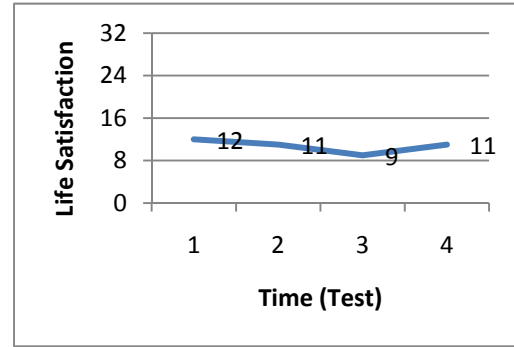
Figure 4.61.   Mrs. HH
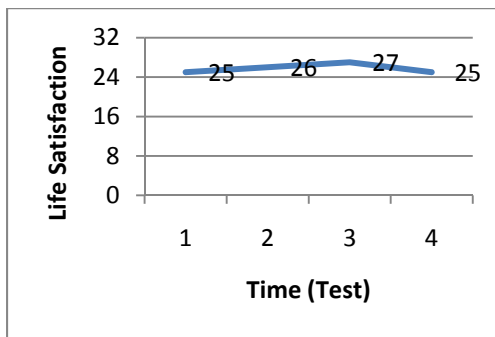
Figure 4.62.   Mrs. II
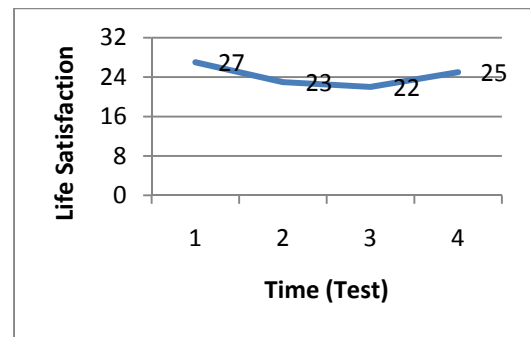
Visual interpretation indicates an increase in the negative perception of life satisfaction for the Area 10 Endwright face-to-face card players during the treatment phase of the experiment for three out of four participants: Mrs. AA, Ms. BB, and Mrs. II.

Below are each test site two (Area 10 Endwright Center) face-to-face self-esteem charts grouped for visual comparison and interpretation.

Test Site Two Face-to-Face Group Card Play Self-Esteem Scores

Figure 4.63.   Mrs. AA
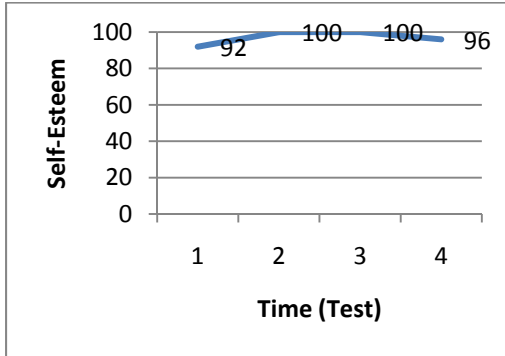
Figure 4.64.   Ms. BB
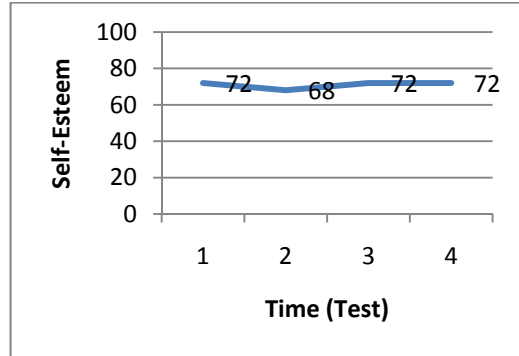
Figure 4.65.   Mrs. HH
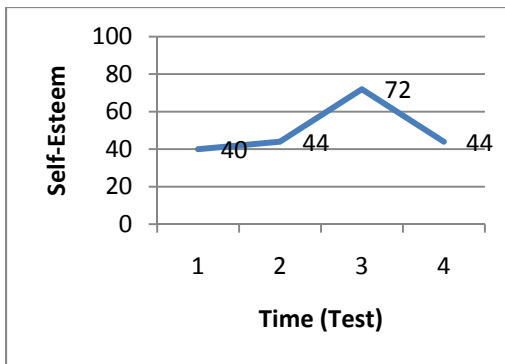
Figure 4.66.   Mrs. II
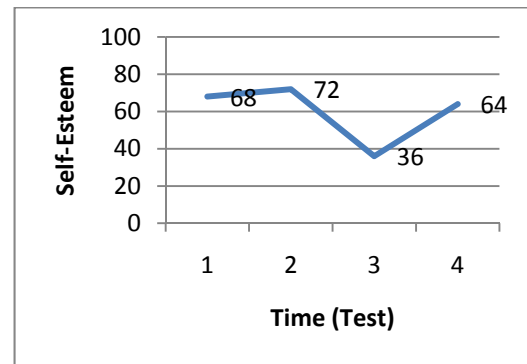
Interpretation of the trend lines across times of testing indicate an increase in the positive perception of self-esteem for the Area 10 Endwright face-to-face card players during the treatment phase of the experiment for three out of four participants: Mrs. AA, Mrs. HH, and Mrs. II.

Charts juxtaposing combined test site scores of each treatment condition appear below.

Figure 4.67. *Juxtaposition of test sites one and two face-to-face participant life satisfaction scores.*
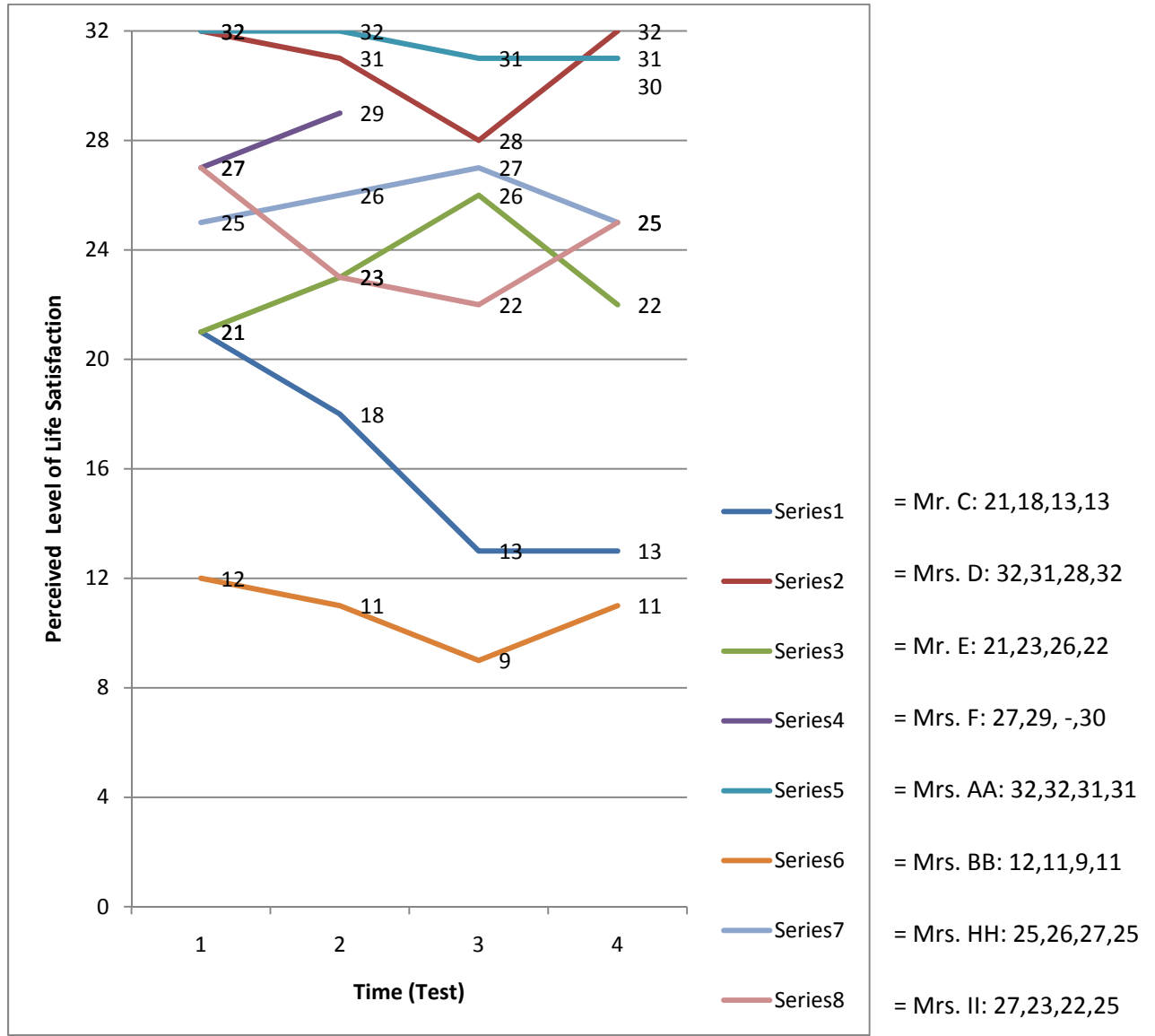
Comparing the combined Life Satisfaction scores of face-to-face participants between test sites one and two, both sites visually show a general negative trend during the treatment phase of the experiment for five out of eight participants.

Figure 4.68. *Juxtaposition of test sites one and two face-to-face participant self-esteem scores.*
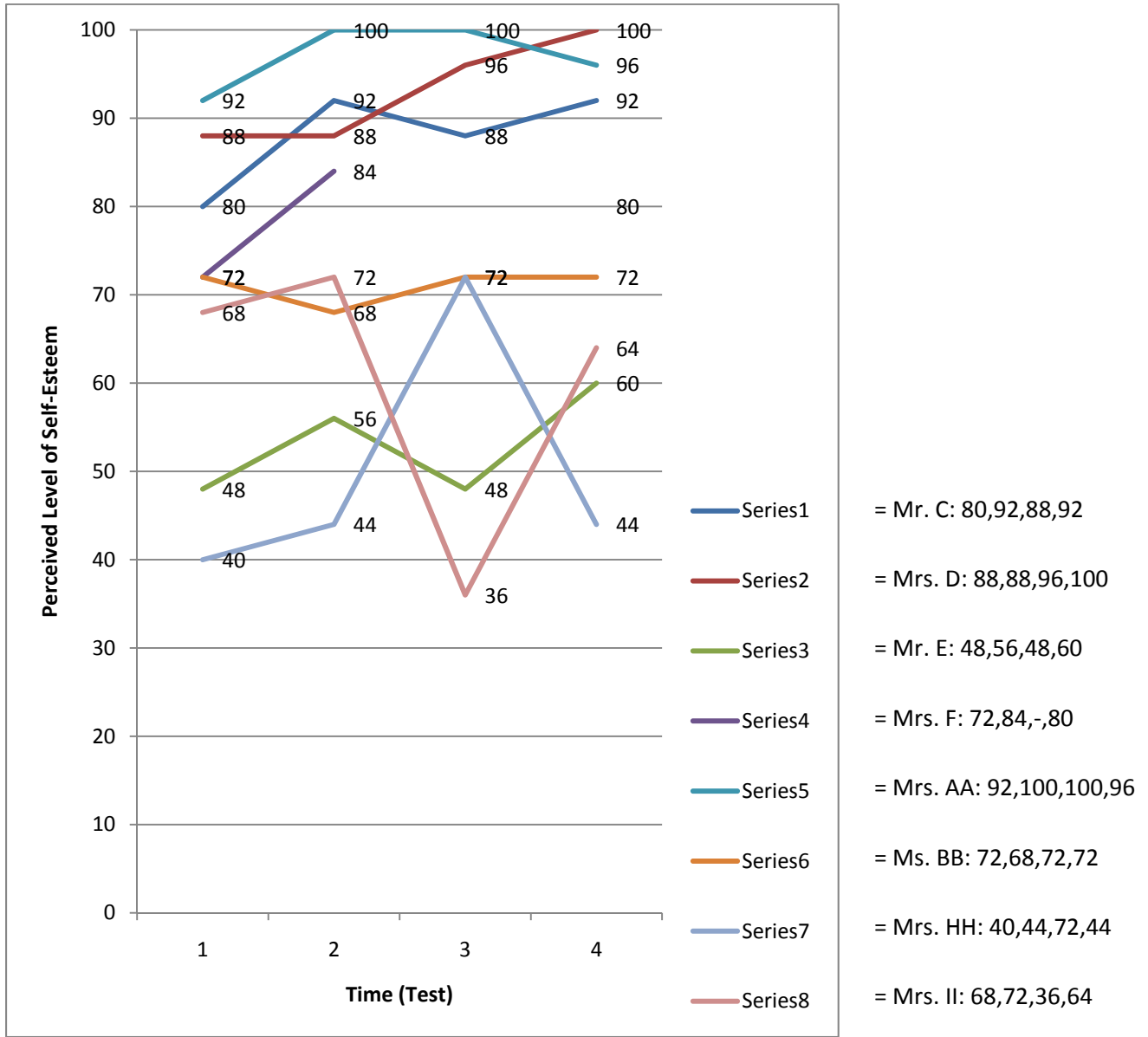
Comparing the combined self-esteem scores of face-to-face participants in the two above charts between test sites one and two, both sites visually show a general positive trend during the treatment phase of the experiment for six out of eight participants.

Discussion and Summary

The purpose of this study was to examine a potentially effective way to improve the perception of life satisfaction and self-esteem of older adults. The study sought to further investigate the effects of activity on the well-being of older adults and to add new findings to the body of knowledge the impact that activity has on the mental and physical health of older adults. The study findings indicate that indeed there is data that substantiates the basic tenant of activity theory that playing a game of cards either individually on the computer or with other people, has a positive effect on the perception of life satisfaction and self-esteem of older adults.

Analysis comparing individual scores and trend lines of the participants' response to the two dependent variables during the treatment phase of the study indicated ambiguity. Several of the participants' trends in their test scores for life satisfaction were the opposite of the trends in their test scores recorded for self-esteem. There are several factors that may explain why this situation occurred. As previously mentioned in the literature review, the nature of a persons' self-esteem is not as stable as it is for life satisfaction, thus small events such as participation in the study could have had more of an effect on the self-esteem scores.

Both of the instruments employed to measure the two dependent variables used dichotomous responses to answer the questions. This dichotomous response to the test questions lacked sensitivity to measurement of the dependent variables and put into question whether the data was of an interval or ordinal nature. It is also possible that some of the participants may not have answered the questions according to their true

feelings possibly out of concerns for protection of their privacy, as the nature of the questions of both instruments were of a personal nature.

Based on the findings, the face-to-face participants had a higher incidence of negative responses to the treatment for the dependent variable of life satisfaction, compared to the computer participants. One out of the eight computer participants showed a negative response during the treatment phase of the experiment, as opposed to, five of the eight face-to-face card playing participants reporting a negative response for life satisfaction. It is possible the face-to-face card playing participants higher incidence of negative test scores for life satisfaction during the treatment phase, may be attributed to personality conflicts and negative influences of other face-to-face card players.

The findings of the study indicated that at 87.5 % of the participants in the study showed some improvement in their test scores on one or both of the measured dependent variables during the treatment phase of the research project. The findings demonstrate that engagement in a nonphysical activity has the potential to improve an older adult's perception of life satisfaction and self-esteem. This study was conducted over a very short time, the treatment condition lasting only four weeks. For improvement in the perception of life satisfaction and self-esteem to be evidenced in the short duration of the treatment phase, gives credence to the possibility that an older adult who cannot participate in routine physical exercise may be able to benefit from engagement in a nonphysical activity like playing a game of cards.

Because of the small sample size, the findings of the research study are preliminary and inconclusive. A research study with a larger sample size and using a treatment group/control group experimental design is needed to confirm the tenets of

activity theory and to be able to generalize with greater confidence the preliminary

findings of the present study.

CHAPTER 5

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study explored the perception of life satisfaction and self-esteem of older adults who were engaged in playing cards with others or on the computer using a single subject A-B-A design. Subjects were older adults from two local senior venues – the Endwright Center in Ellettsville, Indiana and Bell Trace Senior Living Community in Bloomington, Indiana. The A-B-A design was conducted over 6 weeks and data were collected on two dependent variables once during Phase A, twice during Phase B, and once during the return to baseline Phase A. Data were analyzed using the Microsoft Excel statistical program for descriptive statistics and trend line analysis of the test scores.

Findings

Below are the findings generated by analysis of the study.

1. Test score trend lines for both dependent variables showed there was a positive increase during the treatment phase of the experiment for 87.5% of the subjects on one or both of the dependent variables.

2. Face-to-face card players reported more negative response to treatment than computer card players for the dependent variable of life satisfaction.

3. More than one third of the participants' trend lines for life satisfaction were the opposite polarity of their trend lines recorded for self-esteem.

Conclusions

The purpose of this study was to examine a potentially effective way to improve the perception of the life satisfaction and self-esteem of older adults. Based on the need for maintaining good physical and mental health in older adults, the exploration of the effects of low cost activities was relevant to finding ways to help older people live healthier and happier lives. By implementing informed cost saving interventions that increase the physical and mental well being of older adults, the individual and society could be spared some of the excessive costs associated with poor health in the older adult. The activity intervention of card playing appeared to provide a promising approach to improved self-esteem and life satisfaction.

Based on the limitations and findings of this study, the following conclusions are offered:

1. The findings support the underlying tenets of activity theory.

2. A sample size that would be large enough to examine group treatment effects was not achieved; however, based on single subject design and data analysis, preliminary improvements on each dependent measure were found for some of the study participants.

3. Test scores may not have reflected a true response to treatment by the participants due to other activities that the participants may have engaged in outside of the study.

4. The use of dichotomous instruments to measure the dependent variables lacked sensitivity to accurately measure the dependent variables and provide a maximum indication of variability across the study phases.

5. This study was conducted over a short time, evidence of improvement in the perception of life satisfaction and or self-esteem by the participants during treatment suggests that, older adults may benefit from short term nonphysical therapy.

6. An older adult who cannot participate in routine physical exercise could benefit from engagement in a nonphysical activity like playing a game of cards.

Recommendations for Further Study

The following recommendations are suggested for future research involving the investigation of the effect of card play on the perceived life satisfaction and self-esteem of older adults:

1. The originally proposed quantitative group design should be conducted with the appropriate amount of people to give the experiment enough power to generalize the results to the target population.

2. The present study should be executed over a longer period of time to obtain a better picture of change in the measurement of the two dependent variables.

3. The study could be replicated using more sensitive instruments to measure the effect of card play on the perceived life satisfaction and self-esteem and older adults.

4. Future research could be implemented using the single-subject design with one to five older adult participants who are either confined to a bed or who are wheelchair bound.

5. A study could be implemented that included a measure of the minimum amount of physical activity that would produce a positive effect on the perception of life satisfaction and self-esteem of older adults.

6. The findings of the present study suggest that socialization does not always have a beneficial effect. A study should be conducted to explore the psychosocial effects on the perception of life satisfaction and self-esteem of playing cards with other people.

7. Implement a research project that investigates the relationship of the socioeconomic levels of the participants and any effect it may have on their perceived level of life satisfaction and self-esteem of older adults when subjected to the treatment conditions of the present study.

8. Execute a research project that examines the educational level of the participants and its relationship to their perception of life satisfaction and self-esteem of older adults under similar treatment conditions of the present study.

9. Replicate the study with older adults from more diverse ethnic backgrounds.

10. Develop a survey aimed at older adults that would investigate card playing frequency and ability on the computer or with other people, against their perceived levels of life satisfaction and self-esteem. This survey could be sent out to a very large number of respondents from the target population.

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APPENDICES

APPENDIX A

HUMAN SUBJECTS INFORMED CONSENT DOCUMENTATION

INDIANA UNIVERSITY BLOOMINGTON

INFORMED CONSENT STATEMENT

The Effects of Card Playing on Perceived Self-Esteem and Life Satisfaction of Older Adults

You are invited to participate in a research study. You were selected as a possible participant because you are between the ages of 60 and 90 and responded to our advertisement*.* We ask that you read this form and ask any questions you may have before agreeing to be in the study.

The study is being conducted by Mark V. Saunders with the department of Health, Physical Education, and Recreation at Indiana University.

STUDY PURPOSE

The purpose of this study is to investigate the effect of card playing on older adults. To determine if there is a difference in the perception of self esteem and life satisfaction of older adults that play cards either with other people or who play cards on the computer. By examining the effects of card playing on self-esteem and life satisfaction, we may be better able to understand the perception of self-esteem and life satisfaction of older adults.

NUMBER OF PEOPLE TAKING PART IN THE STUDY:

If you agree to participate, you will be one of 16 subjects who will be participating in this research.

PROCEDURES FOR THE STUDY:

If you choose to participate in the study you will be asked to play cards either with other people or on the computer during a four week card playing session. Card play sessions will be conducted two times a week for four weeks. You will be asked to answer two tests regarding self-esteem and life satisfaction at the beginning, middle, and end of the card play period. Two weeks after the card playing sessions have ended you will again be asked to answer the two tests. The two tests should take approximately 10 minutes each to complete. Also, prior to the beginning of the study along with the two tests, we ask that you fill out a demographic questionnaire that will take approximately 10 minutes to complete. The demographic questionnaire will only be given once.

RISKS OF TAKING PART IN THE STUDY:

Your confidentiality could possibly be jeopardized by the fact that you may be known to other participants or the researcher. The risks of possible loss of confidentiality will be minimized. The confidentiality of each participant is of utmost concern to the researcher, as the researcher is only interested in the results of the data collected through the answers provided by the questionnaires, not your personal identity. As with any activity, there exists the possibility of physical or psychological harm. To prevent negative interactions amongst the participants, each session of card game play will be

attended by the researcher. While completing the survey, it is possible that answering the questions may make you feel uncomfortable you can tell the researcher that you feel uncomfortable or do not care to answer a particular question. If for any reason you wish to cease involvement in the study you may do so at any time, no questions asked.

BENEFITS OF TAKING PART IN THE STUDY:

The results of this study will potentially help to find a cost effective way to improve an older adults' sense of self-esteem and life satisfaction. A potential result of the findings of the study is that improvement of self-esteem and life satisfaction may lead to a positive effect on the physical and mental health of the older adult.

ALTERNATIVES TO TAKING PART IN THE STUDY:

An alternative to being in this study is to choose not to participate.

CONFIDENTIALITY

Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Your identity will be held in strict confidence on reports in which the study may be published. No audio or video recording will take place during the study as the study is only interested in the data provided by the questionnaires. Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates, the IUB Institutional Review Board or its designees, the study sponsor, Dr. Barbara Hawkins, and (as allowed by law) state or federal agencies, specifically the Office for Human Research Protections (OHRP).

PAYMENT

You will not receive payment for taking part in this study.

CONTACTS FOR QUESTIONS OR PROBLEMS

For questions about the study, contact the researcher Mark V. Saunders, 1912 W. Wylie St. Bloomington, Indiana 47403-2069, 812-331-2137, marsaund@indiana.edu.

For questions about your rights as a research participant or to discuss problems, complaints or concerns about a research study, or to obtain information, or offer input, contact the IUB Human Subjects office, 530 E Kirkwood Ave, Carmichael Center, 203, Bloomington IN 47408, 812-855-3067 or by email at iub_hsc@indiana.edu

VOLUNTARY NATURE OF STUDY

Taking part in this study is voluntary. You may choose to not take part or, you may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. Your decision whether or not to participate in this study will not affect your current or future relations with the investigator(s).

PARTICIPANTS' CONSENT

In consideration of all of the above, I give my consent to participate in this research study.

I will be given a copy of this informed consent document to keep for my records. I agree to take part in this study.

Participants' Printed Name:

Participants' Signature:_____**Date**:_____

(must be dated by the
participant)

Printed Name of Person Obtaining Consent:

Signature of Person Obtaining Consent:_____**Date**:_____

APPENDIX B

RESEARCH INSTRUMENTS

LIFE SATISFACTION SCALE
(LSS)

NAME: _____ DATE: _____

INSTRUCTIONS: Read each statement. If you agree with the statement, place an "X" in the "AGREE" column. If you disagree with the statement, place an "X" in the "DISAGREE" column.

QUESTIONS	AGREE	DISAGREE
1. I feel just miserable most of the time	☐	☐
2. I never dreamed that I could be as lonely as I am now	☐	☐
3. I never felt better in my life	☐	☐
4. I have no one to talk to about personal things	☐	☐
5. I have so few friends that I'm lonely much of the time	☐	☐
6. I can no longer do any kind of useful work	☐	☐
7. This is the most useful period of my life	☐	☐
8. I have more free time than I know how to use	☐	☐
9. I do better work than ever before	☐	☐
10. I haven't a cent in the world	☐	☐
11. I have no use for religion	☐	☐
12. My life is meaningless now	☐	☐
13. I am just as happy as when I was younger	☐	☐
14. Sometimes I feel there is no point in living	☐	☐
15. I can't help feeling now that my life isn't very useful	☐	☐
16. My life is full of worry	☐	☐
17. This is the dreariest time of my life	☐	☐
18. My life is still busy and useful	☐	☐
19. I like being the age I am	☐	☐
20. I seem to have less and less reason to live	☐	☐
21. Most of the things I do are boring or monotonous	☐	☐
22. I often feel lonely	☐	☐
23. Compared to other people, I get down in the dumps too often	☐	☐
24. Things keep getting worse as I get older	☐	☐
25. These are the best years of my life	☐	☐
26. I have a lot to be sad about	☐	☐
27. I sometimes worry so much that I can't sleep	☐	☐
28. I am as happy now as I ever was	☐	☐
29. I feel old and somewhat tired	☐	☐
30. The older I get, the worse everything is	☐	☐
31. My life could be happier than it is now	☐	☐
32. Life is hard for me most of the time	☐	☐

To whom it may concern,

This letter is to grant permission for Mark Saunders to use the following copyright material;

Instrument: *Coopersmith Self-Esteem Inventories Adult Form*

Author: *Stanley Coopersmith, Ph.D.*

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for his thesis research.

Five sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any other published material.

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

THE SELF-ESTEEM INVENTORY

(Coopersmith, 1967, 1991)

Self-Esteem Inventory

Please mark each statement in the following way:

If the statement describes how you usually feel, put a check in the column "Like

Me"

If the statement does not describe how you usually feel, put a check in the

column "Unlike Me"

There are no right or wrong answers.   Like Me   Unlike Me

1. I spend a lot of time daydreaming.   ----------   ----------

2. I often wish I were someone else.   ----------   ----------

3. I'm pretty sure of myself.   ----------   ----------

4. I'm easy to like.   ----------   -----------

5. I never worry about anything.   ----------   -----------

APPENDIX C

DATA COLLECTION CHART

Table C.1.

Chart Depicting Treatment, Data Collection, and Testing

Group 1:   8   Card playing older adults play cards with other people   (X1)Treatment
Group 2:   8   Card playing older adults play cards on the computer   (X2)Treatment
Total   16

Symbol: ✸ Denotes the administration of the Coopersmith Self Esteem Inventory and the Life Satisfaction Scale.

Random	Group	Baseline Test	Mid-Treatment Test	Post-Treatment Test	Return To

Baseline Test

Assignment

Week 6

R

1 → ✸ X1 ✸ X1 ✸ ✸

2 → ✸ X2 ✸ X2 ✸ ✸

Week 1   Week 2   Week 3   Week 4   Week 5

Time

92
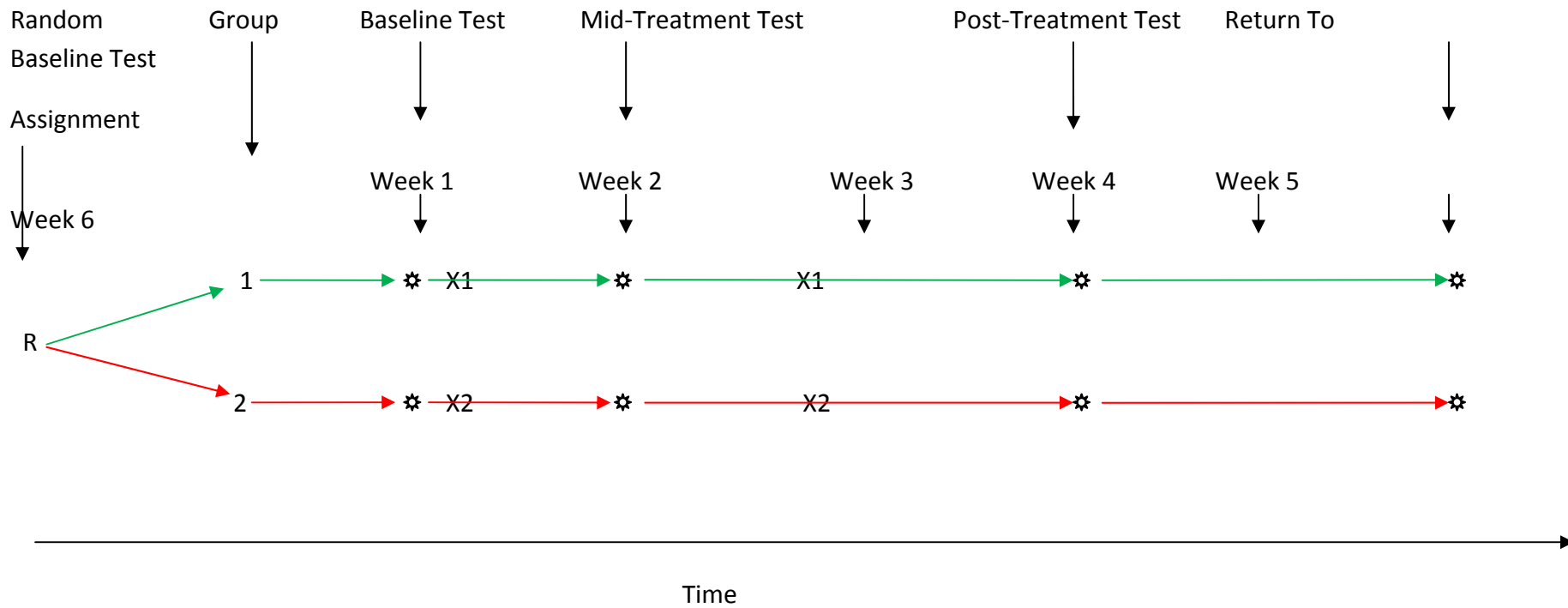
APPENDIX D

EXCEL DEMOGRAPHIC AND TEST SCORE RAW DATA

Table D.1

Excel Demographic Raw Data

Study ID #	group	site	age	race	sex	education	marital	freq-card	ability	prev-comp.	curr-comp.	freq-comp
#-03	2	1	76	1	2	3	2	3	4	0	0	1
#-04	2	1	83	6	1	5	3	2	1	0	0	1
#-05	2	1	87	1	2	2	3	2	2	0	0	1
#-06	2	1	84	1	1	2	3	2	1	0	0	1
#-01	1	1	79	1	1	4	3	6	2	1	1	7
#-02	1	1	85	1	1	1	2	7	3	1	1	6
#-07	1	1	83	1	1	2	3	2	3	1	1	7
#-08	1	1	85	1	1	3	3	7	2	1	1	5
#-001	2	2	65	1	1	4	2	3	1	1	1	6
#-002	2	2	76	1	1	3	1	3	2	1	0	1
#-008	2	2	78	1	1	2	3	1	1	0	0	1
#-009	2	2	76	1	1	1	3	3	3	0	0	1
#-003	1	2	74	1	1	3	4	2	3	1	0	3
#-004	1	2	87	1	1	2	1	6	3	1	0	3
#-005	1	2	79	1	1	1	1	1	1	0	0	1
#-006	1	2	68	1	1	1	4	6	3	0	0	1

Table D.2

Excel Test Score Raw Data

Study ID	test1-LS	test2-LS	test3-LS	test4-LS	test1-SE	test2-SE	test3-SE	test4-SE
#-03	21	18	13	13	80	92	88	92
#-04	32	31	28	32	88	88	96	100
#-05	21	23	26	22	48	56	48	60
#-06	27	29		30	72	84		80
#-01	19	23	19	19	76	88	80	96
#02	21	19	18	19	56	76	76	68
#-07	25	24	26	24	96	96	96	96
#-08	23	27	21	25	76	72	88	80
#-001	32	32	31	31	92	100	100	96
#-002	12	11	9	11	72	68	72	72
#-008	25	26	27	25	40	44	72	44
#-009	27	23	22	25	68	72	36	64
#-003	12	15	14	13	48	52	56	48
#-004	27	29	31	32	100	88	88	100
#-005	24	25	25	23	60	68	68	72
#-006	32	31	32	31	92	96	96	96

APPENDIX E

DEMOGRAPHIC EXCEL RAW DATA KEY

Group Numerical Designation

Computer Group=1 / Face to Face Group=2

Site Numerical Designation

Bell Trace = 1 / Endwright Center = 2

Ethnic Origin

       a. Caucasian (White) = 1

       b. Hispanic/Latino = 2

       c. Native American = 3

       d. African American (Black) =4

       e. Asian American =5

       f. Other (please specify) = 6

Gender Numerical Designation

       a. Female: =1

       b. Male: =2

Educational Level Numerical Designation

       a. Primary and/or Secondary School= 1

       b. Post High School Business, Technical, or Trade School= 2

       c. College (1-4 years)= 3

       d. Graduate Education (5-7 years)= 4

       e. Post Graduate Education (7+ years)= 5

Marital Status

       a. Single =1   b. Married =2

       c. Widowed =3   d. Divorced =4

e. Separated = 5   f. Other (please specify) =6

Frequency of Playing Cards

    a. Never = 1

    b. Once every 3-6 months = 2

    c. Once every 1- 3 months = 3

    d. At least once every month = 4

    e. At least once every 2 weeks = 5

    f. Every week = 6

    g. More than once a week = 7

Self Rated Ability

    a. Poor = 1

    b. Average = 2

    c. Good = 3

    d. Excellent = 4

Frequency of Computer Play

    a. Never = 1

    b. Once every 3-6 months = 2

    c. Once every 1- 3 months = 3

    d. At least once every month = 4

    e. At least once every 2 weeks = 5

    f. Every week = 6

    g. More than once a week = 7

APPENDIX F

DEMOGRAPHIC SUMMARY TABLES

Table F.1

Demographic Summary Table Test Site 1 Bell Trace Senior Living Community

Computer Card Players

Participant Pseudonym	Mrs. A	Mrs. B	Mrs. G	Mrs. H
Age	79	85	83	85
Ethnic origin	Caucasian	Caucasian	Caucasian	Caucasian
Sex	Female	Female	Female	Female
Education Level	Graduate (5-7 yrs.)	Primary or Secondary	Business/Trade	College (1-4 yrs)
Marital Status	Widowed	Married	Widowed	Widowed
Card play frequency	Every week	Every week	Once every 3-6 Months	More than once Per week
Card play ability	Average	Good	Good	Average
Previous computer card play	Yes	Yes	Yes	Yes
Current computer card play	Yes	Yes	Yes	Yes
Computer card play frequency	More than once a week	More than once a week	More than once a week	At least once every two weeks

Table F.2

Demographic Summary Table Test Site: 1 Bell Trace Senior Living Community

Face to Face Card Players

Participant Pseudonym	Mrs. C	Mrs. D	Mr. E	Mrs. F
Age	76	83	87	84
Ethnic origin	Caucasian	Caucasian	Caucasian	Caucasian
Sex	Male	Female	Male	Female
Education Level	College (1-4 yrs.)	Post Graduate Education (7+yrs.)	Post High School Business/Trade	Post High School Business/Trade
Marital Status	Married	Widowed	Widowed	Widowed
Card play frequency	Once every 1-3 months	Once every 3 -6 months	Once every 3-6 Months	Once every 3-6 Months
Card play ability	Excellent	Poor	Average	Poor
Previous computer card play	No	No	No	No
Current computer card play	No	No	No	No
Computer card play frequency	Never	Never	Never	Never

Table F.3

Demographic Summary Table Test Site 2: Area 10 Agency on Aging Endwright Center

Computer Card Players				
Participant Pseudonym	Ms. CC	Ms. DD	Ms. EE	Ms. FF
Age	74	87	79	68
Ethnic origin	Caucasian	Caucasian	Caucasian	Caucasian
Sex	Female	Female	Female	Female
Education Level	College (1-4 yrs.)	Post High School Business/Trade	Primary and Secondary School (8-12)	Primary and Secondary School (8-12)
Marital Status	Divorced	Single	Single	Divorced
Card play frequency	Once every 1-3 months	Every week	Never	Every week
Card play ability	Good	Good	Poor	Good
Previous computer card play	Yes	Yes	No	No
Current computer card play	No	No	No	No
Computer card play frequency	Once every 1-3 months	Once every 1-3 months	Never	No

Table F.4

Demographic Summary Table Test Site 2: Area 10 Agency on Aging Endwright Center

Face to Face Card Players

Participant Pseudonym	Mrs. AA	Mrs. BB	Mr. HH	Mrs. II
Age	65	76	78	76
Ethnic origin	Caucasian	Caucasian	Caucasian	Caucasian
Sex	Female	Female	Female	Female
Education Level	Graduate Education (5-7yrs.)	College (4 yrs.)	Post High School Business/Trade	Primary and secondary
Marital Status	Married	Single	Widowed	Widowed
Card play frequency	Once every 1-3 months	Once every 1-3 months	Never	Once every 1-3 Months
Card play ability	Poor	Average	Poor	Good
Previous computer card play	Yes	Yes	No	No
Current computer card play	Yes	No	No	No
Computer card play frequency	Every Week	Never	Never	Never