

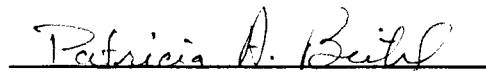
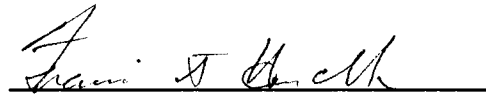
To the Graduate Council:

I am submitting herewith a thesis written by Amanda L. Gutridge entitled "How Leisure Participation Affects the Perceptions of Inactive Older Adults as Compared to Active Ones, From a Biological, Psychological, and Social Perspective." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science with a major in Recreation and Leisure Studies.



Dr. Mary Dale Blanton,
Major Professor

We have read this thesis
and recommend its acceptance:



Accepted for the Council:



Associate Vice Chancellor
and Dean of The Graduate School

HOW LEISURE PARTICIPATION AFFECTS THE PERCEPTIONS OF INACTIVE
OLDER ADULTS AS COMPARED TO ACTIVE ONES, FROM A BIOLOGICAL,
PSYCHOLOGICAL, AND SOCIAL PERSPECTIVE

A Thesis Presented
for the
Master of Science
Degree
The University of Tennessee, Knoxville

Amanda L. Gutridge

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DEDICATION

This work is dedicated to my Grandmother, Evelyn Corum. Her incredible zest for life and bountiful energy have always been an inspiration to me. I hope that one day I, too, may age as gracefully and wonderfully as she. Granny, I will love you always.

ACKNOWLEDGMENTS

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And finally, I am most grateful to my fiancé, Keith, who has provided me with his continued love and support throughout my graduate studies and who has, perhaps, given me the greatest motivation to complete my thesis and to graduate; a ring and a promise!

ABSTRACT

As the review of literature suggested, by participating in an exercise program such as rowing, elderly individuals are able to meet more friends, experience fewer bouts of depression, have fewer severe health complications, and consequently experience a better quality life. The primary purpose of this study was to identify how leisure participation affects the perceptions of active versus inactive elderly adults from a biological, psychological, and social perspective. To achieve this purpose, a questionnaire was developed and administered to active and inactive adults over the age of 55.

The research involved two populations, including 31 individuals who actively participate in rowing clubs in the Southeastern United States and 35 persons who are members of Knoxville-area churches. A color-coded Survey/Questionnaire was sent to 83 individuals; Seventy-three of those Survey/Questionnaires were then returned to the researcher. Of the 73 that were returned, only 66 qualified for the study. The Senior Survey/Questionnaire was developed specifically for this study. It was developed by the researcher and consisted of 34 questions, which took approximately 5 minutes to complete. The questionnaire was based on a five point Likert scale. Respondents completed the form by circling the numbers of the scale.

Statistical treatment of the data included using an analysis of variance utilizing a one-way ANOVA (analysis of variance) by group to interpret the data and indicate how the total scores (biological, psychological, and social) were distributed around the mean.

The directional hypotheses were:

1. There is a significant difference in the perceived biological well-being between active and inactive older adults.
2. There is a significant difference in the perceived psychological well-being between active and inactive older adults.

3. There is a significant difference in the perceived social well-being between active and inactive older adults.

Initially, the church members were assumed to be inactive. However, this was not necessarily the case; Nor were all the rowers active. One rower claimed to never exercise (to be completely inactive), while 16 of the church members claimed to lead moderate to vigorously active lives.

Within the scope of this study, and based on the purpose and hypotheses proposed, the following conclusions were drawn: There was no significant difference in how leisure participation affected the perceptions of active versus inactive elderly adults from a biological, psychological, and social perspective. There was, however, a significant difference in the perceived social well-being between moderately active and vigorously active older adults. Moderately active older adults rated themselves as being more sociable/having more social contacts than vigorously active persons.

Recommendations for further research include conducting a more extensive and comprehensive study to determine the factors associated with leisure and exercise that are most influential and lead to an increased sense of biological, psychological, and social well-being among older adults. It is also recommended that further research include participants in different types of athletic organizations such as cycling, running, golf, and/or tennis, instead of only rowing. Further research in this area also could be conducted to determine if persons are more likely to be active if their spouse participates in activities with them.

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CHAPTER 1

INTRODUCTION

“Even in old age, you need adventure. Not the kind that comes from going on safari, but adventures of the heart, mind, and spirit.... A sense of usefulness, especially in the declining years, is more important than fame or fortune.” (Walsh, 1993, p. 65).

According to all of the researchers examined in the literature, participation in some sort of exercise and/or leisure program, to a varying degree (i.e., different duration and intensities), is beneficial for most aging adults. The conformity of this agreement was reflected in the consistency of the findings of the reviewed articles.

Both Siegenthaler (1996) and Clark (1996) agreed on the theory that leisure participation is strongly influenced by perceived leisure control. The more control an individual feels that he/she has, the more likely it is that he/she will get involved in a leisure pursuit. Another positive outcome resulting from leisure involvement, as seen by both researchers, was the correlation between participation in group activities and life satisfaction and contentment. In essence, the more active a person is, the happier he/she will be. Also true for both studies was the observation that the social aspect of leisure (i.e., group activities) is often the primary motivating factor for participation by elderly individuals. The provision of a variety of quality programs was another factor contributing to habitual participation. For the leisure provider, identifying and understanding the leisure constraints of the specific target group at hand, was an essential step in the programming of activities; some of the noted constraints included a lack of transportation, money, exercise partners (Siegenthaler, 1996), unsafe neighborhoods in which to walk, chronic pain, and unfavorable weather conditions (Clark, 1996), as well as lack of knowledge, and misconceptions (Blanding, 1994).

Another area in which there were consistent findings was the area concerning the psychological well-being of the elderly. By giving elderly individuals the opportunity to

feel a sense of belonging, need, or love, one can enhance the attitudes of depressed and lonely persons. Loneliness may often be a precursor to other, more severe physical and mental disorders. Since this is a well known fact, activities such as bibliotherapy, reminiscence groups, dance, music, singing programs (Riddick & Keller, 1992), intergenerational mixers, and volunteer services (Walsh, 1993), have all been suggested by both studies to help alleviate these behaviors.

As noted by both Blanding (1994) and Siegenthaler (1996), the Elderhostel program is a growing service which offers a wide variety of high-risk outdoor experiences for the active older adult. Activities which are available include whitewater rafting, canoeing, backpacking, and rock climbing, to name a few.

Concerning the topic of health maintenance, Kligman and Pepin (1992), Rooney (1993), and Shephard (1993) all concluded that very few elderly individuals actively participate in any physical activities. Few elderly even participate to the point that any noticeable health benefits are able to be seen. According to Kligman & Pepin (1992), 60-70 percent of the elderly population remain sedentary. Only 2/3 even exercise on a regular basis (Rooney 1993).

All three of the above researchers agreed that there are numerous benefits to regular exercise; these benefits are primarily in the form of preventive measures. Kligman and Pepin (1992) noted that when used as a therapeutic modality, exercise and leisure activities will often relieve or completely alleviate symptoms such as sleep disorders, anxiety, depression, and obesity. Rooney (1993) added some additional benefits to this list including osteoporosis, hypertension, diabetes, and coronary heart disease. Along with the already mentioned perks of leisure/exercise participation, Shephard (1993) promoted the benefits of muscle tone. Accordingly, each of these researchers strongly contended that by delaying the above symptoms, one would be able to lead a much more independently functioning, healthy, high-quality life style; this wards off institutionalization for most.

The suggestion of a check-up, along with close supervision by one's physician, was pertinent according to Kligman & Pepin (1992), Rooney (1993), and Shephard (1993), alike. The assessment of each individual patient should be about the same for every older person. The physician's recommendations, however, would be as unique as each of the participants' ailments and overall conditions.

A common belief was held among the aforementioned authors. They determined that when comparing the amount of benefits one receives through participation in a continual exercise program, that the benefits one gains from starting such a program as an early adult are about the same as the benefits gained had he/she exercised his/her whole life.

The essential elements of any exercise program were also agreed upon. These elements included the type, frequency, duration, and intensity of an activity. If performed correctly in this manner, exercise is an excellent opportunity for the older adult to improve his/her flexibility, strength, and cardiovascular fitness all at the same time.

Statement of the Problem

This study was conducted to determine, from a biological, psychological, and social perspective, how participating in a regular exercise program affects the perceptions of inactive older adults as compared to active ones.

To achieve the purpose of providing a clearly defined current study on the effects of exercise on elderly persons, information was sought from three areas: (a) biological, (b) psychological, and (c) social. Therefore, the following directional hypotheses were to be tested for significance ($p \leq .05$).

Hypothesis I: There is a significant difference in the perceived biological well-being between active and inactive older adults.

Hypothesis II: There is a significant difference in the perceived psychological well-being between active and inactive older adults.

Hypothesis III: There is a significant difference in the perceived social well-being between active and inactive older adults.

Definitions of Terms

Active older adult. A person aged 55 or above who participates in moderate-to-vigorous leisure activities 2 or more days per week.

Biological well-being. Physical health. Healthy organ systems such as pulmonary, cardiovascular, and immune systems.

Inactive older adult. A person aged 55 or above who participates in moderate-to-vigorous leisure activities less than 2 days per week.

Leisure constraints. Any event or situation (i.e., unfavorable weather, poor health, or lack of transportation) which may hinder a person from participating in an activity.

Psychological well-being. Mental health. Having no signs of persistent loneliness, anxiety, or depression; being content with one's life.

Regular exercise program. Exercising, at a moderate-to-vigorous level, 2 or more days per week for at least 30 minutes each day.

Self-efficacy. Having self-esteem and a sense of value in the world; this allows an individual to perform effectively both on the job and in leisure activities.

Social well-being. Social health. Having a high amount of social support from family, friends, co-workers and peers; tends to be a strong predictor of favorable health outcomes.

Assumptions

The assumptions of this study were as follows:

1. It was assumed that each of the participants will answer the questionnaire honestly and to the best of his/her ability and knowledge.

2. It was assumed that the selected sample of subjects is representative of the whole population studied.

3. It was assumed that the older adults who were selected from Knoxville-area churches are inactive.

Scope of the Study

This study concerned the well-being of two populations of older adults. The first population included 31 individuals who actively participate in one of the following rowing clubs: Lookout Rowing Club (Chattanooga, TN), and Oak Ridge Rowing Association (Oak Ridge, TN). The second population consisted of 35 persons who were assumed to be inactive, and were selected from Knoxville-area churches: Powell United Methodist (Powell, TN) and Washington Pike United Methodist (Knoxville, TN).

Significance of the Study

The intent of this study was to promote leisure awareness to leisure professionals, to primary care persons, and, most important of all, to older adults. The basic findings of this research should provide a strong basis for initiating at least low-impact exercise programs for active and inactive older persons, alike.

Through participation in an exercise program such as rowing, older individuals are able to meet more friends, experience fewer bouts of depression, have fewer severe health complications, and consequently experience a better quality life.

CHAPTER 2

REVIEW OF LITERATURE

The purpose of this paper was to identify how leisure participation benefits older individuals from a biological, psychological and social perspective. The majority of the literature reviewed were obtained from refereed journals.

Included in the body of the review of literature are four sections. Each of these sections contains the specific content of the articles and discusses each article in length. The following is a list of the contents of each of the four sections. The first section discusses those factors which determine leisure involvement among the elderly population. The second one tells of the effects (i.e., the benefits) that leisure and recreation have on the psychological well-being of older persons. The third illustrates the variety of programs offered through outdoor recreation programs. And finally, the fourth section depicts using exercise as a method of health maintenance.

Factors Determining Leisure Involvement

There has been a great deal of investigation concerning the contribution of leisure participation on the well-being of older adults. Since the 1950's, when this topic was first studied, researchers have been trying to solve the mystery of leisure involvement and its effects on aging. Since then, several studies have been conducted specifically concerning independently-living older adults and their involvement in leisure participation (Siegenthaler, 1996). The purpose of this review article was to examine the relationship between leisure involvement and life satisfaction among elderly individuals. Siegenthaler (1996) accomplished this by examining related studies and their results, and then he formed his own conclusions.

Siegenthaler (1996) wrote of a 1994 survey of Elderhostel program participants where the psychological well-being of the older adults was examined. Those individuals

who actively involved themselves in a variety of activities received the most satisfaction and contentment. This suggested that there is, indeed, a close connection between leisure involvement and the contentment of one's life. One must be very careful in interpreting this data, however. Siegenthaler (1996) noted that the participants of the Elderhostel program are not typical senior citizens; unlike most older adults, they have been involved in leisure activities most of their lives.

Siegenthaler (1996) reviewed another study which was also conducted in 1994. The researchers of this study investigated the correlation between life satisfaction and the importance of leisure. The group consisted of 618 retired women, most of whom had negative feelings towards acquiring new leisure interests and hobbies. The major cause of these ill feelings stemmed from the presence of pre-existing, poor health conditions. In addition to these conditions, there were also some leisure constraints reported by these women, which included a lack of transportation, money and exercise buddies (Siegenthaler, 1996).

Leisure constraints such as those listed above, generally tend to overshadow any motivation an individual might feel toward leisure involvement. And as a result, one may cease any sort of leisure participation he/she may have enjoyed previously. However, when a person perceives that there is a wide variety of activities available from which to choose, he/she sees this as having control over his/her leisure experience. The more leisure control an individual has, the more likely he/she will continue to participate. Accordingly, those older adults who voluntarily involved themselves in moderate levels of socially-oriented, self-rewarding activities almost always reported having a high level of perceived leisure control, and as a consequence, these seniors were more likely to stay healthy longer (Siegenthaler, 1996).

Participating in group-oriented activities is another means for the older adult to gain life satisfaction. The social aspect of leisure is often the primary reason for participation

among this population. The opportunity for interaction and camaraderie among peers, alone, is motivation enough to spur the interest of involvement in most older adults. Researchers have found that it is becoming even more difficult to address the leisure interests of elderly individuals, since leisure providers are unclear as to exactly how older adults define recreation and leisure (Siegenthaler, 1996).

In another study reviewed by Siegenthaler (1996), when asked to define the term play, 102 elderly Canadians most commonly associated it with young children, rather than adults like themselves. When a second group, consisting of 8 older widowed women, was asked how they define leisure, their responses revealed that they viewed leisure as being routine activities, generally performed in the home. Leisure activities for these women included things such as cooking, cleaning, writing letters, and so on. This same question was asked of 30 older black women. Most of these women perceived leisure as being free time. Similar to the widowed women referred to above, these black women described their free time in terms of work and service (Siegenthaler, 1996).

All of the women interviewed seemed to ward off idle time with these so-called leisure pursuits. Today, much of what we recognize as being leisure was seen as being frivolous during the earlier part of the century. Perhaps this is true because of the strict work ethic on which these and other older individuals were raised (Siegenthaler, 1996).

As was concluded by this study, in general, healthy individuals (as opposed to unhealthy ones) are more likely to begin new activities, and subsequently will increase their involvement in these activities (Siegenthaler, 1996). Based on the responses of the various older individuals of the above studies, leisure and recreation activities, as defined by the younger generations, are not a part of their every day lives. According to Siegenthaler (1996), the leisure interests of these older individuals primarily involved family, work, and community services. In today's society, however, leisure interests are almost completely separated from these areas.

Siegenthaler (1996) resolved his study by observing that one of the best ways in which leisure professionals are able to enhance perceived leisure control among participants is to provide meaningful programs. These are programs in which the participants are able to feel useful by making their own decisions. In turn, this enhanced control enables the participant to gain more benefits from the leisure activity, encouraging him/her to continue involvement.

Leisure control is closely related to self-efficacy which refers to the factors predicting one's adoption of regular exercise. Those persons who have this strong sense of control (i.e., choice and variety) over their leisure pursuits are more likely to continue involvement in these activities. Essentially, they participate because they are able to see themselves benefiting from such pursuits (Clark, 1996).

The following qualitative research, conducted by Clark, (1996), examined the factors which initiate and/or inhibit the adoption of regular exercise routines among elderly individuals. This article focused on investigating and understanding self-efficacy, i.e. the judgment of one's competence, of older adults. Clark concentrated primarily on those individuals who were of lower education and socioeconomic levels.

Clark (1996) gathered the information by personal interviews of two separate focus groups, i.e., one group representing the general elderly population (10 volunteers from a local senior citizens' center) and the other representing elderly minorities from a lower socioeconomic background (9 black women 55-70 years old, located through an inner-city clinic data bank). Both groups were questioned concerning factors influencing their decision to participate in exercise programs.

Members of the first focus group were arranged into one of two categories; half were regular exercisers and the other half were not. Along with measuring their efficacy expectations (the judgment/determination of one's own capabilities to perform a certain task), Clark (1996) was also interested in the older adults' outcome expectations as well,

i.e. their judgments as to the impact(s) of their behavior(s). Sadly, the whole group agreed with one group member's comment concerning the fact that, they did, indeed, have low outcome expectations. This was due to the simple fact that they were getting old- "At my age, what can I expect?" stated one volunteer. There were, however, some positive outcome expectations among the participants as well. The benefits most mentioned were eating and sleeping better, making new friends, avoiding and/or delaying dependency, and overall wellness.

It was noted by Clark (1996) that there is a direct correlation between self-efficacy and socioeconomic status. Clark found that gender, along with minority status, is a strong predictor of socioeconomic status, as well as material and non-material resources. The absence or presence, then, of these resources will undoubtedly affect perceived leisure control as well as self-efficacy. Essentially, one who has relatively few resources is more apt to have health problems and is less likely to participate in health promotion efforts. This same individual would also find it difficult to develop a strong sense of control. Similarly, it has been shown that someone who dropped out of high school is less likely to participate in any type of health maintenance program than someone who has attained a higher education level (Clark, 1996).

The second focus group, as mentioned before, consisted of nine black women aged 55-70. A universal consideration of these older women was that they rarely exercised by themselves due to low efficacy expectations. However, all agreed that they had higher expectations of participating in an activity on a regular basis if they were not doing it alone. One woman claimed that if "you can talk and walk, then you don't think about what you're doing." Only one of the nine women walked on an occasional basis. Some of the women that Clark (1996) interviewed did have legitimate obstacles to exercising such as lack of transportation and money, unsafe neighborhoods in which to walk, difficulty of standing for long periods of time, chronic pain, and unfavorable weather conditions. For the

majority of these elderly women, the reason for being interested in an exercise group was not for the health and well-being benefits as much as it was a way to "get out."

In summary, Clark (1996) found that demographic characteristics increased one's chances of having a lower occupational status, as well as low income and education levels. These factors then influence one's chances of leisure participation; the lower the above mentioned levels, the less likely the individual will strive to be active.

Clark (1996) concluded by reemphasizing that peer support, along with self-efficacy, is one of the primary motivating factors for exercise in persons of lower socioeconomic status. He also believed that it proved to be especially beneficial to health care providers of all forms, if the specific barriers to exercise in this group of individuals were identified. As a result of his findings, Clark (1996) recommended further study of this particular cross-section of elderly persons, primarily because of their poor health and sedentary lifestyles.

The Effects of Leisure and Recreation on the Psychological Well Being of Elderly Persons

According to Riddick and Keller (1992), the older adult population (in America) aged 65 and over has tripled through the years since 1900 to 1989. Most of the people in this elderly population have some sort of health problem they must deal with on a daily basis. The two most prevalent problems with which aging Americans deal today are depression and loneliness. In this study, Riddick and Keller (1992) were primarily concerned with the influence of leisure participation on the social psychological well-being of elderly persons. In order to determine this, they reviewed the literature of similar studies and made their own conclusions, accordingly.

Depression among the aged is, perhaps, the most commonly diagnosed non-organic psychological problem. Around 10-25 percent of the older adult population deal with this symptom. It has also been estimated that, of the elderly living in a long-term health care

facility, approximately 35 percent display similar depressive symptoms (Riddick & Keller, 1992). The numerous reasons for and causes of this depressed state generally stem from either social, biological, psychological, or cultural factors. The most common reason for depression is due to inevitable occurrences of the aging process, some of which are as follows; death of spouse or family member, declining health, and even lowered economic and/or social states (Riddick & Keller, 1992).

Another commonly diagnosed problem generally found among aging adults is loneliness. Riddick and Keller (1992) reported that of the older adult population who are non-institutionalized, 12-39 percent show definite signs of loneliness. Even though, this has been found to be true more often in the nursing home setting, it is also very common among aging individuals in community settings, as well. Loneliness is often a precursor to other physical and mental disorders, such as anxiety and depression.

While examining the literature, Riddick and Keller (1992) reviewed nine recreation interventions in order to see what types of impact the interventions might have on the lives of the aging population. Participants of this study were either included in an intervention program such as a bibliotherapy group, or they were placed in a control group, which was not given the same opportunities as the first group. Whether in a community setting or a long-term health care facility, participants in the bibliotherapy group reported less depression, as compared to the individuals who did not participate in any such program. Likewise, those individuals who were part of a structured reminiscence group fared better than those in an unstructured or control group. The participants of a particular nursing home also showed a significant reduction in depression when given a stuffed animal to call their own (Riddick & Keller, 1992).

In each of these interventions, those who were given the opportunity to interact with others, or those who were given a gift (the stuffed animal), continually showed fewer signs of depression than those who were not provided these interventions. Conversely,

three other interventions showed few, if any, positive effects of curbing depression. These interventions included reality orientation, touch groups, and writing groups (Riddick & Keller, 1992).

In other studies it was found that elderly individuals participating in recreation intervention programs such as dance/movement, music, singing, and/or videogame play programs, all showed dramatic changes in characteristics such as an increase in talking, friendliness, and overall sociability. Yet, other researchers contended that some of these interventions such as stocked aquariums, pet therapy, and stuffed animal programs have little to no effect on the social well-being of elderly individuals (Riddick & Keller, 1992).

In conclusion, Riddick and Keller (1992) stated that four things need to be considered when studying the effects of social-psychological recreation programming for the well-being of elderly adults. First, none of the fore-mentioned studies were conducted in acute care or long-term care facilities of any kind. Hence, it was recommended that additional research is needed in these areas to determine the psycho-social benefits of recreational programming among the elderly in these other various therapeutic settings. Second, when conducting such studies, one should thoroughly research the topic at hand, using sound practices including the use of a theoretical basis, proper research methods and statistics, as well as the use of control groups. Third, one should consider the use of “comparative treatment designs on specific outcome(s) and their cost-effectiveness” (Riddick & Keller, 1992). Finally, an analysis of program intensity should be conducted in order to establish facilitator-client contact. Very few studies have focused on the effects of duration and/or frequency of contact; different data may result due to a variation in exposure.

As indicated above, participation in recreational programs can be a positive influence on the social psychological well-being of elderly adults (Riddick & Keller, 1992). Many therapeutic interventions, including bibliotherapy and organized reminiscence

groups, have helped to alleviate the symptoms of both loneliness and depression in the older adult. However, it was determined by Riddick and Keller (1992) that, in order to determine to what extent and under what circumstances recreation is able to do this, further studies on this topic are needed.

To have a purpose in life, to be needed and loved, and to be able to reciprocate that love, are all extremely important aspects of a healthy self-image. The attainment of a positive self-image then is directly related to one's psychological well-being. By investing more quality leisure time in developing programs for the elderly population, their chances for life satisfaction would be increased.

In his new agenda for American leisure, Walsh (1993) reviewed the inequities of leisure programming for graying adults. Many of today's senior citizens are interested in continuing their zest for life well on into their fifties and beyond. This may be true since these might be the first years of their lives in which they have a little more discretionary time and money. Unfortunately, as a result of aging, many of these same older adults begin to feel as if they are shunned by society, as a whole; they believe they are seen as a burden to the young, and as a result, they have become old. However, through his agenda, Walsh has planned to prove that there is a way to resurrect the aging population, through leisure services, so that psychologically they are young at heart again.

Walsh (1993) has strong convictions about invigorating the older population once more. His beliefs are similar to those of Edward Fisher, Professor Emeritus of Notre Dame University, who stated the following: "To find a way of being useful that is right for you takes some exploring...The big thing is not to trivialize time (Walsh, 1993). And trivialize time is exactly what many nursing homes, adult day cares, and long-term health care facilities do (Walsh, 1993).

Many of these agencies are guilty of planning unchallenging activities and only provide for their participants the same old, stale programs such as cards, bingo, TV, and

movies. All too often, leisure providers are more concerned with program expediency rather than program quality. This typical way of programming tends to discourage self-reliance, creativity, and initiative. And at the same time, it fosters dependence on others, and passivity in both work and play (Walsh, 1993).

One of the most promising possibilities in programming for the elderly is to utilize their talents, expertise, and wisdom by allowing them to give back to the community. Walsh (1993) was a strong advocate for sending these seniors out to share their knowledge and to become a primary collaborative resource among the underserved populations of the community. By tutoring, reading, and by sharing past-life experiences (often of a historical nature), older adults are able to interact wonderfully with all generations. The inherent need to feel wanted and to be needed actually boosts the psychological well-being of older adults (Walsh, 1993), providing them with the opportunity to become one of our country's greatest resources. Intergenerational mixers such as these, are an excellent opportunity for both the young and old, alike.

Leisure programmers should also encourage life-long learning among the elderly as a way of promoting a positive self-image, satisfaction with one's life, and overall happiness. Walsh (1993) contended that our communities should encourage such useful leisure pursuits among the elderly, for it would be to everyone's benefit.

In conclusion, Walsh (1993) stated that it would be a crime for our leisure professionals to not provide our aging adults with creative and useful leisure pursuits with which to enhance their psychological well-being. Intergenerational partnerships provide opportunities for both young and old to make new friends, to foster self-awareness, and is a means to grow spiritually. By investing more quality leisure time and programming in our elderly, they may be able to provide an invaluable resource. Even with other resources (such as money) being limited, our communities will still be given the chance to flourish and prosper (Walsh, 1993).

Variety in Outdoor Recreation Programs

Through his review article, Blanding (1994) concluded that as today's older population becomes increasingly more healthy and active, it will become necessary for leisure professionals to provide a larger array of activities than ever before. These older adults no longer want to participate in the same hum-drum activities that seniors have settled for in the past; they want some variety. This new breed of senior citizen has leisure interests not much unlike that of younger adults, and even teens. They appreciate river rafting, hiking, camping, cycling, and more. With the passage of the Americans with Disabilities Act (ADA), many more seniors are able to enjoy outdoor leisure pursuits than ever before. Blanding (1994) noted that, while not all aging adults have a disability, the majority of them still benefit from the improved access provided by the ADA.

Outdoor recreation creates new benefits which have never been seen before in traditional approaches to recreation for the elderly. Older participants involving themselves in outdoor activities find themselves having a brighter outlook on life, being more energetic, and building self-confidence. These are all healthy components of aging adults (Blanding, 1994).

Many more public and private facilities are beginning to offer a wider variety of outdoor recreation possibilities for graying Americans. Some of these include Parks and Recreation services, YMCA and YWCA, community centers, senior centers, and commercial and private resorts (Blanding, 1994). There are still many other centers and organizations, however, which do not provide an outdoor recreation environment for their older participants. Some cite frailty of the participants or environmental barriers (i.e. urban environments) as the reason for not including such programs. In one study, the members of a Colorado senior center were questioned as to why they did not pursue outdoor recreation activities more often. Resulting answers varied from perceived notions of high costs, to inexperience, and fear of the unknown.

A study similar to that of the Colorado study was conducted again in Maine. This time, however, it was the leisure providers' turn to answer. Location of leaders qualified to conduct an expedition or outing was a big concern, followed by liability on the provider's part. In yet another study which concerned leisure constraints, other misconceptions held by older adults towards outdoor recreation included lack of knowledge, transportation, companionship, and experience, high costs, and misconceptions (Blanding, 1994).

Certain organizations such as the YMCA and the National Parks Service, have been capitalizing on the expanding interests of the older population. The U.S. Forest Service has also benefited from the older adults' continually growing numbers. The Forest Service has found an excellent resource in the older adult population. By allowing the senior citizens to be hosts in the Forest Service campground, the seniors stay for free, while at the same time, providing the park with a free service, as well. Elderhostel programs are also springing up everywhere. This service provides more high-risk outdoor adventure activities for elderly individuals than any other. The participants may be seen rock climbing, backpacking, and canoeing, among other things (Blanding, 1994).

Blanding offered the following suggestions and recommendations for programming outdoor recreation activities for older adults. Avoid negative stereotypes concerning the inability of seniors to participate in high-adventure activities; stay positive. Encourage seniors to share their outdoor experiences with other peers who may be interested in the same or similar activities; gain their interest. Identify and assess the interests and needs of the population at hand; research their demographics and natural resources, including their concerns. Plan a multitude of programs to serve the multitude of interests in your population; variety is the key. Seek out rental stores and outfitters who provide senior discounts, research the activities well, and know your participants; safety is a must (Blanding, 1994).

Essentially, the findings of Blanding's (1994) report confirmed that, identifying and assessing the changing interests of today's older adult population will be essential to the successful outdoor recreation programmer and center. Providing quality services, along with a great deal of variety will attract more clientele than ever imagined before. The President's Commission on American Outdoors holds this stance: "Owing to the positive relationship which exists between leisure activity and healthy adjustment in late adulthood, expansion of opportunities designed to promote greater participation of older adults in outdoor recreation should be vigorously pursued" (Blanding, 1994).

Exercise and Health Maintenance

According to Kligman and Pepin (1992), although the literature detailing the benefits of leisure participation among elderly individuals continues to grow, only a small amount of this population (30-40 %) exercises enough to gain improved health and fitness levels. In their review article, Kligman and Pepin (1992), revealed that initial evidence suggested that the risks of exercise far outweighed the benefits, when pertaining to older adults. More recently, however, it has been proven that, by involving themselves in vigorous activities, older adults have tapped into another excellent source of preventive medicine practices. The primary intent of this research was to inform health care professionals of the positive aspects of prescribing participation in physical activities for older adults. The purpose of this type of exercise program is primarily aimed at reinforcing and extending healthy, independent functioning (Kligman & Pepin, 1992).

Because of its miraculous healing and rejuvenating effects, exercise among the elderly is strongly advocated by numerous national public health policy directives; 'Healthy People 2000' national health objectives is one of these. Policies such as this one, promote physical activities as possible treatment modalities. It is by participation in these activities that the asymptomatic older individual is able to prevent or delay the onset of debilitating

illnesses due to aging. Older adults who already struggle with decreased and limited functioning abilities also greatly benefit from regular exercise (Kligman & Pepin, 1992).

As reviewed by Kligman and Pepin (1992), other studies reported the following findings. Inactivity among the older population invariably leads to the decline of various organs and multiple body functions. However, healthy lifestyle changes, which include increased physical activity, may prolong one's life span. Additionally, older adults who work hard to maintain optimal levels of overall fitness (i.e. flexibility, strength, and cardiovascular fitness), are less likely to end up in a long-term health care facility. And finally, physical activity even has been recently linked to the prevention of cancer.

The benefits of regular exercise on the graying adult become more recognized each year. It even has been determined that exercise, as a therapeutic modality, is an excellent source of non-medicinal therapy. Some of the symptoms that exercise may relieve or alleviate are sleep disorders, anxiety, depression, diabetes mellitus, hypertension, obesity, and coronary artery disease (Kligman & Pepin, 1992), to name a few.

Kligman and Pepin (1992) noted that exercise programs are not healthy for all older adults. With this in mind, it is important for the older adult to consult a physician before starting a regular exercise program. This will permit the doctor to complete a physical check-up of the older person's health status, allowing the physician to make decisions and recommendations accordingly. Several areas of health which may be assessed in a routine check-up might include the physical exam, determination of overall functional capacity, respiratory and musculoskeletal functioning, and currently prescribed medications. Medications such as antihistamines, diuretics, and insulin may produce unusual pharmacological effects, requiring the physician to make alterations in his/her recommendations concerning choice of exercise (Kligman & Pepin, 1992).

A balanced fitness program is essential to the success of any successful exercise program. According to Kligman and Pepin (1992), the three key elements of such a

program were flexibility, strength, and cardiovascular endurance training. Flexibility training in older adults helps to counter stiffness in muscles and joints due to years of inactivity. A minimum of 15-20 minutes of light stretching per day can significantly increase flexibility in older adults. A common misconception among most people is that loss of strength and muscle mass is a natural part of the aging process. This assumption is false, however. Lack of strength in elderly individuals is directly related to inactivity. And finally, cardiovascular endurance training provides the foundation on which one should base his/her exercise program. Not only does cardiovascular training dramatically increase one's overall aerobic and functional capacities, it also reduces one's risk for chronic illnesses such as coronary heart disease. Kligman and Pepin (1992) suggested that participation in activities such as walking or rowing would improve one's cardiovascular fitness level. As the above evidence shows, all three of these interventions are critical to the older population in the maintenance of their independence.

Kligman and Pepin (1992) defined four essential elements of any exercise program. These elements included the type, frequency, duration, and intensity of an activity. It is important to choose an activity that utilizes large muscle groups, requires numerous repetitions, raises the resting heart rate, and lasts for at least 20 minutes or more. In order to achieve maximum benefits, one should participate at least 3 days a week; 5-7 days is ideal. Exercisers should work hard enough to noticeably change their heart rate, but at the same time, they should be able to comfortably carry on a conversation with another person (Kligman & Pepin, 1992).

It is very important to allow the older participant to choose an activity that interests him/her in order to stimulate regular, voluntary participation. Additionally, if the activity or activities easily fit into an individual's schedule and/or lifestyle, he/she is more likely to follow the suggested exercise routine. Kligman and Pepin (1992) have suggested that community-based exercise programs, such as parks and recreation departments, be used

for aiding with one's exercise needs. Older adults who participate in a regular exercise program will have a better chance of aging gracefully and remaining independent than those individuals who remain sedentary. A comprehensive exercise program will provide this very outlet (Kligman & Pepin, 1992).

There are two main reasons for the promotion of regular involvement in exercise programs for elderly adults. One incentive is the possible lengthening of the active individual's life span. The other positive result of regular exercise is the opportunity to improve one's quality of life, as well.

Although there is an increased awareness of the benefits of exercise among the elderly, Rooney (1993), in his review article, pointed out that the majority of older adults do not participate in any leisure or exercise programs. To be more exact, only one-third of all adults aged 65 and above do exercise on a regular basis. Inactive older adults are generally unhealthy older adults. Those individuals who are inactive increase their chances for chronic health problems such as depression, osteoporosis, hypertension, obesity, diabetes, and coronary heart disease (Rooney, 1993). The purpose of Rooney's (1993) research was to investigate how exercise affects older adults' physical and psychological well-being.

Although the functional capacity of many organ systems declines as one ages, regular exercise can combat some of this decline. The most prominent problems, resulting from inactivity, prevalent in the general older population, include a loss of flexibility and muscle tone, a decrease in the ability to exercise aerobically, and the limited ability to provide and care for one's self (Rooney, 1993). Moreover, it is these characteristics which lead to an inability to live independently. The good news is that it is never too late to reap the benefits from an aerobic and strength training exercise program.

There was a National Health Interview Survey of senior citizens in 1985 (Rooney, 1993). After obtaining results from these 27, 000 adults ages 65 and over, the following

data was collected. Only 7.5 percent of the seniors were physically active on a regular basis, the rest of them were either completely inactive or were sporadically active. Only 5 percent of these older adults were even aware of the correct exercise time, frequency, and duration which is essential to improving heart and lung functioning. And finally, only 30 percent reported that their physician had discussed with them the importance of such an exercise program (Rooney, 1993).

As noted by Rooney (1993), because of the above survey, as well as others with similar results, the U.S. Department of Health and Human Services has designed some national public health goals, which are entitled 'Healthy People 2000.' This program's emphasis is primarily to increase not only an individual's life span, but to increase his/her quality of life, as well. Of the many recommendations spelled out in this program, two specific ones include increasing physical activity and encouraging leisure time interests and activities (Rooney, 1993).

Rooney (1993) examined another study which was conducted on selected alumni from Harvard College; it was determined that the mortality rates of physically active older adults regularly expending 2,000 Kcals per week were significantly lower than that of non-exercisers of the same age. If started at some point before or by age 60, even moderate levels of exercise are beneficial enough that the active individual can expect an average increase in his/her life expectancy of 1 to 2 years (Rooney, 1993).

Another health benefit Rooney (1993) attributed to regular exercise was an increased cardiovascular fitness level. Cardiovascular fitness is often measured by either maximal oxygen uptake (VO_2), or metabolic equivalents (METS). METS may also be described as being the amount an individual has exercised as compared to his/her resting metabolic rate. VO_2 measures how well the heart and lungs are able to transport oxygen to peripheral parts of the body; it also determines the ability of the muscles to extract this oxygen, allowing one to continue aerobic (opposed to anaerobic) exercise (Rooney, 1993).

The average inactive adult over the age of 75 generally reaches his/her maximum MET capacity by performing routine daily activities such as light cleaning or even by walking. On the other hand, an individual who exercises at least moderately, on a regular basis, can increase his/her MET capacity 2 to 3 times than that of the non-exerciser (Rooney, 1993). In addition to these findings, Rooney (1993) asserted that the active older adult will enjoy the satisfaction of a prolonged life. Of greater importance to the older adult, may be the fact that because of his/her participation in an exercise program, he/she may extend the active period of his/her life, thus prolonging independence (Rooney, 1993).

Exercise programs which combine high-intensity with high-frequency are the best ones for older individuals seeking to improve their physical fitness (Rooney, 1993). Rooney (1993) also affirmed that it is possible for seniors to decrease their chances of falling and injuring themselves by simply participating in a regular exercise program. Through this process, participants will have the opportunity to increase both muscle strength and flexibility (Rooney, 1993).

When designing an exercise program for older adults, Rooney (1993) suggested that the programmer assess the individual's previous exercise history, and then choose goals and programs accordingly. Optimal exercise conditions occur at a frequency ranging anywhere from 3 to 5 times weekly, for a recommended duration of 20 to 60 minutes at the individual's maximal MET capacity (Rooney, 1993).

It can be concluded from Rooney's (1993) investigation that it is possible, and strongly suggested, for older adults to engage in some form of physical activity. If pursued under the close supervision of a trained professional, exercise for the older adult can be both safe and extremely beneficial to his/her physical and psychological well-being (Rooney, 1993).

In his 1993 research article regarding exercising and aging, Shephard planned to determine the overall impact of exercise on the elderly population. He did this by focusing

on the following four areas: absolute life expectancy, quality-adjusted life expectancy, functional status (both physiological and psychological), and the economic implications of an exercise program among elderly participants.

As determined in this study, just because an individual was active in his/her younger years, it does not necessarily mean that he/she will live longer as an older adult. Results have actually shown the opposite to be true (Shephard, 1993). By middle-age, most of the former athletes pursued in this study were by far more overweight, more sedentary, and were more apt to abuse alcohol and tobacco than their non-athlete counterparts. The essence of these findings proved that the benefits of exercise cannot be stockpiled, and that some sort of a maintenance program must be followed in order to reap the life-long benefits of exercise (Shephard, 1993).

The results of a similar study, conducted on Finnish cross-country ski champions, provided results which confirmed many researchers' beliefs. They found that if an individual continually exercised on into his/her later years, that his/her life expectancy would increase an average of 3 to 4 years longer than that of his/her inactive cohorts (Shephard, 1993). Likewise, Shephard (1993) reviewed another study which was a 22-year long investigation of Harvard alumni. Participants in this study were limited to those individuals who regularly pursued an exercise routine throughout their adult lives. It was proven that an individual who started (and continued) an exercise program between the ages of 25-39 stood to gain an estimated 2 years onto his/her life expectancy. On the other hand, one who begins an exercise program after the age of 75 can only expect to live an average of 0.4 more years. However, according to Shephard (1993), it almost seems better to have been inactive in one's college years, and then progress to being more active in one's later years. This is evident in the previously sedentary younger adults, studied by Shephard (1993), who adopted the habit of exercising at an older age. Although their total estimated gain of life expectancy was not as great as those who continually exercised

throughout the greater part of their lives, these individuals have fared much better than those who stopped their exercise routines as an early adult (Shephard, 1993).

Although a diligent exercise regimen is beneficial in warding off premature deaths, it does not have much bearing on whether or not one will live well on into old age. Remarkably enough, Shephard (1993) noted that often the amount of time one spends participating in an exercise program is equaled in value to the amount of time that his/her life is extended.

Another way Shephard (1993) measured the extension of one's life was by looking at his/her quality-adjusted life expectancy. Because the results of exercise make most participants "feel good" (Shephard, 1993), their quality-adjusted life expectancy, or outlook on life, will also be a positive one. In some instances, however, exercise may actually have a negative impact on the quality-adjusted life expectancy of an individual. An example of this might be exercising to the point of acquiring a knee or elbow injury. Endorphins also play a large role in a younger person's quality-adjusted life expectancy, in the form of a natural high. Shephard (1993), however, remarked that the average older person rarely exercises hard enough to produce these mood-boosting secretions (Shephard, 1993).

A second area of interest for Shephard (1993) was that of functional changes resulting from exercise. Simply stated, exercise is an essential activity for delaying the many causes of dependency among older adults. Exercise, an excellent method of preventive health, not only benefits an elderly individual socially, but affords medical and economical benefits as well. Essentially, exercise may ward off many of the primary medical causes of elder institution (Shephard, 1993). For instance, increased bone density may prevent broken bones, a group exercise program may lessen the depression felt from the loss of a spouse, and increased flexibility and muscle tone should allow an older individual to dress him/herself rather than having to depend on someone else. By starting

an exercise program as an early adult, or even on into later adulthood, one may increase his/her chances of remaining independent by 10 to 20 years (Shephard, 1993). Of the many older individuals who were active at 50 years of age, most are now living independently, whereas those who were inactive at 50 have since been institutionalized (Shephard, 1993).

Shephard (1993) strongly believed that, in addition to boosting one's perceived health, and by curbing anxiety and depression, exercise produces psychological benefits as well. At any point in time, an individual's perceived health determines his/her outlook on life. Therefore, by regularly participating in an exercise regimen, an elderly person is better able to ignore life's minor aches and live a healthy, relatively independent life.

As mentioned earlier, the adoption of a regular exercise program will not substantially increase the length of one's life as much as it will increase the quality of that person's life. The cost of a preventative health maintenance program, such as regular exercise, is much less than the medical costs of an acute-care or long-term care facility. The major expenses a senior citizen will generally have in the beginning of any exercise program, are those spent on a routine doctor's visit. This visit will allow the physician to determine the level and appropriateness of any suggested physical activity (Shephard, 1993).

In conclusion, Shephard (1993) strongly suggested that primary care physicians should promote the benefits of regular exercise to their aging patients. Provided with the facts that the monetary costs of the medical interventions far exceed the costs of the health maintenance programs, it makes perfect sense, both personally and socioeconomically, for senior citizens to adopt some form of exercise program.

Conflicts in Studies

There was only one minor disagreement in the whole scope of the reviewed literature. Although the discrepancy was small, it will be discussed. Riddick and Keller's (1992) review of other research studies on recreational interventions found results concluding that individuals who were given the opportunity to interact with others, or those who were given a gift (i.e., a stuffed animal), repeatedly indicated fewer signs of depression than those who were not provided these interventions. On the other hand, Riddick and Keller (1992) indicated other intervention methods such as reality orientation, writing groups, touch groups, stocked aquariums, pet therapy, and even stuffed animal programs which were said to show few, if any positive effects on eliminating depressive feelings among older individuals.

Constructs/Ideas Which Were Not Addressed

Although the idea of intergenerational activities was mentioned in Walsh's (1993) article, it could be an extremely important aspect of the psychological wellness of elderly adults, and should have been addressed more strongly.

Similarly, Clark (1996) introduced socioeconomic problems as related to leisure. However, further study of the poorer populations is needed in order to reduce their sedentary lifestyle. This, in effect, would be a preventive health measure, moving them in the direction of overall health and well-being.

Application to the Pragmatic Field

The basic findings of this literature review suggested that leisure professionals need to place more emphasis on providing a greater variety of high quality activities for older adults. As Blanding (1994) recognized, many older adults of the 90's no longer want to participate solely in traditional-type activities such as knitting, singing, and painting. As a

result, many of these individuals have begun to demand higher quality leisure programs than was once expected. Unfortunately, however, there were very few such leisure programs and activities available to satisfy the needs and desires of this growing population. This is certainly an area upon which leaders in the field of recreation could greatly improve.

Additionally, it would be exceedingly beneficial if researchers were to attempt to identify and to alleviate participants' leisure constraints. If more time was being spent on examining the needs of the elderly and implementing new interventions, perhaps more older adults would remain active and, therefore, more healthy. If leisure professionals were ever able to merely formulate new ways of reducing the most common of barriers (i.e., lack of transportation and/or poor health conditions), this advancement would be considered a tremendous breakthrough in the field of recreation and leisure studies.

Blanding (1994) had some additional considerations for the leisure professional. Avoid negative stereotyping when appraising the abilities of older adults. Always encourage participants to share their experiences with peers having similar interests. Identify and assess the interests and needs of the population at hand. And finally, plan a multitude of programs from which the older adult may choose.

The final application presented, deals with prescribing and monitoring a balanced fitness program. Kligman and Pepin (1992) encouraged every health care professional to promote the many benefits (i.e., the improvement of one's quality of life) of exercise, especially to older adults.

CHAPTER 3

PROCEDURES

The primary purpose of this study was to determine, from a biological, psychological, and social perspective, how a regular exercise program affects the perceptions of inactive as compared to active older adults. The procedures of this chapter will be presented in the following manner: the description of the subjects, the rationale, an overview of scheduling, and an evaluation of the information.

Description of Subjects

The population of this study consisted of two groups; active and inactive older adults, aged 55 and above. The first group included 31 individuals who actively involve themselves (i.e., compete in masters-level competitions) in one of the following rowing clubs located in the south-eastern United States: Lookout Rowing Club (Chattanooga, TN), and Oak Ridge Rowing Association (Oak Ridge, TN). The second group consisted of 35 persons who were assumed to be inactive, and were obtained from Knoxville-area churches: Powell United Methodist (Powell, TN), and Washington Pike United Methodist (Knoxville, TN).

Completion of the questionnaire, itself, served as informed consent for this study. This is possible, primarily for the reason that at the bottom of the cover letter of the survey (Appendix A), it was printed as such in bold type. Additionally, it also stated that no negative consequences would ensue if the person contacted in this study chose not to participate.

Rationale

The intent of this study was to use the obtained information as a supplement to the field of knowledge in therapeutic recreation and its interventions for elderly persons. The researcher's motivation was four-fold: (a) to identify the factors which determine leisure involvement, (b) to examine the biological effects of exercise, (c) to examine the psychological effects of exercise, and (d) to examine the social effects of exercise.

It is this researcher's belief that all persons should be given equal leisure activity opportunities; this includes the older adult population, as well. The identification of specific leisure factors (those factors which foster as well as impede involvement) should be the initial concern of all leisure professionals.

It is also believed by this researcher that by participating in a regular exercise program such as rowing, an older adult can tremendously increase his/her chances of remaining healthy longer; physically, emotionally and socially. Elderly individuals who are well-balanced in the physical, psychological, and social domains are also more likely not only to live longer, but to live a better quality of life, as well. These overall benefits may lead to fewer doctor visits and fewer bouts of depression, and may result in more people with whom one is able to give and receive moral support.

By identifying and evaluating the different outcomes from the surveys (Appendix B), as completed by the two aforementioned groups of elderly persons, the researcher aimed to identify the specific benefits rowing has provided many elderly persons.

The Leisure participation questionnaire/survey was developed specifically for this study. It was developed by the researcher and consisted of 34 questions, which took approximately 5 minutes to complete. The questionnaire was based on a five point Likert scale. Respondents completed the form by circling the numbers of the scale. A cover letter (Appendix A) accompanied each of the questionnaires and explained the purpose of the

survey. The questionnaire was delivered by mail. Approximately 85 forms were delivered in all.

The validity of this survey form was evaluated by the researcher's thesis committee. The committee consisted of Dr. Mary Dale Blanton, Dr. Francis Hendrick, and Dr. Patricia Beitel. Each gave feedback to the researcher concerning question content as well as overall questionnaire format. This questionnaire was not tested for reliability.

Overview of Scheduling/Data Collection

Initial contact was made by telephone, to persons in charge at each of the rowing clubs (Lookout Rowing Club in Chattanooga, TN and Oak Ridge Rowing Club in Oak Ridge, TN). The purpose of the study was discussed in full with each of these persons and any questions were answered at this time. Next, the researcher asked for the addresses of possible participants so that the questionnaires could be sent to each individual at his/her respective home. However, it should be noted that all of the questionnaires were delivered, in bulk, to the initial contact person for Lookout Rowing Club, and he proceeded to mail out each individual questionnaire to eligible persons over 55. As a concluding remark, the researcher assured each person in charge, and later to each participant (Appendix A), as well, that at the end of the study all addresses would be destroyed and no further attempts at contacting participants would be made.

After initial contact was made, color-coded questionnaires (Appendix C) were mailed out to the participants. Included with the questionnaires was a stamped and pre-addressed envelope in which to return the completed form. An additional note accompanied the questionnaire (Appendix A) asking that the participants promptly return the form within two weeks of receiving it.

The questionnaires sent to the rowers included an additional note (Appendix D). It stated that the reason they were contacted was two-fold. First, the researcher has a fond

interest in rowing because she rowed at the University of Tennessee at Chattanooga for 4 years, the last of which she was the women's captain. And second, she has chosen each person because of her interest of working with older adults once she is out of school, as a recreation therapist.

Members of the *inactive* group were selected, at random, within each of the selected churches, from classes containing members ages 55 and above. Initial contact was made by telephone, to persons in charge of some of the older adult classes of the above listed churches. Again, the purpose of the study was discussed in full with each of these persons, and all questions were answered. At this time, the addresses of possible participants were obtained so that the questionnaires could be sent to each individual at his/her respective home. These questionnaires (Appendix B) were also color coded (Appendix C), to represent each of the different churches. In addition to the questionnaire, each person also received a stamped, pre-addressed envelope in which to return the completed form.

Evaluation of the Information

Hypothesis I reads as follows: There is a significant difference in the perceived biological well-being between active and inactive older adults. The information to support this hypothesis came from questions 1-12 on the questionnaire. Statistical treatment of data included using an analysis of variance utilizing a one-way ANOVA (analysis of variance) by group to interpret the data and show how the total biological scores were distributed around the mean.

Hypothesis II reads as follows: There is a significant difference in the perceived psychological well-being between active and inactive older adults. The information to support this hypothesis came from questions 13-20 on the questionnaire. Statistical treatment of data included using an analysis of variance utilizing a one-way ANOVA

(analysis of variance) by group to interpret the data and show how the total psychological scores were distributed around the mean.

Hypothesis III reads as follows: There is a significant difference in the perceived social well-being between active and inactive older adults. The information to support this hypothesis came from questions 21-27 on the questionnaire. Statistical treatment of data included using an analysis of variance utilizing a one-way ANOVA (analysis of variance) by group to interpret the data and show how the total social well-being scores were distributed around the mean.

Questions numbered 28-31 are related to demographics. Question number 32 specifically concerns health-related problems. And questions numbered 33 and 34 relate specifically to how often each participant exercises.

Respondents of the questionnaire (Appendix B) answered each of the questions by circling a number on a five point Likert scale system, which was rated in the following manner. The number "1" represented "never", the number "2" represented "seldom", the number "3" represented "sometimes", number "4" represented "often", and the number "5" represented "always." Also included at the end of the questionnaire (Appendix B) were additional lines for supplemental information; the completion of these lines, however, was optional.

CHAPTER 4

RESULTS AND DISCUSSION

The purpose of this study was to identify how leisure participation affects the perceptions of older adults from a biological, psychological and social perspective. A questionnaire was developed to determine the perceived biological, psychological and social well-being of active compared to inactive older adults aged 55 and above. The population for this study was comprised of 31 individuals who are members of southeastern rowing clubs and 35 persons who are members of Knoxville-area churches.

The hypotheses of this study were tested by using a one-way ANOVA (analysis of variance), by group.

This chapter is a report and discussion of the results found in the Senior Survey/Questionnaire. The data in this chapter were grouped into the following sections: Participant Profile, Return Rate, Demographics, Analysis of Data, and Discussion.

Participant Profile

The participants in this study consisted of two populations of elderly persons ages 55 and above. The first population included 31 individuals who actively participate in one of the following rowing clubs: Lookout Rowing Club (Chattanooga, TN), and Oak Ridge Rowing Association (Oak Ridge, TN). The second population consisted of 35 persons who were assumed to be inactive, and were selected from Knoxville-area churches: Powell United Methodist (Powell, TN) and Washington Pike United Methodist (Knoxville, TN).

The level of physical activity was measured by 2 questions which were previously validated by Washburn et al. (Washburn, Adams & Haile, 1987). These two questions (questions numbered 33 and 34) are combined to assess the frequency of exercise-induced sweating. Question number 33 asks "At least once a week, do you engage in a regular

activity like brisk walking, jogging, rowing, bicycling, etc., long enough to work up a sweat?", and is followed by "YES" and "NO". The next question, question number 34, states "If you answered 'YES' to the question above, how many days per week?" The subjects were asked to respond to this question by circling a list of numbers from 1 to 7. The answers to these two questions then combine to produce an index ranging from 0 to 7.

The participants who responded with either a "NO" on question number 33 or "1" on question number 34 were categorized as being *inactive*. Participants who circled the numbers "2", "3", and "4" for number 34 were labeled *moderately active*. And those participants who marked the numbers "5", "6", and "7" were categorized as being *vigorously active*.

Return Rate

A total of 83 individuals received, by mail, a Senior Survey/Questionnaire. Forty-three were sent to rowers and 40 were sent to church members. Of the 83 forms mailed, 73 were returned to the researcher, which is an 88 percent return rate (37 were returned by the rowers and 36 were returned by the church members). Of the 73 surveys returned to the researcher, only 66 qualified for the study (90 percent). Of those seven surveys that were excluded from the study, five of the respondents did not meet the age requirement (all five were rowers), and two of the respondents simply failed to complete the survey/questionnaire form (one was a rower and the other was a church member).

Demographics

Besides the biological, psychological, and social questions in the survey/questionnaire, the participants of this study were asked to disclose general demographic information, as well. The following categories will be included in this discussion: age,

gender, and marital status. The average number of health problems suffered by participants will also be discussed.

A breakdown of the demographic information sought from the respondents was as follows. When analyzed by age, the number of individuals in each of the five age categories proved to be fairly uniform, as illustrated in Table 1: 12 participants were in the 55-59 age category, 11 participants in the 60-64 age category, 12 participants in the 65-69 age category, 11 participants in the 70-74 age category, 10 participants in the 75-79 age category, and 10 participants in the 80+ age category. Concerning gender, 34 of the respondents were male and 32 were female (Table 2). A breakdown of the marital status included four divisions from which the participants could choose: widowed, single, married, divorced (Table 3). Additional tables are also provided which summarize the average number of health problems for each group (Table 4), and the average number of days exercised by each group (Table 5). The raw data may be found in Appendix E.

Table 1

Total Breakdown of Age Versus Activity Level

Group	55-59 yrs	60-64 yrs	65-69 yrs	70-74 yrs	75-79 yrs	80 + yrs	Total
Inactive	2	2	3	4	3	6	20
Moderately Active	4	4	5	3	2	4	22
Vigorously Active	6	5	4	4	5	0	24
Total	12	11	12	11	10	10	66

Table 2

Total Breakdown of Gender and Activity Level

	Male	Female	Total
Inactive Group	4	16	20
Moderately Active Group	12	10	22
Vigorously Active Group	18	6	24
Total	34	32	66

Table 3

Current Marital Status Versus Activity Level

	Widowed	Single	Married	Divorced
Inactive Group	9	2	9	0
Moderately Active Group	3	2	17	0
Vigorously Active Group	1	0	23	0
Total	13	4	49	0

Table 4

Average Number of Health Problems and Activity Level

	Average Number of Health Problems
Inactive Group	1.85
Moderately Active Group	1.23
Vigorously Active Group	1.13

Table 5

Average Number of Days Exercised and Activity Level

	Average Number of Days Exercised
Inactive Group	0.10
Moderately Active Group	3.05
Vigorously Active Group	5.63

According to Table 1, the participants were almost equally distributed among the age categories as arranged in the survey/questionnaire. The total number of older adults in each age category ranged from 10 subjects (75-79 years and 80 years +) to 12 subjects (55-59 years and 65-69 years). The two remaining age categories, 60-64 years and 70-74 years, each contained 11 older adults. The largest number of participants were in the 55-59 years and 65-69 years age categories, while the fewest number of participants were found in the 75-79 years and 80 years + category.

As shown in Table 2, the participants were almost uniformly divided when analyzed by gender, which was similar to the results found when examining the age variable. There were only two more males than females who participated in this study. When examining each separate group, the following information was concluded: The majority of the participants who rated themselves as being in the inactive category (16 women) were female as opposed to male participants (4 men). Twelve males, as opposed to 10 females perceived themselves as being moderately active. And in the final group, 18 males versus 6 females perceived themselves as being vigorously active. In this study, males reported themselves as being more physically active than did the females. This could possibly have been a result of the men perceiving that they perform more manual labor of an active nature as compared to women. Or, perhaps, the majority of the men surveyed were truly more active than the women.

By looking closely at the breakdown of the participants' marital status in Table 3, it may be concluded that the majority of the older adults in this study are married and none are presently divorced. Within the inactive group, an equal number of persons (9 out of 20) are widowed as are married; Two persons are single. Seventeen out of 22 individuals in the moderately active group are married; Three are widowed and two are single. Of the persons in the vigorously active group, 23 of the 24 are married; One is widowed.

As concluded from Table 4, on average, the individuals who perceived themselves as being vigorously active also reported themselves as having a fewer number of health problems. Although there is a visible difference in the average number of health problems reported by each group, there is no significant difference between any of the groups.

Table 5 is a breakdown of the data which was used to divide the participants into one of the three following groups (these groups have been used throughout the study): the inactive group, the moderately active group, and the vigorously active group.

The inactive group was designated by those individuals who did not “regularly participate in an activity long enough to work up a sweat” (They participated 1 or fewer times per week). The moderately active group was designated by individuals who “regularly participate in an activity long enough to work up a sweat” (They were active 2 to 4 days per week). And finally, the vigorously active group was determined by those individuals who “regularly participate in an activity long enough to work up a sweat” (They were active 5 to 7 days per week).

Analysis of Data

This study was conducted to determine, from a biological, psychological, and social perspective, how participating in a regular exercise program affects the perceptions of inactive elderly adults as compared to active ones. Originally, the researcher had planned to divide the participants of this study into two groups, active and inactive elderly adults. However, upon analyzing the data more closely, three groups instead of two became evident. The main issue at hand still concerns active versus inactive elderly adults, but the researcher simply subdivided the active group into two different groups: moderately active and vigorously active (the raw data are in Appendix E).

The following directional hypotheses were to be tested for significance ($p \leq .05$).

Hypothesis I: There is a significant difference in the perceived biological well-being between active and inactive older adults.

Hypothesis II: There is a significant difference in the perceived psychological well-being between active and inactive older adults.

Hypothesis III: There is a significant difference in the perceived social well-being between active and inactive older adults.

Each of these three hypotheses will be presented in this chapter using the following outline: (a) Hypothesis, (b) Brief Description of the Scoring, and (c) Report of the Overall Findings (including tables).

HO 1: Perceived Biological Well-Being

HO 1: There is a significant difference in the perceived biological well-being between active and inactive older adults.

Computation of an index score on the Senior Survey/Questionnaire for each participant was calculated based on a Likert scale of "1" for never to "5" for always. Each individual participant's score was then combined into an average index score. The questions in the biological section were worded in such a way that a high score was worse than a low score. The index score obtained from each participant's survey/questionnaire on his/her perceived biological well-being fell into the following ranges. The scores of individuals in the inactive group ranged from 18, which indicated a positive score, to a score of 31, indicating a negative response (Appendix E). The scores of individuals in the moderately active group ranged from 14, which indicated a positive score, to a score of 32, indicating a negative response (Appendix E). The scores of individuals in the vigorously active group ranged from 17, which indicated a positive score, to a score of 39, indicating a negative response (Appendix E). The scores of the two combined active groups (moderately active and vigorously active groups) ranged from 14, which indicated a positive score, to a score of 39, indicating a negative response (Appendix E).

A one-way ANOVA was used to determine any significant differences between the responses of the three groups of older adults. The difference between two means is significant only if the F-ratio is greater than or equal to 17.83 at the .05 level. The F-ratio was 1.43. Therefore, no two groups were significantly different at the .05 level. Therefore, this result does not allow the following directional hypothesis to be accepted:

There is a significant difference in the perceived biological well-being between active and inactive older adults.

Table 6
Perceived Biological Well-Being

	Mean	Standard Deviation	Range
Inactive Group	24.40	3.97	13
Moderately Active Group	22.95	4.53	18
Vigorously Active Group	23.00	5.43	22
Combined Active Groups	22.98	4.96	25

HO 2: Perceived Psychological Well-Being

HO 2: There is a significant difference in the perceived psychological well-being between active and inactive older adults.

Computation of an index score on the Senior Survey/Questionnaire for each participant was calculated, based on a Likert scale of "1" for never to "5" for always. Each individual participant's score was then combined into an average index score. The questions in the psychological section were worded in such a way that a high score was worse than a low score. The index score obtained from each participant's survey/questionnaire on his/her perceived psychological well-being fell into the following ranges. The scores of individuals in the inactive group ranged from 10, which indicated a positive score, to a score of 25, indicating a negative response (Appendix E). The scores of

individuals in the moderately active group ranged from 10, which indicated a positive score, to a score of 21, indicating a negative response (Appendix E). The scores of individuals in the vigorously active group ranged from 9, which indicated a positive score, to a score of 21, indicating a negative response (Appendix E). The scores of the two combined active groups (moderately active and vigorously active groups) ranged from 9, which indicated a positive score, to a score of 21, indicating a negative response (Appendix E).

A one-way ANOVA was used to determine any significant differences between the responses of the three groups of older adults. The difference between two means is significant only if the F-ratio is greater than or equal to 2.45 at the .05 level. The F-ratio was 1.61. Therefore, no two groups were significantly different at the .05 level. This result does not allow the following directional hypothesis to be accepted: There is a significant difference in the perceived psychological well-being between active and inactive older adults.

Table 7
Perceived Psychological Well-Being

	Mean	Standard Deviation	Range
Inactive Group	16.55	4.38	15
Moderately Active Group	15.23	2.94	11
Vigorously Active Group	14.71	3.00	12
Combined Active Groups	14.96	2.95	12

HO 3: Perceived Social Well-Being

HO 3: There is a significant difference in the perceived social well-being between active and inactive older adults.

Computation of an index score on the Senior Survey/Questionnaire for each participant was calculated, based on a Likert scale of "1" for never to "5" for always. Each individual participant's score was then combined into an average index score. The questions in the social section were worded in such a way that a high score was better than a low score (this was opposite with respect to the other two sets of questions). The index score obtained from each participant's survey/questionnaire on his/her perceived social well-being fell into the following ranges. The scores of individuals in the inactive group ranged from 11, which indicated a negative score, to a score of 26, indicating a positive response (Appendix E). The scores of individuals in the moderately active group ranged from 16, which indicated a negative score, to a score of 28, indicating a positive response (Appendix E). The scores of individuals in the vigorously active group ranged from 12, which indicated a negative score, to a score of 26, indicating a positive response (Appendix E). The scores of the two combined active groups (moderately active and vigorously active groups) ranged from 12, which indicated a negative score, to a score of 28, indicating a positive response (Appendix E).

A one-way ANOVA was used to determine any significant differences between the responses of the three groups of older adults. The difference between two means is significant only if the F-ratio is greater than or equal to 2.45 at the .05 level. The F-ratio was 3.23. Therefore, there was a significant difference at the .05 level between two of the groups. To determine, among the three groups, where the significant difference was, a Newman-Keuls test was run. In using this test, the mean differences of the three groups were compared to the critical value in order to declare a significant difference between two of them. The significant difference was between the moderately active group and the

vigorously active group. The moderately active group perceived themselves as having more social contacts/being more sociable than the vigorously active group. This result, however, does not allow the acceptance of the following directional hypothesis: There is a significant difference in the perceived social well-being between active and inactive older adults.

Table 8
Perceived Social Well-Being

	Mean	Standard Deviation	Range
Inactive Group	20.50	3.93	15
Moderately Active Group	22.55	3.29	12
Vigorously Active Group	20.08	3.20	14
Combined Active Groups	21.26	3.44	16

Discussion

No significant differences were found between groups concerning perceived biological, perceived psychological, or perceived social well-being. There was, however, a significant difference between the moderately active group and the vigorously active group with regards to perceived social well-being. The moderately active group reported themselves as having more social activities/encounters than the vigorously active group.

As mentioned above, computation of an index score on the Senior Survey/Questionnaire for each participant was calculated based on a Likert scale of “1” for never to “5” for always. Each individual participant’s score was then combined into an average index score. The questions in the biological section were worded in such a way that a high score was worse than a low score. However, after reviewing the data, question number 10 (from the biological well-being section) was not used in the scoring. Its wording was opposite compared to the rest of the questions in the biological section. So, in scoring this question, a low score on the Lickert scale was worse (it represented a poorer perceived well-being) than a high score on the Lickert scale (which represented a higher perceived well-being). In the other two sections of questions, the translation of the high scores and the low scores was different. For instance, all of the other questions in the biological section, questions 1 through 12, were worded in such a way that if a person responded with a “5” for “always”, he/she would end up with a higher average score (representing a *lower* perceived well-being) for that section. However, question number 10 asks “how often” each respondent exercises. If a person were to answer this question with a “5” for “always”, his/her average score for that section would be higher, thus representing a *higher* perceived well-being. Therefore, question number 10 was omitted from the scoring process.

Another area of concern for the researcher deals with discrepancies. Inconsistent answers were reported between questions 10 and 34. It was common for individuals to answer that they exercised “often” in response to question number 10. But, when they answered question number 34, these same people would indicate that they exercise no more than 1 day a week, if any.

Another incident noted by the researcher was that certain questions may have been interpreted differently by different people. Question number 8, for instance, asked how often each person visits his/her doctor for health problems. Several persons made a note

beneath the question clarifying that they went “sometimes” as a result of their annual physical and other check-ups, not because of severe health complications.

As previously mentioned, this study was conducted to determine, from a biological, psychological, and social perspective, how participating in a regular exercise program affects the perceptions of inactive elderly adults as compared to active ones. According to this study, there is no significant difference in the perceived well-being (biological, psychological, and/or social) of elderly individuals

The following directional hypotheses were tested for significance ($p \leq .05$), and the following conclusions were made.

Hypothesis I: There is a significant difference in the perceived biological well-being between active and inactive older adults. According to the findings of this research, and with the sample populations used, there was no real significant difference between active and inactive older adults. Nor was there a difference between moderately or vigorously active adults and inactive adults.

Hypothesis II: There is a significant difference in the perceived psychological well-being between active and inactive older adults. According to the findings of this research, and with the sample populations used, there was no real significant difference between active and inactive older adults. There was no difference between moderately or vigorously active adults compared to inactive adults either.

Hypothesis III: There is a significant difference in the perceived social well-being between active and inactive older adults. According to the findings of this research, and with the sample populations used, there was no real significant difference between active and inactive older adults. There was, however, a significant difference between moderately active and vigorously active older adults, concerning social well-being. The moderately active group reported themselves as having more social activities and/or encounters than did the vigorously active group.

At the end of the survey, space was provided for additional comments. This portion of the survey, however, was optional. While some people did not bother to make any comments at all, others took advantage of this portion of the survey. A few of these comments may be found in Appendix F.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter consists of a summary of the study. It is categorized into four sections: (a) Summary of Procedures, (b) Summary of Findings, (c) Conclusions, and (d) Recommendations.

Summary of Procedures

As the review of literature suggested, by participating in an exercise program such as rowing, elderly individuals are able to meet more friends, experience fewer bouts of depression, have fewer severe health complications, and consequently experience a better quality life. The primary purpose of this study was to identify how leisure participation affects the perceptions of active versus inactive elderly adults from a biological, psychological, and social perspective. To achieve this purpose, a questionnaire was developed and administered to active and inactive adults over the age of 55.

The research involved two populations, including 31 individuals who actively participate in rowing clubs in the southeastern United States and 35 persons who are members of Knoxville-area churches. A color-coded Survey/Questionnaire was sent to 83 individuals; Seventy-three of those Survey/Questionnaires were then returned to the researcher. Of the 73 that were returned, only 66 qualified for the study.

Statistical treatment of the data included using an analysis of variance utilizing a one-way ANOVA (analysis of variance) by group to interpret the data and show how the total scores (biological, psychological, and social) were distributed around the mean.

Summary of Findings

Initially, the church members were assumed to be inactive. However, this was not necessarily the case; Nor were all the rowers active. One rower claimed to never exercise (to be completely inactive), while 16 of the church members claimed to lead moderate to vigorously active lives.

Based on the results found in this study, the following conclusions have been drawn by the investigator:

1. There was no significant difference in the perceived biological well-being between active and inactive older adults.
2. There was no significant difference in the perceived psychological well-being between active and inactive older adults.
3. There was no significant difference in the perceived social well-being between active and inactive older adults. There was, however, a significant difference in the perceived social well-being between *moderately* and *vigorously* active older adults. The moderately active group perceived themselves as having more social contacts/interaction.

Conclusions

Within the scope of this study, and based on the purpose and hypotheses proposed, the following conclusion was drawn: There was no significant difference in how leisure participation affected the perceptions of active versus inactive elderly adults from a biological, psychological, and social perspective. There was, however, a significant difference in the perceived social well-being between moderately active and vigorously active older adults. Moderately active older adults rated themselves as being more sociable/having more social contacts than vigorously active persons.

Recommendations

Based on the findings of this study, the following recommendations were made for further research:

1. Future studies should be conducted in which the sample size is larger than the sample used in this investigation.
2. Further research in this area could include participants in different types of athletic organizations such as cycling and running, or golf and tennis, instead of only rowing.
3. A more extensive and comprehensive study could be conducted to determine the factors associated with leisure and exercise that are most influential and lead to an increased sense of biological, psychological, and social well-being among older adults.
4. Studies could be conducted in which subjects were not already assigned to a set group such as “active” and “inactive” groups.
5. Future studies should be conducted to analyze, more closely, age as a factor in level of activity, from a biological, psychological, and social perspective.
6. A more comprehensive study could be conducted to investigate the relationship between gender and level of activity.
7. Further research in this area could be conducted to determine if persons are more likely to be active if their spouse participates in activities with them.

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APPENDICES

APPENDIX A

SENIOR SURVEY/QUESTIONNAIRE

Dear Senior,

My name is Amanda Gutridge, and I am a graduate student in therapeutic recreation at the University of Tennessee at Knoxville. I am conducting a study, as a partial fulfillment for a master's thesis, concerning the effects of leisure participation on persons 55 and older. The reason you have been contacted is because of my interest in working with older adults once I am out of school, as a recreation therapist.

In order to keep the forms completely confidential, please do not include your name or initials on any part of the survey form. I would greatly appreciate any time you might contribute in helping me to complete this portion of my thesis, as it will be incomplete without sufficient response. It should take only about 5 minutes to complete all 34 questions.

After all the questions have been answered, and within 2 *weeks* of receiving the survey, I am asking that you mail it back in the stamped and pre-addressed envelope provided. Your participation will be greatly appreciated. If you have any further questions, please do not hesitate to call me at (423) 947-8617.

Sincerely,

Amanda Gutridge
Graduate Student, Researcher

Dr. Mary Dale Blanton
Associate Professor of Health, Leisure and Safety Sciences
University Of Tennessee, Knoxville
(423) 974-6045
Thesis Committee Chair

Completion of the questionnaire itself will serve as informed consent for this study. You are free to choose not to participate in the following study; if you choose not to, there will be no resulting negative consequences. Regardless of whether or not you choose to participate, your address will be destroyed by the researcher and no further contact will be attempted.

APPENDIX B

Senior Survey/Questionnaire

Circle the **number rating** that best describes your current condition:

1. Do you experience breathing problems such as shortness of breath, coughing, or chest pains?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

2. Do you experience any heart problems such as racing heart, chest pains, or irregular heart beats?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

3. Do you have trouble with repeated infections?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

4. Do you experience joint or muscle problems such as pain, swelling, or weakness?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

5. Do you ever experience tingling or weakness in your arms or legs?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

6. Do you experience balance problems when walking or standing?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

7. Do you have trouble remembering things?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

8. How frequently do you visit your doctor for health problems?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

9. Do you take any prescribed or over-the-counter medications for chronic health conditions?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

10. Do you exercise?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

11. Do you use tobacco in any form?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

12. Do you use alcohol in any form?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

13. Do you ever experience long periods of sadness, loneliness, or depression?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

14. Do you ever experience anxiety, stress, or tension?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

15. Do you have trouble sleeping through the night?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

16. Do you ever lose your appetite?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

17. Do you ever experience extreme tiredness?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

18. Do you ever have trouble concentrating on things?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

19. Do you sweat excessively due to nervousness, tension, or fear?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

20. Do you ever hyperventilate?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

21. Do you ever watch TV or movies with friends or relatives?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

22. Do you attend church functions?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

23. Do you ever attend functions at a senior center?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

24. Do you participate in special interest groups?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

25. Do you go out to eat with family or friends?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

26. Do you ever have guests over to your place for a meal or entertainment?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

27. Do you receive social support from family or friends?

Never	Seldom	Sometimes	Often	Always
1	2	3	4	5

28. Circle your **age range**: 55-59 60-64 65-69 70-74 75-79 80+

29. Circle your **gender**: Female Male

30. Circle only **one** of the following:

Married Single Divorced Widowed

31. Circle **all** that apply to your family situation. Do you have:

Children Grandchildren Nieces/Nephews Siblings

32. Circle **all** that apply to your current physical condition:

anemia	arthritis	cancer
constipation	diabetes	diarrhea
emphysema	heart disease	high blood pressure
kidney disease/stones	liver problems	lung problems
nervous/emotional problems	thyroid problems	ulcers
urinary tract problems		

33. At least **once** a week, do you engage in regular activity like brisk walking, jogging, rowing, bicycling, etc., long enough to work up a sweat? **YES** **NO**

34. If you answered "YES" to the question above, how many days per week? Circle only **one** response.

1 2 3 4 5 6 7

This researcher is interested in any additional information that you want to share, but were not asked in the above survey questions. For example, list the *types* of activities or exercise routines in which you participate. _____

APPENDIX C

Color Code Chart

Inactive older adults

Powell United Methodist Church.....blue paper

Washington Pike United Methodist Church.....red paper

Active older adults

Lookout Rowing Club.....yellow paper

Oak Ridge Rowing Association.....pink paper

APPENDIX D

SENIOR SURVEY/QUESTIONNAIRE

Dear senior,

My name is Amanda Gutridge, and I am a graduate student in therapeutic recreation at the University of Tennessee at Knoxville. I am conducting a study, as a partial fulfillment for a master's thesis, concerning the effects of leisure participation on persons 55 and older.

The reason you have been contacted is two-fold. First, I have a fond interest in rowing because I rowed at the University of Tennessee at Chattanooga for 4 years, the last year of which I was the women's captain. And second, I have chosen you because of my interest in working with older adults once I am out of school, as a recreation therapist.

In order to keep the forms completely confidential, please do not include your name or initials on any part of the questionnaire. I would greatly appreciate any time you might contribute in helping me to complete this portion of my thesis, as it will be incomplete without sufficient response. It should take only about 5 minutes to complete all 34 questions.

After all the questions have been answered, and within 2 *weeks* of receiving this survey, I am asking that you mail it back in the stamped and pre-addressed envelope provided. Your participation will be greatly appreciated. If you have any further questions, please do not hesitate to call me at (423) 947-8617.

Sincerely,

Amanda Gutridge
Graduate Student, Researcher

Dr. Mary Dale Blanton
Associate Professor of Health, Leisure and Safety Sciences
University of Tennessee, Knoxville
(423) 974-6045
Thesis Committee Chair

Completion of the questionnaire itself will serve as informed consent for this study. You are free to choose not to participate in the following study; if you choose not to, there will be no resulting negative consequences. Regardless of whether or not you choose to participate, your address will be destroyed by the researcher and no further contact will be attempted.

APPENDIX E

Inactive Group									
ID	age	gender	bio	psycho	socio	# health probs	#days ex.	marital stat	fam support
1	75-79	f	30	16	26	3	0	w	3
2	70-74	f	18	10	26	1	0	s	1
3	80+	f	31	16	20	2	0	w	4
4	55-59	m	24	15	21	1	1	m	3
5	80+	f	28	13	24	3	0	w	4
6	70-74	f	18	15	23	0	0	w	4
7	55-59	f	20	16	19	1	1	m	2
8	80+	f	26	17	24	5	0	w	3
9	70-74	m	20	10	20	1	0	m	4
10	75-79	f	24	23	20	2	0	w	4
11	80+	f	22	12	21	2	0	w	1
12	75-79	f	22	19	19	1	0	m	4
13	80+	f	23	22	11	3	0	s	2
14	80+	f	26	24	15	4	0	w	3
15	70-74	f	26	17	17	1	0	m	4
16	65-69	f	30	25	24	3	0	m	2
17	65-69	m	24	15	24	1	0	m	2
18	65-69	f	24	17	23	2	0	m	3
19	60-64	f	30	18	17	0	0	w	3
20	60-64	m	22	11	16	1	0	m	4
Averages			24.40	16.55	20.50	1.85	0.10		3.00

Moderately Active Group									
ID	age	gender	bio	psycho	socio	# health probs	#days ex.	marital stat	fam support
21	80+	f	24	18	23	3	3	w	4
23	80+	f	19	18	22	0	3	s	2
24	80+	f	24	16	27	1	4	m	1
25	65-69	f	23	16	26	2	3	m	3
26	70-74	f	25	12	22	1	2	m	3
27	60-64	m	23	16	28	1	3	m	4
28	75-79	f	24	14	22	1	3	w	3
29	60-64	f	26	17	26	2	3	m	4
30	65-69	f	26	21	18	1	2	w	3
31	55-59	m	14	13	23	1	4	m	3
32	65-69	f	32	18	17	3	3	s	4
33	55-59	m	29	20	20	2	3	m	0
34	80+	m	17	13	21	1	3	m	3
35	70-74	m	18	10	23	1	3	m	4
36	60-64	m	20	11	26	0	3	m	4
37	55-59	m	23	16	19	1	3	m	3
38	65-69	f	22	16	23	1	2	m	4
39	70-74	m	21	12	24	1	4	m	2
41	60-64	m	25	13	22	0	4	m	4
42	75-79	m	23	16	21	1	3	m	4
43	55-59	m	16	12	16	0	3	m	2
44	65-69	m	31	17	27	3	3	m	3
Averages				22.95	15.23	22.55	1.23	3.05	3.05

Vigorously Active Group									
ID	age	gender	bio	psycho	socio	# health probs	#days ex.	marital stat	fam support
45	60-64	m	33	21	23	3	6	m	4
46	75-79	m	21	16	26	1	5	m	3
47	65-69	m	23	15	12	1	6	m	1
48	75-79	f	24	15	21	2	5	m	4
49	70-74	m	27	17	16	2	6	m	3
50	70-74	f	39	19	18	5	7	m	4
51	75-79	f	28	16	22	1	6	w	1
52	60-64	m	21	15	19	0	6	m	4
53	55-59	f	15	9	21	0	5	m	4
54	70-74	m	25	20	20	2	5	m	4
55	60-64	f	20	13	22	1	7	m	4
56	55-59	f	18	13	23	1	5	m	3
57	60-64	m	28	17	21	1	6	m	4
58	55-59	m	24	13	18	0	5	m	3
59	55-59	m	23	14	21	1	6	m	4
60	75-79	m	18	14	13	0	6	m	2
61	65-69	m	19	15	19	1	5	m	4
62	55-59	m	17	12	17	0	5	m	2
63	65-69	m	27	12	23	1	7	m	3
64	55-59	m	22	12	20	1	5	m	2
65	65-69	m	20	13	22	1	5	m	4
66	75-79	m	19	12	22	0	6	m	4
67	70-74	m	23	19	22	1	5	m	4
68	60-64	m	18	11	21	1	5	m	4

Averages	23.00	14.71	20.08	1.13	5.63	3.29
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Combined Active Groups										
ID	age	gender	bio	psycho	socio	# health probs	#days ex.	marital stat	fam support	
21	80+	f	24	18	23	3	3	w	4	
23	80+	f	19	18	22	0	3	s	2	
24	80+	f	24	16	27	1	4	m	1	
25	65-69	f	23	16	26	2	3	m	3	
26	70-74	f	25	12	22	1	2	m	3	
27	60-64	m	23	16	28	1	3	m	4	
28	75-79	f	24	14	22	1	3	w	3	
29	60-64	f	26	17	26	2	3	m	4	
30	65-69	f	26	21	18	1	2	w	3	
31	55-59	m	14	13	23	1	4	m	3	
32	65-69	f	32	18	17	3	3	s	4	
33	55-59	m	29	20	20	2	3	m	0	
34	80+	m	17	13	21	1	3	m	3	
35	70-74	m	18	10	23	1	3	m	4	
36	60-64	m	20	11	26	0	3	m	4	
37	55-59	m	23	16	19	1	3	m	3	
38	65-69	f	22	16	23	1	2	m	4	
39	70-74	m	21	12	24	1	4	m	2	
41	60-64	m	25	13	22	0	4	m	4	
42	75-79	m	23	16	21	1	3	m	4	
43	55-59	m	16	12	16	0	3	m	2	
44	65-69	m	31	17	27	3	3	m	3	
45	60-64	m	33	21	23	3	6	m	4	
46	75-79	m	21	16	26	1	5	m	3	
47	65-69	m	23	15	12	1	6	m	1	
48	75-79	f	24	15	21	2	5	m	4	

Combined Active Groups (Continued)										
ID	age	gender	bio	psycho	socio	# health probs	#days ex.	marital stat	fam support	
49	70-74	m	27	17	16	2	6	m	3	
50	70-74	f	39	19	18	5	7	m	4	
51	75-79	f	28	16	22	1	6	w	1	
52	60-64	m	21	15	19	0	6	m	4	
53	55-59	f	15	9	21	0	5	m	4	
54	70-74	m	25	20	20	2	5	m	4	
55	60-64	f	20	13	22	1	7	m	4	
56	55-59	f	18	13	23	1	5	m	3	
57	60-64	m	28	17	21	1	6	m	4	
58	55-59	m	24	13	18	0	5	m	3	
59	55-59	m	23	14	21	1	6	m	4	
60	75-79	m	18	14	13	0	6	m	2	
61	65-69	m	19	15	19	1	5	m	4	
62	55-59	m	17	12	17	0	5	m	2	
63	65-69	m	27	12	23	1	7	m	3	
64	55-59	m	22	12	20	1	5	m	2	
65	65-69	m	20	13	22	1	5	m	4	
66	75-79	m	19	12	22	0	6	m	4	
67	70-74	m	23	19	22	1	5	m	4	
68	60-64	m	18	11	21	1	5	m	4	

Averages	22.98	14.96	21.26	1.17	4.39	3.17
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APPENDIX F

Additional Comments From the End of the Senior Survey/Questionnaire

Inactive Group

Within the inactive group, the following remarks were made:

One woman commented: "I am active in church- a secretary to the United Methodist Women; vice-president in my circle; organist; play in bell choir; secretary of my Sunday School class."

Another woman stated "I have a large yard and, weather permitting, I rake leaves, rake grass after someone else cuts it, cut shrubbery, and grow flowers."

Only one man responded within the group of inactive persons. He listed the following activities: "hiking, outdoor work, and Nordic Track".

Moderately Active Group

A larger quantity of persons made comments within the moderately active group. The following were some of the more interesting statements:

One female church member stated: "I feel that mental and physical activity are the keys to a long healthy life- stay involved- don't become a couch potato."

A male rower listed the following activities: walking, erging, rowing, red wine drinking."

On the more disciplined side of things, another male rower wrote the following: "My typical workouts: 1) Rowing on the water, 40 min., 2) Rowing on a machine, 30 min., 3) Treadmill 30 to 40 min. (half walking, half jogging)., 4) Street, 3 miles, 32 to 36 minutes (half walking, half jogging)., 5) Row on a machine for 20 minutes, walk/run for

20 minutes on a treadmill. Plus I always do a complete series of back, hamstring, and neck stretches.”

Another man used this space to brag: “I have had a 99% blockage of [my] right coronary [artery] without any heart damage.”

A female church member stated that she participates in “water exercises- 3 times a week, weather permitting.”

And the final comment from the moderately active group came from a woman in the 65 to 69 age range. She stated: “I am in a transitional stage. I have become noticeably weaker over the last year. I have been rowing or erging at least twice a week and swimming once a week. I can’t do that right now without getting seriously fatigued.”

Vigorously Active Group

The most impressive comment of all was written by a rower in the vigorously active group. She wrote the following: “The only way to promote continued quality of life is to retain both aerobic and muscular fitness. It [exercise] is also beneficial psychologically. Part of Recreation Therapy in the elderly should involve daily coping skills which cause problems for so many elderly folks... I participate in jazzercise, a combination of (aerobic/step/strength) training, rowing (indoor and outdoor), kayaking, swimming, walking, and weights.”

Other comments from the vigorously active group included: “I walk 3 miles/day, 6 days each week. Daily exercise for arthritis (back and neck).”

A few other active activities listed by persons in the vigorously active group included: “ballroom dancing, rowing, erging, basic conditioning, boating, and hiking.”

Another person noted “running, volleyball, and skiing” on her list.

One rower wrote the following: “I participate in masters rowing competitions at local, regional, and national level. Train year round for these competitions.”

And the final comment to be included from the vigorously active group was written as follows: “I have arthritic deterioration in my right hip. In the Spring of 1996, I switched from port to starboard, thereby decreasing the amount of pressure put on my right leg and hip. I rowed throughout the Summer and Fall, then went on an ergometer. Four months into erging, my right hip became a problem. My doctor has taken me off the ergometer. At present, I am taking 2400 mg/day of ibuprofen and doing only upper body work. I miss very much competitive-level rowing workouts and will get a hip replacement as soon as I can convince my doctor!”

Regardless of which group these comments came from, they are all extremely uplifting and motivational. Some people go to a great deal of trouble to stay active, and it shows through their comments. This researcher was very lucky to have had two very cooperative populations from which to survey. Without them, this research would have been incomplete.

VITA

Amanda Lea Gutridge was born in Knoxville, Tennessee on January 1, 1973. She received her elementary, middle, and high school education in Powell, Tennessee. She graduated from Powell High School in 1991. From August 1991 to December 1995, Amanda attended The University of Tennessee at Chattanooga where she graduated with a Bachelor of Science degree in Biology. From January 1996 to May 1997, she pursued her graduate studies in Recreation and Leisure Studies at The University of Tennessee, Knoxville. In May of 1997, Amanda received a Master of Science degree in Recreation and Leisure Studies with a concentration in Therapeutic Recreation.

Amanda is a member of Tri Beta Biological Honor Society and Eta Sigma Gamma National Professional Health Education Honorary. She is also a member of the American Therapeutic Recreation Association (ATRA).

At the time this thesis was completed, Amanda was engaged to Gregory Keith Bruce, of Cleveland, Tennessee. Keith was in his fourth year of medical school at Emory University, Atlanta, Georgia. They were married May 31, 1997.