

---

## Articles

---

### Enhancing a Sense of Independence and Psychological Well-Being Among the Elderly: A Field Experiment

Mark S. Searle and Michael J. Mahon  
Faculty of Physical Education and Recreation Studies  
The University of Manitoba

Seppo E. Iso-Ahola  
Department of Kinesiology  
The University of Maryland

Heather Adam Sdrolias and Joanne van Dyck  
Faculty of Physical Education and Recreation Studies  
The University of Manitoba

The sense of control and freedom an individual has is critical to both physical and psychological health. Perceived locus of control and competence are two important aspects of a sense of independence. Leisure education has long been suggested as an important modality for increasing individual's control and competence and as a result, life satisfaction. This field experiment was designed to test that hypothesis among a sample of older adults who had recently reported ceasing participation in their favorite recreation activity or were experiencing problems which were limiting their participation in their favorite leisure activity. Thirteen experimental group subjects (15 controls) went through an extensive leisure education protocol based on Bullock and Howe's (1991) model. Subjects in the experimental group experienced higher levels of perceived leisure control, leisure competence, and life satisfaction and reduced levels of boredom when compared to the control group. However, a more generalized sense of control did not increase for the experimental group. The data do support the potential of leisure education as an effective means for promoting a sense of independence among the elderly. Further research is needed to assess behavioral outcomes.

**KEYWORDS:** *Leisure education, psychological well-being, locus of control, competence, boredom, independence.*

---

Mark Searle is Director, Health, Leisure, & Human Performance Research Institute and Professor, Recreation Studies; Michael Mahon is Research Associate, Health, Leisure, & Human Performance Research Institute and Associate Professor, Recreation Studies; Heather Adam Sdrolias is Assistant to the Director & Research Associate, Health, Leisure, & Human Performance Research Institute; and Joanne van Dyck is Research Associate, Health, Leisure, & Human Performance Research Institute, all at the University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2. Seppo Iso Ahola is Professor, Department of Kinesiology College of Health and Human Performance, The University of Maryland. Address all correspondence to the first author. This research was supported, in part, by funding from the Government of Manitoba's contribution to the Health Care Products and Services Research Group of CARNET: The Canadian Aging Research Network (A federally funded Network of Centres of Excellence).

## Introduction

To be able to exercise control over one's life has often been described as the pillar of human functioning and living. "At the core of one's psychological functioning is the belief that he/she is able to undertake various tasks and activities and is capable of performing them successfully" (Iso-Ahola, 1984, p. 115). It follows that a sense of control and freedom becomes critical to both psychological and physical health (Rodin, Timko, & Harris, 1985). This was demonstrated in now-classic experiments by Langer and Rodin (1976), Rodin and Langer (1977), Schulz (1976), and Schulz and Hanusa (1978). Nursing home patients' psychological and physical health were significantly improved by enhanced perceived control and freedom. Most dramatically, the mortality rate was reduced by the experimental manipulation that stressed enhancement of a sense of personal control and freedom. These experiments and their findings demonstrated that a sense of control is fundamental to human life, even to the very end of it. When people give up personal control, they become helpless and lose the sense of purpose in life as well as the will to live (Seligman, 1975).

This importance of personal control and freedom suggests that people want to be able to live their lives independently, at least within western society. While the degree of personal control and freedom may vary, the desire to be self-determined to the end of human life is evident (Langer & Rodin, 1976; Rodin & Langer, 1977; Schulz, 1976; Schulz & Hanusa, 1978). It is not surprising that a greater sense of control over life correlates positively with lower rates of illness and better health (Coleman & Iso-Ahola, 1993; Deci & Ryan, 1987). A corollary to all of the above is that the biggest constraint to independent living and psychological well-being is the belief that one is not able to undertake tasks and activities and complete them successfully. In other words, a sense of lack of personal control and competence critically undermines one's desire to live independently.

If independent living is psychologically the essence of human functioning, because it promotes physical and psychological health, it then becomes important for society to create the environment and programs that are likely to enhance a sense of control and competence in its citizens, especially among those whose sense of independent living has eroded due to various factors and circumstances. Leisure education has long been touted as a modality that not only increases people's awareness about the importance of leisure but also promotes a sense of personal control and competence (Datillo & Murphy, 1991). In fact, many scholars have suggested that the promotion of independent living should be the ultimate goal of leisure education programs (Datillo & Murphy, 1991; Dunn, 1981; Tabourne, 1992). The same applies to therapeutic recreation programs as well (Austin, 1991; Peterson & Gunn, 1984). Currently, there are leisure education programs that specifically focus on enhancement of personal control and competence and thereby independent living (Bullock & Howe, 1991; Bullock & Luken, 1994). Does enhanced control and competence result in higher levels of life satis-

faction and reductions in boredom? Does a leisure education program aimed at increasing personal leisure control and competence positively influence feelings of control outside the domain of leisure? In other words, are such leisure education programs successful? Do they achieve their goal? The present study was planned to answer these questions.

It is important to note that there is a difference between a sense of independent living and actual independent living. The former refers to a perception of it while the latter refers to actual independent living as reflected by relevant behaviors. Such relevant behaviors include activities of daily living such as personal hygiene, climbing stairs, preparing meals and instrumental activities of daily living which include such things as leisure pursuits (Verbrugge, 1990). One way for leisure education to lead to independent living is to first change people's sense of their independence. Thus, one must first perceive him or herself to be independent before they behave in a manner that reflects this perception. This is because a sense of control and competence precedes actual independent living. If people do not have a sense of personal control and competence they cannot be expected to live independent lives (Seligman, 1975). In this sense, enhancement of a sense of control and competence is a necessary, albeit not automatically sufficient, step for independent living to occur. If leisure education programs are able to change people's perceptions of their personal control and competence, then it is reasonable to expect changes in actual behavior reflecting independent living.

Erosion of a sense of personal control and competence is acute among the elderly (Baltes & Baltes, 1990). Physical ailments alone can lead to such undermining effects. In addition, and unfortunately, institutional care for the elderly is often such that it undercuts rather than promotes a sense of independent living. Because leisure is important to older adults (Larson, Zuzanek, & Mannell, 1985; Larson, Mannell, & Zuzanek, 1986), leisure activities can be used as a tool to enhance older adults' sense of control and competence (Searle & Mahon, 1991, 1993). Thus, leisure education programs specifically geared toward enhancement of the elderly's mastery over their lives and behaviors can be expected to promote a sense of independent living. If it can be shown that these kinds of leisure education programs result in enhanced sense of control and competence and improved psychological well-being in general, then scientific validation of those programs has been established. As the present experiment was designed to test the effect of a leisure education program on perceived control and competence, it is seen, in part, as a construct validation study.

It was hypothesized that a leisure education program designed to focus on enhancement of perceived leisure control and competence would improve subjects' sense of leisure control, leisure competence and psychological well-being (as indicated by life satisfaction). In addition, leisure boredom, because it correlates negatively with leisure competence (Iso-Ahola & Weissinger, 1987), was expected to be reduced by the leisure education program. This would be another indicator of the effects of the intervention on

the psychological well-being of the subjects. Finally, an attempt was made to see if these expected effects would become generalized. That is, is the positive effect of a leisure education program limited to a specific domain, such as enhanced leisure control, or does the effect extend beyond it to a generalized sense of personal control? If the treatment program is powerful enough, such generalized effects could be expected in a general measure of locus of control. This possibility was explored empirically in the present study.

## Method

### *Subjects*

The study consisted of a volunteer sample of 30 subjects from the city of Winnipeg, Manitoba. These subjects were derived from a pool of participants ( $n = 260$ ) identified from the Canadian Aging Research Network needs study ( $N = 1406$  adults aged 65 and over) as being willing to participate in future research projects and who met the criteria of currently experiencing some problem which was reducing or eliminating their participation in a favorite leisure activity or had already led to the ceasing of their participation. We further reduced the pool of available participants by restricting the study to those subjects residing in the city of Winnipeg and eliminating those who upon attempts to recontact were now unwilling to participate in future studies, had become too ill, were deceased, or could not be contacted. Thus, the total pool available was 82 subjects. We observed in this group of 82 respondents, compared to the remaining 1324 subjects, that there were more females in the group ( $X^2 = 12.80$ ,  $df = 1$ ,  $p < .0003$ ), and fewer subjects in this group who indicated that they were presently married ( $X^2 = 26.42$ ,  $df = 4$ ,  $p < .0003$ ). In all other respects, the two groups were quite similar.

The potential subjects were contacted by telephone to determine their interest in participating in the study. A standard telephone script was developed which ensured that all initial contact was consistent. Subjects were told that if they participated, they would either take part in two appointments where they would fill out a number of questionnaires, or they would take part in these two sessions and take part in a weekly home-based leisure education program for approximately 16 weeks. Subjects were advised that their responses would be kept confidential and only grouped data would be reported. If subjects agreed to participate in the study they were asked to fill out an informed consent form. Following this, they were randomly assigned to either an experimental or control group.

The final sample consisted of 30 subjects, with 15 in the control group and 15 in the experimental group. Two subjects withdrew from the experimental group leaving it with 13. One withdrew due to personal health problems and the other due to the death of a family member. Table 1 shows the demographic profile of the sample by group. All subjects were of European descent and were Caucasian. There were few males in the sample and the

TABLE 1  
*Demographic Profile of the Experimental and Control Group Subjects*

Variables	Experimental	Control Group
Sex <sup>1</sup>		
Males	2	1
Females	11	14
Age <sup>2</sup>		
65-69	2	1
70-74	2	8
75-79	3	3
80-84	5	1
85+	1	2
Mean Age	77.5	75.6
S.D.	5.5	5.3
Marital Status <sup>3</sup>		
Single	0	2
Married	4	7
Divorced	0	2
Widowed	9	4
Years of Education <sup>4</sup>		
0-4	1	1
5-9	4	4
10-14	7	5
15+	1	5
Mean Education	10.6	11.5
S.D.	4.0	4.8
Employed <sup>5</sup>		
Yes	0	1
No	13	14

<sup>1</sup>Chi Square = .53, *df* = 1, N.S.

<sup>2</sup>*F* = .771, *df* = 1, 26, N.S.

<sup>3</sup>Chi Square = 4.27, *df* = 3, *p* < .03

<sup>4</sup>*F* = .295, *df* = 1, 26, N.S.

<sup>5</sup>Chi Square = .87, *df* = 1, N.S.

experimental group was about two years older than the control group on average (mean age for the experimental group = 77.5 compared to 75.6 for the control group). However, this age difference was not statistically significant. There was a greater proportion of widows in the experimental group (*n* = 9) compared to the control group (*n* = 4). Only one subject among the 28 was still employed. The experimental group subjects also had less education on average than did the control group subjects, although this difference was not statistically significant. In addition, it was determined that there were no significant differences between the control and experimental group in terms of activities of daily living (*F*(1,26) = .253, *p* = N.S.) dexterity

( $F(1,26) = .657, p = \text{N.S.}$ ), number of chronic conditions ( $F(1,26) = .679, p = \text{N.S.}$ ), and number of illness symptoms ( $F(1,26) = .330, p = \text{N.S.}$ ). However, the subjects in the study had significantly more problems with dexterity tasks ( $F(1,1392) = 3.922, p < .048$ ) and had significantly more illness symptoms ( $F(1,1392) = 3.901, p < .048$ ) than the rest of the participants in the needs assessment survey.

### *Instrumentation*

The experimental design was one in which both groups were pre-tested and post-tested on a number of dependent variables. The following measures were used during the pre and post-tests: Perceived Leisure Control Scale; Perceived Leisure Competence Scale; Life Satisfaction Index A; Locus of Control Scale; and Leisure Boredom Scale.

The Perceived Leisure Control Scale was designed by Witt and Ellis (1987) to assess the degree of internality, or the extent to which the individual perceives control of events and outcomes in his or her leisure experiences. There are 17 items contained in this scale. The test-retest reliability for this scale has ranged from .79 to .81 while the internal consistency measures (Cronbach, 1951) have ranged from .86 to .94 in previous administrations of the test. The construct validity has been well established through a series of well-documented steps (Witt & Ellis, 1987). The test-retest reliability coefficient in a study with older adults conducted by Searle and Mahon (1991) (pre-test to first post-test) was .71 indicating reasonable stability for the scale. However, test-retest reliability calculated based on the first post-test to the second post-test (a period of three months) revealed a less stable pattern over time with a coefficient of .61 (Searle & Mahon, 1993). Similar results concerning the stability of the scale were found in this study with a test-retest coefficient of .59. The scale is scored through a straightforward summative procedure. In this study, the higher the score, the higher the feelings of internal control.

The Perceived Leisure Competence Scale was also a product of the work of Witt and Ellis (1987). This scale enables the measurement of perceptions of the degree of personal competence in leisure endeavors. Specifically, the scale examines competence in four areas: cognitive, social, physical, and general. The scale is composed of 20 items. The scale is also scored through a straightforward summative procedure. The test-retest validity of the scale has ranged from .82 to .88. The internal consistency has ranged from .83 to .93. The construct validity has been reported in detail in Witt and Ellis (1987). The test-retest reliability coefficient in the 1991 Searle and Mahon study was .87 indicating strong stability for the scale. The test-retest reliability calculated based on the first post-test to the second post-test (a period of three months) revealed a drop in the stability to .66 (Searle & Mahon, 1993). The test-retest reliability coefficient in the present study for the Perceived Leisure Competence Scale was .87. As with the leisure control scale, the higher the score, the higher the feelings of leisure competence.

The Life Satisfaction Index A was developed by Neugarten, Havighurst and Tobin (1961) and revised later by Wood, Wylie and Sheafor (1969). The scale consists of 13 items which were reverse coded in this study such that high scores indicate high life satisfaction. Validity and reliability coefficients for the Index have been reported at .57 and .79 respectively (Wylie, 1974). Riddick and Daniel (1984) reported a Cronbach (1951) alpha of .84 in their use of the index with a sample of older women. Searle and Mahon (1991, 1993) reported a test-retest reliability of .71 over an eight week period and a coefficient of .52 over three months. The test-retest reliability coefficient in the present study for the Life Satisfaction Scale was .65.

The Locus of Control Scale was developed by Levenson (1974). This scale was developed based on a sample of college students but has been used more recently with older adults (Shewchuk, Foelker, & Niederehe, 1990). It is designed to differentiate between two types of external orientation—belief in chance, and belief in control by powerful others, as well as internal orientation. Levenson's (1974) scale of 24 items was modified to a 12 item scale (Shewchuk et al., 1990). The three components of the Levenson Locus of Control Scale; Internal, Powerful Others, and Chance had test-retest reliabilities for a one-week period of  $r = .64, .74, \text{ and } .78$ , respectively. The same 10 item modified version of the locus of control scale was utilized in the present study as was used in the original needs assessment study. It had been modified in order to have equal number of items dealing with externality as internality. High scores indicate greater feelings of control. The test-retest reliability coefficient of the locus of control scale used in this study was .50.

The Leisure Boredom Scale (Iso-Ahola & Weissinger, 1990) is intended to measure individual differences in perceptions of boredom in leisure. The Cronbach's (1951) alpha coefficients for the total scale were reported by Iso-Ahola and Weissinger in a review of three separate studies as .85, .88, and .86. The scale consists of 16 items and uses a five point Likert response format ranging from strongly agree to strongly disagree. In this application of the scale, the lower the score, the less boredom one is experiencing. The test-retest reliability coefficient in this study for the leisure boredom scale was .78.

### *Leisure Education Intervention*

The intervention for this study was a modified version of the Community Reintegration Program (CRP) (Bullock & Howe, 1991). This intervention was originally developed as a transitional therapeutic recreation program for persons who have recently moved from a rehabilitation program back into their home community. Bullock and Howe (1991) reported that participants involved in the CRP program successfully re-engaged in activities participated in before their accident, and/or initiated new, alternative activities. The program was modified to ensure that all of the activities, discussions and exercises were appropriate for an older adult population. The original CRP pro-

gram did, however, have some subjects who were older adults. As a result, minimal modifications were necessary.

The CRP is described by Bullock and Howe (1991) as being conceptually framed in the principle of normalization and social role valorization (Wolfensberger, 1972, 1985). In their description of this conceptual framework, Bullock and Howe (1991, p. 9) indicate that, "... social role valorization theory identifies the individual's right and responsibility to assume a valued role in society and society's obligation to allow the individual to pursue that role without constraint."

In addition to social role valorization serving as a foundation to the intervention in the present study, the intervention was also based on social learning theory and social exchange theory. Social learning theory (Bandura, 1977) proposes that personal competency is an important motivator in human behavior. Within social learning theory, Bandura postulated a theory of self-efficacy which suggested that a primary motivator for an individual is the perception of competence or personal mastery. Wehmeyer (1992) argues that Bandura's work provides a basis for understanding the construct of self-determination. Wehmeyer (1992, p. 305) suggests that "self-determination refers to the attitudes and abilities required to act as the primary causal agent in one's life and to make choices regarding one's actions free from undue external influence or interference." According to Bandura (1982), the degree to which individual's are self-determining is determined by their efficacy expectations (the conviction that they can perform the behavior).

In addition to social learning theory, social exchange theory (Blau, 1964; Emerson, 1972a, 1972b; Homans, 1961) provides a second theoretical foundation for the intervention. Condeluci (1991) notes that a state of interdependence between persons with and without a disability is conducive to facilitating social integration. Interdependence focuses on relationships that lead to a mutual acceptance and respect between persons with and without disabilities. Condeluci argues that in order to achieve such a state, a person must first be self-determining. That is, they must be able to act independently. Condeluci's notion of interdependence is closely tied to the concept of reciprocity, which is one of the key elements of social exchange theory. Gouldner (1960) has observed that the two central elements of reciprocity are that people should help those that help them, and that people should not injure those who have helped them. He argues that reciprocity is a universal norm. The concepts of interdependence and self-determination are applicable to an older adult population, as in many cases older adults are faced with many challenges similar to those of persons with a disability.

Therefore, concepts of social role valorization, self-determination, and interdependence helped to drive the leisure education process within the present study. In addition, the dependent variables were closely tied to both the conceptual framework and the intervention. The interdependent nature of the intervention was designed to foster a greater sense of control in each subject. This was facilitated by the self-study nature of the intervention, and the fact that the Therapeutic Recreation Specialist was trained to foster a



reciprocal relationship between herself and each subject. In addition, the process of identifying barriers and ways in which to overcome barriers, and the development of a personal action plan were also designed to foster control in the subjects.

The intervention was also designed to facilitate greater feelings of competence and enhanced participation. The CRP model allowed subjects to take a realistic look at their present repertoire of leisure activities and assess the extent to which they are still meeting their leisure needs. This process is very important for older adults who may have declining health or who may in fact be in the process of disablement. Since most of the subjects in the study had significantly more dexterity problems and more illness symptoms than the rest of the original needs assessment sample, this was particularly important. The present intervention helped subjects to determine what was the most realistic, yet desirable leisure plan for their present abilities. As such, it was individualized to address the unique challenges facing each experimental group subject and designed to ensure that these subjects perceived themselves as competent to achieve their leisure plan, thereby increasing the probability of enhanced participation.

Mahon and Searle (1994) recently have suggested that a leisure education process can help facilitate enhanced well-being in older adults, as measured by life satisfaction. The present study was designed to further test this proposition. In addition, there has been a suggestion that a leisure education process may be useful in counteracting leisure boredom (Iso-Ahola & Weisinger, 1990). The present study was designed to decrease feelings of boredom by facilitating enhanced participation in activities the subjects both feel in control and competent.

The intervention consisted of a minimum of 12 units conducted by a Therapeutic Recreation Specialist (TRS). Each of the units consisted of a variety of activities such as: discussion exercises, paper and pencil exercises, role playing, and recreation activity participation (See Figure 1). Though each unit had a specific objective and activities to be initiated with all subjects, the leisure education process was individualized to meet the needs of each subject. In some cases the TRS was able to complete more than one unit during an intervention session, while other subjects required more than one session to complete a given unit. The speed at which subjects proceeded through the process depended upon the personal issues that they and the TRS felt were important to address in relation to each unit. For example, some subjects had a substantial number of real and perceived barriers to leisure participation, while others did not. Those who had a significant number of barriers spent a longer amount of time in Unit 6, Barriers.

After each of the experimental group subjects met individually with the TRS to complete the pre-test (one session), they began the leisure education intervention. Each subject was given a CRP Participant Guide (Bullock & Morris, 1990). The guide provided the participants with user friendly information on each of the units and a number of exercises. This manual was originally developed by Bullock and Morris (1990) as a self-study guide. In

Unit 1: *What you do for recreation.* This unit has the client explore the potential benefits of recreation on physical and mental well-being and his/her personal recreation interests.

Unit 2: *Why you do what you do.* Based on the list of interests identified in unit 1, the TRS helps the clients decide what motivates them to participate in specific recreation activities.

Unit 3: *How it's done.* The client learns to conduct an activity analysis of each of his/her recreation interests by analyzing the physical, mental and social skills required for each activity.

Unit 4: *Can you do it?* Clients are taught to realistically assess current and potential physical and mental capabilities, and how they may affect future recreation involvement.

Unit 5: *Can/will you adapt?* Each of the clients is exposed to the concepts of activity adaptation and equipment modification and taught how to utilize the procedures to facilitate satisfactory leisure participation.

Unit 6: *Barriers.* Clients explore the variety of barriers they may face, and explore ways and means of overcoming barriers to enable them to participate in their chosen leisure pursuits.

Unit 7: *Making plans for your future recreation.* Clients are taught to make realistic short and long range leisure plans.

Unit 8: *What else is there?* In this unit clients explore other potential recreation pursuits, determine what skills they must learn to participate in such activities, and develop plans to facilitate their participation in these activities.

Unit 9: *Resources.* Clients are taught to identify who may act as a support for them to carry out their leisure goals, and how to make clear and assertive requests for assistance.

Unit 10: *Personal resources.* Each of the clients is taught to assess personal resources including such things as finances, transportation, and equipment as they relate to their leisure plans.

Unit 11: *Community resources.* Clients are exposed to community resources and are taught how to assess such resources as a means of facilitating community-based participation.

Unit 12: *Before You're Through With Us.* Prior to the end of the intervention clients are asked to reassess and if necessary revise their participation goals. In part, this is to ensure that they are able to continue to reassess their leisure goals in the future.

*Figure 1.* Leisure Education Program Units

the present study each subject had the option of reading ahead in the participant's manual or completing all of the unit exercises with the TRS. If a subject chose to read ahead and independently complete some of the exercises, he/she and the TRS would discuss the unit which had been completed independently at the following meeting. The TRS and subjects met on an individual basis only (unless the activity was to be done outside the home and therefore, with some group) and they met once a week. Initially, the TRS met with each subject in their home to conduct the leisure education program. As the program proceeded and the subjects had identified activities they wished to engage in, the sessions took place outside of the home, if the activities were not home-based. The average number of weeks spent in the leisure education program was 17 (ranged from a minimum of 14 to a maximum of 25).

Prior to the post-test session, an ongoing developmental action plan was developed by the subject and the Therapeutic Recreation Specialist. In preparation for the termination of the intervention, the Therapeutic Recreation Specialist initiated a process of withdrawal from the lives of the experimental group subjects through decreased contact and then phone only contact, until the process was concluded. This was done in an effort to reduce the effects of the TRS visits and to ensure the results were reflective of the intervention process. The objective of the individual plan was to have the subject re-evaluate and if necessary, revise his/her recreation participation goals to ensure that they would continue to meet his/her needs. Following this, each subject articulated a plan for his/her continued involvement in the recreation activity(s) he/she had initiated.

The control group was contacted twice over the period of the study. In the first instance, they were informed that they had been assigned to the control group and that they were to maintain their current lifestyle. We then arranged a meeting with them at their home to collect the pre-test data on the same variables as the experimental group. The second contact came at the end of the study when we arranged to meet with them again at their home for the purposes of collecting post-test data. Control group subjects received no intervention and were not recipients of other interventions from social service or recreation agencies during the time period of this study.

### *Analysis*

A pre-post test experimental design was used in the study. Each of the 28 subjects were pre-tested on the quantitative dependent measures identified earlier. Following this, the experimental group ( $n = 13$ ) received an individualized leisure education program once per week for approximately one hour. At the completion of the intervention, the experimental and control group subjects were post-tested using the same measures as in the pre-test.

Descriptive statistics were used to describe the demographic characteristics of both the control and experimental groups. Multiple analysis of co-

variance (MANCOVA) was used to determine whether there was a significant difference between the control and experimental subjects in terms of the dependent measures perceived leisure control, perceived leisure competence, life satisfaction, generalized locus of control and leisure boredom, controlling for pretest differences. Following the MANCOVA, analysis of covariance was used to determine significant differences between the two groups on the dependent variables separately, controlling for pretest differences. Finally, Pearson Product Moment correlations were run on the post-test results to assess the nature of the relationships between the dependent variables.

### Results

The multivariate analysis of covariance of the one independent variable (control group versus experimental group) and the five dependent measures (perceived leisure control, perceived leisure competence, life satisfaction, generalized locus of control, and leisure boredom), controlling for pre-test differences was significant ( $F(25,64.65) = 4.28, p < .000$ ). The results of the subsequent analysis of covariance are displayed in Table 2. Subjects in the experimental group significantly improved their leisure control ( $F(1, 25) = 25.044, p < .000$ ), leisure competence ( $F(1, 25) = 27.144, p < .000$ ), life satisfaction ( $F(1, 25) = 15.023, p < .001$ ), and reduced their leisure boredom ( $F(1, 25) = 14.507, p < .001$ ) from pre-test to post-test compared to the control group. There was no significant improvement in generalized locus of control for the experimental group from pre-test to post-test when com-

TABLE 2  
A Summary of ANCOVAs for the Dependent Measures

	Means and Standard Deviations		ANCOVA	
	Control Group	Experimental Group	Main Effects*	Significance
Leisure Control				
Pre-test	3.34, .41	3.11, .55		
Post-test	3.06, .58	3.91, .50	$F = 25.044$	$p < .000$
Leisure Competence				
Pre-test	2.87, .57	2.87, .40		
Post-test	2.67, .70	3.49, .61	$F = 27.144$	$p < .000$
Life Satisfaction				
Pre-test	3.27, .63	3.43, .57		
Post-test	3.13, .52	3.90, .62	$F = 15.023$	$p < .001$
Generalized Locus of Control				
Pre-test	3.59, .57	3.86, .31		
Post-test	3.81, .49	4.07, .34	$F = .907$	N.S.
Leisure Boredom				
Pre-test	2.27, .64	2.93, .79		
Post-test	2.43, .59	1.97, .76	$F = 14.507$	$p < .001$

\* $df = 1,25$

pared to the control group ( $F(1,25) = .907$ , N.S.). However, both groups reported increases in their generalized sense of control over the course of the intervention.

The correlation matrix (see Table 3) of the post-test dependent variables demonstrates the interrelationships of these variables. Such interrelationships must be understood in order to interpret the results (e.g., to assess whether some variables correlated in a direction other than hypothesized). Leisure control was significantly correlated with leisure competence ( $r = .86$ ,  $p < .01$ ), life satisfaction ( $r = .54$ ,  $p < .01$ ), generalized locus of control ( $r = .45$ ,  $p < .05$ ), and leisure boredom ( $r = -.50$ ,  $p < .01$ ). Leisure competence was found to be significantly related to life satisfaction ( $r = .50$ ,  $p < .01$ ), generalized locus of control ( $r = .45$ ,  $p < .05$ ) and leisure boredom ( $r = -.49$ ,  $p < .01$ ). Life satisfaction was significantly correlated with both the generalized locus of control ( $r = .48$ ,  $p < .05$ ) and leisure boredom ( $r = -.74$ ,  $p < .01$ ). The generalized measure of locus of control was also significantly correlated with leisure boredom ( $r = -.55$ ,  $p < .01$ ). These correlational results are consistent with the way the variables were expected to relate to one another given the research questions posed at the outset.

### Discussion

The purpose of this study was to test the effect of a leisure education program on a sense of independence and psychological well-being among community residing elderly persons. In addition, the purpose of this study was to establish construct validity of a leisure education program by showing that such an intervention was useful in achieving the aims often attributed to it. Results confirm that the intervention had the desired effects of enhancing perceived leisure control and leisure competence, two necessary precursors to actual independent behavior. In addition, there was a significant positive effect on life satisfaction which was further substantiated by an

TABLE 3  
*Intercorrelations Among the Dependent Measures*

	Leisure Control	Leisure Competence	Life Satisfaction	General Locus of Control
Leisure Competence	.86**			
Life Satisfaction	.54**	.50**		
General Locus of Control	.45**	.45*	.48**	
Leisure Boredom	-.50**	-.49**	-.74**	-.55**

\*Significant  $p < .05$

\*\*Significant  $p < .01$

observed reduction in leisure boredom. Thus, there was an improvement in psychological well-being. However, the effects appeared to be domain specific as a generalized sense of control was not enhanced through this process.

Iso-Ahola (1979, 1980), Mannell and Bradley (1986), Mannell, Larson and Zuzanek (1988), and Witt and Ellis (1987), among many others, have made convincing arguments that the most critical determinant of what constitutes leisure, is the freedom one perceives in choosing that activity. Coleman (1993) has recently shown that the freedom of choice one perceives in his or her leisure influences the severity of illness experienced. Ability to make choices is related to a strong sense of control over one's leisure and feelings of being able to do the activity in a manner which is satisfying. Thus, the strength of a leisure education intervention may lie in its addressing the issue of choice. That is, through the process it is possible to explore the range of choices an individual perceives him or herself having, examine how that choice set can be expanded or otherwise altered to enhance an individual's options and then facilitate actual participation in one or more of the desired activities. As a result, positive change in feelings of leisure competence and control are more likely to result.

These findings demonstrate the powerful potential of structured interventions to enhance an individual's leisure. Leisure education has been cited as a process to enhance the quality of leisure experiences and thereby the quality of life for many years (e.g., Brightbill, 1966; Datillo & Murphy, 1991; Dunn, 1981; Kaplan, 1979; McDowell, 1976). More recently, leisure education has been designed with goals of enhancing independence and promoting greater control and competence (Bullock & Howe, 1991; Bullock & Luken, 1993; Datillo & Murphy, 1991, Mahon, 1994). Furthermore, the issue of constraints on leisure has been the subject of intensive investigation in the past decade. Among that which is clear, is the need to find strategies to help people overcome their constraints and enhance their quality of life. Searle and Jackson (1985) suggested leisure education interventions as a viable means to address constraints, yet little has been done to directly assess the efficacy of this proposal.

This research provides an initial piece of evidence to support the validity of claims surrounding leisure education as it relates to the specific process we have used. These findings differ from earlier research by Searle and Mahon (1991, 1993) in which they reported short and long term effects on perceived leisure competence but no effects on perceived leisure control. At the time they speculated that this may have been due to the lack of opportunity for individuals who received the leisure education intervention to actually engage in their desired activities and operationalize their leisure action plan. The Bullock and Howe (1991) leisure education process, which ensured subjects had the opportunity to become engaged in their desired leisure pursuit(s), overcame that problem as evidenced by the findings. Thus, leisure education, in order to be an effective device to enhance perceived leisure control, must provide for the actual involvement of the subjects in the activity(s) of their choosing and see to the establishment of this new or renewed participation pattern.

However, despite the positive outcomes, the lack of change in generalized perceptions of control suggests changes are needed to the nature of the intervention. Since the intervention was aimed at improving perceptions of control within the sphere of leisure, and there were no direct efforts made to instruct the subjects on how to take greater control over other aspects of their life, the result is, in retrospect, not surprising. However, it is imperative that leisure education interventions address this issue if they are intended to have the outcomes generalized to other aspects of an individual's life.

In the future, more controlled experimental studies are needed to assess the validity of leisure education with other age groups, cultural groups, and those dealing with different problems (e.g., depression). Moreover, subsequent research should include a third group of subjects who would receive a social call once a week and efforts should be directed at including an element in the intervention to enable subjects to see how the process can be applied to other aspects of their life. This would help to test the effects of the intervention and not simply the visit by the Therapeutic Recreation Specialist and would create a more realistic environment for testing the outcomes on a generalized sense of control. An extension of the present study could include a follow up to determine whether there has been any significant behavioral changes as a result of the intervention. Future research directed at replicating and extending this study will address a frequently cited criticism of leisure research, i.e., the shortage of replication research (Godbey, 1989). Babbie (1989) notes that replication is an important process in safeguarding against over-generalization and premature conclusions. Stockdale's (1989, p. 114) argument that leisure research needs to be characterized by more convergence that will result in "...explicit and coherent theorizing about the nature and origins of leisure behavior..." implies a greater need for replication research.

## References

- Austin, D. R. (1991). *Therapeutic recreation: Processes and techniques*. Champaign, IL: Sagamore Publishing, Inc.
- Babbie, E. (1989). *The practice of social research* (5th Ed.). Belmont, CA: Wadsworth.
- Baltes, P. B. & Baltes, M. M. (Eds.) (1990). *Successful aging: Perspectives from the behavioral sciences*. Cambridge: Cambridge University Press.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, New Jersey: Prentice Hall.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, 37, 122-147.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.
- Brightbill, C. K. (1966). *Educating for leisure-centered living*. Harrisburg, PA: Stackpole Books.
- Bullock, C. C., & Howe, C. Z. (1991). A model therapeutic recreation program for the reintegration of persons with disabilities into the community. *Therapeutic Recreation Journal*, 25(1), 7-17.
- Bullock, C. C., & Luken, K. (1994). Recreation through reintegration. In D. Compton & S. E. Iso-Ahola, (Eds). *Leisure and mental health*. (pp. 215-233). Park City, Utah: Family Development Resources.
- Bullock, C. C., & Morris, L. (1990). *The community reintegration program*. Chapel Hill, NC: The University of North Carolina at Chapel Hill.

- Coleman, D. (1993). Leisure based social support, leisure dispositions and health. *Journal of Leisure Research*, 25, 350-361.
- Coleman, D. & Iso-Ahola, S. E. (1993). Leisure and health: The role of social support and self-determination. *Journal of Leisure Research*, 25, 111-128.
- Condeluci, A. (1991). *Interdependence: A route to community*. Orlando, FL: Paup M. Deutsch.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of test. *Psychometrika*, 16, 297-334.
- Datillo, J., & Murphy, W. (1991). *Leisure education program planning: A systematic approach*. State College, PA: Venture Publishing Inc.
- Deci, E. L., & Ryan, R. M. (1987). The support and autonomy and the control of behavior. *Journal of Personality and Social Psychology*, 53, 1024-1037.
- Dunn, J. K. (1981). Leisure education: Meeting the challenge of increasing leisure independence of residents in psychiatric transitional facilities. *Therapeutic Recreation Journal*, 15(4), 17-23.
- Emerson, R. M. (1972a). Exchange theory, Part I: A psychological basis for social exchange. In J. Berger, M. Zelditch, & B. Anderson (Eds.), *Sociological theories in progress*, (Vol. 2), (pp. 38-57). Boston: Houghton-Mifflin.
- Emerson, R. M. (1972b). Exchange theory, Part II: Exchange relations and network structures. In J. Berger, M. Zelditch, & B. Anderson (Eds.), *Sociological theories in progress*, (Vol. 2), (pp. 58-87). Boston: Houghton-Mifflin.
- Godbey, G. (1989). Implications of recreation and leisure research for professionals. In E. L. Jackson & T. L. Burton (Eds.) *Understanding leisure and recreation: Mapping the past, charting the future* (pp. 613-628). State College, PA: Venture Publishing, Inc.
- Gouldner, A. W. (1960). The norm of reciprocity. *American Sociological Review*, 25, 161-178.
- Homans, G. C. (1961). *Social behavior: Its elementary forms*. New York: Harcourt Brace Jovanovich.
- Iso-Ahola, S. E. (1979). Some social psychological determinants of perceptions of leisure: Preliminary evidence. *Leisure Sciences*, 2, 305-314.
- Iso-Ahola, S. E. (1980). *The social psychology of leisure and recreation*. Dubuque, IA: Wm. C. Brown.
- Iso-Ahola, S. E. (1984). Social psychological foundations of leisure and resultant implications for leisure counselling. In E. T. Dowd (Ed.), *Leisure counselling: Concepts and applications* (pp. 97-125). Springfield, IL: Charles C. Thomas.
- Iso-Ahola, S. E., & Weissinger, E. (1987). Leisure and boredom. *Journal of Social and Clinical Psychology*, 5, 356-364.
- Iso-Ahola, S. E., & Weissinger, E. (1990). Perceptions of boredom in leisure: Conceptualization, reliability and validity of the leisure boredom scale. *Journal of Leisure Research*, 22, 1-17.
- Kaplan, M. (1979). *Leisure: Lifestyle and lifespan*. Philadelphia: Saunders. Langer, E., & Rodin, J. (1976). The effects of choice and enhanced personal responsibility for the aged: A field experiment in an institutional setting. *Journal of Personality and Social Psychology*, 34, 191-198.
- Larson, R., Mannell, R., & Zuzanek, J. (1986). Daily well-being of older adults with friends and family. *Journal of Psychology and Aging*, 1, 117-126.
- Larson, R., Zuzanek, J., & Mannell, R. (1985). Being alone versus being with people: Disengagement in the daily experience of older adults. *Journal of Gerontology*, 40, 375-381.
- Levenson, H. (1974). Activism and powerful others: Distinctions within the concept of internal-external control. *Journal of Personality Assessment*, 38, 377-383.
- Mahon, M. J. (1994). The use of self-control techniques to facilitate self determination skills during leisure in adolescents with mild and moderate mental retardation. *Therapeutic Recreation Journal*, 28(2), 58-72.
- Mahon, M. J., & Searle, M. S. (1994). Leisure education: It effects on older adults. *Journal of Physical Education, Recreation, and Dance*, 65(4), 36-41.



- Mannell, R. C., & Bradley, W. (1986). Does greater freedom always lead to greater leisure? Testing a person X environment model of freedom and leisure. *Journal of Leisure Research*, 18, 215-230.
- Mannell, R. C., Larson, R., & Zuzanek, J. (1988). Leisure states and 'flow' experiences: Testing perceived freedom and intrinsic motivation hypotheses. *Journal of Leisure Research*, 20, 289-304.
- McDowell, C. F. (1976). *Leisure counseling: Selected lifestyle processes*. Eugene, OR: Center of Leisure Studies, University of Oregon.
- Neugarten, B. L., Havighurst, R. J., & Tobin, S. S. (1961). The measurement of life satisfaction. *Journal of Gerontology*, 16, 134-143.
- Peterson, C., & Gunn, S. (1984). *Therapeutic recreation: Processes and techniques*. Englewood Cliffs, NJ: Prentice Hall.
- Riddick, C. C., & Daniel, S. N. (1984). The relative contributions of leisure activities and other factors to the mental health of older women. *Journal of Leisure Research*, 16, 136-148.
- Rodin, J., Timko, C., & Harris, S. (1985). The construct of control: Biological and psychological correlates. *Annual Review of Gerontology and Geriatrics* (Volume 5), (pp. 3-55). New York: Springer.
- Rodin, J. & Langer, E. (1977). Long term effects of a control-relevant intervention with the institutionalized aged. *Journal of Personality and Social Psychology*, 35, 897-902.
- 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., & Hanusa, B. H. (1978). Long-term effects of control and predictability-enhancing interventions: Findings and ethical issues. *Journal of Personality and Social Psychology*, 36, 1194-1201.
- Searle, M. S. & Mahon, M. J. (1991). Leisure education in a day hospital: The effects on selected social-psychological variables among older adults. *Canadian Journal of Community Mental Health*, 10(2), 95-109.
- Searle, M. S. & Mahon, M. J. (1993). The effects of leisure education on selected social-psychological variables: A three month follow-up study. *Therapeutic Recreation Journal*, 27(1), 9-21.
- Searle, M. S., & Jackson, E. L. (1985). Recreation non-participation and barriers to participation: Considerations for the management of recreation delivery systems. *Journal of Park and Recreation Administration*, 3(2), 23-35.
- Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death*. San Francisco: W.H. Freeman and Company.
- Shewchuk, R. M., Foelker, G. A., & Niederehe, G. (1990). Measuring locus of control in elderly persons. *International Journal of Aging and Human Development*, 30, 213-224.
- Stockdale, J. E. (1989). Concepts and measures of leisure participation and preference. In E.L. Jackson & T.L. Burton (Eds.), *Understanding leisure and recreation: Mapping the past, charting the future* (pp. 114-150). State College, PA: Venture Publishing, Inc.
- Tabourne, C. E. S. (1992, April). Name that tune: Leisure education with the elderly. *Parks and Recreation*, 27(4), 46-48, 82.
- Verbrugge, L. M. (1990). The iceberg of disability. In S.M. Stahl (Ed.), *The legacy of longevity* (pp. 55-75). Newbury Park, CA: Sage.
- Wehmeyer, M. L. (1992). Self-determination and the education of students with mental retardation. *Education and Training in Mental Retardation*, 4, 302-314.
- Witt, P., & Ellis, G. (1987). *The leisure diagnostic battery: Users manual*. State College, PA: Venture Publishing, Inc.
- Wolfensberger, W. (1972). *The principle of normalization in human services*. Toronto: National Institute Of Mental Retardation.

- Wolfensberger, W. (1985). An overview of social role valorization and some reflections on elderly mentally retarded persons. In M. P. Janicki & H. M. Wisniewski (Eds.), *Aging and developmental disabilities: Issues and approaches* (pp. 62-76). Baltimore, MD: Brookes.
- Wood, V., Wylie, M., & Sheafor, B. (1969). An analysis of a short self-report measure on life satisfaction: Correlation with later judgements. *Journal of Gerontology*, 24, 465-499.
- Wylie, R. C. (1974). *The self concept: A review of methodological consideration and measuring instruments* (Vol. 1). Lincoln, NE: University of Nebraska Press.