Effects of a Control-Relevant Therapeutic Recreation Intervention on Older Adults' Perceived Leisure Competence and Control

by

Magda Zmitrowicz

Submitted to
The Faculty of Graduate Studies
in Partial Fulfillment
of the Requirements for the Degree of
Master of Science

Faculty of Physical Education and Recreation Studies
University of Manitoba
Winnipeg, Manitoba

March, 2001

National Library of Canada
Acquisitions and Bibliographic Services
395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale du Canada
Acquisitions et services bibliographiques
395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-62878-7

Canada

THE UNIVERSITY OF MANITOBA

FACULTY OF GRADUATE STUDIES

*****

COPYRIGHT PERMISSION PAGE

Effects of a Control-Relevant Therapeutic Recreation Intervention on Older Adults' Perceived Leisure Competence and Control

BY

Magda Zmitrowicz

A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of Manitoba in partial fulfillment of the requirements of the degree

of

Master of Science

MAGDA ZMITROWICZ © 2001

Permission has been granted to the Library of The University of Manitoba to lend or sell copies of this thesis/practicum, to the National Library of Canada to microfilm this thesis/practicum and to lend or sell copies of the film, and to Dissertations Abstracts International to publish an abstract of this thesis/practicum.

The author reserves other publication rights, and neither this thesis/practicum nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

Acknowledgements

I would like to express my sincere appreciation to many people who have contributed to this thesis.

Special thanks to my advisor, Dr. Jennifer Mactavish, for giving me the opportunity to complete my degree, for her expertise, guidance, and never settling for less than excellence. Thanks to Dr. Judy Chipperfield for helping me achieve "conceptual clarity". I am grateful to Dr. Dan Bailis for helping me to interpret the research results. Thank you to my external advisor, Dr. John Bond, for his suggestions and editorial comments.

Special appreciation goes to the Concordia Hospital patients who, despite their physical and emotional stress, were willing to participate in this project. I am thankful to Concordia Hospital, especially to Diane Wieler who made my research possible.

Thanks to fellow grad students, Chris and Sandy for their support and friendship throughout this process. I am also grateful to Maureen Rodrigue for her kindness and understanding.

A special gratitude goes to my family. I would not be able to complete this task without their love and support. Thanks to my daughter Anna, for her encouragement and understanding that Mom was not always there for her during this time. Most importantly, to my husband Gustaw who has lived through the "master's years ", supporting and encouraging me along the way. For his optimism and willingness to hear about the high points and the lows, for being able to put "things" in perspective, I am deeply grateful.

Table of Contents

Acknowledgements.....i

List of Tables.....v

List of Figures.....vi

Abstract.....vi

CHAPTER ONE.....1

INTRODUCTION.....1

Problem Statement.....6

Hypotheses.....6

Definitions.....7

Elderly.....7

Elderly with Moderate Impairments.....7

Concordia Hospital Day Centre.....7

Conceptual Definitions.....8

Perceived Competence.....8

Locus of Control.....8

Significance of the Study.....8

Delimitations.....9

Limitations.....9

CHAPTER TWO.....11

REVIEW OF RELATED LITERATURE.....11

Research on Activity Participation and Psychological Domain.....11

Research on Locus of Control, Health and Aging.....14

Psychological Constructs.....19

Perceived Competence.....19

Locus of Control 20
Attribution Theory 23
Older Adults, Control Relevant-Interventions, and the Psychological Domain.....26
CHAPTER THREE.....32
METHOD.....32
Participants Selection and Recruitment Process 32
Research Design and Variables 34
Therapeutic Recreation Program in the Hospital Day Centre.....35
Enhanced Control and Responsibility Group 37
Instrumentation 39
The Perceived Leisure Competence Scale 41
The Perceived Leisure Control Scale 41
Generalizability Measure.....42
Post-Intervention Interviews.....43
Data Collection Procedure.....43
Pilot Study.....43
Main Investigation Data Collection.....44
Data Analysis 45
CHAPTER FOUR.....48
RESULTS.....48
Socio-Demographic Characteristics.....48
Activity Selections.....50
Perceived Leisure Competence and Control -Descriptive Data 54
Results of Hypotheses Testing 56
Participants' Perspectives on the Program: Key Themes.....61

CHAPTER FIVE.....64
DISCUSSION.....64
Links to Existing Literature.....65
Possible Limitations and Alternative Explanations.....67
Conclusion and Future Recommendations.....71
References.....73
Appendices.....81
Appendix A.....82
Client's Consent to Participate.....82
Information About the Project for Clients.....82
Appendix B.....84
Letter to the Hospital Executive Director.....84
Letter to the Therapy Services Manager.....84
Appendix C.....85
Description of the Study and Consent Form.....85
Appendix D.....88
Perceived Leisure Competence Scale.....88
Appendix E.....92
Perceived Leisure Control Scale.....92
Appendix F.....96
Generalizability Measure.....96
Appendix G.....98
Recreation Activities Chosen by the Majority of the Experimental Group Participants.....98
Appendix H.....100
List of Activities for the Control Group.....100

List of Tables

Table 1: Day Centre Daily Activity Schedule 36

Table 2: Daily Recreation Activity Schedule for the Enhanced Control and Responsibility Experimental Group 39

Table 3: Age, Education, and Duration of Attending the Day Centre Program for the Experimental and Control Group.....49

Table 4: The Health Conditions of the Experimental and Control Group Participants..... 50

Table 5: Activities Selected by the Experimental Group during the Therapeutic Recreation Intervention 52

Table 6: Experimental Group Members' Activity Participation in Group versus Individual Activities.....53

Table 7: Pre and Post Test Means, Standard Deviations and Range of Scores for the Dependant Variables and the Generalizability Measure.....54

Table 8: Summary of Repeated Measures Analysis of Variance ANOVA for Perceived Leisure Competence and Control 57

Table 9: Repeated Measures Analysis of Variance ANOVA for the Generalizability Measure.....60

List of Figures

1. Interaction Effect for Control/Experimental Conditions for Perceived Leisure Competence.....59

2. Interaction Effect for Control/Experimental Conditions for Perceived Leisure Control.....59

Abstract

The purpose of this study was to determine the effect of control-relevant therapeutic recreation intervention on perceived leisure competence and control among older adults attending a hospital day centre program.

Gerontology literature supports the contention that control-enhancing interventions affect physical and psychological well-being, and contribute to increased life satisfaction and successful aging of older individuals. This investigation was a pioneer attempt to assess the relationship between control and psychological variables in older adults living independently and attending a community based hospital day centre.

Thirty-four older adults, age 55 and over, who attended the Concordia Hospital Day Centre in Summer of 1999 participated in this investigation. The participants were randomly assigned to one of two conditions (i.e. enhanced control and responsibility group and no personal control group). Those assigned to the experimental group participated in a seven week control enhancing recreation program designed to increase perceptions of leisure competence and control. Pre- and post- intervention data collection interviews were conducted with each participant.

The results from this research indicated that control relevant therapeutic recreation intervention may be a vehicle by which older individuals with decreased mental and/or physical functioning can enhance leisure competence and control.

CHAPTER ONE

Introduction

The effect of increased opportunities to exert personal control, choice and decision making on psychological well-being in later life has been a concept of interest for many researchers over the past twenty years (Langer & Rodin, 1976; Mercer & Kane, 1979; Rodin & Langer, 1977; Savell, 1991; Shary & Iso-Ahola, 1989; Slivinske & Fitch, 1987). Researchers have attempted to understand how control relevant intervention operates and to identify the psychological constructs most likely to be affected. Among the most important changes obtained after providing opportunities for choice and decision making were increases in self-perceptions of competence and control. Unfortunately, previous research has primarily focused on the institutionalized elderly. Information regarding community residents and the effect of control-enhancing therapeutic recreation interventions remains limited. This study was designed to test the effectiveness of control-relevant intervention (choice and decision making) on perceptions of leisure competence and control among older adults living in the community and attending a hospital day centre program.

Environmental and personal factors associated with growing old may diminish opportunities for control in later life (Rodin & Timko, 1992). The elderly are exposed to a variety of personal and social conditions that challenge perceptions of personal control. These conditions may include retirement, reduced income and professional status, loss of loved ones, and decreased physical and/or mental functioning (Eustis, Greenberg, & Patten, 1984).

Older community residents, who were the focus of the present study, are exposed to a variety of challenging conditions associated with the aging process. Health-related changes such as stroke, vision and hearing impairments, arthritis, amputations, heart disease, and decreased mental and/or physical functioning

make them particularly "frail" and vulnerable. According to Rodin (1980, 1986, 1987) and Schulz (1980) older persons who can be categorized as "frail" because of health related problems are at greater risk of diminished feelings of control and lowered self-worth than older individuals in good physical and mental health. Studies have shown that the poorer the health of the older individual, the less likely she or he perceives herself/himself as being competent and in control (Teitelman & Priddy, 1988). These findings apply to nursing home residents (Arling, Harkins, & Capitman, 1984) as well as elderly individuals living in the community (Hunter, Linn, Harris, & Pratt, 1980).

The consequences of a lack of perceived control over one's environment have been broadly investigated (Abramson, Seligman, & Teasdale, 1978; Iso-Ahola, 1980a; MacNeil & Teague, 1987; Seligman, 1975). Researchers have found that lower perceived control is associated with the state of helplessness, loss of zest for life, and depression in older adults (Abramson, Seligman, & Teasdale, 1978; Seligman, 1975). Conversely, higher perceived control is a major determinant of positive cognitive, psychological, and physical outcomes in later life, (Brandtstadter & Baltes-Gotz, 1990; Rowe & Kahn, 1987; Schulz, 1976) and is an indicator of successful aging (Ryff, 1989).

Attribution theory provides a theoretical framework that demonstrates the link between perceived competence, locus of control, and successful aging. Attribution theory is based on the premise that people have an inherent need to understand events and activities in their environment and intend to engage in meaningful behaviour. The theory attempts to identify the perceived causes of this meaningful behaviour. An individual can attribute the causes of her/his actions to one of four causal attributions: (a) ability, (b) effort, (c) task difficulty, or (d) luck (Weiner, 1980). These attributions can be classified into three dimensions: (a) locus of causality, (b) stability, and (c) controllability (Weiner,

1986). Locus of causality pertains to causes of behaviour (ability, effort, task difficulty, and luck); stability refers to causes of behaviour based on consistency over time, and; controllability is concerned with the degree of perceived control an individual has over the cause (Weiner, 1986). The theory further suggests that the primary reason individuals attempt to identify causes of behaviour is to exercise control over the environment (MacNeil & Teague, 1987). People feel most in control when behaviour (only if the behaviour is successful) can be attributed to internal factors, which leads to feelings of increased competence, perceived control, and self-worth. People can feel a lack of control when they perceive that external factors affect their actions, which may result in feelings of incompetence, helplessness, and lower self-esteem (Iso-Ahola, 1980; Weiner, 1980).

Studies by Langer and Rodin (1976), Rodin and Langer (1977), and Shary and Iso-Ahola (1989) support the belief that attributions about the causality of behaviour influence the aging process. These authors found evidence that increased opportunities for choice and decision making enhanced perceived control over the environment, and affected people's perceptions of competence, locus of control, and self-worth. The above-mentioned studies are significant since perceptions of enhanced competence and control were facilitated through the provision of opportunities for choice within a recreation context.

Research indicates that recreation participation is significantly related to enhanced psychological well-being and has positive effects on life satisfaction and the quality of older adults' lives (DeCarlo, 1974; Lawton, 1994; Menec & Chipperfield, 1997; Peppers, 1976; Riddick, 1993; Russel, 1990). Russell (1990) reported that satisfaction with recreation is the only significant, direct predictor of quality of life in old age. The author stated that the value of recreation is determined more by the participant's satisfaction than by frequency of

participation. Among the most prominent psychological benefits of activity participation are enhanced feelings of mastery and competence, increased internal locus of control and personal worth, and reduced level of anxiety and depression (Leitner & Leitner, 1996; Perri & Templer, 1984). In a recent study, Menec and Chipperfield (1997) examined perceived control and well-being among older adults who participated in exercise and nonphysical leisure activities, such as attending cultural events, reading, involvement in volunteer organizations on perceived control and well-being in older adults. The results indicated that an internal locus of control was positively related to exercise and participation in non-physical leisure activities. Furthermore, leisure activity participation was associated with better perceived health, and greater life satisfaction. Emerging from this research is the importance of recreation participation on the psychological well-being and quality of life enjoyed by elderly individuals. Purcel and Keller (1989) also indicated that in order to help older adults achieve maximum benefits, therapeutic recreation specialists should increase participants' feelings of control by involving them in planning, implementing, and evaluating their recreation activities.

Research on the effects of choice and decision making in the therapeutic recreation domain remains limited. Most of the studies that implemented control-relevant therapeutic recreation interventions to enhance psychological well-being in older adults were conducted in long term care facilities. A study by Langer and Rodin (1976) investigated the effects of enhanced personal responsibility and choice on a group of nursing home residents. Residents in the experimental group were given the freedom to make choices and to take responsibility of caring for a plant rather than having decisions made for them and the plant taken care of by the staff. The results of this study showed a significant improvement in alertness, active participation, and a general sense of

well-being in the experimental group versus the control group. Following up 18 months later, Rodin and Langer (1977) found that the residents in the experimental group continued to be more active, more sociable, and showed better health and activity patterns. They also had lower mortality rates than the non-treatment group.

Mercer and Kane (1979), in a similar study, found that individuals who experienced control-enhancing conditions for five weeks were less hopeless, more active, and functioning at higher levels than were those who did not have their level of control altered. In another study, Shary and Iso-Ahola (1989) also provided strong support for the hypothesis that enhanced personal control, choice and responsibility significantly increased perceptions of competence and self-esteem among a group of nursing home residents.

In the aforementioned studies, investigators assessed the effects of enhanced personal control on the well-being of the institutionalized elderly. Research pertaining to older individuals who are more independent and live in the community is limited. Only one study, by Slivinske and Fitch (1987), attempted to assess the effect of control enhancing interventions on the well-being of elderly individuals living in retirement communities. The results revealed that individuals who received the control-enhancing intervention experienced significantly greater improvements in perceived control and well-being than members of the control group who were not involved in the intervention. The authors suggested however, that the selected sample might not have been representative of older people in general because of the relatively high socioeconomic status of the participants. The researchers indicated that other samples of older individuals should be studied to determine how well the results generalize to other populations of elderly individuals in a variety of community settings.

In summary, gerontology literature suggests the potential value of control-enhancing therapeutic recreation interventions for improving physical and psychological well-being in later life. A positive relationship was noted between activity participation and quality of life among older individuals. Therapeutic recreation interventions that allow older individuals to make decisions, be responsible, and feel "in control" were found significant in enhancing psychological well-being and quality of life. Unfortunately, most of the research in this area has been implemented in long-term care facilities. Consequently, research that extends current knowledge of nursing home residents to older adults living independently in the community is needed. Thus, the present investigation was an attempt to extend knowledge and understanding of this issue.

Problem Statement

The purpose of this study was to determine the effects of a control-relevant therapeutic recreation intervention on perceived leisure competence and control among community residing elderly individuals who attended a hospital day centre program.

Hypotheses

It was hypothesized that:

1) Participants in the intervention group would show an increase, over time, in their perceptions of leisure competence, whereas control participants would not.
2) Perceptions of leisure control would increase over time, among participants who were randomly assigned to receive the intervention, but not among their counterparts who would maintain normal activities.

Definitions

Elderly. The term "elderly" as it was used in the present study is based on the chronological age of the individual. In previous research and in many recreation programs age 55 is typically the minimum age at which a person is considered "elderly" (Leiter & Leiter, 1995). Thus, age 55 was considered the minimum age for participation in this study.

Elderly Individuals with Moderate Impairments. According to the definition used at Concordia Hospital, the term elderly individuals with moderate impairments refers to older individuals with chronic physical and/or mental impairments requiring nursing services and ongoing medical monitoring. Chronic conditions such as senile dementia, depression, emotional disturbances, cerebrovascular disorders, vision impairment, arthritis, diabetes, heart disease, and pulmonary disease may create a gradual deterioration in health and physical and/or mental functioning of these individuals. These chronic conditions may restrict the ability of older individuals to participate in recreation activities involving a great deal of movement or strenuous exercise, but they do not necessarily result in substantial mobility impairments (e.g., wheelchair) (Leiter & Leiter, 1996).

Concordia Hospital Day Centre. The Day Centre at Concordia Hospital is a community-based program for assisting older adults with functional impairments. Programs in the centre are designed based on the participants' individualized care plans. The day centre program provides health, social, and related support services in a protective setting during any part of a day, but does not provide 24-hour care. The general philosophy of the Centre is to increase and/or maintain the maximum degree of physical, psychological, and social

independence. The Day Centre creates a link in the continuity of care for elderly individuals between home care services and nursing home placement in order to delay or prevent institutionalization (Neustadt, 1985).

Conceptual Definitions

Perceived Competence. The perception an individual holds about her/his ability to effectively interact with the environment and by this action, controls what happens within the course of an activity (Iso-Ahola, 1980).

Locus of Control. The degree to which an individual perceives having control over the environment (Rotter, 1966). According to Rotter (1975), there are two types of control, internal and external. People are said to have an internal locus of control when they believe reinforcements are contingent upon their own behaviour or stable personal characteristics. External locus of control results when people believe that reinforcements are due to luck, fate, or powerful others outside of their control.

Significance of the Study

Research regarding the effects of choice and decision making on psychological well-being among older individuals living independently in the community and attending community-based care settings is almost non-existent. The majority of studies have focused on institutionalized individuals, specifically, those in long-term care facilities (Teitelman & Priddy, 1988; Savell, 1991). The question is, can the effect of control-enhancing therapeutic recreation intervention be generalized from institutionalized older adults to older adults living independently in the community, especially to those who are experiencing some degree of physical and/or mental impairment? Thus, this study was an attempt to extend

knowledge about the impact of control-relevant therapeutic recreation interventions on the perceived leisure competence and control of older individuals living in the community. It is also important for therapeutic recreation specialists and other health care professionals working with this population to understand the significance of choice and decision making on psychological well-being of older adults. A higher perception of control and competence transferred to every day life may help an older person with mental and/or physical impairment to overcome some of the obstacles associated with deteriorating health and, as a result, enhance the individual's quality of life.

Delimitations

Participation in this investigation was restricted to older individuals who, according to medical determinations had impaired mental and/or physical functioning. Participants were referred to the day centre by home care coordinators, physicians and other health care professionals, health care facilities, the participants themselves and/or their families. Participants also were referred to the day centre program from the hospital wards as part of the hospital discharge planning process. The participants were further delimited to those who volunteered to participate, were able to give verbal responses to orally directed questions, and were able to attend a hospital day centre program regularly.

Limitations

The participants in this study were individuals who participated in the hospital day centre program prior to the beginning of the intervention. The research was conducted in a real life setting and each participant had attended the program for different durations. Thus, the field-based nature of the present

study, and the need to draw participants from those who had previously attended the program were factors that may have increased the pre-intervention scores on perceived leisure competence and control and as such diminish the power of the intervention.

CHAPTER TWO

Review of Related Literature

Building on the issues briefly presented in the introduction, the following chapter further develops the rationale for the study. Specifically, the relationship between choice and decision making, perceptions of control and competence, and successful aging are further developed. In an effort to enhance understanding of these relationships, four major topics are examined. First to be presented is research pertaining to the role of recreation as it relates to psychological well-being and successful aging. The second section relates personal control to health and successful aging. The third segment focuses on the psychological constructs of perceived competence and locus of control. This section also examines the connection between these variables and how these constructs are theoretically linked within attribution theory of aging. The fourth portion of this chapter analyses the effects of control-relevant interventions on psychological well-being among older adults with moderate mental and/or physical impairment.

Research on Activity Participation and the Psychological Domain

The effect of recreation participation on psychological well-being in later life has been the subject of systematic investigation by a number of researchers (e.g., Lawton, 1994; Mactavish & Searle, 1992; Perri & Templer, 1984; and Toole & Abourezk, 1989). The results of these studies indicate a positive relationship between recreation and the psychological well-being of older adults.

Perri and Templer (1989) examined the effects of aerobic exercise on psychological well-being of individuals age 60 and over living in the community. The subjects in the experimental group, who participated in aerobic exercise, demonstrated significantly lower depression, increased internal locus

of control, reduced anxiety, improved self-concept, and improved short-term memory. In a similar study, Toole and Abourezk (1989) also noted that aerobic activity had a positive effect on the mental functioning of older adults. In this study the experimental group participants experienced improved memory skills and increased information processing speed, which were significantly greater than those in the control group.

In another study, Lawton (1994) investigated older adults and the affective behavioral domain. Analysis revealed that involvement in affective activities (e.g., participating in spectator sports, visiting out of town, vacationing) was positively correlated with less hostility in older adults. The results also indicated that higher levels of activity involvement were positively associated with lower levels of depression, anxiety, and shyness.

Mactavish and Searle (1992) examined changes in perceived competence, locus of control, and self-esteem among older adults with a mental disability who lived in the community. The participants were involved in a five-week physical activity program. The results indicated that the intervention had a significant and positive effect on the experimental group's attributions of perceived competence, locus of control, and self-esteem. The authors suggested that activity participation might be a vehicle by which individuals with a mental disability can exercise personal control. To achieve this effect, however, programming must be based on the choices and individual preferences of the participants.

Within the literature, life satisfaction is often conceptually linked to psychological well-being (Leiter & Leiter, 1996). Iso-Ahola (1980) contends that psychologically "healthy" individuals are those who are satisfied with their lives. Research conducted with elderly individuals indicates that active leisure participation contributes to life satisfaction, and subsequently, to successful

aging (DeCarlo, 1974; Peppers, 1976; Riddick 1993; Russel, 1990). Russel (1990) states that satisfaction with recreation is the only significant, direct predictor of quality of life in old age. Variables such as health, marital status, age, and income were found to have little impact on quality of life.

Almost forty-years ago, Lucas (1962) stated that recreation is one of the most effective tools for helping older people live fuller, more satisfying and productive lives. The findings of DeCarlo (1974) have confirmed a positive relationship between active leisure involvement and quality of life in old age. The results also suggested that participation in all three domains (affective, motor, and cognitive) positively influences the aging process. Furthermore, DeCarlo indicated that people who participate regularly in recreation, experience more successful aging than non-participants.

A study conducted by Peppers (1976) supports active leisure participation and its positive influence on life satisfaction. Studying a sample of retirees the author found that individuals who had access to their preferred activities reported higher levels of life satisfaction. It also was noted that participation in favoured activities was more important in developing life satisfaction than frequency of engagements. Recent investigations of activity participation and life satisfaction further support the role of recreation as a means of assisting older adults to achieve successful aging. Russel (1990) also verifies that the value of recreation activity is determined more by its satisfaction to the participant than by frequency of participation. In another study Riddick (1993) found that for older females, involvement in recreation activities is the most important factor in determining life satisfaction. Social interactions, participation in community and volunteer organizations, and solitary activities were found to be correlated, most highly, with older women's life satisfaction.

An investigation conducted by Menec and Chipperfield (1997) also confirmed the positive relationship between leisure activities and psychological well-being in older adults. Participation in exercise and non-physical leisure activities were found to be positively related to better perceived health and greater life satisfaction. According to Purcell and Keller (1989) the feeling of being in control over the environment is a significant factor, which helps older adults achieve life satisfaction in leisure and recreation. Thus, the authors contend that participants should have access to their preferred activities and play a role in planning, implementing, and evaluating activities.

In summary, the preceding review of literature clearly indicates a positive relationship between active participation in recreation and the psychological well-being of older adults. The findings show that individuals who participate in recreation have enhanced psychological well-being and quality of life. Furthermore, the participation in preferred and freely chosen activities was found to be more important in the development of internal locus of control and in greater life satisfaction of older individuals than frequency of engagements and participation in any particular type of activity.

Research on Locus of Control, Health and Aging

According to Heckhausen and Schulz (1995) control is one of the few constructs that have been investigated in relation to individuals of all ages, from early childhood to old age. For almost three decades researchers interested in aging have studied the connection between control and health in order to explain how perceptions of control affect people's mental and physical functioning as they age.

In studies conducted in the 1970's there was little evidence that generalized control beliefs change in later life (Schulz, Heckhausen & Locher, 1991). More

recent studies, however, demonstrate some declines in generalized perceptions of control associated with advancing age and indicate that factors such as mental or/and physical impairment may contribute to decreased control in older adults (Gatz & Karel, 1993; Waller & Bates, 1991; Wolinsky & Stump, 1996). Teitelman and Priddy (1988) suggest that the strength of the relationship between a sense of control and physical/mental functioning increases in later life. The elderly, particularly those who are frail, are more vulnerable and may be unable to control a variety of personal and social conditions that can affect their emotional and physical health. Perception of control over one's environment is a major determinant of positive psychological and physical outcomes in later life (Brandtstadter & Baltes-Gotz, 1990; Rowe and Kahn, 1987).

According to Rowe and Kahn (1987) individuals who are able to minimize negative affects related to aging experience "successful aging", while those who are not, undergo "usual aging". People who experience "usual aging" tend to withdraw socially, are less active, more dependent, and lose control over their environment. MacNeil and Teague (1987) assert that personal perceptions and individual attitudes are very important in the aging process. The extent to which an individual perceives herself/himself to be responsible for events in life, affects the person's psychological well-being and may help to explain why some people, despite experiencing significant reductions in mental and/or physical functioning, undergo successful aging while others undergo usual aging.

Abramson, Seligman, and Teasdale (1978) and Seligman (1975) state that individuals who do not manipulate the environment effectively and who do not feel themselves in control experience a state of learned helplessness. According to Seligman (1975) learned helplessness occurs when people, exposed to uncontrollable events believe, that they can do nothing to change the outcome of those events, and develop the inappropriate expectation that outcomes of future

events also will be beyond their control. The condition of learned helplessness may result in diminished motivation to initiate actions or respond to the environment, lower cognitive functioning, apathy and withdrawal. Many helpless individuals experience loss of perceived competence and lower self-esteem (Abramson, Seligman & Teasdale, 1978). Helplessness, and its resulting negative effects, can be considered a prime threat to quality of life and well-being in nursing home residents, as well as in individuals receiving support services in the community (Teitelman & Priddy, 1988).

According to Rodin (1986) a sense of purpose and control over one's life is integral to the health of older adults. Research suggests that elderly individuals with an internal locus of control are more active, alert, and have a lower probability of death than those with external beliefs (Brothen & Detzner, 1983; Langer & Rodin, 1976; Waller & Bates, 1992). Studies also demonstrate that by giving older adults more control, their psychological well-being may be enhanced and benefits, similar to those experienced by individuals with an internal locus of control, can be achieved (Langer, Rodin, Beck, Weinman, & Spitzer, 1979; Schulz, 1976; Ryff, 1989).

Increasingly, researchers are focusing on the potentially protective role of positive emotional states and coping styles in the development of illness. Optimism and perceived control appear to be the most significant in the process of faster and better recoveries from certain diseases (Scheier & Carver, 1985; Bandura, 1986). Perceived control also appears to be a factor that promotes positive adjustment to illness and/or disability (Taylor, Helgeson, Reed, & Skokan, 1991). People, who believe that they can control the course and the day-to-day symptoms of their illness, appear better able to adjust to their disorders (Affleck, Tennen, Pfeiffer, & Fifield, 1987).

The effect of perceived control and functional status on health and mortality among young-old and old-old adults was examined by Menec and Chipperfield (1997b). The results indicated the association between a greater sense of control and lower rates of hospitalization and mortality in old-old individuals with little impairment. The study also demonstrated that perceived control was associated with perceived health among old-old individuals with some functional impairment, but not among those with little impairment.

Chipperfield and Greenslade (1999) also investigated the association between perceived control and patterns of health service usage among older adults with arthritis. Two hundred and forty older adults, 66 to 98 years of age, participated in this study. The demographic data, (age, education, living arrangements), as well as information regarding the presence or absence of specified health conditions, were provided by participants during the interview. Levenson's Locus of Control Scale and domain specific questions assessing the subjects' personal sense of control were used. Health service utilization data were accessed through the health registry maintained by Manitoba Health. The results indicated that among older adults who were restricted, those who perceived low levels of control visited their physician more often, had more laboratory tests, and stayed longer in hospital than individuals with greater perceptions of control. Brown and Grannick (1983), in a related study, supported the previous findings. Older adults with an internal locus of control visited the doctor less frequently than did the older individuals with an external locus of control.

Extending the previous findings related to perceived control, health, and aging, a longitudinal study by Menec and Chipperfield (1997a) indicates a positive association between high internal locus of control, participation in active and nonactive leisure activities, and better perceived health and life satisfaction in older individuals. Older adults, 713 women and 545 men, participated twice

(in 1983 and in 1990) in this study. Five demographic variables were examined: age, gender, years of education, experienced health problems, and leisure activity involvement. The study also included six endogenous variables (variables that are affected by and affect other variables) such as locus of control, exercise behavior, activity level, perceived health, health problems, and life satisfaction. The variables were assessed using selected scales and the relationship between variables was analyzed. The results showed that an internal locus of control was positively related to exercising and participating in leisure activities. Additionally, exercising was associated with better perceived health and life satisfaction.

In summary, evidence suggests that self-perceptions about the ability to control one's social and physical environment are crucial to the maintenance of physical and psychological well-being. Loss of control is associated with a state of helplessness that may be linked to decreased perceptions of competence and lower self-esteem. The "frail " elderly may be most vulnerable to the negative health effects of lower levels of perceived control. The ability to successfully manipulate important aspects of the environment has been found to be associated with improved health and well-being. Individuals who are able to minimize these negative effects experience "successful" aging while those who do not undergo "usual" aging. Research indicates a positive relationship between an internal locus of control and successful aging. In addition, emerging from this chapter is an indication of the positive effect of recreation and its potential utility in facilitating internal locus of control among older individuals.

Psychological Constructs

In the following section the importance of perceived competence and locus of control on successful aging and a theoretical link between these constructs and attribution theory will be presented.

Perceived Competence. Perceived competence is the perception an individual holds about her/his ability to effectively interact with the environment, and by this action, control what happens within the course of an activity (Iso-Ahola, 1980). One of the first theorists who analyzed the motives behind human behavior was Robert White (1958). White describes self-perceptions of competence as motives that drive people to engage in mastery attempts that affect the environment. In other words, the desire for competence is the force that motivates behavior. According to White, learning and performance will be enhanced by increasing the frequency and persistence of mastery attempts to facilitate effective control over the environment.

Harter (1978), based on White's assumptions, proposed an extended model of competence motivation. In this model, Harter suggests that four important elements influence motivation and, therefore, increase mastery behavior: (a) perceived competence, which refers to self-evaluations in four specific domains of competence (cognitive, social, physical and general): (b) perceived control, which represents an understanding of the factors responsible for success or failure: (c) motivational orientation describes an intrinsic or extrinsic viewpoint: (d) affective outcomes refer to a continuum from enjoyment to anxiety. Furthermore, Harter's theory of competence motivation suggests that repeated failure in mastery attempts causes a negative affect. Thus, repeated failure at mastery in an achievement domain will lead to lower perceptions of competence, while successful mastery attempts facilitate feelings of competence.

Perception of competence appears to play a particularly crucial role in influencing future participation behavior. According to Harter's theory (1978) an individual will probably choose to participate in recreation programs in which she or he feels competent, while avoiding those that are perceived to be beyond her or his ability. Additionally, voluntary participation will stimulate successful mastery attempts, facilitate feelings of competence, and increase future participation.

Research on the perceived competence of older adults remains limited. Existing knowledge indicates, however, that perceived competence is an important indicator of psychological well-being (Bandura 1982; Iso-Ahola, 1980; Shary & Iso-Ahola, 1989). According to Bandura (1982), people evaluate their personal competence and effectiveness from their perceived ability to successfully perform behaviors intended to reach expected outcomes in the environment. A significant increase in perceived competence is a factor important to the enhancement of one's self-esteem, with self-esteem being a good indicator of psychological well-being (Iso-Ahola, 1980).

Locus of Control. Locus of control has been defined as the degree to which an individual perceives having control over the environment (Rotter, 1966). There are two types of control, internal and external. People are said to have an internal locus of control when they believe reinforcements are contingent upon their behavior or stable personal characteristics. External locus of control results when people believe that reinforcement is due to luck, fate, or powerful others who are beyond their control (Iso-Ahola, 1980; Weiner, 1980; Witt & Ellis, 1987).

Locus of control is acquired over time through learning experiences and is a comparatively stable element of personality (Rotter, 1966). Changes in locus of control, however, can be brought about by introducing new experiences, that

alter previous patterns of success and failure (Phares, 1976). Thus, the potential exists for influencing a person's locus of control.

Bensink, Godbey, Marshall, and Yarandi (1992) examined the effect of progressive relaxation on locus of control and self-esteem among a group of institutionalized elderly. Two intervention groups met for 30 minutes, twice a week for 6 weeks of progressive relaxation. Two control groups met for the same number of sessions over the same period of time to participate in a social group activity that had been chosen by the group prior to each session. The results showed that perceived locus of control in both groups continued to be externally oriented by the end of the 6-week intervention; however, locus of control in both groups had moved toward an internal orientation. It could be concluded that more than 6 weeks of intervention may be required to change locus of control.

It has been documented in the gerontological literature that elderly individuals with internal locus of control are more active, alert, have higher self-esteem, and increased life satisfaction (Fawcett, 1980; Langer & Rodin, 1986; Waller & Bates, 1992). Elderly people with external locus of control reported significantly poorer general health and lower self-esteem than internally oriented older people (Brown, 1983; Hunter, 1980). Therefore, emerging from locus of control research is the significance of internal and external perceptions of reinforcement on factors such as competence, self-worth, helplessness and depression (Bensink, Godbey, Marshall, & Yarandi, 1992; Harter, 1978; Iso-Ahola 1980; Molinari & Mederehe, 1984). Studies also have demonstrated that by providing older adults with greater control, positive changes in psychological well-being can be fostered (Langer, Rodin, Beck, Weinman, & Spitzer, 1979; Schulz, 1976). Thus, emerging from this research is the importance of providing older individuals with the opportunities for choice and decision making.

The literature offers evidence that leisure and recreation may be areas where older adults can exercise control over the environment (Iso-Ahola, 1980; Mactavish & Searle, 1992; Savell, 1991; Shary & Iso-Ahola, 1989). Within a recreation context, individuals may exercise control by, for example, deciding whether or not to participate in an activity or by selecting a particular program from among meaningful alternatives (Savell, 1991).

Research with respect to older individuals' perceptions of control within a recreation context is not extensive. Recognizing the significance of choice and decision making as essential means of affecting perceptions of control, the development of the Perceived Leisure Control Scale by Witt and Ellis (1987), was an important step toward understanding the relationship between recreation participation and locus of control among older individuals. The development of the Perceived Leisure Control Scale (Witt & Ellis, 1987) helped to resolve a number of concerns, which restricted research in leisure and recreation. First, the development of the scale increased a number of suitable instruments that assess perception of control in leisure domain. Second, a scale was designed and tested for use with individuals beyond childhood. Third, the instrument provided the opportunity to quantify the results of therapeutic intervention and to compare the effectiveness of different treatments.

In summary, positive perceptions of competence and an internal locus of control have been associated with improved psychological well-being in later life. Conversely, low perceptions of competence and external perceptions of reinforcement may induce helplessness, depression, and other psychological disorders, which can subsequently affect the successful aging process. Furthermore, positive perceptions of competence and internal locus of control can be facilitated within a recreation context through the provision of opportunities for choice and decision making.

Attribution Theory

To establish the association between perceived competence, locus of control and successful aging, a framework based on attribution theory will be used. The following section describes this framework and the link between competence and control, older adults, and successful aging.

Attribution theory is concerned with perceptions of causality, or the perceived reasons that events occur. The theory helps to understand how people's inferences about causality may affect their perceptions of competence and control, and subsequently their self-esteem and psychological well-being (Iso-Ahola, 1980; Savell, 1991). Attribution theorists focus on the conditions under which causes of behavior are ascribed to internal (personality) or external (situational) factors.

Heider (1958) was the first theorist who proposed a distinction between personal and situational causality and made the assumption that people are inclined toward causal analysis of their behavior. Thus, it is the individual's perception that dictates whether causation is attributed to either internal or external causes. Based on Heider's analysis, causes for success or failure can be attributed to one of four causal factors (a) ability, (b) effort, (c) task difficulty, and (d) luck. In more recent literature, perceived causes of success or failure (ability, effort, task difficulty, and luck) have been classified into three dimensions: (a) locus of causality, (b) stability, and (c) controllability (Weiner, 1986).

The locus of causality dimension refers to whether the cause of an outcome is perceived as being internal (personal) or external (environmental) to the individual. Ability and effort, considered internal or personal dimensions indicate that the outcome (successful or unsuccessful) is attributed to individual characteristics. The factors, task difficulty and luck, are external or situational,

thus the outcome of one's behavior is associated with forces beyond individual's control. In other words, locus of causality is concerned with an individual's perception about his/her ability to effectively control the environment. People feel most in control when they believe that the successful outcome depends on their personal characteristics, whereas individuals who believe that the cause is external will attribute outcomes to forces beyond their control, such as fate, luck, or powerful others (Weiner, 1986).

The stability dimension classifies causes of behavior as either stable or unstable. According to Weiner these dimensions are associated with the search for causality over a period of time. For instance, the stable causal factors "ability" and "task difficulty" are perceived as consistent over time, while "effort" and "luck" are considered unstable since they appear to be dynamic and unpredictable in nature.

The controllability dimension refers to the degree of control an individual has over the causes of success and failure. For example, a person can control his industriousness during an activity, but is not able to control his aptitude during the same activity (Weiner, 1986).

Attribution theory further suggests that the primary reason individuals attempt to find causes of behavior is the desire to exert control and mastery over their environment (Iso-Ahola, 1980; Kelley, 1971; Wortman, 1979). It was noted by Mactavish and Searle (1992) "that people feel most in control when a successful behaviour can be attributed to internal and stable factors (i.e. ability, competence), because they indicate personal causation which produces feelings of competence and self-worth" (p. 41). Conversely, when an unsuccessful behavior is believed to be dependent on external and unstable factors (i.e. fate, luck) perceived control is diminished, which can create feelings of incompetence, helplessness, and low self-worth (Iso-Ahola, 1980; Weiner, 1980).

A number of researchers have emphasized the importance of a sense of control on well-being and successful aging (MacNeil & Teague, 1987; Rodin, 1986; Schulz, 1980). MacNeil and Teague maintain that older individuals are frequently confronted by circumstances that imply environmental rather than personal causation. Because of the aging process and potential health problems, older people often passively accept increasing loss of personal control. This may result in a shift toward an external causation pattern. In time, the person may shift from being in control of his/her life situations to being controlled by them. Thus, an external, environmental attributional style may have an influence on older adults' perceptions of competence and self-esteem (Garber & Seligman, 1980; MacNeil & Teague; Seligman, 1975).

In order to understand possible behavioral changes associated with growing older, MacNeil and Teague (1987) developed an attribution theory of aging that provides an indication of affective functioning in later life. The theory supports Iso-Ahola's (1984) contention that at the core of one's psychological functioning is the belief that she or he is able to undertake various tasks and activities, and is capable of performing them successfully. In the face of aversive experiences and problems associated with decreased physical and mental functioning, a person, confident in his/her personal effectiveness, has the capacity to overcome difficulties rather than attribute negative experiences to personal incompetence and helplessness. Thus, a person with an internal perception of control will most likely experience successful aging. Conversely, a person who believes, that she or he can do nothing to influence the outcomes of life events is likely to develop lower self-worth, helplessness, and depression.

In summary, self-perceptions of competence and control are the main factors associated with psychological well-being (Iso-Ahola, 1980). Attribution theory helps to explain how people's inferences about causality may affect competence

and control (Iso-Ahola, 1980; Kelley, 1971). In general, when an outcome is successful, internal attributions produce feeling of control over the environment, which results in positive emotional well-being. In contrast, individuals who are governed by external attributions perceive a lack of control, which may decrease their mental health.

Older Adults, Control-Relevant Interventions, and the Psychological Domain

For more than two decades researchers have attempted to assess the effect of increased opportunities for choice and decision making on psychological well-being among older adults. In an early study in this area, Langer and Rodin (1976) provided interventions designed to increase feelings of choice and predictability over daily events. Ninety-one 65 to 91 year old nursing home residents participated in this study. The residents were randomly assigned to an experimental or control group. Participants from the experimental group were called together for a talk by the hospital administrator, who delivered a communication that emphasized the residents' responsibility for themselves, specified activities they could take part in, and clarified when decision making was possible. The control group was given a talk by the administrator emphasizing, that it was the staff's responsibility to care for them as patients. Two types of questionnaires were designed to assess the effects of induced responsibility. To determine whether the intervention was successful participants were asked questions about how much control they felt over general events in their lives. To determine whether the intervention influenced their well-being they were asked how happy and active they felt. The results indicated that the residents for whom responsibility had been emphasized became more active and alert, felt less unhappy, and became increasingly

involved in a variety of activities. The control group experienced none of these gains.

Eighteen months later, Rodin and Langer (1977) conducted a follow-up study in which they re-tested 26 participants from the experimental group and 9 from the control group. Two nurses on different shifts evaluated each resident for mood, awareness, sociability, mental attitude, and physical activity. In addition to the original measures, data also included physicians' ratings of the individual's health over the intervening period, mortality, and participation in a question and answer lecture. It was concluded from the follow-up study that the experimental group continued to be more active and have higher ratings of health, smaller decreases in mood and sociability, and lower rates of mortality. In fact, although the numbers were very small only 15% of the residents in the experimental group died within this time, compared with 30% in the control group.

In another study, Shary and Iso-Ahola (1989) examined the effects of increased opportunities for personal control, choice, and responsibility on nursing home residents' perceived competence and self-esteem. The sample consisted of 28 participants, mostly females (85%), whose average age was 82.7. Fourteen residents in the experimental group were read a message by the social worker that emphasized the residents' opportunity to exercise choice and decision making over their daily activities. Participants were given choices to select activities in which they would like to participate, and they also could decide whether or not to care for a plant. The residents assigned to the control group were informed about the nursing home's responsibility for them and about the daily activities that had been scheduled for them. Rosenberg's Self-Esteem Scale was used to measure the residents' self-esteem and a 10- item scale was created to assess the participants' self-perceptions of competence. The data

indicated that residents in the experimental group experienced significantly greater increases in self-esteem and feelings of perceived-competence when compared to residents in the control group.

In a recent study examining the effect of choice and decision making on successful aging in leisure and recreation domain, Savell (1991) anticipated that enhanced perceived control would positively affect perceived physical and psychological well-being, and leisure satisfaction. Forty three older adults living in a nursing home participated in this investigation. The participants were divided into five groups. Participants within the three decision making groups were given the choice of: (a) participating in the daily leisure program; (b) selecting an alternative from among four equally interesting activity options available in the program; or (c) choosing both options ("a" and "b"). Participants in the no decision making group were given no choices while those in the base-line group completed only the repeated measures of the dependent variables. Three scales measuring perceived physical well-being, subjective well-being, and leisure satisfaction were administered. The results of this study provided insufficient evidence that the opportunity for choice in the leisure context enhanced perceived control among the participants.

The majority of leisure research that examines the effect of choice and decision making on psychological well-being in older people has been conducted in institutional settings, primarily in long-term care facilities. There is a dearth of scientific data regarding leisure, the effect of control enhancing interventions and older adults living in the community.

One of the few investigations that examined older individuals living independently is a study conducted by Mactavish and Searle (1992). The purpose of this investigation was to determine the effect of a physical activity intervention on perception of competence, locus of control, and self-esteem in

older individuals with a life-long mental disability. The sample consisted of twenty-six older adults with a mental disability who were placed into either an experimental or control group. Pre- and post- test measures on perceived competence, locus of control, and self-esteem were obtained from both groups before and after a 2 hour, 5-week (1 x week) physical activity intervention. The control group participants continued their normal weekly activities and were not included in any aspect of the intervention. In order to give the experimental participants the opportunity to exercise individual choice and responsibility, prior to beginning the first activity session it was emphasized that they were responsible for choosing the activities they would be participating in, for example, stationary cycling, swimming, bowling, dancing, walking, and other fitness related activities. Version A of the Perceived Leisure Competence Scale and the Perceived Leisure Control Scale were employed to measure the participants' perceptions of personal competence and locus of control. Rosenberg's Self-esteem Scale was used to determine participant's feelings about self. Responses were recorded on a three-point Likert Scale. It was concluded from the findings that participation of older adults with a mental disability in a physical activity positively influenced perceived competence, locus of control, and self-esteem. The psychological enhancement demonstrated in this study was, according to the authors, "in large, a reflection of how successfully the program facilitated control through the decision making process" (p. 46). The researchers believed that choices in physical activity participation might be a vehicle through which older people with a mental disability can derive psychological benefit and, thereby, influence the aging process.

Another study, that investigated older adults living independently was conducted by Slivinske and Fitch (1987). Although, not specifically in a leisure context, these authors attempted to determine if control enhancing interventions

could positively affect psychological well-being among older people who are more independent than individuals living in nursing homes. It was hypothesized that the subjects in the educational program would experience greater positive changes in level of perceived control, health, and well-being than members of the control group. Sixty-three residents living in retirement communities were randomly selected and randomly assigned to the experimental and control groups. Participants in the experimental group attended classes that were designed to promote greater independence within their living environments. Classes in stress management, nutritional awareness, self-responsibility, physical fitness, and spirituality held twice a week for 10 weeks were selected to enhance perceptions of control and psychological well-being. The results indicated that the individuals who received the control-enhancing interventions significantly improved levels of perceived control and physical and mental health compared to their counterparts in the control group. The study suggested that some declines in older people formerly attributed to biological aging might be prevented or delayed by facilitating increased control over environment.

In summary, research with respect to older people's psychological well-being and control-enhancing intervention in the leisure and recreation domain is not extensive. The review of existing studies however, indicated a positive relationship between control, enhanced well-being and improved quality of life in older population. These investigations also offered evidence in support of the utility of recreation as a facilitator of control.

The majority of this research has been conducted within populations residing in institutional settings. As such, knowledge about the effects of recreation-based control relevant interventions on older adults in the community remains limited. Thus, it is anticipated, that by examining the effect of control-relevant

therapeutic recreation intervention on perceived leisure competence and control of older adults living independently the results of this study will extend the previous research.

CHAPTER THREE

Method

The following chapter describes the method that was utilized in this study. Five sections will be presented to illustrate the investigation process: the participants, the research design, the therapeutic recreation intervention, the instrumentation, and the data collection and analysis procedures.

Participant Selection and Recruitment Process

The participants were older adults who attended the Concordia Hospital Day Centre. All of the Day Centre clients had some type of moderate cognitive and/or physical impairment, as diagnosed by their physician, which required nursing services and ongoing medical monitoring (e.g., wound care, sugar, blood pressure monitoring). The most common chronic conditions experienced by the clients were: senile dementia, depression, emotional disturbances, stroke, vision impairments, arthritis, diabetes, heart disease, and pulmonary disease. All of the clients lived in the community with varying degrees of support from the Manitoba Home Care.

The Concordia Hospital Day Centre represents a health maintenance model of day care centres. This model is focused on providing coordinated health care for clients. Everyday services include nursing care and therapeutic recreation interventions. Clients also benefit from other services available in the hospital (e.g. occupational or physical therapy). The Day Centre enables the elderly clients to receive coordinated professional health care and utilizes the program for ongoing health maintenance. The Day Centre also provides respite for family members engaged in caregiver roles, and increases the options for those who chose not to place a family member in a nursing home.

Prior to beginning the study letters of consent were sent to the executive director of Concordia Hospital and to the therapy services director (Appendix B). A description of the study was attached to these letters (Appendix C). Interested individuals were asked to indicate their willingness to participate in this project by completing a "volunteer to participate" form (Appendix A).

Forty eight clients who attended the Concordia Hospital Day Centre in the Summer of 1999 and met the following criteria were identified as potential participants for this study (a) age 55 and over, (b) communicative and oriented as judged by the staff employed in the Day Centre, and (c) able to attend Day Centre program regularly once a week. Participants were selected from the existing pool of Day Centre Clients. In other words, each individual participated in the day centre program before the intervention and had attended the program for different durations.

Each of 48 eligible participants was approached by the researcher and asked her/his permission to participate in the study. Four of the potential participants were not interested in participating because of holiday plans or other commitments. Of the 48 possible participants, 44 volunteered to participate in this research project. Each of these individuals was assigned a number between 00 and 43 based on the order in which they volunteered (e.g., first person to volunteer was assigned #0, and so on). Then using a table of random numbers the participants were randomly assigned to one of the two conditions, the experimental or control group. For example, the first number-name encountered was assigned to the experimental group, the second to the control group, and so on until each group had 22 participants. Thus, clients assigned even numbers were selected for the experimental group while those with odd numbers to the control condition.

The participants from the experimental group attended the Day Centre program one day each week for seven weeks on Tuesday or Thursday while the control group, also attended one day each week for seven weeks on Monday or Wednesday. Participants were required to remain a minimum of six weeks in the program to be included in the data collection process.

During the course of the study 10 participants, 3 males and 7 females, 5 from the experimental and 5 from the control group were lost because of the inability to fulfill the program attendance requirements caused either by health related problems or other commitments such as doctor's appointments or unexpected out of town family visits. Thus, the final sample consisted of 34 participants, 17 in the experimental and 17 in the control group. The experimental group included 12 females and 5 males, the mean age was 74.06 years (SD = 13.32). The control group consisted of 14 females and 3 males, the mean age was 76.80 (SD = 10.71).

Research Design and Variables

The study included one independent variable, a therapeutic recreation based control relevant intervention, and two dependent variables, perceived leisure competence and perceived leisure control. The independent variable consisted of two groups: an experimental and a control group. Participants in the experimental group were exposed to a process planned to enhance their sense of leisure competence and control in the therapeutic recreation program; participants in the control group received no such intervention. The experimental and control groups were tested on each of the dependent measures before and after the 7-week intervention. The pre-testing took place during a one-week period before the intervention and the post-testing during a one-week

period after the intervention. This study utilized a two-group, pre-test post-test experimental design.

Therapeutic Recreation Program in the Concordia Hospital Day Centre

The objective of therapeutic recreation program in the Concordia Hospital Day Centre is to help older adults restore and/or maintain optimal functioning. Therapeutic recreation in the Day Centre includes interventions in three domains of functioning: psychomotor, cognitive, and affective. Generally, there are three recreation programs during the day, one program in the morning and two programs in the afternoon. An exercise class is conducted consistently every day, after lunch. The other two daily programs consist of either group or individual activities. Two recreation therapists and one experienced volunteer run the programs.

Since the Day Centre was established in 1996, daily activity programs were conducted according to the therapeutic recreation calendar, which was prepared by the recreation therapists every month. A typical day in the Day Centre is presented in Table 1.

Table 1

Day Centre Daily Activity Schedule

Time	Activity Schedule
9:30 a.m.	Arrival, AM News/Coffee
10:30 a.m.	Morning program, (e.g., Colour painting, Trivia) directed by the therapeutic recreation staff
11:30 a.m.	Free time, 1-1 interventions, Lunch
1:00 p.m.	Exercises
2:00 p.m.	Afternoon program, (e.g., Curling, Reminiscing) directed by the therapeutic recreation staff
3:00 p.m.	Coffee/Juice
4:00 p.m.	Departure

Table 1 indicates how the therapeutic recreation program in the Concordia Hospital Day Centre operates. The clients who were assigned to the control group participated in activity programs scheduled by recreation therapists according to the therapeutic recreation calendar (see Appendix H for a full listing of activities). The control group participants did not have opportunities to make any choices or decisions about the daily events and/or the process of implementing the activities. The control group ($n = 17$) participated in the Concordia Hospital Day Centre program once a week on Monday ($n = 7$) or on Wednesday ($n = 10$) for seven weeks from August 23 to October 6, 1999. The recreation activity programs were chosen and run by a recreation therapist and a volunteer, both unaware of the purpose of this research.

Enhanced Control and Responsibility Group

The recreation activity program for the intervention group (n = 17) was run on Tuesday (n = 11) and Thursday (n = 6) for seven weeks from August 24 to October 7, 1999. Two experienced volunteers who were unaware of the objectives of this study conducted the programs.

The following procedure was implemented to increase personal control, choice and decision making of the participants assigned to the experimental group. Prior to beginning the study the recreation therapist met with the experimental group (n = 17) to explain that the participants were responsible for choosing the activities they were to participate in as part of the recreation program. The message stressed that the clients were in control of selecting the activities they could participate in each day. The message also stressed the importance of such personal decisions and choices in making the recreation program at the Day Centre "their program". The following communication was given:

> Day Centre is a place where you come regularly every week to spend the entire day. To make your visit in the Day Centre a pleasant and meaningful experience, you will have the opportunity to decide, how you want to spend your time here. In other words, you will make the recreation program in Day Centre "your program" by choosing recreation activities you prefer and want to participate in.

One week prior to beginning the intervention, the participants were asked to choose one activity they would like to do upon their next visit to the Day Centre. Two activities selected by the majority of the clients were conducted during the following week's morning and afternoon programs. For example, the participants had the three following activity choices: art class, video, and an adapted basketball game. If the majority selected the video option and art class as preferred activities, both chosen activities would be conducted the following week, one of the activities in the morning, and the other in the afternoon. The

same question was asked again on the day of arrival to the Day Centre to confirm that the participants wanted to participate in the previously chosen activities and if not, to give them the opportunity to engage in an alternative, individual activity of their choice. A few alternative activities such as word puzzles, reading and painting were offered for those participants who were not interested in either of the chosen group activities. The same selection process was followed each week of the intervention.

To further increase the participants' sense of control, when activity programs were conducted, the participants were continuously provided with opportunities to make choices and assume responsibility over situations. For example, prior to an art class, participants had the opportunity to choose what they wanted to paint as well as to decide what painting technique they would like to work on. The participants also were encouraged to choose whether or not they wished to participate in the particular activity, if not, they could take part in one of the alternative activities on an individual basis.

Table 2 presents the modification of the therapeutic recreation schedule at the Concordia Hospital Day Centre that was intended for the enhanced control and responsibility group.

Table 2

Daily Recreation Activity Schedule for the Enhanced Control and Responsibility Experimental Group

Time	Activity Schedule
9:30 a.m.	Arrival, AM News/Coffee
10:30 a.m.	Morning activity program selected by the clients, or individual alternatives
11:30 a.m.	Free time, 1-1 interventions, Lunch
1:00 p.m.	Exercises
2:00 p.m.	Afternoon activity program selected by the clients, or individual alternatives
3:00 p.m.	Coffee/Juice
4:00 p.m.	Departure

Instrumentation

Instruments to assess perceived competence and locus of control were selected in accordance with the following criteria: (a) the instruments were reliable and valid and (b) they were appropriate for the participants (e.g., comprehensible, brief and easy to administer).

Perceived competence and locus of control have been recognized in the literature as important determinants of psychological well-being (Seligman, 1975; Iso-Ahola, 1980; Weiner, 1980; Skinner, 1996). It also was noted that recreation activities might offer opportunities to enhance perceived competence

and locus of control within a leisure context (Iso Ahola, 1980; Shary & Iso-Ahola, 1989; Mactavish & Searle, 1992; Menec & Chipperfield, 1997).

Recognizing the need for instrumentation to assess perceived leisure competence and control Witt and Ellis (1987) developed The Perceived Leisure Competence Scale (Witt & Ellis, 1987) and The Perceived Leisure Control Scale (Witt & Ellis, 1987). These scales specifically measure perceptions of competence and perceptions of control within the leisure and recreation domain. Although previously used with adolescents, the scales were designed and have been tested for use with individuals beyond childhood (Witt & Ellis, 1987; Mactavish & Searle, 1992).

The rationale for selecting these instruments is that: (a) both scales were developed specifically for research in leisure and recreation domain, (b) the scales are consistent with the recreation based nature of this study, (c) the instruments have demonstrated validity and reliability, and (d) both have been used with various groups of people including older persons with mental and/or physical impairments.

Apart from this rationale it should also be mentioned that the pertinence of the selected instrumentation was further supported by the pilot test conducted in July 1999. The Perceived Leisure Competence Scale (Witt & Ellis, 1987) and The Perceived Leisure Control Scale (Witt & Ellis, 1987) were tested with a sample ($\underline{n}$ = 6, 3 females, 3 males). The mean age for this group was 75.30 (SD = 8.45), similar to the participants in the main investigation. The instruments were administered to the patients coming to the hospital day centre in a pre- and post-interviews separated by two weeks interval. The reliability results of the pilot test and the main investigation are documented in the next section.

The Perceived Leisure Competence Scale (Appendix D). The Perceived Leisure Competence Scale version A (Witt & Ellis, 1987) was designed to measure an individual's perception of competence in leisure activities. Twenty brief statements intended to assess perceptions of competence in four domains: cognitive, social, physical, and general are included in this scale. Responses are recorded on a four point Likert scale, from "strongly disagree" to "strongly agree". The obtained scores are then summed to indicate the participants' levels of competence.

In the Leisure Diagnostic Battery User's Manual, Witt & Ellis (1987) reported the following reliability ratings for this scale: test-retest reliability ranging from .82 to .88 and the internal consistency (Cronbach's alpha coefficient, which provide an index of the relationship of the items within the test) ranging from .83 to .93. Mactavish and Searle (1992) used the Perceived Competence Leisure Scale Version A to determine the perceptions of personal competence in older adults with a mental disability. The test-retest reliability calculated in this investigation ranged from .98 in the pilot test to .78 in the main study and the internal consistency (Cronbach's alpha coefficient) was reported as .84. The test-retest reliabilities calculated in the present study ranged from .82 in the pilot test to .77 in the main study. The internal consistency (Cronbach's alpha) for the main study was .82.

The Perceived Leisure Control Scale (Appendix E). Version A of the Perceived Leisure Control Scale (Witt & Ellis, 1987) was used to assess the participants' perceptions about their degree of internal control over events and outcomes in her/his environment. The responses to 17 items were recorded using four point Likert scales in the same way as with the previous instrument. Scores ranged from 1 "strongly disagree", 2 "disagree", 3 "agree", to a maximum value of 4

"strongly agree". As before, the scores were summed in a simple additive scoring procedure with a higher score indicating a greater degree of internal control. The validity and reliability ratings of this instrument have been reported by Witt and Ellis (1987) with internal consistency (Cronbach's alpha) ranging from .86 to .94, and test-retest reliability rating ranging from .79 to .81. Reliability ratings and internal consistency measures, also have been reported by Mactavish and Searle (1992; i.e., retest reliability ratings of .97 in the pilot test to .74 in the main study, and Cronbach's alpha coefficient of .82 in the main study). In the present study the test-retest reliability ranged from .84 in the pilot study to .78 in the main investigation. The internal consistency (Cronbach's alpha coeficient) in the main study was .85.

In sum, in the present study the retest reliability and internal consistency coefficients for each of the dependent measures were found to be satisfactory and within the acceptable ranges (Thomas & Nelson, 1996). Thus, these data provide support for using the Leisure Competence Scale (Witt & Ellis, 1987) and the Leisure Control Scale (Witt & Ellis, 1987) as instruments in this study.

Generalizability Measure (Appendix F). In order to examine external validity of the present study a generalizability measure was developed by the researcher to collect data on dependent measures. Participants were asked in the pre-intervention and post-intervention interviews to assess their feelings of leisure competence and control while performing recreation activities in their home environment. Two statements were used to assess perceived leisure competence and three statements to evaluate perceived leisure control. The generalizability measure assisted in determining whether the intervention had any carry over effects to participants' homes.

Post-Intervention Interviews. The experimental group participants were interviewed to learn about each person's current leisure involvements beyond the hospital program, their feelings and opinions regarding opportunities to make decisions, and, the modified recreation program at the day centre. The interviews were conducted in the form of informal discussions and included standardized, open-ended questions. For example, "What are your favourite activities at home? ", "How often do you participate in your best-loved activities?", "Do you like making decisions about the recreation activities in the day centre?", "Would you like to be regularly involved in the planning process?", "What is your opinion about the day centre recreation program in the last two months?". The data from these interviews were analysed and coded for key themes.

Data Collection Procedures

Pilot Study. In July 1999, prior to the main investigation a pilot study was conducted to support the rationale for using the selected instrumentation and to determine whether the items were clear and understandable. The instruments, the Perceived Leisure Competence Scale and the Perceived Leisure Control Scale, were administered to a small group of day centre clients ($n = 6$, 3 females, 3 males). It should be noted that the pilot study participants were not included in the main study. The instrumentation was administered twice separated by a two-week interval. The test-retest method was used to determine reliability of the instruments. The statements were found to be clear and understandable for the participants however, they had to be read loudly and unhurriedly.

Main Investigation Data Collection.

One week prior to the implementation of the intervention (August 16 to August 20, 1999) data were collected, on the two dependent variables and the generalizability measure, from participants in both groups. The primary researcher, a female recreation therapist who was working in the therapeutic recreation department at Concordia Hospital, collected the data. To counter possible bias, the lead investigator also trained another volunteer to collect the data from participants who were familiar with the primary researcher.

The researcher or trained volunteer administered the instrumentation in private interviews conducted in the therapeutic recreation office at Concordia Hospital. The duration of these interviews ranged from 20 to 50 minutes. The instruments were administered individually to each participant by reading the statements to the client. Additionally, a copy of each instrument was placed in front of the individual to enable her/him to read and follow each question. This process was intended to facilitate comprehension and assist individuals with hearing impairments to answer the questions. Before administering the instruments, the investigator explained to each participant that she was interested in finding out how the person felt about certain issues. The researcher also emphasized that there were no right or wrong answers to the statements or questions. Subsequently, the participants were asked to select the response that best reflected their views about the statement/item in question. Responses were collected on a four-point Likert scale (from strongly agree, agree, disagree, to strongly disagree), with higher scores considered to be the better scores (i.e., higher perceptions of perceived leisure competence and control).

The socio-demographic data (gender, age, education, health condition, length of attendance of the day centre program) were recorded from the

participants' day centre charts. These data were collected and utilized to provide a context for helping to interpret the statistical results of the study.

During the intervention, the researcher also recorded information regarding the participant's activity selections. Additionally, a checklist was used to monitor which of the participants took part in the group activity versus those who engaged in the individual options.

Post-intervention data were collected for all participants one week after the cessation of the intervention (October 11 to October 15). Once post-intervention data collection on the dependent and generalizability measures was completed, the experimental group participants were interviewed to learn more about their leisure involvements outside the day centre program. They were also asked about their views on the modified day centre recreation program (i.e., the intervention). These open-ended interviews were facilitated using conversationally worded yet standardized questions. The researcher asked the same questions of all the participants. During each interview the researcher recorded detailed field notes for later analysis.

Data Analysis

Various types of data (e.g., nominal, interval, qualitative) were collected in the present study. Consequently, a variety of approaches to data analysis were required. These approaches included: (a) descriptive statistical analyses of the socio-demographic and activity selection data, (b) parametric statistical analyses of the dependent measures data, and (c) key theme analysis of the qualitative data from the post-intervention interviews. Each of these approaches is described in the following sections.

Descriptive data (e.g., means, standard deviations) on age, gender, education, and duration of attendance at the day centre program were computed before

introducing the intervention. Information about the participants' chronic health conditions obtained from their day centre medical charts also was subjected to descriptive statistical analyses.

Data on activity selections were collected every week for 7 consecutive weeks after the participants revealed their preferences. This information was recorded by one of the volunteers on an activity sheet that was prepared for each individual. The researcher was interested how often group versus individual options were selected and the type of activities engaged in each week of the study.

In summary, the descriptive analyses were performed to provide an overview of the two groups based on selected socio-demographic characteristics, chronic health concerns, and to track activity selections throughout the duration of the intervention. This information was important for providing a context that would aid in interpreting the result of the study.

Parametric statistical analyses were conducted on the dependent measures data using a Macintosh microcomputer and the Statistical Analysis Software (SAS) package. Repeated measures ANOVA, with an alpha level of .05 (set a priori), was used to assess the effect of the intervention on perceived leisure competence and perceived leisure control. These constructs are recognized as being conceptually and theoretically independent and, as such, two separate repeated measures ANOVA were conducted (Shary & Iso-Ahola, 1989; Mactavish & Searle, 1992).

According to Thomas and Nelson (1996), repeated measures ANOVA is an appropriate and frequently chosen procedure when the same dependent variable is measured more than once within a study employing a pre-and post-test experimental design. In addition to this point, two advantages of this approach contributed to its selection for use in the present study. The first advantage

relates to the usefulness of repeated measures ANOVA for identifying variations among subjects and for separating these from the error term. The ability to do this reduces the potential error term, which increases power and decreases the chance of rejecting a true null hypothesis [reduces the probability of Type 1 error (Thomas & Nelson, 1996)]. The second advantage of the repeated measures ANOVA is that this statistical procedure can be used within a study with a small number of participants.

The repeated measures ANOVA also was utilized on the data from the generalizability measure. The generalizability measure included five questions, two related to perceived leisure competence and three to perceived leisure control. The measure was intended to assess possible carryover effects of the intervention on the experimental group's perceptions of leisure competence and control at home (i.e., external validity).

Qualitative data from the post-intervention interviews with the experimental group were analysed using a key theme approach (Goetz & LeCompte, 1984). This approach involved the reading and re-reading of the written field notes to identify and code consistent themes (Thomas & Nelson, 1996).

CHAPTER FOUR

Results

The purpose of this investigation was to determine the effect of a control enhancing therapeutic recreation intervention on perceived leisure competence and control among older adults living in the community and attending the Concordia Hospital Day Centre program. The following chapter includes the results of this investigation: specifically, (a) descriptive statistics from analyses of the socio-demographic and activity selections data, (b) results of the inferential statistical analyses (repeated measures ANOVAs) of the dependent measures and generalizability measure data, and (c) key themes that arose from the post-intervention interviews with the experimental group participants.

The control-relevant therapeutic recreation intervention, as hypothesized, resulted in enhanced perceptions of leisure competence and control among the experimental group participants, while no significant change was revealed among their control group counterparts. However, no statistically significant evidence suggested that the intervention affected the participants' perceptions of leisure competence and control in their home environments.

Socio-Demographic Characteristics

Information regarding the participants' gender, age, education, health condition, and duration of attendance at the day centre program was recorded to provide a descriptive overview of the participants. The socio-demographic data were contained in the client's day centre chart. Table 3 provides descriptive data on age, years of education, and duration of attending the day centre program, for each group. From these data it is evident that the mean age and the years of education of participants in both groups were relatively comparable. The length

of attendance the day centre program, however, was greater in the experimental group than in the control condition.

Table 3

Age, Education, and Duration of Attending the Day Centre Program for the Experimental and Control Group Participants

Condition	n	Age in Years		Years of Education		Months of Attendance	
		M	SD	M	SD	M	SD
Experimental							
Females	12	77.42	11.00	7.08	3.54	26.25	10.13
Males	5	70.69	9.61	7.40	2.61	23.00	12.91
Totals	17	74.06	13.32	7.24	2.94	24.63	14.30
Control							
Females	14	78.28	9.73	6.36	3.34	16.71	12.45
Males	3	75.33	17.00	9.67	2.52	15.67	16.71
Totals	17	76.80	10.71	8.02	2.43	16.14	12.68

Table 4 includes an overview of the pre-existing health conditions of participants in both groups. This information was collected from the client's day centre chart. As can be seen in Table 4, stroke, and heart and pulmonary disease were the health problems most often represented in the experimental group,

while diabetes and anxiety were the leading problems among the control group participants. Other health conditions were relatively similar in both groups.

Table 4

The Health Conditions of the Experimental and Control Group Participants

Type of the health problem	Groups	
	Experimental Group N = 17	Control Group N = 17
Heart and pulmonary disease	4	0
Arthritis	1	2
Early Alzheimer's type dementia	2	2
Stroke	4	1
Diabetes	2	4
Depression	2	3
Anxiety disorder	2	4
Cancer	0	1

Activity Selections

The day centre participants assigned to the experimental group were asked to select two recreation activities during each week of the seven-week therapeutic recreation intervention. The researcher based on the participants' care plans and knowledge of their activity preferences developed the list of possible activity

options. Table 5 includes the two recreation activities chosen by the majority of the experimental group during each week of the intervention.

To accommodate participants who did not want to engage in a particular group activity, individual activity options also were provided. For participants who were interested in individual options the following alternative activities were offered each week: reading, listening to music, puzzle pieces, crossword puzzles, watching TV, word games, church activities, and playing cards. Table 6 documents the group activity selections versus the individual activity choices made by each participant in the experimental group.

As evident in this table, the majority of participants opted to engage in the group activities. Nine participants joined group activities every week during the 7-week study period. Eight individuals chose to participate in a combination of individual and group activities.

Table 5

Activities Selected by the Experimental Group during the Therapeutic Recreation Intervention

Weeks of the Intervention	Selected Activities
Week 1	Garden Walks
	Tabletop Bowling
Week 2	Basketball Game
	Bingo
Week 3	Video "Hello Dolly"
	Tabletop Bowling
Week 4	Gardening
	Bean Bag Game
Week 5	Trivia Questions
	Shuffleboard
Week 6	Video "The Sound of Music"
	Basketball Game
Week 7	Sing-Along
	Word Puzzles

Table 6

Experimental Group Members' Participation in Group versus Individual Activities

Person	Gender	Age	Participation in Group Activities	Participation in Ind. Activities
1.	(M)	78	x	
2.	(F)	55	x	
3.	(F)	91	x	
4.	(F)	78	x	
5.	(M)	79	x	x
6.	(F)	80	x	
7.	(F)	72	x	x
8.	(M)	70	x	x
9.	(F)	76	x	
10.	(F)	90	x	x
11.	(F)	87	x	x
12.	(F)	85	x	
13.	(F)	80	x	x
14.	(F)	66	x	
15.	(M)	55	x	x
16.	(M)	71	x	
17.	(F)	70	x	x

Perceived Leisure Competence and Perceived Leisure Control: - Descriptive Data

Pre-test and post-test means (M), standard deviations (S.D.) and ranges of scores were calculated for the key measures related to the hypothesis (perceived leisure competence and perceived leisure control) and for the generalizability measure designed to assess the same constructs in the home environment. In order to help evaluate the potential similarities and differences between the experimental and control groups these descriptive data were tabulated and presented in Table 7.

Table 7

Pre- and Post- Test Means, Standard Deviations and Range of Scores for the Dependent Variables and the Generalizability Measure

Measure Group	Mean Scores	Standard Deviations	Range of Scores
Perceived Leisure Competence			
Experimental			
Pre-test	56.35	4.58	48-66
Post-test	57.76	5.11	48-65
Control			
Pre-test	56.59	6.19	49-69
Post-test	55.18	5.67	42-66

Perceived Leisure Control			
Experimental			
Pre-test	45.88	5.36	36-54
Post-test	48.00	4.40	40-57
Control			
Pre-test	47.65	5.11	40-59
Post-test	46.59	3.36	41-52
Generalizability Measure (Home)			
Perceived Leisure Competence			
Experimental			
Pre-test	5.88	0.84	3-8
Post-test	5.82	0.65	4-7
Control			
Pre-test	6.12	0.64	4-8
Post-test	5.47	0.89	4-7
Perceived Leisure Control			
Experimental			
Pre-test	7.47	0.89	6-9
Post-test	7.29	0.71	6-9
Control			
Pre-test	7.71	0.82	6-9
Post-test	7.21	0.70	5-8

Note. Maximum (max) and minimum (min) scores possible. Perceived leisure competence; max score = 80/min score = 20. Perceived leisure control; max score = 68 indicating a strong internal control/min score = 17 representing a strong external control. Generalizability measure/perceived leisure competence; max = 8/min = 2. Generalizability measure/perceived leisure control; max = 12/min = 3.

Results of Hypotheses Testing

To assess the effects of the control-relevant therapeutic recreation intervention on perceived leisure competence and control, two repeated measures ANOVAs, one on perceived leisure competence and the other on perceived leisure control, were utilized. The aim of both analyses was to determine whether hypothesized improvements in perceptions of leisure competence and control would be significantly greater in the experimental group than the control group. A 2 factor (Group x Time) ANOVA with repeated measures on "Time" was used to examine the hypotheses, which would be supported by finding of a significant Group x Time interaction.

As shown in Table 8, the results indicated a statistically significant value for the hypothesized interactions, F (1, 31) = 4.33, $p < .046$ for perceived leisure competence, and F (1, 31) = 5.36, $p < .027$ for perceived leisure control. Furthermore, the results revealed that no significant main effects of group or time were found on either dependent variable.

Table 8

Summary of Repeated Measures Analysis of Variance ANOVA for Perceived Leisure Competence and Perceived Leisure Control

Source of Variance	df	Sums of Squares	Mean Squares	F-value	P
Perceived Leisure Competence					
Between					
Group	1	0.00	0.00	0.00	1.000
Error	33	1636.94	49.60		
Within					
Time	1	23.53	23.53	3.01	0.09
Group x Time	1	33.88	33.88	4.33	0.046*
Error	31	242.59	7.83		
Total	67				
Perceived Leisure Control					
Between					
Group	1	4.77	4.77	0.60	0.446
Error	33	1119.94	33.94		
Within					
Time	1	0.529	0.529	0.07	0.799
Group x Time	1	42.88	42.88	5.36	0.027*
Error	31	247.82	7.99		
Total	67				

*Denotes significant effect

Following detection of these interactions, the location of these effects was determined by looking at simple main effects for "Time" in each group. For both variables, the results of these analyses revealed a significant simple main effect for the "Time" factor (perceived leisure competence $\underline{F}(1, 31) = 4.72$, $\underline{p} < .05$ and for perceived leisure control $\underline{F}(1, 31) = 4.76$, $\underline{p} < .05$). These findings indicate that therapeutic recreation intervention affected the experimental participants' perceptions of leisure competence and control. The control group did not experience any significant changes in perceived leisure competence and control over the same period of time (perceived leisure competence $\underline{F}$ (1, 31) = 2,17, $\underline{p} <$ .05 and for perceived leisure control F (1, 31) = 1,28, $p < .05$). Figures 1 and 2 illustrate the mean scores on perceived leisure competence and control for the experimental and control conditions.

In an effort to determine whether the control-relevant intervention affected participants' perceived competence and control in their home environments, data from the generalizability measure were also analysed, using a repeated measures ANOVA. This analysis revealed no statistically significant interaction between the two factor independent variables "Group" and "Time" in perceived leisure competence, $\underline{F}(1, 31) = 1.67$, $\underline{p} < .21$, or perceived leisure control, $\underline{F}(1, 31) = 2.14$, $\underline{p} < .15$ (see Table 9). In other words, the effects of the control-relevant intervention did not appear to extend to the participants' home environments.

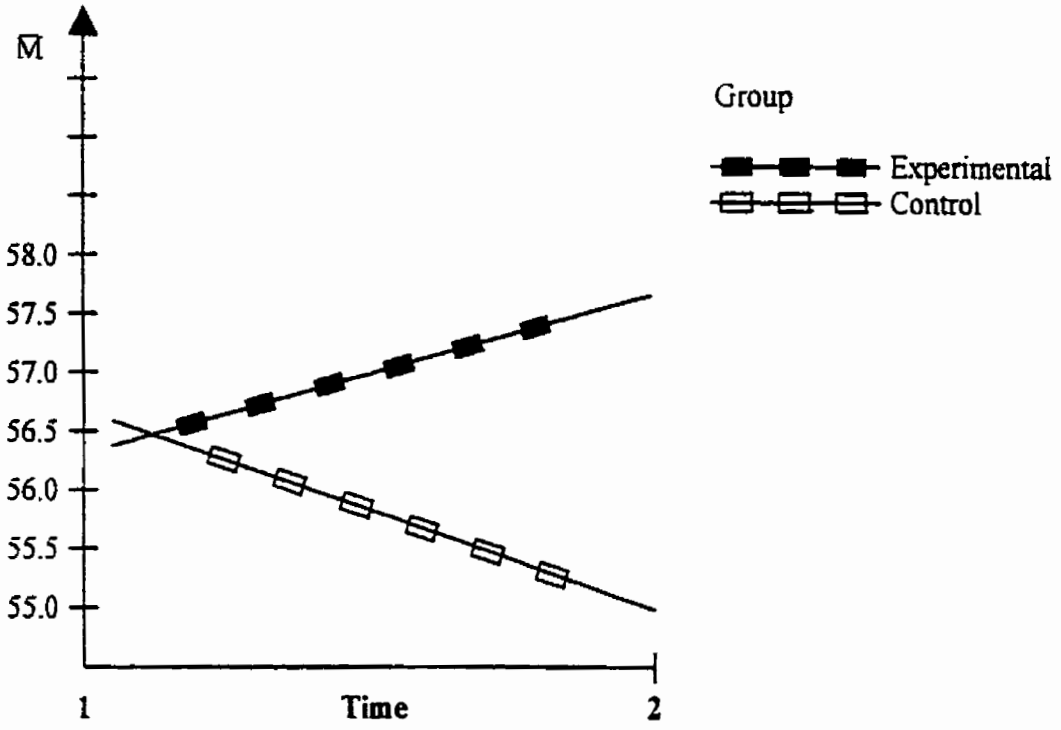

Figure 1. Interaction Effect for Control/Experimental Conditions for Perceived Leisure Competence

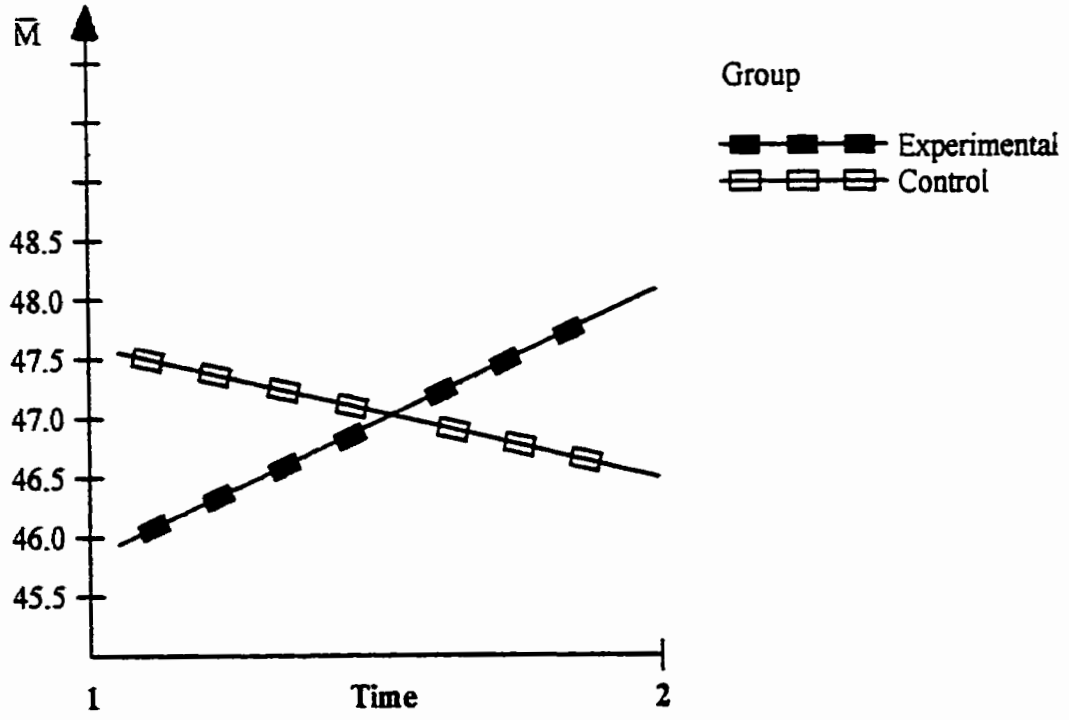

Figure 2. Interaction Effect for Control/Experimental Conditions for Perceived Leisure Control

Table 9

Repeated Measures Analysis of Variance ANOVA for Generalizability Measure

Source of Variance	df	Sums of Squares	Mean Squares	F-value	P
Perceived Leisure Competence					
Between					
Group	1	2.12	2.12	2.40	0.13
Error	33	26.88	0.81		
Within					
Time	1	0.06	0.06	0.07	0.80
Group x Time	1	1.47	1.47	1.67	0.21
Error	31	27.35	0.88		
Total	67				
Perceived Leisure Control					
Between					
Group	1	5.88	5.88	3.37	0.09
Error	33	17.12	0.52		
Within					
Time	1	0.53	0.53	0.39	0.54
Group x Time	1	2.88	2.88	2.14	0.15
Error	31	41.71	1.35		
Total	67				

Participants' Perspectives on the Program: Key Themes

Following the intervention and data collection specific to the dependent measures, participants in the experimental group were interviewed. The purpose of these interviews was: (a) to learn the nature of people's current leisure involvement beyond their recreation activities in the day hospital, and (b) to understand participants' views about the modified day centre recreation program.

The qualitative data from these interviews were analysed and coded for key themes. This process yielded three overarching themes: (a) participants' leisure and recreation interests in their home life, (b) participants' views about the modified day centre program, particularly their opinion of who should select recreation activities in the day centre, and (c) who should control decisions about the activities in which participants should engage.

Regarding current leisure involvements, the experimental group participants reported that they were engaged in a variety of activities. Visiting family and friends, traveling, gardening, spending time at the family cottage were the most frequently mentioned leisure pursuits. The participants also expressed interest and were actively involved in a number of community based activity programs (e.g., low impact aquatic program, bingo, church activities, "shopping in Safeway" program, and going out with a friend). Thus, it was apparent that despite their age and health conditions, the participants, with some help, were still able to master the environment quite independently, which may have given them a sense of purpose and control over their lives.

The comments provided by the participants about the modified recreation program indicated, generally, that they enjoyed having the opportunity to make choices in the day centre over the 7-week intervention period. As one of the participants stated "It was nice to be asked and have a choice in selecting

activities during these few weeks". Although for some participants it was a new and quite interesting experience, the majority of the experimental group participants believed that in the future the day centre therapists should be responsible for selecting the recreation activities. The participants provided a number of reasons in support of their views. For example, a few participants concluded that "the therapist is the professional who knows what people need and what is the best for them to feel better". Another individual stated that she likes everything that is offered in the day centre because the staff considers people's health and medical status. Another person asserted, "I like the activities scheduled because I like to be surprised". A few participants expressed their desire to continue taking part in the planning process by giving the therapist some suggestions with respect to the scheduled activities.

The third theme, that emerged from the interview data was related to the issue of voluntary vs. involuntary activity participation. The majority believed that participation in the activities should be optional. People should have a choice whether or not they would like to participate in the scheduled programs. This choice, according to the group, should depend on individual mental and/or physical well-being during the day. The participants also suggested that they like to have a few individual options. As one person expressed "If I do not feel like doing what everybody else is doing, but I have an individual activity option I can participate in, participation in this chosen-by-myself activity makes me happier".

In summary, the experimental group participants represented a group of older adults, who, despite having a variety of health problems, were still able to function independently. The participants, with some help, were actively engaged in a number of community based activity programs. Questioned about the modified day centre recreation program, the participants indicated that

generally, they enjoyed having the opportunity to decide about the program for the 7-week intervention period. However, in the future, the recreation therapists, because of their status as professionals, should select appropriate activities. The majority of participants also believed that the participation in activities should be optional, and should depend on the individual's predisposition during the day. The participants also expressed that having individual activity options made participation in the program more interesting and enjoyable.

CHAPTER FIVE

Discussion

Research demonstrates that recreation participation is related to enhanced psychological well-being and thus, has a positive effects on the life satisfaction of older adults (DeCarlo, 1974; Russel, 1990; Mactavish & Searle, 1992; Riddick, 1993; Menec & Chipperfield, 1997). The literature also indicates that increased opportunities for choice and decision making in therapeutic recreation affects older individuals' competence and control, helps to develop higher self-esteem, which subsequently may positively influence psychological and even physical health (Langer & Rodin, 1976; Langer & Rodin, 1977; Shary & Iso-Ahola, 1989).

The majority of studies that have considered the effects of control on psychological well-being in older adults have focused on institutionalized individuals, specifically, those in long-term care facilities (Teitelman & Priddy, 1988; Savel, 1991). Research regarding the effects of choice and decision making on perceived competence and control of older people living independently and attending community-based care settings is almost non-existent.

The purpose of this study was to determine the effects of a control-relevant therapeutic recreation intervention on perceived leisure competence and perceived leisure control among elderly individuals living independently in the community and attending a hospital day centre program. It was hypothesized that the perceived leisure competence and control of the older adults who received the intervention would be significantly higher than those who did not. A sample of 34 older adults was randomly assigned to either an experimental or control condition. Data were collected on each participant and each dependent variable by administrating standardized instruments before and after the intervention. Pre- and post-intervention generalizability measures also were conducted. The purpose of these measures was to find out if the control-relevant

therapeutic recreation intervention had carryover effects that influenced participants' leisure competence and control in their home settings. In other words, the generalizability measure was designed to assess the external validity of this study. Post-intervention qualitative data were collected, via person-to-person interviews, to learn about the participants' views on the modified day centre program and their current recreation involvement.

The present investigation supported the hypothesized relationship between increased opportunities for choice and decision making and perceived leisure competence and control of older adults attending the hospital day centre. The results of the repeated measures ANOVA revealed a statistically significant interaction between the independent variable (a control relevant therapeutic recreation intervention) and the dependent variables (perceived leisure competence and control) among the experimental group participants. The generalizability measure results did not, however, indicate any carryover effect of the control enhancing intervention on the participants' leisure competence and control in their home environments. In sum, the present study extended previous findings (Langer & Rodin, 1976; Rodin & Langer, 1977; Mactavish & Searle, 1992; Shary & Iso-Ahola, 1989; Slivinske & Fitch, 1987), and added further evidence that therapeutic recreation interventions can have a positive affects on leisure competence and control.

Links to Existing Literature

It has been documented in previous literature that positive perceptions of competence and an internal locus of control are associated with improved psychological well-being in later life (Rowe &Kahn, 1987; Brandtstadter & Baltes-Gotz, 1990). Conversely, low perceptions of competence and external perceptions of reinforcement may induce helplessness, depression, and other

psychological disorders, which can affect the aging process in negative ways (Molinari & Mederehe, 1984; Waller & Bates, 1992).

Attribution theory, which is concerned with perceptions of causality, is a framework for understanding how people's inferences about causality may affect their perceptions of competence and control, and subsequently their psychological well-being and quality of life (Kelley, 1971; Iso-Ahola, 1980).

In the present investigation attribution theory provided the theoretical underpinning for understanding the relationship between a recreation based intervention and perceptions of leisure competence and control. The participants in this study were older adults with a variety of health problems, e.g., dementia, stroke, heart and pulmonary disease, depression. According to MacNeil and Teague (1987), these individuals, because of their impaired mental and/or physical functioning are often confronted by circumstances that imply environmental rather than personal causation. Consequently, they may passively accept increasing loss of personal control, and shift from being in control of their life situations to being controlled by them. The results of the present investigation suggest that this shift may be altered, to some degree, by participation in a recreation program that provides opportunities for choice and decision making. In turn, the positive affects of these opportunities on perceptions of leisure competence and control may lead to more successful aging (Shary & Iso-Ahola, 1989).

In sum, the present study extended the previous findings (Langer & Rodin, 1976; Mercer & Kane, 1979; Rodin & Langer, 1977; Shary & Iso-Ahola, 1989; Slivinske & Fitch, 1987), and added further evidence that therapeutic recreation interventions, designed to facilitate decision making and choice, can have positive affects on leisure competence and control. Based on the generalizability measure, the extent to which these influences can be translated to home

environments and more global assessments of leisure competence and control, however, requires further investigation.

Possible Limitations and Alternative Explanations

Although, the data analyses revealed statistically significant results, there are a few limitations that may have influenced the findings. The field-based nature of the study, and the need to work with individuals who were already participants in the day centre program is one such possibility. Individuals in the experimental group had been involved in the program for more than 24 months before the intervention, and, as the pre-intervention data indicate their mean scores on the competence and control measures were already relatively high (perceived competence $\underline{M}$ = 57.76 [the total possible score 80]; and control $\underline{M}$ = 45.88 [the total score possible 68]). Despite these limitations, the results clearly indicated that the intervention had significant affects - ones that might have been even stronger had the group lacked previous experience in the day centre program, and had they rated lower on perceived leisure competence and control at the beginning of the study.

Based on the information provided by the experimental group in the post-intervention interviews, the participants in this study maintained their independence through activities such as visiting family and friends, traveling, gardening, and spending time at the family cottage. The participants also expressed interest and were actively involved in a number of community based recreation programs (e.g., low impact aquatic program, bingo, church activities, "shopping in Safeway" program, and going out with a friend). Thus, despite their age and health concerns the participants were still able to master the environment quite independently, which likely gave them a sense of purpose and control over their lives.

As indicated by Rowe and Kahn (1987) individuals who are able to cope and minimize the negative effects related to health impairment and aging have higher perceived competence and control. The pre-intervention scores on leisure competence and control, and active involvement in a range of leisure activities outside the day centre, seem to suggest that the participants in the present study were coping well with their health related concerns and maintaining their independence. Yet, the results indicated that even a group with these pre-existing attributes benefited from interventions that enhanced choice and decision making.

Another possible limitation of the study was the attrition of 10 participants. Of the 44 subjects in this study, 10 were unable to attend the day hospital program on a regular basis (i.e., did not meet attendance requirements). It is important to note, however, that those who dropped out did so for a variety of personal reasons (e.g., medical appointments, family commitments), which were not related, directly, to the intervention. Additionally, an equal number of participants dropped out of both groups, which suggests that the attrition of study participants was not associated with the intervention.

The hospital environment itself also may have been a limitation of the investigation. Conducting the intervention in the hospital may have reinforced inadvertently, the belief that the needs of older adults with health concerns are best served by professionals within medical settings. In the interviews conducted after the intervention, a number of participants indicated that they preferred to follow the therapeutic recreation calendar instead of planning activities by themselves. They stated, "the staff knows better what activities to select". Many of the participants indicated that "the recreation therapist is the person who knows how to help people feel better and what is the best for them". As such, while the intervention provided opportunities for decision making in

an effort to enhance perceived leisure competence and control it is possible that the hospital environment where staff were assumed to know " what is best for the patients" influenced the effectiveness of the intervention.

Rothbaum, Weisz and Snyder (1982) refer to the concept of relinquishing control to more powerful others as "vicarious control". According to the authors vicarious control means that " by the association with powerful others, individuals can share in their victories and in their accomplishments - in short, in their control" (p. 20). The notion of vicarious control is related to the construct of identification, which suggests that people are more likely to identify with other individuals who have characteristics indicating control such as competence, expertise, power, and dominance (Bandura, 1969).

The qualitative data derived from the post-intervention interviews clearly indicated that the participants wanted the recreation staff "to be in control" over the day centre program. The majority of the experimental group participants noted that they wanted the hospital staff to plan appropriate activities. On the other hand, the data also revealed that they, the participants, wanted to make decisions regarding participation in offered activities. It could be assumed that the participants perceived themselves as competent and able to control participation decisions. However, in the hospital based program they wanted the staff to plan the program. These findings suggest that competence and control are complex notions that could be influenced, at least partially, by people's willingness to share control with others they view as "professionals". Thus, in the present study this belief did not result in decreased in perceptions of competence and control because the decision of sharing control with others came from the participants as opposed to having it forced on them. In other words, it is possible that allowing others to take control over certain aspects of one's life may not negatively influence perceptions of competence and control as long as it is a

personal decision to relinquish control to other people. Furthermore, the person to whom this control is being relinquished must be perceived to be competent and professional.

A final potential limitation of the study relates to the generalizability data, which indicated that the intervention did not affect participants' perceived leisure competence and control at home. The generalizability measure consisted of five statements, two that addressed perceived leisure competence and three that considered perceived leisure control. With so few items, it is possible that the generalizability measure was not sensitive enough to detect the effects of the intervention. Additionally, the duration of the control-relevant intervention may not have been enough to generate effects beyond the intervention setting. Perhaps, an instrument that included more items and/or an intervention of greater duration would have affected the participants' perceptions of leisure competence and control at home.

In addition to possible limitations, the study results are also open to several alternative interpretations. For example, the experimental program may have had the observed effects on perceived leisure competence and control, not by enhancing opportunities for decision making in leisure, but by increasing the range of leisure options that were available to participants. This alternative explanation seems unlikely, however, because the main difference between the experimental and control conditions was not in the activity options but in opportunities for choice and decision making. This is an issue that future research should consider by tracking participants' perceived leisure competence and control following the conclusion of control-relevant therapeutic recreation interventions to see whether observed effects continue over time. Another alternative explanation for the findings may be that the experimental group was responding to the researcher's attention and interest, instead of the intervention.

If this were the case, one would expect that the control group participants also would have registered improvements in leisure competence and control- but they did not.

Conclusion and Future Recommendations

In addition to addressing the issues raised in the previous section, future research is needed to extend understanding about the role of therapeutic recreation interventions in enhancing psychological well-being in later life. For example, subsequent investigations should examine the effects of similar interventions used in different settings (e.g. community clubs), and with different populations of older adults. On the latter point, it would be very interesting to compare the effects of control-relevant intervention on older adults who reside in the community versus those living in personal care homes. Another suggestion may include the investigation about the role of the setting itself. How control-enhancing interventions affect older adults who are not receiving any health related services comparing to those who attend a hospital based setting.

The results of this study indicate that enhanced personal control in leisure and recreation may improve older adults' perceptions of leisure competence and control. Consequently, recreation can be an excellent forum for working with older, frail individuals who do not have many occasions to make decisions or to take control. By providing opportunities to select activities, recreation professionals can improve participants' psychological well-being and even their physical health (Rodin, Timko, & Harris. 1985). Thus, it is important for recreation professionals who work with older population to keep communication open and solicit input from participants in planning and implementing programs. The results of this study also indicate the importance of

providing participants with opportunities for making individual activity selection.

The pre-intervention data analyses of the dependent variables revealed that older individuals living in the community and attending a day centre program are still able to maintain relatively high level of perceived leisure competence and control. These findings convey an important message to health care authorities and other health care professionals about the need to assist older adults in maintaining their independence and living in the community as long as possible. In other words, it is necessary to create more community-based program options for older adults to help them stay in the community and to maintain their quality of life.

In sum, the dearth of research in the area of therapeutic recreation, control, and psychological well-being among older individuals especially those living in the community leaves many opportunities for future inquiries. As the number of older individuals age 65 and over in most developing countries will double or triple in less than 30 years (Leitner & Leitner, 1996), there will be an ever-increasing need for therapeutic recreation services for this population- and research that examines the affects of these services.

References

Abramson, L. Y., Seligman, M. E. P., & Teasdale, J. O. (1978). Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 87, 49-74.

Affleck, G., Tennen, H., Pfeiffer, C., & Fifield, J. (1987). Appraisal of control and predictability in adapting to a chronic disease. Journal of Personality and Social Psychology, 53, 273-279.

Arling, G., Harkins, E. B., & Capitman, J. A. (1984). Institutionalization and personal control in a panel study of impaired older people. Paper presented at the 37th Annual Meeting of the Gerontological Society of America, San Antonio, TX.

Bandura, A. (1969). Social-learning theory of identificatory processes. In D. A. Goslin (Ed). Handbook of socialization theory and research. Chicago: Rand McNally.

Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37, 127-147.

Bandura, A. (1986). Social foundation of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice-Hall.

Bensink, G. W., Godbey, K. L., Marshall, M. J., & Yarandi, H. N. (1992). Institutionalized elderly, relaxation, locus of control, self-esteem. Journal of Gerontological Nursing, 16, (4), 90-96.

Brandtstadter, J., & Baltes-Gotz, B. (1990). Personal control over development. In M. M. Baltes & P. B. Baltes (Eds.), Successful Aging : Perspectives from the behavioral sciences (pp. 197-224). Cambridge, England: Cambridge University Press.

Brothen, T., & Detzner, D. (1983). Perceived health and locus of control in the aged. Perceptual and Motor Skills, 56, 946-952.

Brown, B. R., & Granick, S. (1983). Cognitive and psychosocial differences between internal and external locus of control in aged persons. Experimental Aging Research, 9, (2), 107-110.

Chipperfield, J., G., & Greenslade, L. (1999). Perceived control as a buffer in the use of health care services. Journal of Gerontology, 54B, 3, 146-154.

DeCarlo, T. J. (1974). Recreation participation patterns and successful aging. Journal of Gerontology, 29, 416-422. Perceived control as a buffer in the use of health care services. Journal of Gerontology: Social Sciences, 54B, (3), 146- 154.

Eustis, N., Greenberg, J., & Patten, S. (1984). Long-term care for older persons : a policy perspective. Monterey, CA: Brooks/Cole.

Fawcett, F., Stonner, D., & Zeppelin, H. (1980). Locus of control, perceived constraint, and morale among institutionalized aged. International Journal of Aging and Human Development, 11, (1), 13-23.

Garber, J., & Seligman, M. (1980). Human helplessness: Theory and application. New Jork: Academic Press.

Gatz, M., & Karel, M., J. (1993). Individual change in perceived control over 20 years. International Journal of Behavioral Development, 16, 305-322.

Harter, S. (1978). Effectance motivation reconsidered: Toward a developmental model. Human Development, 1, 34-64.

Heckhausen, J., & Schulz, R. (1995). A life span theory of control. Psychological Review, 102, 284 -304.

Heider, F. (1958). The psychology of interpersonal relations. New York: Chapman and Hall.

Hunter, K. M., Harris, R., & Pratt, T. (1980). Discriminators of internal and external locus of control orientation in the elderly. Research on Aging, 2, 49-60.

Iso-Ahola, S. E. (1980a). The social psychology of leisure and recreation. Dubuque, IA: Wm. C. Brown.

Iso-Ahola, S. E. (1980b). Perceived control and responsibility as mediators of the effect of therapeutic recreation on the institutionalized aged. Therapeutic Recreation Journal, 14, 36-46.

Iso-Ahola, S. E. (1984). Social psychological foundations of leisure and resultant implications for leisure counseling . In E. T. Dowd (Ed.), Leisure Counseling: Concepts and applications, (pp. 97-125). Springfield, IL: Charles C. Thomas.

Kelley, H. H. (1971). Attribution in social interaction. Morristown, NJ: General Learning Press.

Kraus, R. (1983). Therapeutic recreation service, principle and practice (3rd ed.). Philadelphia, PA: Saunders College Publishing.

Langer, E. J., & Rodin, J. (1976). The effects of choice and enhanced personal responsibility for the aged. Journal of Personality and Social Psychology, 34, 191-198.

Langer, E. J., Rodin, J., Beck, P., Weinman, C., & Spitzer, L. (1979). Environmental determinants of memory improvement in late adulthood. Journal of Personality and Social Psychology, 37, 2003-2013.

Lawton, M. P. (1994). Personality and affective correlates of leisure activity participation by older people. Journal of Leisure Research, 26 (2), 138-157.

Leiter, M. J., & Leiter, S. F. (1996). Leisure in later life. The Haworth, NY: Press, Inc.

Lucas, C. (1962). Recreation activity development in nursing homes, homes for the aging and hospitals. Springfield, IL: Charles C Thomas, Publisher.

MacNeil, R. D., & Teague, M. L. (1987). Aging and leisure: Vitality in later life. Englewood Cliffs, NJ: Prentice-Hall.

Mactavish, J. B., & Searle, M. S. (1992). Older individuals with mental retardation and the effect of a physical activity intervention on selected social psychological variables. Therapeutic Recreation Journal, 1, 38-47.

Menec, V., H., & Chipperfield, J., G. (1997a). The interactive effect of perceived control and functional status on health and mortality among young-old and old-old adults. Journal of Gerontology: Social Sciences, 52B, 118 - 126.

Menec, V., H., & Chipperfield, J., G. (1997b). Remaining active in later life: the role of locus of control in seniors' leisure activity participation, health, and life satisfaction. Journal of Aging and Health, 9 (1), 105 - 125.

Mercer, S., & Kane, R. A. (1979). Helplessness and hopelessness among the institutionalized aged: An experiment. Health and Social Work, 4, 91-116.

Molinari, V., & Mederehe, G. K. (1984). Locus of control, depression, and anxiety in young and old adults: a comparison study. International Journal of Aging and Human Development, 20, (1), 41-52.

Neustadt, L. F. (1985). Adult Day Care: a model for changing times. Physical and Occupational Therapy in Geriatrics, 4, (1), 53-66.

Osgood, J., N. (1982). Life after work. New York: Praeger Publishers.

Peppers, L. G. (1976). Patterns of leisure and adjustment to retirement. The Gerontologist, 16, 441-446.

Perri, S., & Templer, D. (1984). Effects of an aerobic exercise program on psychological variables in older adults. International Journal of Aging and Human Development, 20, 167-172.

Peterson, C., Seligman, M. E. P., & Vaillant, G. E., (1988). Pessimistic explanatory style is a risk factor for physical illness: A thirty-five-year longitudinal study. Journal of Personality and Social Psychology, 55, 23 - 27.

Phares, E. J. (1976). Locus of control in personality. Morristown, IL: General Learning Press.

Purcell, R., Z. & Keller, M. J. (1989). Characteristics of leisure activities which may lead to leisure satisfaction among older adults. Activities, Adaptation, and Aging, 13, (4), 17-27.

Riddick, C. (1993). Older women's leisure activity and quality of life. In Kelly, J. R. (Ed.). Activity and aging: Staying involved in later life . Newbury Park, CA: Sage Publications.

Rodin, J., & Langer, E. J. (1977). Long-term effects of a control-relevant intervention with the institutionalized aged. Journal of Personality and Social Psychology, 35, 897-902.

Rodin, J. (1980). Managing the stress of aging: the role of control and coping. In S. Levine & H. Ursin (Eds.), NATO conference on coping and health. New York: Academic Press.

Rodin, J., Timko, C., & Harris, S (1985). The construct of control: biological and psychosocial correlates. In C. Eisdorfer, M. P. Lawton, & G. L. Maddox (Eds.), Annual review of gerontology and geriatrics (Vol. 5, pp. 3-55). New York: Springer.

Rodin, J. (1986). Aging and health: effects of the sense of control. Science, 233, 1271-1276.

Rodin, J. (1987). Personal control through the life course. In R. Abeles (Ed.), Implications of the life span perspective for social psychology. Hillsdale, NJ: Lawrence Erlbaum.

Rodin, J, & Timko, Ch. (1992). Sense of control aging and health. In Ory, M. G., Abeles, R. P., Lipman, P. D. Aging, health, and behavior. Sage Publications, Newbury Park CA. pp. 174-206.

Rothbaum, F., Weisz, J, R. & Snyder, S. S. (1982). Changing the world and changing self: a two-process model of perceived control. Journal of Personality and Social Psychology, 42, (1), 5-37.

Rotter, J. (1966). Generalized expectancies for internal vs external control of reinforcement. Psychological Monographs, 80, 1-28.

Rotter, J. (1975). Some problems and misconceptions related to the construct of internal vs external control of reinforcement. Journal of Consulting and Clinical Psychology, 43, 56-67.

Rowe, J. W., & Kahn, R. L. (1987). Human aging. Usual and Successful. Science, 237, 143-149.

Russel, R. V. (1990). Recreation and quality of life in old age: A casual analysis. The Journal of Applied Gerontology, 9 (1), 77-90.

Ryff, C. D. (1989). Beyond Ponce de Leon and life satisfaction: new direction in quest to successful aging. International Journal of Behavioral Development, 12, (1), 35-55.

Savell, K. S. (1991). Leisure, perception of control and well-being: implications for the institutionalized elderly. Therapeutic Recreation Journal, 3, 44-59.

Schulz, R. (1976). Effects of control and predictability on the physical and psychological well-being of the institutionalized aged. Journal of Personality and Social Psychology, 33, 563-573.

Schulz, R, (1980). Aging and control. In J. Garber, & M. E. P.Seligman (Eds.), Human helplessness: Theory and applications (pp. 261-277). New York: Academic Press.

Schultz, R., Heckhausen, J., & Locher, J. (1991). Adult development, control, and adaptive functioning. Journal of Social Issues, 47, 177 - 196.

Seligman, M. E. P. (1975). Helplessness: on depression, development and death. San Francisco, CA: Freeman.

Shary, J. M., & Iso-Ahola, S. E. (1989). Effects of a control-relevant intervention on nursing home residents' perceived competence and self-esteem. Therapeutic Recreation Journal, 23, 7-15.

Slivinske, L. R., & Fitch, V. L. (1987). The effect of control enhancing interventions on the well-being of elderly individuals living in retirement communities. The Gerontologist, 27, 176-181.

Taylor, S., E., Helgeson, V. S., Reed, G. M., & Skokan, L., A. (1991). Self-generated feelings of control and adjustment to physical illness. Journal of Social Issues, 47 (4), 91 - 109.

Teitelman, J. L., & Priddy, J. M. (1988). From psychological theory to practice: improving frail elders' quality of life through control-enhancing interventions. The Journal of Applied Gerontology, 7, (3), 298-315.

Thomas, J. R. & Nelson, J. K. (1996). Research methods in physical activity. Champaign, IL: Human Kinetics.

Toole, T. & Abourezk, T. (1989). Aerobic function, information processing, and aging. In Ostrow, A. C. (Ed.). Aging and motor behaviour. Indianapolis, IN: Benchmark Press.

Waller, K. V., & Bates, R. C. (1992). Health, locus of control andself-efficacy beliefs in a healthy elderly sample. American Journal of Health Promotions, 6, 302-309.

Weiner, B. (1980). Human motivation. New York: Holt, Rinehart, Winston.

White, R. (1958). Motivation reconsidered. The concept of competence. Psychological Review, 66, 297-323.

Witt, P., & Ellis, G. (1987). The leisure diagnostic battery: Users manual. State College, PA: Venture Publishing.

Wolinsky, F., D., & Stump, T., E.(1996). Age and the sense of control among older adults. Journal of Gerontology: Social Sciences, 51B, 217 - 220.

Wortman, C. B. (1976). Casual attributions and personal control. In J. H. Harwey, W. J. Ickes, R. F. Kidd, (eds.), New direction in attribution research (vol. 1). Hillsdale, NY: Erlbaum.

Appendices

Appendix A

(The name of the client to participate)

I would like to participate in the study conducted by Magda Zmitrowicz, a graduate student in the faculty of Physical Education and Recreation Studies. I understand that my participation is voluntary and I can withdraw from the study anytime I want to. I also know that information collected in this study is confidential and my identity will not be released without my written permission.

Volunteer participant's signature: _____

Date: _____

Information about the Project for Clients Participating in the Recreation Activity Study

The participants in this study will be randomly assigned to one of two groups. Participants assigned to the experimental group will be asked to select recreation activities that they would like to participate in (e.g. indoor games, outdoor games, trivia questions, colour painting, word puzzles etc.). Participants in the control group will not have the opportunity to select activities but they will participate in the recreation programs chosen by the recreation therapist. Please note that both groups are equally important to the success of this project.

Each participant, in each group (experimental and control) will be asked to respond to a series of questionnaires twice, within a 7-week interval.

Appendix B

Dear Ms / Mr. (Executive Director, Nursing Day Centre Manager, Therapy Services Manager).

My name is Magda Zmitrowicz. I am a recreation therapist in the Concordia Hospital Day Centre. I am presently completing a Master of Science degree in therapeutic recreation at the University of Manitoba. As part of the requirements for my degree, I am expected to conduct a research study. I would like to conduct my research in the Concordia Hospital Day Centre and will need to test 40 clients attending the program.

I would like to request your permission to select the clients from the Day Centre. You will find attached a description of the study.

Thank you for your support,

Magda Zmitrowicz

Appendix C

Effects of a Control-Relevant Therapeutic Recreation Intervention on Older Adults' Perceived Leisure Competence and Control

Description of the Study

Rationale

Results of gerontological research suggest that the opportunity for choice and decision making given to older individuals enhances their psychological well-being and positively contributes to the process of successful aging.

The majority of studies regarding psychological well-being and control-enhancing interventions have been implemented at the institutional level in long-term care facilities. Research in respect to the effects of choice and decision making on psychological well-being of older individuals with a physical and/or mental impairments living independently in the community and attending community-based care settings almost does not exist. Thus, the proposed study may add some knowledge about the possible impact, which a control-enhancing intervention may have on older people living in the community, and to contribute to a better understanding of this population.

If the results are as anticipated it is also important for therapeutic recreation specialists and other health care professionals working with this population to recognize the significance of the opportunity for choice and decision making on psychological well-being and a better quality of life in older independent individuals.

Purpose of the Study

This study attempts to determine whether a control-relevant intervention (the opportunity for choice and decision making) can enhance perceptions of leisure competence and control in older individuals attending the hospital adult day care centre.

Measurements and Procedures

The study involves two research groups. Subjects in the experimental group will be given the opportunity for choice and decision making in respect to their daily recreational activities while the control group will not be given such opportunity. Two brief questionnaires assessing subjects' perceived leisure competence and control will be administered twice, at the beginning of the intervention and after 7 weeks when the treatment is over. The questions will be read individually to each subject. To assess perceptions of leisure competence and control each individual will be asked to indicate the response that they believe is the most true of her/him.

Confidentiality

Information collected in this study will be confidential. A client's identity will not be released without prior written permission from the client. All information derived from the individual interviews will be destroyed following the completion of the written report.

Participant's Right to Withdraw from the Study

Each participant has the right to deny consent or withdraw from the study at any time.

Consent Form

I have read the description of the study and understand the measurement procedures involved.

I understand that the participant may withdraw or may be withdrawn from the study at any time.

All information will be kept confidential.

Date _____

Signature _____ Position _____

Appendix D

Perceived Leisure Competence Scale

Statements	Strongly agree	Agree	Disagree	Strongly disagree
1. I'm good at almost all the recreation activities I do.				
2. During competitive activities, if I try, I usually win.				
3. I'm good enough to play active games				
4. When participating in group activities, I'm a good leader.				
5. I'm good at thinking of new recreation activities to do.				

	Strongly Agree	Agree	Disagree	Strongly Disagree
6. I learn new activities fast.				
7. I'm good at doing recreation activities with other people.				
8. I'm good at thinking of things that are pleasant to do.				
9. I'm better than most people at doing my favorite recreation activity.				
10. It's easy for me to choose a recreation activity in which to participate.				
11. I'm good at meeting people.				
12. I'm good at most of the recreation activities I do.				

	Strongly Agree	Agree	Disagree	Strongly Disagree
13. I am able to do recreation activities well.				
14. I have the skills to do the recreation activities in which I want to participate.				
15. I'm able to do indoor and outdoor activities as well as I want to.				
16. I'm usually good at the new recreation activities I try.				
17. I'm a better participant than most people.				
18. I know many recreation activities that are fun to do.				

	Strongly Agree	Agree	Disagree	Strongly Disagree
19. I'm satisfied with how well I can do most recreation activities.				
20. I'm good at the recreation activities I do with other people.				

Appendix E

Perceived Leisure Control Scale

Statements	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I can do things during a recreation activity to enable other people to enjoy doing the activity with me.				
2. I can be as good as I want to be at the recreation activities in which I participate.				
3. I can usually convince other people to do the recreation activities I want to do.				
4. If someone started an argument with me, I could make them stop.				

	Strongly Agree	Agree	Disagree	Strongly Disagree
5. I can do things during recreation activities that will help me make new friends.				
6. I can do things during a recreation activity that will improve the skills of the participant.				
7. I can make almost any activity fun for me to do.				
8. I usually decide who I will participate with during recreation activities.				
9. I can make good things happen when I do recreation activities.				
10. I can do things during recreation activities that will make everyone have more fun.				

	Strongly Agree	Agree	Disagree	Strongly Disagree

11. I can usually persuade people to do recreation activities with me, even if they don't want to.

12. I can make a recreation activity as enjoyable as I want it to be.

13. When I'm doing recreation activities, I can keep bad things from happening.

14. During a recreation activity, I can do things that will make other people better players.

15. I can do things during recreation activities that will make other people like me more.

16. I can enable other people to have fun during recreation activities.

	Strongly Agree	Agree	Disagree	Strongly Disagree
17. I can do things during recreation activities that will help other people win more often.				

Appendix F

Generalizability Measure

I. Perceived Leisure Competence

(a) I'm good at the recreation activities I choose -while I'm on my own at home

_____ "I strongly agree"

_____ " I agree"

_____ " I disagree"

_____ " I strongly disagree"

Comments: _____

(b) I'm good in selecting new recreation activities-while I'm on my own at home

_____ "I strongly agree"

_____ "I agree"

_____ "I disagree"

_____"I strongly disagree"

Comments: _____

II Perceived Leisure Control

(a) I can convince other people to select the recreation activities I want to do -while I'm on my own at home.

_____ " I strongly agree"

_____ "I agree"

_____ "I disagree"

_____ "I strongly disagree"

Comments: _____

(b) I usually decide who I will participate with during recreation activities- while I'm on my own at home.

_____ "I strongly agree"

_____ " I agree"

_____ "I disagree"

_____ "I strongly disagree"

Comments: _____

(c) During the recreation activities time usually somebody else decides for me what recreation activity I am going to do- while I am on my own at home.

_____ "I strongly agree"

_____ "I agree"

_____ "I disagree"

_____ "I strongly disagree"

Comments: _____

Appendix G

Recreation Activities Chosen by the Majority of the Experimental Group Participants

Week 1

Outside Walks

Tabletop Bowling

Horseshoes Game

Week 2

Basketball Game

Bingo

Watercolour Painting

Week 3

Video " Wedding Stories "

" Hello Dolly "

" Three Tenors "

Tabletop Bowling

Bocce Ball Game

Week 4

Gardening

Beanbag Game (a participant tosses three beanbags on the plastic board placed on the floor trying to get as close to the center as possible)

Bowling

Week 5

Trivia Questions

Shuffleboard

Bingo

Week 6

Video " The Sound of Music "

Basketball Game

Painting Class

Week 7

Sing -a -Long

Word Puzzles

Curling

Individual Activity Options Given to the Experimental Group

Reading

Listening to Music

Puzzle Pieces

Crossword Puzzles

Watching TV

Word Games

Church Activities

Playing Cards

Art Projects

Appendix H

List of Activities for the Control Group Participants

Reminiscing

Waterecolour Painting

Horseshoe Game

Video "Titanic"

Conversation Pieces (Conversations on familiar topics such as work, home, school, family, favorite activities)

Garden Walks

Trivia Questions

Curling

Video "Three Tenors"

Bingo

Grandparents Talk

Shuffleboard

Word Puzzles

Storytelling

Tabletop Bowling

Wheel of Fortune

Basketball Game

Crafts

Playing Cards

Domino Game

Art Projects

Horticulture

Games Variety (Ball toss, Adapted volleyball, Adapted soccer, Adapted Racquetball, Adapted basketball)

Sing-a Long