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Elizabeth Ann Christopher

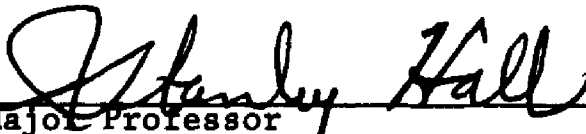
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A SURVEY OF THE LIFETIME SPORTS NEEDS AND
INTERESTS OF SENIOR CITIZENS IN
MIDDLE TENNESSEE


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ABSTRACT

A SURVEY OF THE LIFETIME SPORTS NEEDS AND INTERESTS OF SENIOR CITIZENS IN MIDDLE TENNESSEE

by Elizabeth Ann Christopher

This study was conducted to ascertain the needs and interests of senior citizens in middle Tennessee in relation to lifetime sports.

A survey with a list of 36 lifetime sports, divided into three categories, was administered to 94 senior citizens between the ages of fifty-five to sixty-five. The survey sample was to respond as to the method of instruction, the degree of participation, and those in which they wished to have further instruction.

Chi squares for the educational achievement level of college and above and high school graduates and below between the method of instruction and degree of participation resulted in the camping area significant at the .01 level for college and above and team sports significant at the .05 level for high school graduates and below. The t test between the educational achievement levels resulted in five of the seven areas being significant: camping, at the

.025 level; dance, at the .005 level; water activities, at the .025 level; racket activities, at the .025 level; and conditioning, at the .005 level. The Spearman rank order correlation resulted in all areas being significant at the .001 level.

Based on the findings of this study, the following recommendations were made: colleges, universities, and other instructional agencies should offer a wide variety of lifetime sports to prepare the youth of today to be the active senior citizens of tomorrow; and team sports should not be eliminated from school programs but a wide variety of lifetime sports should be offered.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF APPENDIXES	viii
 Chapter	
1. INTRODUCTION	1
STATEMENT OF THE PROBLEM	8
PURPOSE OF THE STUDY	8
SIGNIFICANCE OF THE STUDY	8
DELIMITATIONS OF THE STUDY	9
DEFINITIONS OF TERMS	9
BASIC ASSUMPTIONS	10
2. REVIEW OF RELATED LITERATURE	12
EDUCATIONAL PROGRAMS	18
EXERCISE PROGRAMS	24
3. METHODS AND PROCEDURES	42
SURVEY SAMPLE	42
INSTRUMENT	44
COLLECTING THE DATA	46
ANALYSIS OF DATA	47
4. ANALYSIS OF THE DATA	49
ANALYSIS AND PERCENTAGE OF AGE, SEX, AND EDUCATIONAL LEVEL	50

Chapter	Page
ANALYSIS OF THE SEVEN AREAS	53
MODERATE ACTIVITY	54
CAMPING	57
TEAM SPORTS	62
DANCE	66
WATER ACTIVITIES	71
RACKET ACTIVITIES	75
CONDITIONING	79
5. SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS	96
SUMMARY	96
FINDINGS	97
CONCLUSIONS	100
RECOMMENDATIONS	106
Recommendations for Future Research	107
APPENDIXES	108
BIBLIOGRAPHY	126

LIST OF TABLES

Table	Page
1. Frequency Distribution of Subjects by Sex . . .	51
2. Frequency Distribution of Subjects by Age . . .	51
3. Frequency Distribution of Subjects by Grade	52
4. Number and Percentage of Responses for Method of Instruction for Moderate Activity	55
5. Number and Percentage of Responses for Degree of Participation for Moderate Activity	56
6. Chi Square Results for Method of Instruction and Degree of Participation for the Area of Moderate Activities	58
7. Number and Percentage of Responses for Method of Instruction for Camping	59
8. Number and Percentage of Responses for Degree of Participation for Camping	61
9. Chi Square Results for Method of Instruction and Degree of Participation for the Area of Camping	62
10. Number and Percentage of Responses for Method of Instruction for Team Sports	63
11. Number and Percentage of Responses for Degree of Participation for Team Sports	65
12. Chi Square Results for Method of Instruction and Degree of Participation for the Area of Team Sports	66

Table	Page
13. Number and Percentage of Responses for Method of Instruction for Dance	67
14. Number and Percentage of Responses for Degree of Participation for Dance	69
15. Chi Square Results for Method of Instruction and Degree of Participation for the Area of Dance	70
16. Number and Percentage of Responses for Method of Instruction for Water Activities	72
17. Number and Percentage of Responses for Degree of Participation for Water Activities	73
18. Chi Square Results for Method of Instruction and Degree of Participation for the Area of Water Activities	74
19. Number and Percentage of Responses for Method of Instruction for Racket Activities	76
20. Number and Percentage of Responses for Degree of Participation for Racket Activities	77
21. Chi Square Results for Method of Instruction and Degree of Participation for the Area of Racket Activities	79
22. Number and Percentage of Responses for Method of Instruction for Conditioning	80
23. Number and Percentage of Responses for Degree of Participation for Conditioning	82
24. Chi Square Results for Method of Instruction and Degree of Participation for the Area of Conditioning	83

Table	Page
25. Chi Square Results for Method of Instruction and Degree of Participation for the Seven Areas of Lifetime Sports . . .	84
26. Chi Square Results for Method of Instruction and Degree of Participation for the Seven Areas of Lifetime Sports for College and Above	86
27. Chi Square Results for Method of Instruction and Degree of Participation for the Seven Areas of Lifetime Sports for High School Graduates and Below	88
28. <u>t</u> Test of Educational Achievement Levels for High School Graduates and Below and College and Above for Seven Areas of Lifetime Sports	90
29. Spearman Rank Order Correlation Results for the Method of Instruction and Degree of Participation for the Seven Areas of Lifetime Sports	92
30. Results of Positive Responses for Further Instruction in the 36 Lifetime Sports	95

LIST OF APPENDIXES

Appendix	Page
A. Senior Citizen Group Meetings Per Month and Directors	109
B. Town/City, Location, Date and Time Survey Instrument Administered	111
C. Lifetime Sports Activities for Survey Instrument and Responses	113
D. Distribution of Survey Sample	116
E. Chi Square	118
F. t Test	120
G. Spearman Rank Order Correlation	122
H. Histogram	124

Chapter 1

INTRODUCTION

According to Ewald, people aged fifty-five and older are pioneers in the society of the future, the leisure society. Free time, time-off-the-job, and recreation are not true leisure. Leisure is a time of creation as opposed to just "free time." Retirees must be the pioneers of the greatest transition yet to take place for humans from life centered on work to life centered on leisure. Forced idleness, underemployment, and sickness do not constitute free choice; retirement must be desired and not forced.¹ Ewald states that, "In order to avoid serious dissatisfaction, our society must provide either more training for leisure in middle age or more opportunity for continued employment in old age."²

Ewald mentions that the knowledged worker can not easily retire. Knowledge activity is habit-forming in a way

¹William R. Ewald, Jr., "Planning for the New Time," Leisure and the Quality of Life, eds. Norman P. Miller and Edwin J. Staley (Washington, D.C.: American Association of Health, Physical Education, and Recreation, 1972), pp. 157-162.

²Ewald, p. 161.

that manual work is not.³ A man who continues to go to the office beyond the normal retirement period, even though his responsibilities are reduced, is stimulated by sights, sounds, and thoughts which would not reach him at home. He has a sense of purpose, his mind operates in an orderly fashion, he gets more exercise, and he will live longer by continuing to be active. As related by Clark,⁴ the Hutschneker studies and similar data strongly suggest deterioration and death are correlatives of retirement, because the will to live is tied to society's definition of worth--work. The new ethic of leisure and the implementation through counseling and communication may be life and death matters to the aged.⁵

Kando declares that leisure remains leisure only so long as it is not forced. Male senior citizens today suffer from (1) education and occupation obsolescence, (2)

³Norman P. Miller and Edwin J. Staley, eds., Leisure and the Quality of Life (Washington, D.C.: American Association of Health, Physical Education, and Recreation, 1972), p. 32.

⁴Irving M. Clark, "Leisure, Environment, and the Generalist," Leisure and the Quality of Life, eds. Norman P. Miller and Edwin J. Staley (Washington, D.C.: American Association of Health, Physical Education, and Recreation, 1972), p. 49.

⁵Gabriel Fackre, "The New Leisure: Planner and Citizen in Partnership," Leisure and the Quality of Life, eds. Norman P. Miller and Edwin J. Staley (Washington, D.C.: American Association of Health, Physical Education, and Recreation, 1972), p. 80.

compulsory retirement and age discrimination, and (3) a decline of male senior citizen jobs such as watchmen, tailors, guards, and locomotive engineers. Retirement should be a beginning, not an end.⁶ Parker affirms that happy retirement depends on the previous life the person has led as well as the physical and social conditions in which he finds himself at this time in life.⁷ Mulac remarked that leisure is not new, but the abundance and prevalence is; whereas, what once belonged to and was enjoyed by the wealthy and privileged now belongs to every worker in the Western Civilization. Today, there are fewer working hours and shorter work weeks, and work is also less physically exhausting. In the early 1900's, workers seldom lived beyond the productive years. Retirement today has become feared and even cursed due to the fact that we are not prepared to use leisure time.⁸

According to Neulinger, the fraction of the total life span worked has remained about the same since 1900, but at that the labor force member could expect only three

⁶Thomas M. Kando, Leisure and Popular Culture in Transition (St. Louis: C. W. Mosby Co., 1975), pp. 74, 89.

⁷Stanley Parker, The Future of Work and Leisure (New York: Praeger Publishers, 1971), p. 89.

⁸Margaret E. Mulac, Hobbies: The Creative Use of Leisure (New York: Harper and Brothers, 1959), p. 5.

retirement years. Since 1950, the number of retirement years has risen to six years and is expected to increase more.⁹ Free time is not a problem, but how we experience it makes it a problem. Psychological problems of leisure relate to ways of coping with conditions brought about by technology which has developed everything but our capacity to deal with free time and leisure.

Senator Eagleton states that there are over 20 million Americans sixty-five and over which is seven times the number reported at the beginning of this century. The over sixty-five age group is increasing faster than the under sixty-five age group.¹⁰ Verhoven reported that 1 out of 10 percent of the population in the United States is sixty-five or over. Since the turn of the century, the nation's population has tripled, with women dominating these statistics by a ratio of 135 to 100. Eighty percent of the older Americans live in households of their own with 18 percent of these living alone and 4 percent of the older Americans are institutionalized.¹¹ Leach postulates that if

⁹John Neulinger, The Psychology of Leisure (Springfield: Charles C. Thomas, 1974), pp. 8, 68, 143.

¹⁰Thomas F. Eagleton, "On Legislation for the Aging," Journal of Economics, LXVI (January, 1974), 20.

¹¹Peter J. Verhoven, "Recreation for the Aging," Recreation for Special Populations, eds. Thomas A. Stein and H. Douglas Sessoms (Boston: Holbrook Press, Inc., 1973), pp. 381-382.

the present rate continues one out of three will be senior citizens by the year 2000 A.D.¹²

Seventy-five percent of the elderly within the age bracket of sixty-five to seventy-four have one or more chronic conditions; and 80 percent of the over seventy-five age group possess such chronic conditions as heart disease, arthritis, diabetes, and activity limiting visual impairments, according to Verhoven. However, half of these individuals with chronic conditions report no limitations of activity of any kind.¹³ In the October, 1975, issue of Aging, it was reported that 80 percent of the early retirees report some kind of health problems, while only 25 percent of the middle aged men still working report such problems.¹⁴ The National Center for Health Statistics estimates that 25 percent of the population over sixty-five have some chronic condition that limits them slightly. However, 87 percent of the population over sixty-five did not enter the hospital even for a short stay in the years 1965-66. In a United States survey, it was found that the overall impairment rate after age seventy-five was 65 percent higher than in ages

¹²Harold H. Leach, "Senior Citizen Fitness Finder," Journal of Physical Education, LXXI (November/December, 1974), 50.

¹³Verhoven, pp. 381-382.

¹⁴James E. Warner, ed., "Fitness Program for Elderly Launched with AoA Grant Aid," Aging, CCLII (October, 1975), 3.

sixty-five to seventy-four. Partial loss of hearing is the most frequent impairment, but all senses lose some acuity after age sixty. Most aged persons experience a reduction in physical vigor with few dying in full physical health.¹⁵

Mason indicates that, for millions approaching or past retirement, aging may cause boredom and uselessness unless they are prepared to use their leisure time. Older adults need to learn how to accept new roles, realize new status, and then have the ability to make necessary adjustments.¹⁶

Johnson and Kleva revealed that higher education must consider the entire area it serves as a campus and all the citizens within this area as their student body. They cite four specific areas that need to be developed for senior citizens--fitness learning laboratories, community athletic programs, walk-in recreation opportunities, and adult life fitness enhancing courses.¹⁷ Physical education has the potential of becoming a great product, easily

¹⁵C. W. Hackensmith, "The Essence of Aging: A Review," Physical Educator, XXX (October, 1973), 143.

¹⁶Dean W. Mason, "Aging and Lifelong Learning," Journal of Research and Development in Education, VII (Summer, 1974), 68-69.

¹⁷William P. Johnson and Richard P. Kleva, "Community Dimension of College P.E.," Journal of Health, Education and Recreation, XLIV (April, 1973), 40.

salable, and much in demand.¹⁸ The community dimension must be expanded to reach its perspective.¹⁹

Doherty remarks that the college student population is declining and progressing toward zero population growth. Some of the reasons for this lack of increase is due to a decline in numbers, economic conditions, and freedom from the draft. Currently, adults make up 40 percent of college enrollment; and, by 1980, they will make up 60 percent of the college population. Adults are also taking advantage of adult education courses offered by high schools, YMCA's and YWCA's, commercial institutions, and other non-school programs. If youth are to be educated for the future, then the young adults also need to improve or have a second chance to learn lifetime sports and activities. The challenge of lifelong learning does not exclude any level or academic discipline. Even though professional leaders have long realized the need for carry-over learning, there has not been enough redesigning of courses to meet the lifetime sports needs of the American public.²⁰

¹⁸Johnson and Kleva, p. 41.

¹⁹Johnson and Kelva, p. 42.

²⁰John P. Doherty, "Life Long Physical Education," Physical Educator, XXXII (December, 1975), 198-199.

STATEMENT OF THE PROBLEM

This study was a survey of the lifetime sports needs and interests of senior citizens from selected towns and cities in middle Tennessee.

PURPOSE OF THE STUDY

The purpose of this study was to determine priorities for lifetime physical activities. This will help colleges, universities, and other instructional groups to determine the activities which senior citizens consider most valuable.

SIGNIFICANCE OF THE STUDY

Colleges and universities across the country offer a variety of lifetime sports activities. More emphasis needs to be placed on some activities and less on others. Perhaps there are several activities in which senior citizens would like to receive instruction through continuing education opportunities. The results of this survey should help colleges and universities to better meet the needs of their younger clientele for the future and the needs of the senior citizens for the present.

DELIMITATIONS OF THE STUDY

This study was limited to senior citizens who were members of an organized senior citizen group and members at large. It was also limited to senior citizens in the age group from fifty-five to sixty-five, since these individuals should be more active than the sixty-five and over age group. This investigation was conducted at senior citizen organizations and with members at large within the middle Tennessee area where schools of higher education are located. The study included the towns and cities of Clarksville, Cookeville, Murfreesboro, Tullahoma, Gallatin, Columbia, and Cleveland.

DEFINITIONS OF TERMS

The following definitions of terms are presented for the purpose of this study.

Leisure society is the time spent off the job by members of our society.

Senior citizen. Chronologically, individuals are considered as senior citizens at age fifty-five by most senior citizen organizations. The government usually considers individuals eligible for social security at age sixty-two to sixty-five. For the purposes of this study, senior citizens are individuals between the ages of fifty-five to sixty-five.

Gerontology is the scientific study of aging processes in biological systems, particularly in humans.²¹

Lifetime sports are activities of a moderate nature, usually individual or dual in nature, that have the appeal of being played throughout the whole life.

Physical activities are events above and beyond the normal daily routine of living.

Aging is an adjective describing an older individual.

Elderly is an adjective which describes a group of older individuals.

BASIC ASSUMPTIONS

The following basic assumptions are set forth:

1. Senior citizens with a higher educational level of achievement have a higher degree of participation.
2. Senior citizens have a high response in the self-taught method of instruction.
3. Senior citizens have a high degree of response in the school category for team sports.
4. Senior citizens do not have a high degree of participation in the team sports area.

²¹Daniel N. Lapedes, ed., McGraw-Hill Dictionary of Scientific and Technical Terms (New York: McGraw-Hill, 1974), p. 619.

5. Senior citizens want further instruction in most of these lifetime sports.

Chapter 2

REVIEW OF RELATED LITERATURE

Geller declares that, in the nursing homes of yesterday and even some today, the food is poor and there is not enough of it; conditions are unsanitary; and there is lack of medical care. But worst of all there is nothing to do day in and day out except wait for death.¹ According to Burrill, "These people must be kept busy and happy, and re-educated to a different attitude so that they may gain their self-respect."²

Senator Eagleton manifests that thousands of human beings who need some relatively inexpensive health care can not change their beds, carry groceries, wash their own hair, or ride a bus to see a doctor and are forced into institutions. Usually the aged become vegetables in these

¹Robert Geller, "Media and Our Aging," Media and Methods, IX (October, 1972), 47.

²Roger H. Burrill, "Recreation Therapy for the Aged Psychiatric Patient," Recreation in Modern Society, eds. Marion N. Hormachea and Carroll R. Hormachea (Boston: Holbrook Press, Inc., 1973), p. 167.

institutions, not due to the degenerative process but isolation and abandonment.³

New York's Montefiore Hospital home care program provides for regular visits to home-bound patients by doctors, physical therapists, and social workers. Their after-care program works with stroke, arthritis, and cancer patients. They bring these patients to the hospital for follow-up treatment to eliminate the need for institutional care. The day hospital program provides custodial care for those with no one home during the day. The cost is twelve dollars per day. The June 2, 1975, issue of Time states that Sweden, Denmark, and Norway use taxes collected from citizens (50 percent in Sweden) to ease the burdens of aging. Sweden's city government runs housing developments where the aged can live close to transportation and recreation facilities. Denmark, with a population of five million, houses more than 600,000 in subsidized houses or apartments and helps those who want to remain in their own homes by providing day helpers and meals.⁴

Removal to nursing homes means removal from living activity which provided companionship, creativity, and social usefulness. Congregate living arrangements do not

³Thomas F. Eagleton, "On Legislation for the Aging," Journal of Economics, LXVI (January, 1974), 20.

⁴"New Outlook for the Aged," Time (June 2, 1975), 48.

change basic needs of people for creative use of leisure time or basic and crucial factors which prevent and delay mental and physical deterioration. They still need recognition, social interrelationships, physical activity, security, new experiences, and change. Laboratory experiments show that man deteriorates without change and loses perspective.⁵

However, Kraus mentions that there is legislation being passed which requires nursing homes to establish activity programs for the elderly. Retirement villages provide security, safety, companionship, and housekeeping. According to one resident, "The older you get, the more you want to live with people like yourselves. You want to put it bluntly, to die with your own."⁶ It must be remembered that these villages are for the financially able and are usually occupied by the higher social class and better educated. These villages usually employ a director to set up the program which might include swimming, golf, clubs, classes, hobby groups, and other events.⁷ As related by Burrill, Riccitelli notes that "There is an ever-increasing

⁵Gene A. Hayes, "Recreation and Leisure Implications for the Aged," Therapeutic Recreation Journal, VI (Third Quarter, 1974), 139.

⁶Richard Kraus, Therapeutic Recreation Service (Philadelphia: W. B. Saunders, 1973), p. 153.

⁷Kraus, p. 153.

awareness among those interested in geriatrics that the institutional care of the aged and infirm must include recreation as part of its total program."⁸

According to Bogdonoff, the retirement syndrome is characterized by an active person suddenly stopping and physical ailments gradually setting in. In laboratory and field observations of primates (baboons and monkeys), it was observed that in order to survive they must belong to the group and be important or worth something. Sociological and psychological studies of man show that he must feel he is somebody in order to successfully deal with the challenges of daily life. The elderly need a specific reason for being alive. They do not need a physician to prescribe a pill, but they do need associations with more people.⁹

Ianni points out in her studies that, by the age of six, children develop biases against old people. By junior high, they have stereotyped the old as powerful and unyielding or sick and unhappy. This causes fear of aging and hostility between the age groups.¹⁰ Nash tells of an organization called SOURCE, which is Senior

⁸Burrill, p. 167.

⁹Thomas Bogdonoff, "Work and Play," Times Educational Supplement, CCCLXXXIX (August 9, 1974), 11.

¹⁰Mary Ellen Ianni, "In Loco Grandparents," Instructor (February, 1973), 174.

(Citizens) Offering Useful Resources for Children's Education. This organization helps the two age groups to understand each other. Our yardstick for measuring when a person is old has changed dramatically. In the 1800's a person of thirty-five years of age was considered to be old. In 1900, a person of forty-five years of age was assumed to be an old person. In 1950, a person of seventy years of age was classified as being old, and, by 2000, it is predicted that a person of one hundred years will be considered old.¹¹

In China, the elderly are adored and only one step below the worship of the Divine, according to Geld. In the days of our founding fathers and many years afterward, the custom of a three-generation family under one roof was universally accepted. If it is found today, it is rural and not urban. The system of values cherished by our forefathers included thrift, appreciation of simple joys, and mature acceptance of suffering as an integral part of living. These values have drastically changed today.¹²

Geller asserts that the Eskimos used to freeze their people to death, while we bury ours alive.¹³ The June 2,

¹¹Jay B. Nash, Philosophy of Recreation and Leisure (Dubuque: Wm. C. Brown, 1953), p. 194.

¹²Solomon Geld, "Reflections on Group Living of the Aged," Recreation and Special Populations, eds. Thomas A. Stein and H. Douglas Sessions (Boston: Holbrook Press, Inc., 1973), pp. 160-161.

¹³Geller, p. 41.

1975, issue of Time reveals that the Eskimos and other nomads respected their elderly, but left them to die when they could no longer care for themselves. Older natives of some South Sea Islands paddle away from their families to death when age overtakes them. Maria Mannes, in the 1968 novel, They, postulated a world in which everyone over fifty years of age was herded into public institutions and eventually liquidated.¹⁴

The absence of work produces anxiety and meaninglessness with the great inner void of unemployment being traumatic, reports Kando. Retirement may produce mental illness, violence, alcoholism, even suicide. Retirement is an approaching nightmare--the last step before death. Scandinavian and other European social democracies have made greater headway toward alleviating this stress and enriching the lives of their senior citizens.¹⁵

Kraus remarks that the elderly have social security, employment pensions, welfare programs, or savings and assistance from the family. They have decreased incomes with no cost of living clauses. The retired are plagued by problems of alcoholism. Since 1958, the death rate has risen 52 percent for white males between sixty and sixty-nine and 114 percent for white females in the same age bracket.

¹⁴"New Outlook for the Aged," p. 44.

¹⁵Thomas M. Kando, Leisure and Popular Culture in Transition (St. Louis: C. W. Mosby Co., 1975), p. 73.

Suicide rates also increase with age. In the age group of over sixty-five, the suicide rate is three times as great as for the ages twenty to twenty-four for males and a ratio of two to one for females. Researchers have concluded that many aged place themselves in vulnerable or life-threatening situations which increase the possibility of demise. This is the disengagement theory.¹⁶

The following quote by an elderly person characterizes how some feel about being old.

My wife is getting blind; on the whole she is glad of it. There is nothing worth seeing. She says she hopes she will also become deaf for there is nothing worth hearing. The best thing about being old is that you are near the goal.¹⁷

EDUCATIONAL PROGRAMS

Pearman asserts that preparation for aging is a lifelong process. The capacity of senior citizens to meet economic stress depends upon their knowledge and wealth. Economic stress is influenced by the understanding and sympathy of the public and the active involvement of senior citizens to improve their welfare. Education can help to improve the economic welfare of the aged. The major objectives of educational efforts are: (1) to inform the

¹⁶Kraus, p. 143.

¹⁷Stanley Parker, The Future of Work and Leisure (New York: Praeger Publishers, 1971), p. 325.

public of the economic problems of the aged and activate wide interest in voluntary and public corrective policies which will better meet the needs of the aged without destroying the support of other vital programs; (2) to orient the young and middle-aged to the later years, so that they better plan their lives in relation to economic factors; and (3) to directly provide economic education for the aged so they can make more effective use of their incomes and savings and increase incomes through employment and entrepreneurship, also becoming involved in seeking more effective income maintenance programs while at the same time respecting urgent needs of other economically deprived groups.¹⁸

Norman and Smith recount a project where the elderly describe to the youth adjustments and problems related to their aging. In this project, the elderly become the teachers and teach students homemaking skills the older persons have found necessary in managing their daily needs. The students work with and learn from the elderly.¹⁹

Sheppard believes that one of the greatest natural reservoirs of human resources is the aged. Vocational

¹⁸J. R. Pearman, "Aging in America: Guidelines for Economic Education," Sociological Education, XXXV (March, 1971), 271.

¹⁹Ruth E. Norman and Ruby Smith, "Comparison to the Elderly," Journal of Home Economics, LXVII (March, 1975), 36.

education helps the elderly upgrade their work skills or learn new ones, rather than the usual harvest of golden years. In training plumbers, pipefitters, and employees in construction, the participants showed a need for short, practical courses, visual aids, competent instructors, and immediate application of the skills. Specific requirements include long and uninterrupted learning sessions and greater consolidation of learning before new skills are attempted. Their accurate response and rapid feedback during the self-structured, learning programs and avoidance of complaints with active mental participation during learning is important.²⁰

Shannon relates a planned program with credit for youth. The young learn humanistic activities by performing services to the elderly by reading to them and providing other personal services. Personal attention helps the elderly with transition and to solve problems better. This promotes better understanding for the youth and the aged.²¹

Edwards postulates that there is a need to develop leisure departments within the university. These departments are to be supported by all the academic areas so

²⁰N. A. Sheppard, "Older Americans: A New Challenge," Agriculture Education (March, 1974), 20-23.

²¹W. A. Shannon, "Our Forgotten Aged," School and Community, LX (March, 1974), 32.

as to develop leisure activities for the elderly.²² Buckley affirms that there is a need for learning courses for senior citizens. These could be located in vacant buildings.²³

According to Nash, in the final analysis, the retired can not just relax and do nothing. They must continue to grow, mature, and search for new meaning in their lives. Some educational opportunities from which the aged can profit are non-competitive, continuing education courses such as defensive driving, tax aide, consumer information, travel services, and others.²⁴

Cole asserts that senility is not a necessity. Ninety percent of senility comes from mental laziness. School systems, especially in Florida, are offering courses to the aged. As one senior citizen describes it, "The brain is a muscle. If you don't exercise it, it goes slack . . . small minds think about people, mediocre minds about things,

²²Patricia B. Edwards, "Is It Recreation Vs Leisure?", Journal of Health, Physical Education, Recreation, XLV (June, 1974), 26.

²³James J. Buckley, Jr., "How to Get a Senior Citizen Education Program Going," American School Board Journal, CLXII (June, 1975), 77.

²⁴Bernard Nash, "Retirement as Leisure," Journal of Health, Physical Education, Recreation, XLIII (March, 1972), 50.

and great minds about ideas. . . . Learning something keeps your mind on ideas."²⁵

Hiemstra relates a survey of eighty-six retired people and their continuing education needs and interests. They responded that transportation problems and educational activities offered in evenings are factors limiting older people from participating; more educational programs and activities should be offered in residential or senior citizen centers with specific attention given to instructional forms of activities and courses. Adult education must consider the aged as a specific clientele with specific needs and interests.²⁶

The long-range educational goals, as set forth by the White House Conference on Aging, are to help older people fulfill lifetime potentials, thus assuring them the means of attaining a self-respecting level of well-being. Freedom to develop partnership roles in promoting the welfare of society, assisting older people in developing abilities uniquely available in later years, helping society to utilize the abilities so developed by older people serving as models of lifelong fulfillment create a climate of

²⁵K. C. Cole, "Golden Oldies," Saturday Review Education, I (February, 1973), 41.

²⁶Roger P. Hiemstra, "Continuing Education for the Aged: A Survey of Needs and Interests of Older People," Adult Leadership, XXII (Winter, 1972), 102.

acceptance by both older persons and society of the desirability, legitimacy, and feasibility of preceding goals. This will help society understand the need and provide support for quality education for everyone at all ages as a contemporary opportunity in lifelong learning. It will provide pre-retirement education so older citizens will be better prepared to meet their specific needs, whereby specific provisions for delivering educational programs to the hidden populations can be provided.²⁷

Blum and Jarvik describe a study of cognitive task performance in adult and old age people with focus placed upon performance of conservative tasks of various types. The old sub-group manifested apparent regression in task mastery performing at levels similar to those of young children. The initially more able declined less on tests in the cognitive battery than did the initially less able. Based on education, the better educated showed less decline. This study suggests that continued intellectual activity throughout the life span may protect against intellectual decline. It is also suggested that survival and greater life span is associated with the more intellectual.²⁸

²⁷ John F. Helling, "Seniors on Campus," Adult Leadership, XXI (December, 1972), 202-204.

²⁸ June E. Blum and Lissy F. Jarvik, "Intellectual Performance of Octogenarians as a Function of Education and Initial Ability," Human Development, XVII, No. 5 (1974), 364.

Mason states,

Nearly all studies dealing with the age factor in adult performance have shown that most human abilities, insofar as they are measurable, decline progressively after reaching a peak somewhere between ages eighteen to twenty-five.²⁹

Ewald states,

Older persons as a group tend to be faced with numerous personal and social problems without adequate resources to meet them. . . . Some needs such as learning a new vocation, keeping mentally active, and develop a vocational interest can be met directly by educational progress.³⁰

Nash refers to the following statement by Dr.

Menninger, a psychiatrist, who asserts that

Recreation is an extremely important aid to growing older gracefully. People who stay young despite their years did so because of an active interest that provides satisfaction through participation. The unfinished business of life is life itself; when it ends, life ends.³¹

EXERCISE PROGRAMS

Various studies show that the aged can benefit from exercise without adding stress to their bodies. Physical changes can be made in the aged with short-term physical

²⁹Dean W. Mason, "Aging and Lifelong Learning," Journal of Research and Development in Education, VII (Summer, 1974), 69.

³⁰William R. Ewald, Jr., "Planning for the New Time," Leisure and the Quality of Life, eds. Norman P. Miller and Edwin J. Staley (Washington, D.C.: American Association of Health, Physical Education, and Recreation, 1972), p. 161.

³¹Nash, Jay B., p. 193.

training; physical activity may even reverse some age-induced physical changes. In Buccola and Stone's study, 36 men ages sixty to seventy-nine volunteered for a fourteen-week program of walk-jogging or cycling. The two groups exercised 25 to 50 minutes daily, three days a week. They were pre- and post-tested on a battery of physiological tests (Astrand Bike Test and Cattell 16 PF). The results showed a significant increase in predicted maximum VO_2 for both groups and increased flexibility. There was a decrease in blood pressure and weight for both. There was a greater reduction of body fat for the cyclists. It was also found that the cyclists did not change in personality factors, while the walk-joggers became less surgent and more self-sufficient. The cyclists were found to be more tough-minded and surgent than the walk-joggers.³²

Wessels suggests that the reduction in VO_2 , cardiac output, maximum heart rate, flexibility, vital capacity, and active tissue as well as the gradual increase in blood pressure, body fat, and reaction time are the result of a reduction of activity in the aged.³³

³²Victor A. Buccola and William J. Stone, "Effects of Jogging and Cycling Programs on Men," Research Quarterly, XLVI (May, 1975), 134-139.

³³J. A. Wessels et al., "Age and Physiological Responses to Exercise in Women 20-69 Years of Age," Journal of Gerontology, XXIII (1968), 269-278.

Kirby declares that

One of the basic needs of people lies in the area of mental and physical health. The community school is concerned first of all, in providing leadership which will encourage the maintenance of good health.³⁴

Kirby's program of exercise varied for each individual according to physical fitness level.³⁵

Leach's study was conducted with 18 men and women sixty-six to eighty years of age who had never exercised or been in a fitness class before. They were given the same type of program as that for cardiac patients. Persons with extremely high blood pressure were required to have a medical examination. The sitting and standing pulse rates were taken before the start of the program which was conducted three times a week. The program included arm swings in various positions and bend-stretching exercises at a moderate pace with lots of explanations. After fifteen minutes of exercise, they went outside and walked around the block. Each day the distance was increased. The pulse rates were checked after the walk to check for stress signs. After two months everyone was walking a mile with the fastest time being twelve minutes by a sixty-eight year old lady, and the slowest was eighteen minutes by an eighty year old. The average time for the group was fourteen to

³⁴Timothy E. Kirby, "Physical Education's Contribution to Meaningful Retirement," Journal of Physical Education, LXXI (May, 1974), 136.

³⁵Kirby, p. 136.

fifteen minutes. The program has now been moved to the "Y" and expanded to a county-wide basis.³⁶

Professor Hall, chairman of the Physical Education Department of the University of Southern California, remarks,

One of our major responsibilities should be to stimulate and motivate older people to do those things that we know are and would be beneficial to them. Now society must be asked a monumental question: Must the elderly be written off as damaged merchandise? . . . Sometimes, it seems to be a case of "out-of-a-job, out-of-mind."³⁷

Nash believes that helping the aged today is perhaps the civilized way of helping ourselves tomorrow. The art of leisure must become the ability to use leisure time for constructive, meaningful activity which contributes to the physical, mental, and emotional well-being of the participants.³⁸

Bradford, a practicing physician concerned about cardiovascular deterioration sought the help of Stone, Buccola, and graduate students at Arizona State University. He obtained 100 residents from a travel trailer village in Mesa, Arizona, who volunteered for a program to improve

³⁶Harold H. Leach, "Senior Citizen Fitness Finder," Journal of Physical Education, LXXI (November/December, 1974), 56-57.

³⁷"Raising the Level of Living of Older Americans," Journal of Physical Education, LXX (January, 1973), 56-57.

³⁸Nash, Bernard, p. 50.

their physical fitness. This gave him the opportunity to study the effects of various kinds of exercise on the elderly. The program included walking, jogging, swimming, and cycling, with cycling being the most popular. They met three times a week and did warm-up exercises for ten minutes. In the initial stage, the participants were limited to one or two miles and later five to seven miles. Most of the participants were sixty to seventy years old; a few were in their fifties, and the oldest was seventy-nine years old. Medical releases from personal physicians were required. The participants were tested on physical and psychological parameter tests. Rest and exercise ECG tests were given to each participant. A submaximal bicycle ergometer test was used to emulate the mode of exercise selected by most residents. The ergometer test was used to classify the participants into one of two groups. Individual programs included a training heart rate and maximum heart rate with consideration of age, fitness level, and ECG recordings during the preliminary tests. The participants were taught to count and record their own heart rate along with the time and distance traveled. After several months, the physical and psychological parameters were regiven. The results showed an increase in physical fitness and flexibility and a decrease in weight, body fat, and blood

pressure. Activities and exercise can arrest or even reverse some age-induced physical changes.³⁹

In the October, 1975, issue of Aging, Warner writes,

The facts are clear and impelling. When you get to retirement age, it's no time to take it easy, but to stay active. A regular program of exercise and fitness activity slows down the aging process and the degenerative diseases of the body associated with aging. In short, you feel better and are able to do more. And because you are able to remain active and involved, not only is your physical health better but your mental health is brighter.⁴⁰

Powell and Pondorf conducted a study using mental ability tests to reflect cognitive deterioration associated with aging. Seventy-one adult male subjects were used in this study. Twenty-six of these had exercised regularly for three years, and twenty-two had little or no exercise for three years; twenty-three were men whose exercise status was uncertain. The regular exercise group scored higher on the mental decrement tests than did the non-exercise group. The better fitness measures were found to accompany higher fluid intelligence scores. General measures related to elevated blood pressure were usually associated with poorer fluid intelligence measures. The specific conclusions of the

³⁹William J. Stone, "A Cycling Program for Senior Citizens," Journal of Health, Physical Education, Recreation, XLV (September, 1974), 97-98.

⁴⁰James E. Warner, ed., "Fitness Programs for Elderly Launched with AoA Grant Aid," Aging, CCLII (October, 1975), 3.

study were fluid intelligence test scores decreased with age and were indicative of the loss of some type of mental ability. Low systolic and diastolic blood pressure, a low total peripheral respiration, and high Schneider Index were all more characteristic of the exercise group; these factors were not associated highly with high fluid intelligence scores in subjects of the same age. Serum cholesterol level and basal metabolic rates were independent of fluid intelligence scores and exercise status. Although subjects who exercised regularly had a higher average fluid intelligence score than subjects who did no exercises, there was no significant difference between the two groups.⁴¹

Hackensmith, in reviewing an article by Dr. Kakiashivile, a Georgian cardiologist who has been studying gerontology for the past twelve years, states that life style for rural persons is active from birth to death and exercise is a major factor in longevity. The constant physical activity requires important cardiopulmonary functioning which supplies more oxygen to the heart muscle and makes the overall physical condition better for rural than the city dwellers.⁴²

⁴¹Richard R. Powell and Richard H. Pondorf, "Comparison of Adult Exercise and Non-exercisers on Fluid Intelligence and Selected Physiological Variables," Research Quarterly, XLII (March, 1971), 70-77.

⁴²C. W. Hackensmith, "The Essence of Aging: A Review," Physical Educator, XXX (October, 1973), 143-144.

The National Association for Human Development launched a year-long national effort for fitness activity and health education for senior Americans. The programs were conducted in cooperation with the President's Council on Physical Fitness and Sports under grants from the United States Administration on Aging. The goals were regimens of moderate exercise, regular activity, and health information for persons over sixty years of age, and to motivate the range of community instruction for the groups so as to provide leadership and facilities to implement model programs. This provides the opportunity for people over age sixty to engage in regular exercise and to inform older citizens about the importance of exercise in maintaining their health. This regimen of exercise urges them to participate in fitness programs especially for them.⁴³

Leach postulates that the retirees must be convinced of the benefits and enjoyment of exercise and fitness. Cognitive learning could be given as a single course or broken down into different categories such as mechanics of living-economy of effort through proper posture, correct methods of carrying, lifting, climbing stairs, reaching high objects, and others. These small tasks can result in disabling injuries due to falls, strains, and sprains. First aid, new facts about emergency care, and

⁴³Warner, p. 3.

identification of physical problems could be recognized and dealt with through cognitive learning courses.⁴⁴

According to a January, 1973, article in the Journal of Physical Education, older people

. . . have a desire to move around, go and do within reason the good things that they have always enjoyed doing. By the very nature and definition of our profession--recreation--we should be concerned chiefly with the self-betterment, self-improvement, and building anew of those we serve. That's our calling. If we don't dedicate ourselves to this our profession is not as big as its size.⁴⁵

Activities differ according to sex suggests the Omaha study. Men prefer workshops for hobbies, horseshoes, croquet, fishing, model railroads, tours, slot machines, and foreign language instruction. Women prefer dancing, movies, religious services, choral groups, physical therapy, and book reviews. Surveys have found that men prefer more active activities than women.⁴⁶

The Louisiana study evaluated the differences of rural and urban life. Religious organizations were basic for both groups, but no one from the rural area was a member

⁴⁴Leach, pp. 56-57.

⁴⁵"Raising the Level of Living of Older Americans," pp 56-57.

⁴⁶James Kitchens, "Interest Span and Cultural Background: Recreation for Senior Citizens in Hospitals, Nursing Homes and Institutions; Meeting the Emotional Needs" (unpublished study, Denton, Texas, the University Center for Community Services), 1969.

of an organized group for the aged. Forty percent of the urban group belonged to an organization. However, clubs were nonexistent in the rural areas because there was no felt need for them. The Louisiana State University study took twenty-two recreation activities and divided them into four categories--intellectual, social, solitary, and activistic. The intellectual group included mental activities of reading books and magazines, attending concerts, plays, singing affairs, and education classes. This group was made up of educated, white, affluent urban individuals. The social category included interaction with others, attending religious church services, participation in organizations, visiting neighbors and relatives other than children. This group was made up of rural, male individuals. Solitary activities included more physical exertion than the others (fishing, hunting, hobbies, traveling, and gardening). This group was made up of higher educated whites in the affluent urban area. Overall differences varied according to education, finances, race, and place of residence. The highly educated white are affluent and urban. They usually participate more in leisure activities. The better educated prefer intellectual and solitary activities. The rural groups prefer activistic and intellectual activities. General conclusions show that lower socioeconomic classes are not leisure oriented. Their

cultural background has not prepared them, and they are happy to "rock in the chairs." Varying types depend on race and residence. Because of occupational and social worlds, the educated are better prepared to cope with leisure, enjoy it, and find self-expression.⁴⁷

Frekany and Leslie conducted an experimental exercise program for a seven-county area of East Central Iowa for the academic year 1973-74. Funds to conduct the program were granted by the Commission on Aging under Title III of the Older Americans Act. The short-range goals of the program were to develop physical activity programs for senior citizens to maintain their physical fitness levels, to carry out activities of daily living with reasonable efficiency, to restore the selected aspects of fitness, to provide opportunity for fun and social interaction while participating in a program that influences their physical fitness, and to organize demonstration teams of senior citizens to go to retirement homes locally and in nearby senior citizen organizations so as to demonstrate the exercise program. The long-range plans were to develop a pool of leadership to continue the program and to publish the exercises utilized in the program, group leadership guidelines, and organization and administration suggestions.

⁴⁷C. B. Ellis, "Leisure Time Activity of Persons Over 65 in Lafayette Parish" (unpublished Master's thesis, Louisiana State University, 1969).

At the conclusion of the program, it was believed that a program tailored to the needs of senior citizens can make a significant contribution to their physical and social well-being. Perhaps all institutions of higher learning should offer a program for undergraduate or graduate students to plan and implement.⁴⁸

In an experiment conducted by a children's physical development clinic, the findings indicated that older adults enjoy the same activities as children, if modified to suit the individual needs. Verbal activities are necessary to the physical and mental well-being of participants.⁴⁹

Goodman, Bley, and Dye conducted a study with the elderly to identify activities that were salient to the participants' needs. The average age in the study was seventy. Women gained more satisfaction from programs which emphasized voluntary service, combinations of service with content and socialization in general.⁵⁰

⁴⁸George A. Frekany and David K. Leslie, "Developing an Exercise Program for Senior Citizens," Therapeutic Recreation Journal, VI (Fourth Quarter, 1974), 178-180.

⁴⁹Dan Leviton, "Toward a Humanistic Dimension of HPER," Journal of Health, Physical Education, Recreation, XLV (February, 1974), 41.

⁵⁰Mortimer Goodman, Nina Bley, and David Dye, "The Adjustment of Aged Users of Leisure Programs," American Journal of Orthopsychiatry, XLIV (January, 1975), 149.

Verhoven believes that the older citizen has roots in a culture which still manifests a great distrust and skepticism of leisure. From our Puritan beginnings, work has been advocated as the only meaningful adventure in life.⁵¹ Godbey quotes studies that say we often read for profit, party for contacts, or do any of a number of things which will increase our chances for advancement on the job.⁵² Also, a senior citizen is quoted as saying, "Hobbies are eccentric when you never make anything (useful) out of them or get anything (monetary) out of them."⁵³

Camping for senior citizens provides a program of cooperative living, development of social relationships, and relaxation of personal tensions which is not often found in other programs. ACA's (American Camping Association) Camping for Senior Citizens sets forth these directives for camping programs: (1) an aim toward providing conditions that foster simple and wholesome living; (2) a place for enriching experiences unobtainable in urban areas; (3) opportunities for development of peer friendships and enjoyment shared through group experiences; and (4) an

⁵¹Peter J. Verhoven, "Recreation for the Aging," Recreation for Special Populations, eds. Thomas A. Stein and H. Douglas Sessoms (Boston: Holbrook Press, Inc., 1973), p. 384.

⁵²John Neulinger, The Psychology of Leisure (Springfield: Charles C. Thomas, 1974), p. 69.

⁵³Verhoven, p. 389.

atmosphere for personal growth and continued enjoyable living by participation in sports, creative arts, social functions, educational lectures, and discussion groups. Voluntary agencies which usually have camps for senior citizens are the Salvation Army, YMCA and YWCA groups, and Red Feather Agencies such as Golden Age Centers.⁵⁴ The first camp exclusively for the older person was sponsored by the Salvation Army at Echo Grove, Michigan, in 1949. About this same time, the Federation of Jewish Philanthropies in New York City sponsored camping for a Golden Age Club.⁵⁵

Glascok and Scholer suggest that ideally these camps for the elderly should be on smooth or level terrains with slight elevations, dry and free from obnoxious insects, and not more than seventy-five miles in travel distance. Programs at these camps could include arts and crafts, dance, drama, music, physical recreation, sports and games, aquatics (fishing, boating, and swimming), social recreation, outdoor recreation, nature, special events, active and passive activities, hiking, tours, creative dramatics (charades and storytelling), folk singing and

⁵⁴Martha McClain Glascok and E. A. Scholer, "Camping for Older Adults," Recreation in Modern Society, eds. Marion N. Hormachea and Carroll R. Hormachea (Boston: Holbrook Press, Inc., 1972), pp. 262-264.

⁵⁵Nash, Bernard, p. 50.

dancing, play party games, nature crafts, modified physical fitness sessions, and walking.⁵⁶

Three departments in the city of Baltimore sponsor a day camp for senior citizens. The program runs from nine to three o'clock with transportation provided. There is a dollar charge for the day, but the only hired personnel is a nurse.⁵⁷

Council work in towns and cities provides a substitute for a paid occupation and a sense of fulfillment and identity for many retired aged. One survey found that 20 percent of the council workers in the United States are retired. They enjoy providing this service to their communities.⁵⁸

The media patronizes the young and the old are not well thought of except the superhumans such as Mae West, writes Geller.⁵⁹ There are many examples of individuals in history, not forced to retire, who have made their best contributions to society in their later years. Some examples are Picasso at the age of sixty-nine, Schoenberg at

⁵⁶ Glascock and Scholer, p. 15.

⁵⁷ Elizabeth Merryman, "Warmth in the Golden Years," Journal of Health, Physical Education, Recreation, XLIV (November, 1973), 45.

⁵⁸ Parker, p. 94.

⁵⁹ Geller, p. 41.

the age of seventy-six, and Dr. Raffaelli Bastianelli, a practicing surgeon at the age of seventy-eight.⁶⁰

Kraus relates information from McKain, chairman of the Committee on Retired Roles and Activities of the 1971 White House Conference on Aging, who suggested a need for more research on aging, more legislation to improve old age benefits, improvement in long-term care facilities, expansion of senior citizen centers, improvement of health care in general, and the preparation of specialized personnel to serve the aged. The literature since this time does not show that these changes are taking place. Recreational leaders must respond by action and not just words as most of the recreation books are doing.⁶¹

Bio-research tells us that as people grow older their bodies become more susceptible to the major causes of death and the death rate increases. In studies conducted on animals where food is restricted after the animals are weaned and the body temperature is lowered by several degrees the life expectancy of the animal is greatly increased. Havighurst suggests that restriction of food and lowering the body temperature in humans would increase their life or slow down the aging process. Havighurst further suggests that perhaps there is a chemical that can be administered

⁶⁰Nash, Jay B., p. 193.

⁶¹Kraus, pp. 161-162.

that will also slow down the aging process.⁶² In a survey by Hackensmith of the elderly inhabitants of the Andean Village of Vicabamba of Ecuador, land of Hunza in the Karakoram Range in Pakistani, the inhabitants live to be one hundred twenty to one hundred thirty years of age, and they are still active and sound. The dietary habits of the inhabitants are believed to be the reason for their longevity. There is no obesity nor signs of malnutrition present in this society. The United States National Academy of Science recommends that a male of age fifty-five or older needs 2400 calories with 65 grams of protein (28 grams=1 ounce), and a female needs 1600 calories with 55 grams of protein. The United States Department of Agriculture states that the average intake of all ages is 3300 calories with 100 grams of protein. This caloric and protein intake is substantially higher than the recommended levels.⁶³

Ginsburg states,

Leisure rather than labor will be the great problem in the years ahead. Those years are now with us. As therapeutic recreation specialists, we have a real responsibility; first, as recreation to make recreation a productive use of leisure for all people, and secondly, as specialists to help those who are disabled

⁶²Robert J. Havighurst, "Understanding the Elderly and the Aging Process," Journal of Home Economics, LXVI (April, 1974), 17-20.

⁶³Hackensmith, pp. 143-144.

or handicapped to find recreation experiences that are peculiarly suited to their needs. Until both of these are accomplished, we cannot consider that we have achieved excellence of even a modest degree.⁶⁴

⁶⁴Isiah Ginsburg, "Therapeutic Recreation: A Modality for Rehabilitation of the Aged," Therapeutic Recreation Journal, VI (First Quarter, 1974), 46.

Chapter 3

METHODS AND PROCEDURES

The directors of each senior citizen center in the seven selected towns or cities in middle Tennessee (see Appendix A) were contacted and arrangements made for the investigator to administer the survey instrument to the members who were present between the ages of fifty-five and sixty-five at Cleveland, Cookeville, Clarksville, Columbia, Murfreesboro, Tullahoma, and Gallatin (see Appendix B). The survey instrument was administered by the researcher at the various centers from July 19 through August 12, 1976. The survey instrument included three areas--method of instruction, degree of participation and further instruction--for the 36 lifetime sports and three personal questions (see Appendix C). The instrument was administered to ascertain the needs and interests of these senior citizens. Chi-square, t test, and Spearman rank order correlation were utilized to analyze the survey responses.

SURVEY SAMPLE

The survey sample was composed of 94 subjects, 28 men and 66 women, between the ages of fifty-five and

sixty-five. These subjects were from senior citizen centers or members at large located in the seven towns or cities in middle Tennessee at Cleveland, Cookeville, Clarksville, Columbia, Murfreesboro, Tullahoma, and Gallatin.

Having visited the different centers, the investigator found that the age requirement for membership started at fifty-five at all centers except Tullahoma, whose membership started at age sixty. Three senior citizen centers had formal meetings once a month, with Clarksville on the first Monday, Tullahoma on the first Tuesday, and Gallatin the second Thursday. The Columbia senior citizens meet formally on the second and fourth Wednesdays of each month. The three remaining senior citizen centers meet four times a month, with Cleveland and Cookeville meeting on Mondays and Murfreesboro meeting on Fridays. All of the various centers have other programs which take place during the rest of the week or month other than formal meetings. These programs include arts and crafts, dance, and Bible study.

The researcher administered the survey to 55 members at these senior citizen centers. After administering the surveys at the selected towns or cities, the survey sample was limited. In order to obtain a larger sampling, the investigator solicited the assistance of a

group of associates. These graduate associates volunteered to assist in collecting the data in their towns from residents who were not members of senior citizen centers between the ages of fifty-five and sixty-five. The graduate associates collected a total of 39 surveys.

The survey sample included a total of 94 senior citizens. Fifty-five of this total were taken from the various senior citizen centers visited. The remaining 39 were senior citizens who were administered the instrument by graduate associates (see Appendix D).

INSTRUMENT

After a thorough search of the literature pertaining to the sociological, psychological, ecological, and physiological characteristics of senior citizens, the investigator developed the instrument which consisted of a listing of 36 lifetime sports and 3 personal questions. The instrument was then presented to members of the Middle Tennessee State University dissertation committee composed of Dr. Stanley Hall, Dr. Douglas Knox, and Dr. Guy Penny. Upon their approval, the instrument was typed, duplicated, and administered to the survey sample.

The survey was divided into three areas of response. The first section pertained to the method of instruction for the activities in which the respondents had participated. The second section pertained to the degree of participation

in the activities in which they had received instruction. This could include advanced instruction for familiar activities or beginning for unfamiliar activities. The three personal questions in the survey instrument asked for age, sex, and level of educational preparation.

The 36 lifetime sports activities were grouped into seven areas. The first area contained moderate activities which included archery, billiards, bowling, fencing, golf, riflery, shuffleboard, and skeet and trap shooting. The second area was built around camping and included bicycling, camping, horsemanship, and motorcycling. The third area was composed of team sports which included basketball, softball, and volleyball. The fourth area of dancing included folk, modern, social, and square dancing. The fifth area was water activities which were baitcasting, canoeing, diving, motor boating, scuba diving, and swimming. The sixth area pertained to racket games of badminton, handball, paddle ball, racketball, and tennis. The seventh area was composed of conditioning which included karate, parachuting, physical conditioning, repelling, sky jumping, and weight lifting. For purposes of analysis, the methods of instruction were grouped into four categories instead of seven. The first method included high school or college; the second method included adult, continuing education and recreational; the third included private; and the fourth included self-taught.

These groupings of instruction are similar and will give a better range of analysis.

COLLECTING THE DATA

The survey instrument was administered by the investigator to 55 senior citizens in seven towns or cities: Cleveland, Cookeville, Clarksville, Columbia, Murfreesboro, Tullahoma, and Gallatin. The senior citizen directors were contacted and a date, location, and time arranged for the administration of the survey at the different senior citizen centers. The researcher traveled by car to each of the designated areas and arrived at least fifteen minutes prior to administering the survey instrument in order to meet each official representative and set up the area for administering the survey.

The room designated for administering the survey varied with each town or city. A brief introduction and explanation of the purposes of the study were presented to the total membership at each center. Then the individuals within the age limitations of the study went to the designated room for more specific instructions. After the specific instructions, the investigator worked individually with each participant in filling out the survey. The completion of each survey took approximately five minutes.

As stated in the survey sample, because of the limited number of members within the age limitations of this

study, the assistance of a group of colleagues was obtained. These graduate associates administered 39 survey forms to senior citizens who were not senior citizen center members within the ages of fifty-five to sixty-five. The researcher met with the volunteers and gave them instructions as if they were members of a senior citizen center. They were shown a survey which had been filled out by a senior citizen from one of the centers, and questions were answered. The volunteer group conducted the survey on a one-to-one basis and answered any questions which participants might have had. Each volunteer collected the data forms from his respective area and returned them to the researcher.

ANALYSIS OF DATA

After the surveys were administered, the results were organized and analyzed to determine if educational achievement had any effect on the degree of participation. The responses from the survey were organized and Dr. Robert E. Prytula, Psychology Department, Middle Tennessee State University, Murfreesboro, Tennessee, was consulted. The Data Processing Center at Middle Tennessee State University assisted in processing part of the data.

Chi square (see Appendix E) was utilized to determine if the observed method of instruction had any significance on the degree of participation for the seven areas of lifetime sports. Chi square was also computed on

each of the seven areas, eliminating the no-response group and collapsing categories. Using the mean educational level, chi squares were computed for the total survey sample to determine if the observed method of instruction made any significance in the degree of participation for the seven areas of lifetime sports.

A t test (see Appendix F) was utilized to determine if the educational level made any significant difference in the degree of participation.

The Spearman rank order correlation (see Appendix G) was utilized to determine if instruction and the degree of participation for the respondents were significant.

The responses for each of the seven areas of lifetime sports were tabulated for the method of instruction and the degree of participation. These responses and the percentages for the various responses within the method of instruction and the degree of participation are shown in histogram form (see Appendix H).

The responses for further instruction in the 36 lifetime sports were tabulated and are shown in table form.

Chapter 4

ANALYSIS OF THE DATA

This study was concerned with the needs and interests of senior citizens in relation to lifetime sports activities. One basic assumption was that the level of education would affect the degree of participation in these lifetime sports. Another assumption was that the majority of this age would be self-taught.

This study surveyed 94 senior citizens in middle Tennessee between the ages of fifty-five to sixty-five at Cleveland, Cookeville, Columbia, Clarksville, Murfreesboro, Tullahoma, and Gallatin. The researcher traveled to the seven cities and towns and administered 55 of the surveys. A group of graduate associates administered 39 surveys to members at large within these seven cities and towns.

The original survey instrument was composed of a list of 36 lifetime sports. The survey was divided into three areas of response. The first section pertained to the method of instruction for familiar activities. The second section pertained to the degree of participation for these familiar activities. The third section requested a yes or no answer to whether the respondent wanted further

instruction. The survey instrument also asked for age, sex, and level of educational preparation.

For the purposes of statistical analysis, the 36 lifetime sports were grouped into seven areas according to similarities. Chi square was used to determine if the method of instruction made any significant difference on the degree of participation. Chi square was figured eliminating the no-response group in each area and as a whole. A t test was run to determine if the educational level made any significant difference in the degree of participation. The Spearman rank order correlation was utilized to determine if instruction and the degree of participation for the respondents were significant.

This chapter is designed to present the statistical findings from this survey sample.

ANALYSIS AND PERCENTAGE OF AGE, SEX, AND EDUCATIONAL LEVEL

This sample survey contained 94 subjects, 28 (29.79%) males and 66 (70.21%) females. This is a ratio of three men to every seven women (see Table 1).

The mean age for the male group was 60.89 years, and the mean age for the female group was 60.69 years (see Table 2).

The mean education level for the males was 11.98 and 12.19 for the females (see Table 3).

Table 1
Frequency Distribution of Subjects by Sex

Sex	Frequency	Percent
Male	28	29.79
Female	<u>66</u>	<u>70.21</u>
Total	94	100.00

Table 2
Frequency Distribution of Subjects by Age

Age	Frequency	Percent
55	8	8.51
56	3	3.19
57	7	7.45
58	5	5.32
59	7	7.45
60	11	11.70
61	10	10.64
62	11	11.70
63	10	10.64
64	11	11.70
65	<u>11</u>	<u>11.70</u>
Total	94	100.00

Table 3
Frequency Distribution of Subjects by Grade

Grade	Frequency	Percent
4	1	1.06
5	1	1.06
7	4	4.26
8	6	6.38
9	2	2.13
10	10	10.64
11	7	7.45
12	29	30.85
13	4	4.26
13.5	1	1.06
14	9	9.57
15	1	1.06
16	12	12.77
17	3	3.19
18	3	3.19
19	1	1.06
Total	<u>94</u>	<u>99.99</u>

According to the World Almanac Book of Facts, 16.1 percent of the white and Negro American population aged fifty-five to sixty-four have completed school through the eighth grade, 31.9 percent through high school, and 3.6 percent five or more years of college.¹ In this study, 12.76 percent have completed school through the eighth grade, 51.04 percent have finished high school, and 36.14 percent have completed five or more years of college. Compared to the national statistics, this sample was educationally higher in two out of three of the categories discussed.

ANALYSIS OF THE SEVEN AREAS

Each of the seven areas is presented in a histogram to show the distribution of the frequencies for the method of instruction and degree of participation. A chi square eliminating the no response and combining the private and recreational instruction to make three methods was figured. The degree of participation was divided into two categories combining weekly, every two weeks, and monthly for one level and yearly and never for the other level.

¹George E. Delury, ed., World Almanac Book of Facts (New York: Newspaper Enterprise Association, Inc., 1974), p. 296.

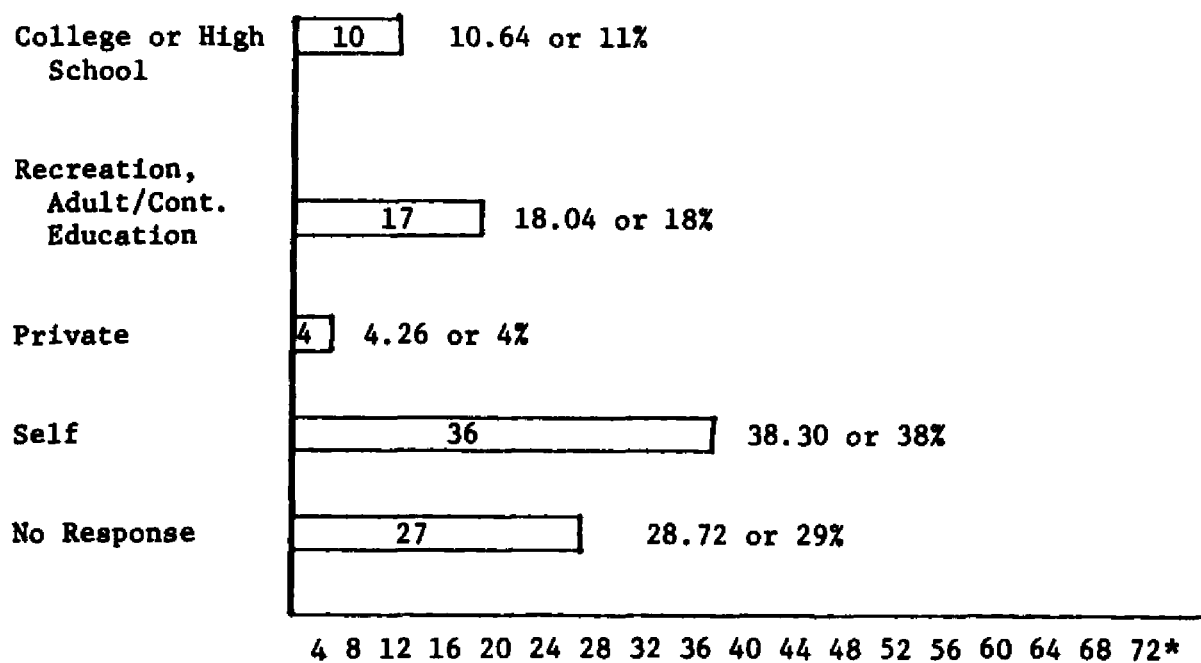
MODERATE ACTIVITY

The 94 subjects in the area of moderate activity, which includes archery, billiards, bowling, fencing, golf, riflery, shuffleboard, and skeet and trap shooting, responded to the method of instruction for this group of activities in the following manner (see Table 4): 27 subjects, or 29 percent, indicated no method of instruction or response; 36 subjects, or 38 percent, were self-taught; 4 subjects, or 4 percent, received private lessons; 17 subjects, or 18 percent, had instruction through a recreational, adult, or continuing education agency; and 10 subjects, or 11 percent, had instruction while in high school or college. The self-taught instruction was the most frequent method of response. This is 38 percent overall preference and 54 percent, excluding the no-response group.

The overall breakdown of the moderate activity area in reference to the degree of participation indicated the following responses (see Table 5): 27 subjects, or 29 percent, had no prior participation in this area; 24 subjects, or 26 percent, participated weekly; 3 subjects, or 3 percent, responded that they participated once every two weeks; in the once a month category, 7 subjects, or 7 percent, responded in this area; 9 subjects, or 10 percent, indicated once a year participation; and 24 subjects, or

Table 4

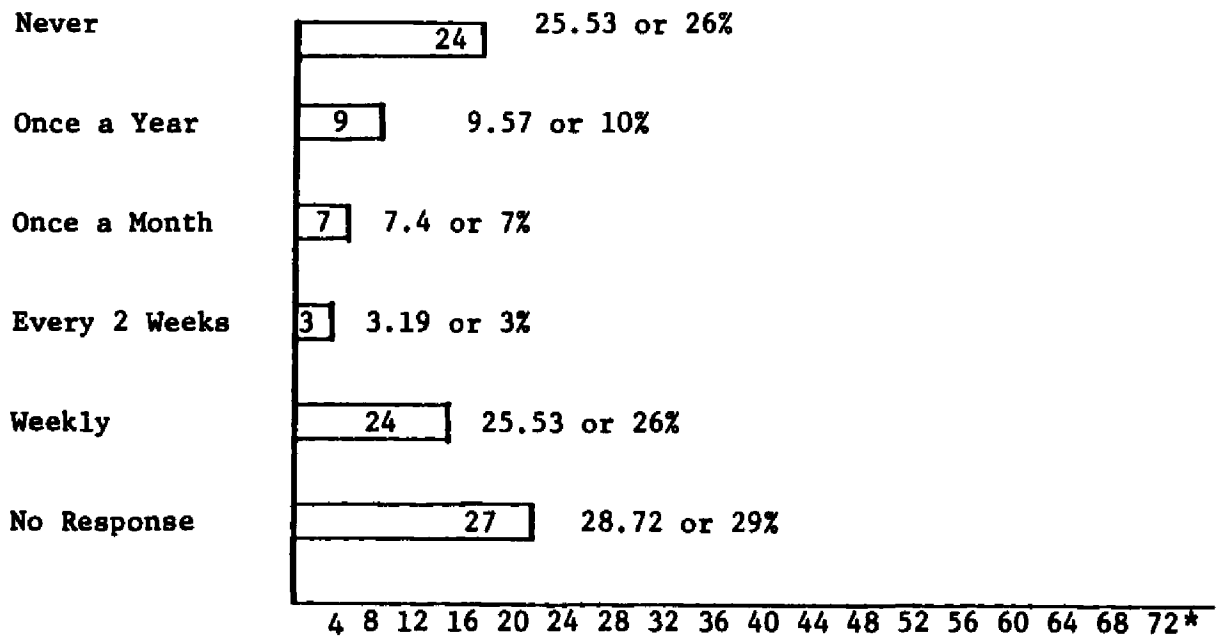
Number and Percentage of Responses for
Method of Instruction for
Moderate Activity



*Scale of responses

Table 5

**Number and Percentage of Responses for
Degree of Participation for
Moderate Activity**



*Scale of responses

26 percent, had no participation at this stage in their lives. With the exception of the no-response group, the weekly and never groups made equal numbers of responses. Excluding the no-response group, this is 36 percent, and, including the no-response group, it is 26 percent of the total groups.

Chi square was computed by cross-tabulating the method of instruction and degree of participation. The two methods of instruction, private and recreational, and adult/continuing education, were combined for one method. The five degrees of participation were combined to make two categories: the first was composed of weekly, every two weeks, and once a month; the second was composed of once a year and never.

The X^2 of 1.78 (see Table 6) is less than the critical value for X^2 .95,2 = 5.991, which reveals the responses for method of instruction and degree of participation in moderate activity: self--weekly, two weeks, and monthly, 19, self--yearly and never, 17; private-recreational --yearly and never, 6; and school--weekly, two weeks, and monthly, 3; and school--yearly and never, 7. These responses did not differ significantly from the expected responses.

CAMPING

The second area of lifetime sports entitled camping includes bicycling, camping, horsemanship, and motorcycling.

Table 6
Chi Square Results for Method of Instruction
and Degree of Participation for the
Area of Moderate Activities

Moderate Activity	Weekly, Two Weeks, and Monthly	Year, Never	Total
Self	19 (19.125)*	17 (16.875)*	36
Private Recreational	12 (9.56)*	6 (8.437)*	18
School	3 (5.312)*	7 (4.687)*	10
	34	30	64

*Expected responses

$$X^2 .95, 2 = 5.991$$

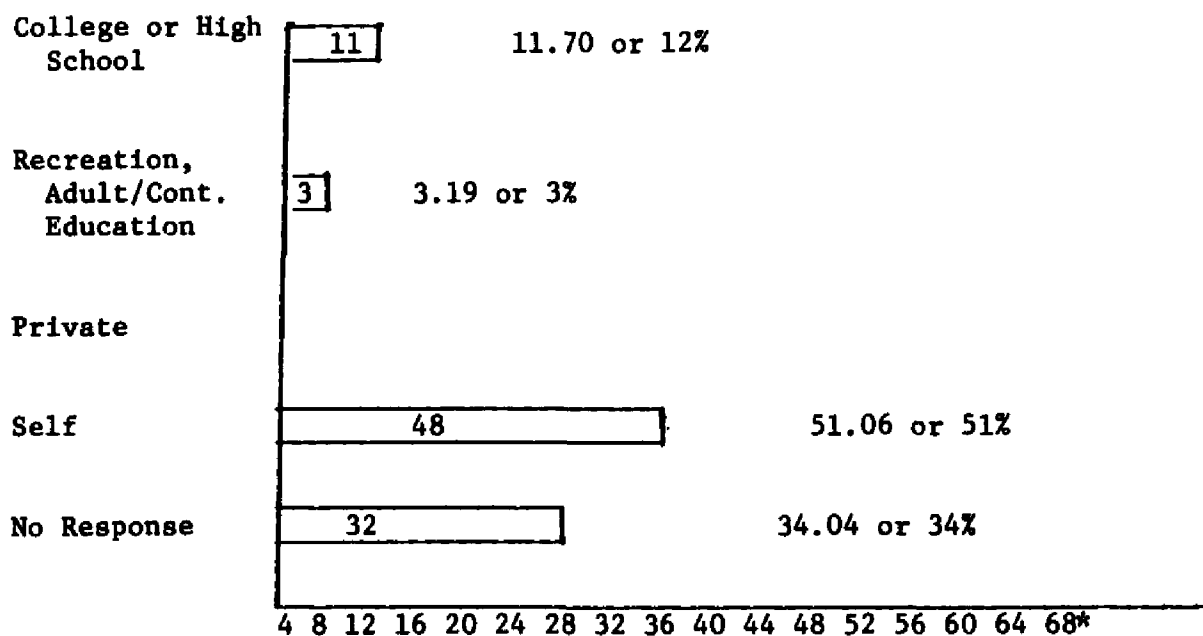
$$X^2 .99, 2 = 9.210$$

$X^2_{,2}, 1.78$ not significant

The subjects responded in this second area in the following manner (see Table 7): 32 subjects, or 34 percent, indicated no knowledge of any of these activities; 48 subjects, or 51 percent, were self-taught; 3 subjects, or 3 percent, received their instruction through recreational agencies or adult/continuing education classes; and 11 subjects, or 12 percent, had learned while in high school or college. Excluding the no-response group, the self-taught was the most frequent response. This is an overall 51 percent and 77 percent, excluding the no-response group.

The overall response in the camping area in reference to the degree of participation indicated the

Table 7
Number and Percentage of Responses for
Method of Instruction for
Camping



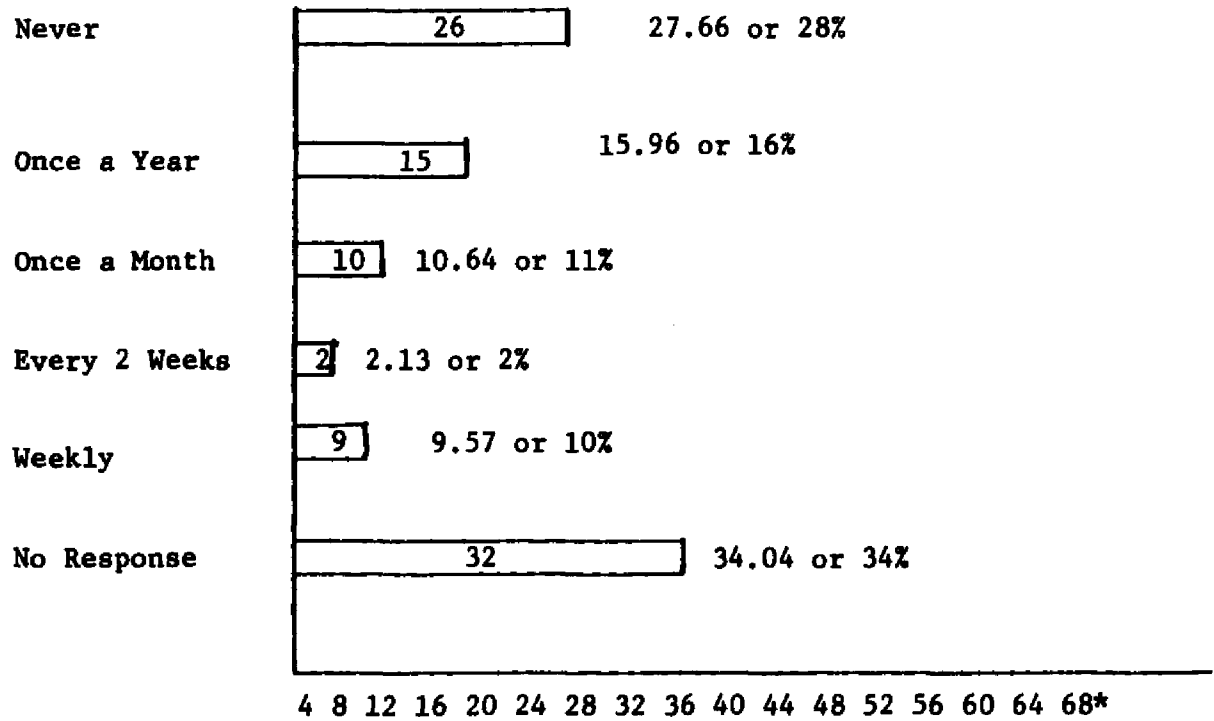
***Scale of responses**

following information (see Table 8): 32 subjects, or 34 percent, made no response in this area; 9 subjects, or 10 percent, participated weekly; 2 subjects, or 2 percent, indicated a once every two week participation; 10 subjects, or 11 percent, responded to participating once a month; 15 subjects, or 16 percent, indicated once a year participation; and 26 subjects, or 28 percent, were not participating in this area at this stage in their lives. The never group was the most frequent response, with the exception of the no-response group of 32 subjects. This is 28 percent, including all areas, and 42 percent, excluding the no-response group.

Chi square for the camping area was computed by cross-tabulating the method of instruction and the degree of participation. The two methods of instruction, private and recreational, and adult/continuing education, were combined for one method. The five degrees of participation were combined to make two categories. The first was composed of weekly, every two weeks, and once a month; the second was composed of once a year and never.

The X^2 of 12.56 (see Table 9) is significant for the X^2 .99,2 = 9.210, which reveals the responses for method of instruction and degree of participation: self--weekly, two weeks, and monthly, 22, self--yearly and never, 26; private-recreational--yearly and never, 2; school--weekly, two weeks, and monthly, 0, school--yearly and

Table 8
Number and Percentage of Responses for
Degree of Participation for
Camping



*Scale of responses

Table 9
Chi Square Results for Method of Instruction
and Degree of Participation for the
Area of Camping

Camping	Weekly, Two Weeks, and Monthly	Year, Never	Total
Self	22 (17.806)*	26 (22.452)*	48
Private Recreational	1 (1.118)*	2 (1.403)*	3
School	0 (4.081)*	11 (5.145)*	11
	23	39	62

*Expected responses

$$\chi^2_{.95,2} = 5.991$$

$$\chi^2_{.99,2} = 9.210$$

$\chi^2_{,2}$, 12.56 is significant

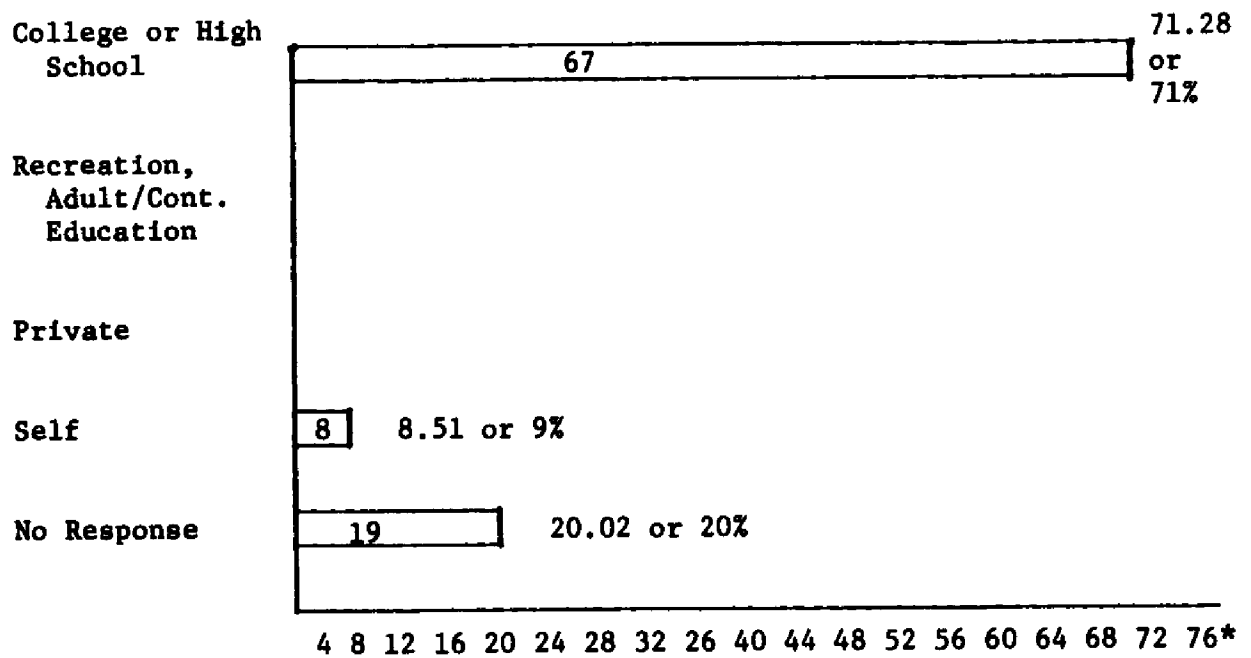
never, 11. These responses were significantly different from the expected responses.

TEAM SPORTS

The third area, team sports, includes basketball, volleyball, and softball. The survey sample responded to the method of instruction in the following manner (see Table 10): 19 subjects, or 20 percent, indicated no instruction or participation; 8 subjects, or 9 percent, were self-taught; and 67 subjects, or 71 percent, had received their instruction while in high school or college. The school instruction was the most frequent response in this

Table 10

Number and Percentage of Responses for
Method of Instruction for
Team Sports



*Scale of responses

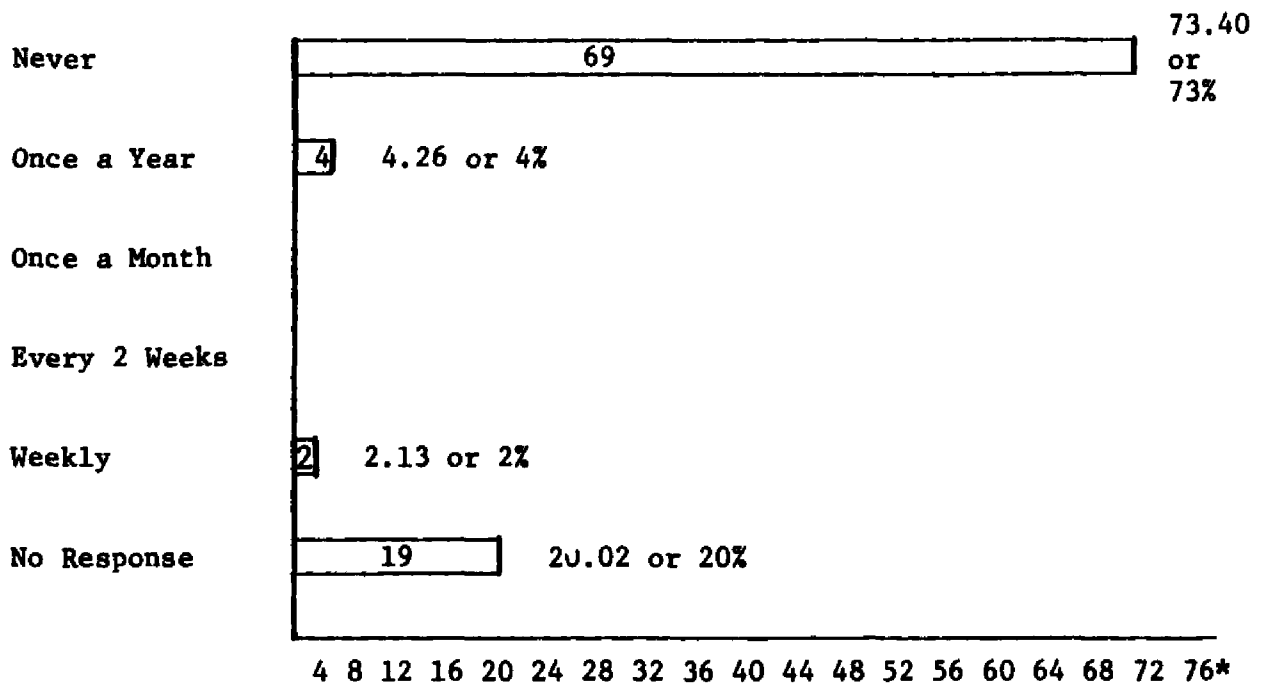
area. This is 71 percent, including all responses, and 89 percent, excluding the no-response group.

The overall response in the team sports area in reference to the degree of participation indicated the following information (see Table 11): 19 subjects, or 20 percent, made no response in this area; 2 subjects, or 2 percent, participated weekly; 4 subjects, or 4 percent, indicated they participated once a year; and 69 subjects, or 73 percent, who had some type of prior instruction do not participate at the present. The never category received the greatest amount of response in this area. Since this group of activities are of the team sports type, it is not unusual to get this response. This is an overall response of 73 percent and 92 percent, excluding the no-response group.

Chi square was computed for the team sports area by cross-tabulating the method of instruction and the degree of participation. The two methods of instruction, private and recreational, and adult/continuing education, were combined for one method. The five degrees of participation were combined to make two categories. The first was composed of weekly, every two weeks, and once a month; the second was composed of once a year and never.

The X^2 of .85 (see Table 12) is less than the critical value for $X^2_{.95,2} = 5.991$, which reveals the responses for method of instruction and degree of

Table 11
 Number and Percentage of Responses for
 Degree of Participation for
 Team Sports



*Scale of responses

Table 12

Chi Square Results for Method of Instruction
and Degree of Participation for the
Area of Team Sports

Team Sports	Weekly, Two Weeks, and Monthly	Year, Never	Total
Self	0 (.213)*	8 (7.787)*	8
Private Recreational	0 (0)*	0 (0)*	0
School	2 (1.787)*	65 (65.213)*	67
	2	73	75

*Expected responses

$$\chi^2_{.95,2} = 5.991$$

$$\chi^2_{.99,2} = 9.210$$

$\chi^2_{,2}, .85$ is not significant

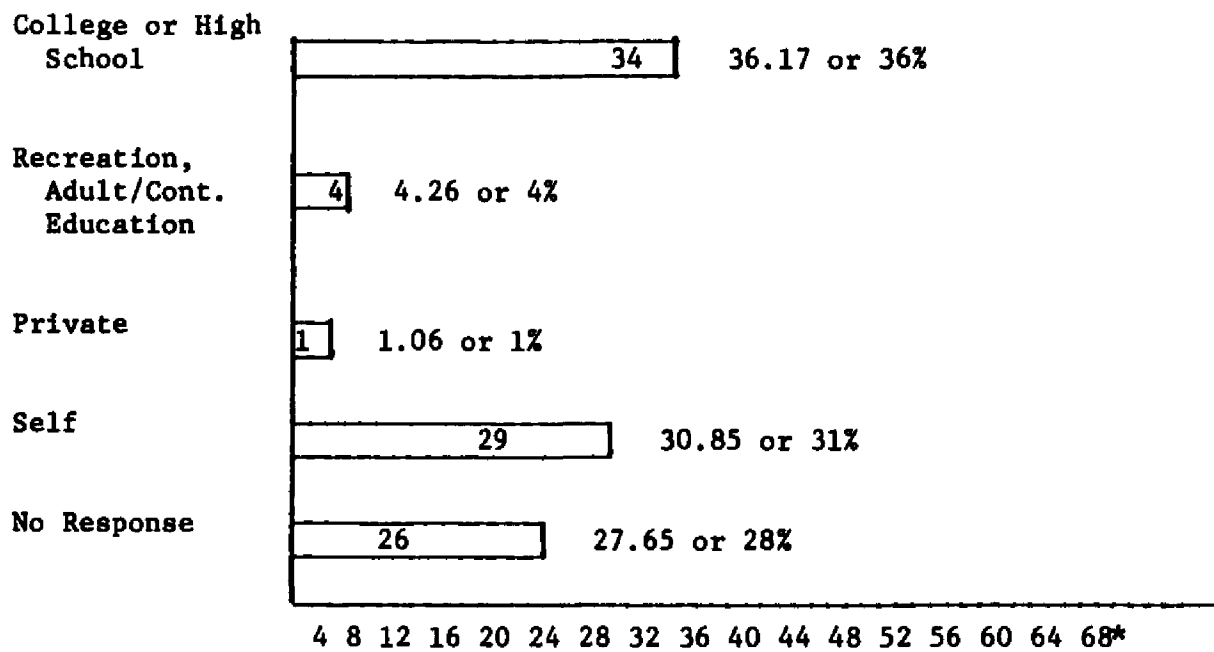
participation in team sports: self--weekly, two weeks, and monthly, 0, self--yearly and never, 8; private-recreational--weekly, two weeks, and monthly, 0, private-recreational--yearly and never, 0; school--weekly, two weeks, and monthly, 2, school--yearly and never, 65. These responses did not differ significantly from expected responses.

DANCE

The fourth area of dance, including folk, modern, social, and square dance, showed the following distribution for the method of instruction (see Table 13): 26 subjects, or 28 percent, indicated no knowledge in the area of dance; 29 subjects, or 31 percent, were self-taught; 1 subject, or

Table 13

Number and Percentage of Responses for
Method of Instruction for
Dance



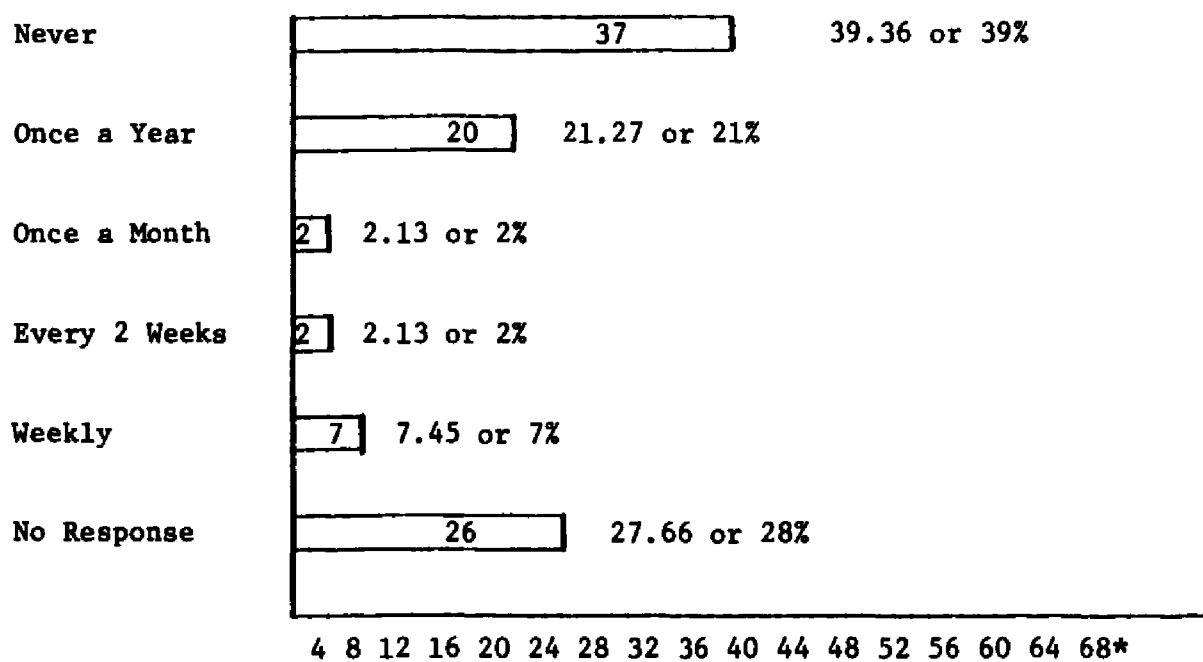
*Scale of responses

1 percent, had private lessons; 4 subjects, or 4 percent, received their instruction through recreational or adult/continuing education classes; and 34 subjects, or 36 percent, had received instruction while in high school or college. The school category received the greatest number of responses, with self-taught being the next closest. This is an overall 36 percent response for school and 31 percent for self-taught; this is 50 percent for the school category, excluding the no-response group, and 43 percent for self-taught.

The 94 subjects indicated their degree of participation for this area of dance in the following manner (see Table 14): 26 subjects, or 28 percent, made no response; 7 subjects, or 7 percent, participated weekly; 2 subjects, or 2 percent, indicated they participated once every two weeks; 2 subjects, or 2 percent, participated once a month; 20 subjects, or 21 percent, participated once a year; and 37 subjects, or 39 percent, did not participate at all at this stage in their lives. This is 40 percent, including all responses, and 54 percent, excluding the no-response group.

Chi square was computed for the area of dance by cross-tabulating the method of instruction and degree of participation. The private and recreational and adult/continuing education were combined for one method of instruction. The five degrees of participation were

Table 14
 Number and Percentage of Responses for
 Degree of Participation for
 Dance



*Scale of responses

combined to make categories: the first was composed of weekly, every two weeks, and once a month; the second was composed of once a year and never.

The dance area resulted in X^2 of .02 (see Table 15), which is less than the critical value for $X^2_{.95,2} = 5.991$. This reveals that the responses for method of instruction and degree of participation in dance were not significantly different: self--weekly, two weeks, and monthly, 5, self--yearly and never, 24; private and recreational--weekly, two weeks, and monthly, 1, private and recreational--yearly and never, 4; school--weekly, two weeks, and monthly, 6, school--yearly and never, 28. These responses did not differ significantly from expected responses.

Table 15

Chi Square Results for Method of Instruction
and Degree of Participation for the
Area of Dance

Dance	Weekly, Two Weeks, and Monthly	Year, Never	Total
Self	5 (5.118)*	14 (23.882)*	29
Private Recreational	1 (.882)*	4 (4.118)*	5
School	6 (6.0)*	28 (28.0)*	34
	12	56	68

*Expected responses

$$X^2_{.95,2} = 5.991$$

$$X^2_{.99,2} = 9.210$$

$X^2_{,2}, .02$ is not significant

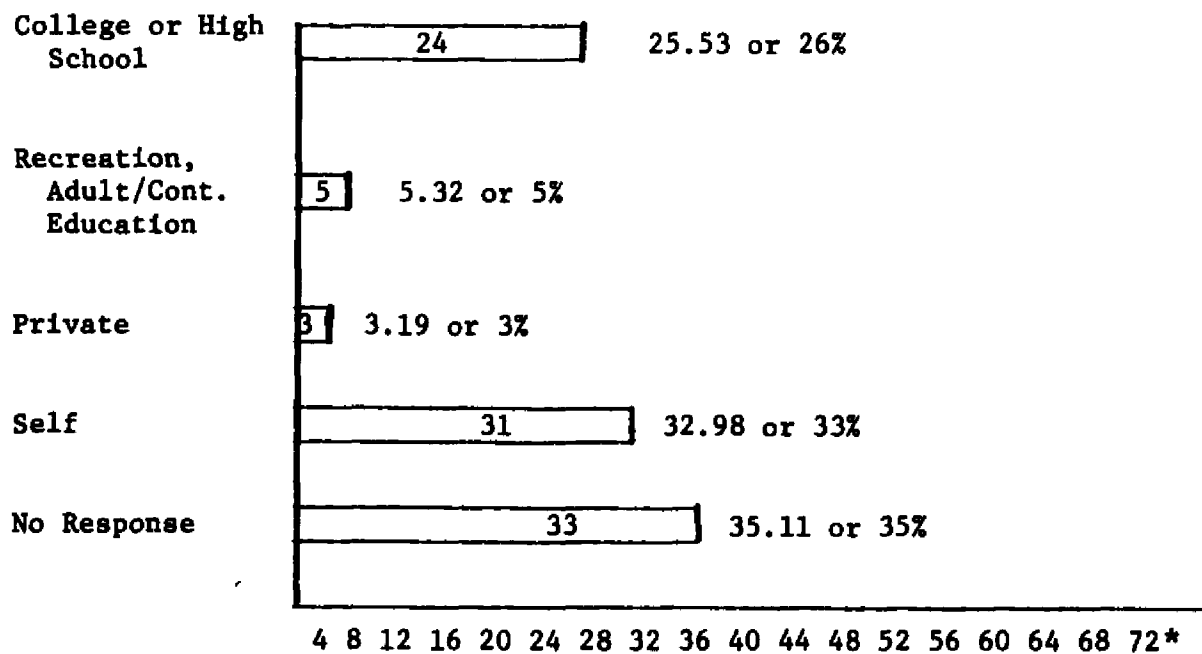
WATER ACTIVITIES

The fifth category, water activities, includes baitcasting, canoeing, diving, motor boating, scuba diving, and swimming. The 94 subjects responded in the following manner in reference to their method of instruction (see Table 16): 33 subjects, or 35 percent, had no instruction in any of the activities in this area; 31 subjects, or 33 percent, were self-taught; 3 subjects, or 3 percent, had private lessons; 5 subjects, or 5 percent, received their instruction from a recreational agency or adult/continuing education; and 24 subjects, or 26 percent, learned while in high school or college. The self-taught category received the greatest response and was 26 percent, including all responses, and 40 percent, excluding the no-response group.

The overall response in reference to the degree of participation in water activities was (see Table 17): 33 subjects, or 35 percent, had no previous participation in this area; 10 subjects, or 11 percent, participated weekly; 1 subject, or 1 percent, participated once every two weeks; 5 subjects, or 5 percent, participated once a month; 17 subjects, or 18 percent, participated once a year; and 28 subjects, or 30 percent, were not participating at this time in their lives. The never category had the greatest amount of response. This is 30 percent, including all responses, and 46 percent, excluding the no-response group.

Table 16

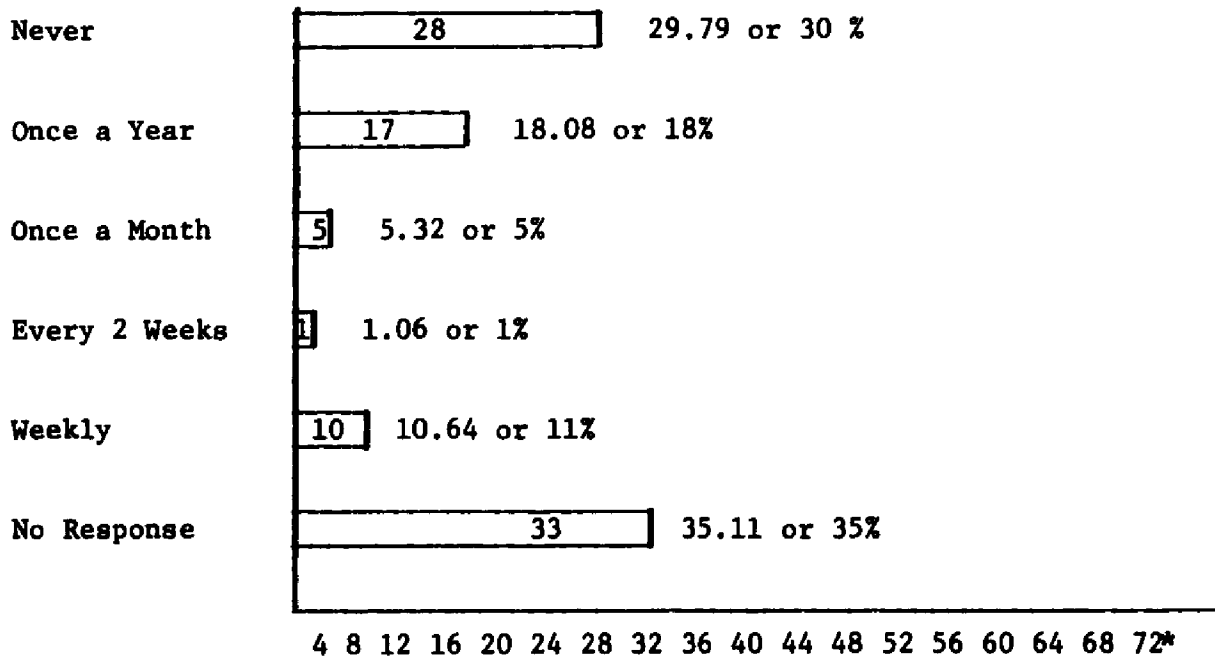
Number and Percentage of Responses for
Method of Instruction for
Water Activities



*Scale of responses

Table 17

**Number and Percentage of Responses for
Degree of Participation for
Water Activities**



*Scale of responses

Chi square was computed by cross-tabulating the method of instruction and the degree of participation. The private and recreational and adult/continuing education were combined for one method of instruction. The five degrees of participation were combined to make two categories: the first was composed of weekly, every two weeks, and once a month; the second was composed of once a year and never.

The X^2 of 1.87 (see Table 18) is less than the critical value for $X^2_{.95,2} = 5.991$, which reveals the responses for method of instruction and degree of

Table 18

Chi Square Results for Method of Instruction
and Degree of Participation for the
Area of Water Activities

Water Activities	Weekly, Two Weeks, and Monthly	Weekly, Never	Total
Self	10 (8.131)*	21 (22.869)*	31
Private Recreational	2 (1.574)*	4 (4.426)*	6
School	4 (6.275)*	20 (17.704)*	24
	16	45	61

*Expected responses

$$X^2_{.95,2} = 5.991$$

$$X^2_{.99,2} = 9.210$$

$X^2_{,2}$, 1.87 is not significant

participation for water activities: self--weekly, two weeks, and monthly, 10, self--yearly and never, 21; private and

recreational--weekly, two weeks, and monthly, 2, private and recreational--yearly and never, 4; school--weekly, two weeks, and monthly, 4, school--yearly and never, 20. These responses did not differ significantly from expected responses.

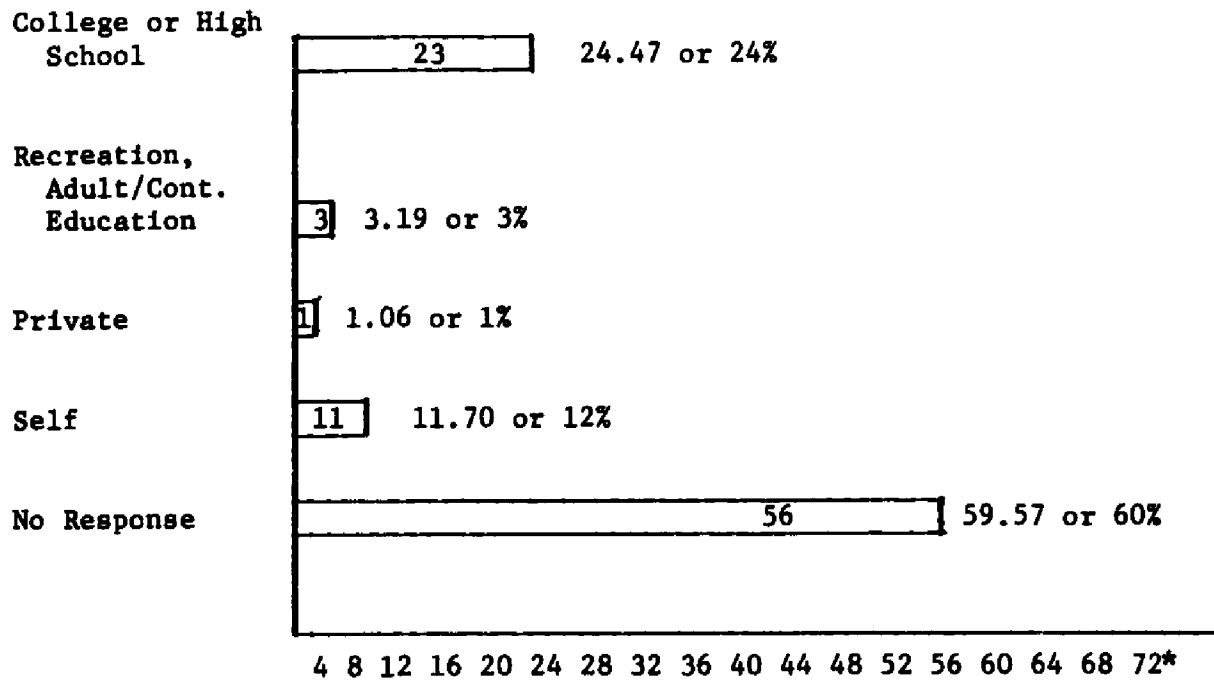
RACKET ACTIVITIES

In the sixth area of racket games, including badminton, handball, paddle ball, racketball, and tennis, the 94 subjects responded in reference to the method of instruction in the following manner (see Table 19): 56 subjects, or 60 percent, had no prior instruction in any of these games; 11 subjects, or 12 percent, were self-taught; 1 subject, or 1 percent, had private lessons; 3 subjects, or 3 percent, had received instruction through a recreational agency or adult/continuing education classes; and 23 subjects, or 24 percent, had learned while in high school or college. The self-taught group received the most response with 25 percent for all subjects and 61 percent, excluding the no-response group.

In reference to the degree of participation for the 94 subjects in this area of racket games, the results were (see Table 20): 56 subjects, or 60 percent, had no previous participation in any of these games; 7 subjects, or 7 percent, participated weekly; 2 subjects, or 2 percent,

Table 19

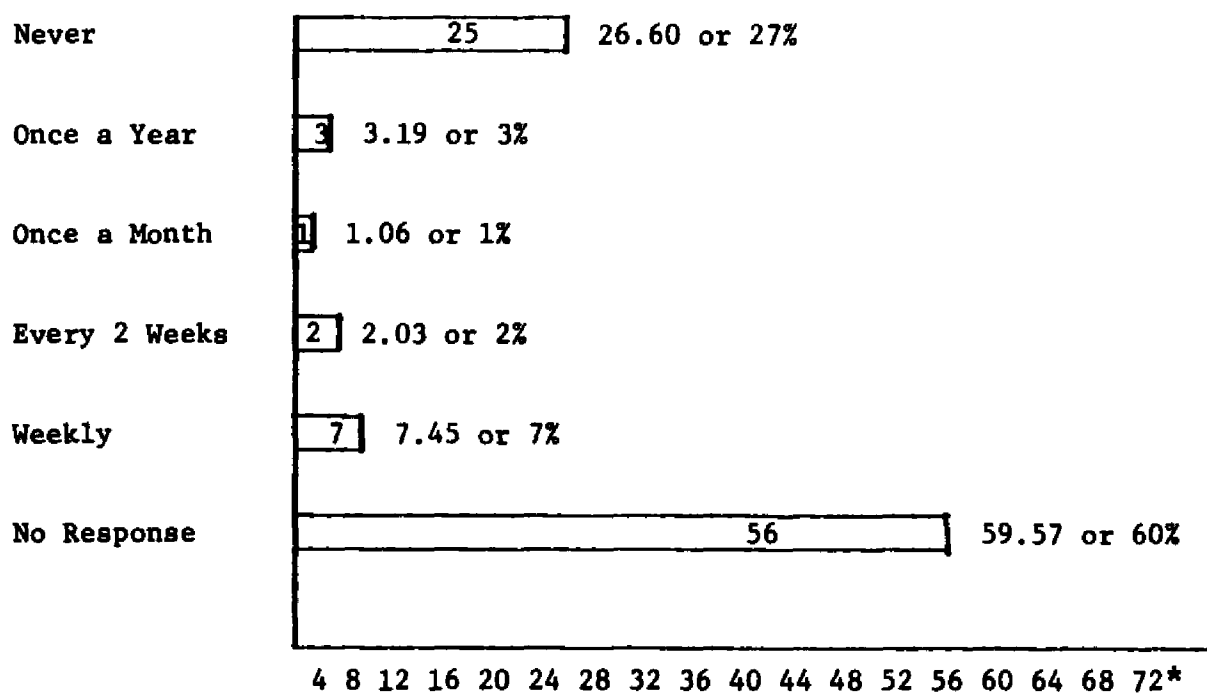
Number and Percentage of Responses for
Method of Instruction for
Racket Activities



*Scale of responses

Table 20

Number and Percentage of Responses for
Degree of Participation for
Racket Activities



*Scale of responses

participated every two weeks; 1 subject, or 1 percent, participated once a month; 3 subjects, or 3 percent, participated once a year; and 25 subjects, or 27 percent, were not participating at all at this time in their lives. The non-participating group had the highest number of responses, with the exception of the 56 subjects who had no previous knowledge in this area. This is 27 percent for all responses and 66 percent, excluding the no previous knowledge group.

Chi square was computed for the area of racket games by cross-tabulating the method of instruction and the degree of participation. The two methods of instruction, private and recreational and adult/continuing education, were combined for one category. The five degrees of participation were combined to make two categories: the first was composed of weekly, once every two weeks, and once a month; the second was composed of once a year and never.

In the area of racket activities, the X^2 of 1.25 (see Table 21) is less than the critical value for $X^2_{.95,2} = 5.991$, which reveals the responses for method of instruction and degree of participation: self--weekly, two weeks, and monthly, 2, self--yearly and never, 9; private and recreational--weekly, two weeks, and monthly, 2, private and recreational--yearly and never, 2; school--weekly, two weeks, and monthly, 6, school--yearly and never,

17. These responses did not differ significantly from expected responses.

Table 21

Chi Square Results for Method of Instruction
and Degree of Participation for the
Area of Racket Activities

Racket Activities	Weekly, Two Weeks, and Monthly	Weekly, Never	Total
Self	2 (2.895)*	9 (8.105)*	11
Private Recreational	2 (1.053)*	2 (2.947)*	4
School	6 (6.053)*	17 (16.947)*	23
	10	28	38

*Expected responses

$$\chi^2_{.95,2} = 5.991$$

$$\chi^2_{.99,2} = 9.210$$

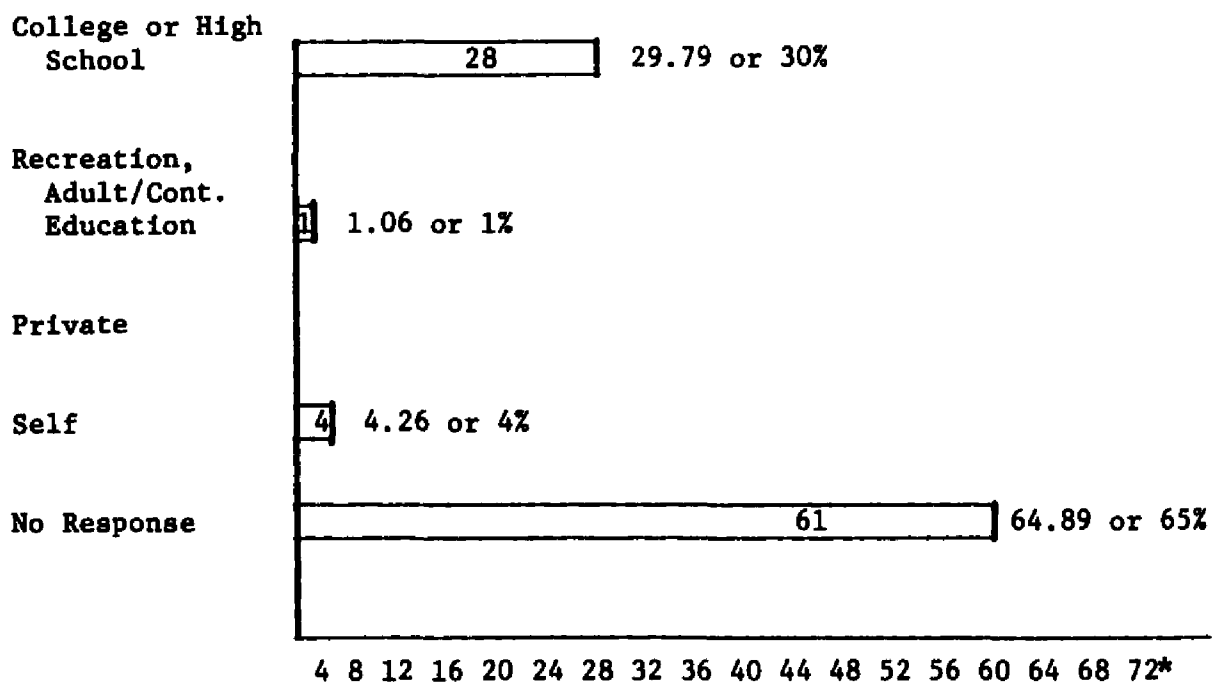
$\chi^2_{,2}, 1.25$ is not significant

CONDITIONING

The seventh area of conditioning, including karate, parachuting, physical conditioning, repelling, sky jumping, and weight lifting, received the following responses in reference to the method of instruction (see Table 22): 61 subjects, or 65 percent, had no previous instruction in any of these sports included in this area; 4 subjects, or 4 percent, were self-taught; 1 subject, or 1 percent, had instruction through a recreational agency or adult/continuing education classes; and 28, or 30 percent, had

Table 22

Number and Percentage of Responses for
Method of Instruction for
Conditioning



*Scale of responses

received instruction while in high school or college. With the exception of the no knowledge group, the school group had the greatest amount of response, with 30 percent, including all groups, and 85 percent, excluding the no-response group.

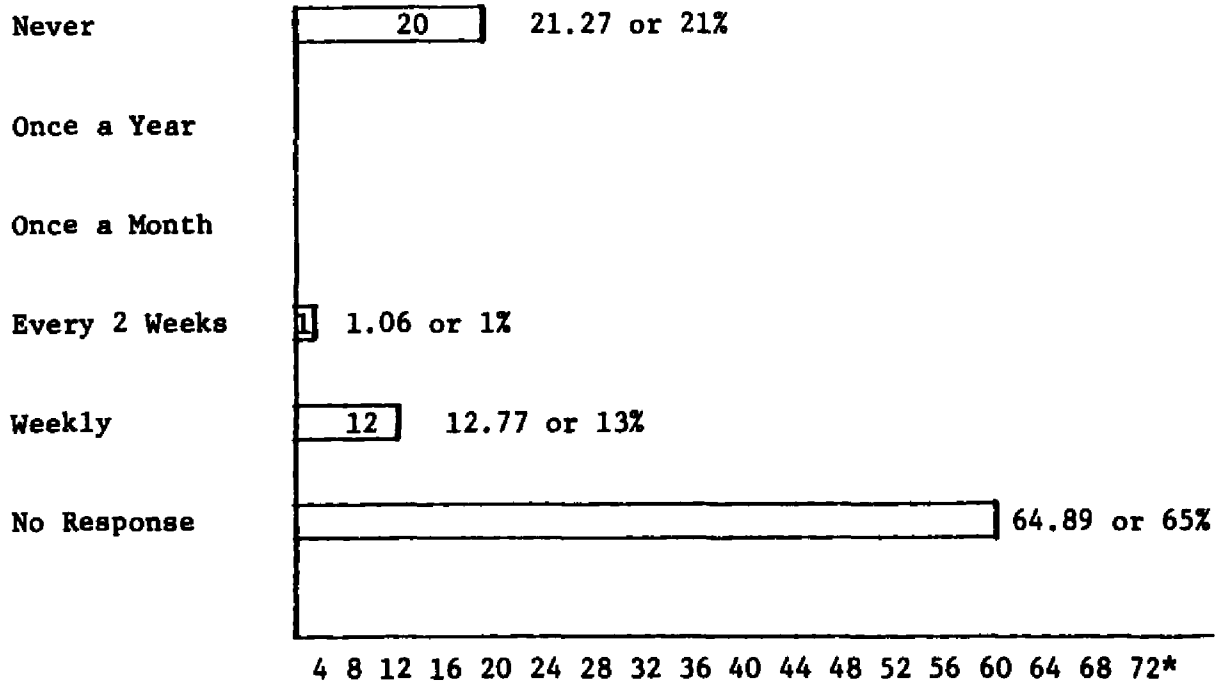
The degree of participation in this area was (see Table 23): 61 subjects, or 65 percent, had no previous participation in this area; 12 subjects, or 13 percent, participated weekly; 1 subject, or 1 percent, participated every two weeks, and 20 subjects, or 4 percent, did not participate in their lives. Excluding the no previous instruction group, the non-participating at this time had the greatest amount of response, with 21 percent for all responses and 61 percent for all responses, except the no knowledge group.

Chi square was computed for the conditioning area by cross-tabulating the method of instruction and the degree of participation. The private and recreational and adult/continuing education were combined for one category. The five degrees of participation were combined to make two categories: the first was composed of weekly, once every two weeks, and once a year; the second was composed of once a year and never.

The X^2 of 1.25 (see Table 24) is less than the critical value for $X^2_{.95,2} = 5.991$, which reveals the

Table 23

Number and Percentage of Responses for
Degree of Participation for
Conditioning



*Scale of responses

Table 24

Chi Square Results for Method of Instruction
and Degree of Participation for the
Area of Conditioning

Conditioning	Weekly, Two Weeks, and Monthly	Weekly, Never	Total
Self	2 (1.576)*	2 (2.424)*	4
Private Recreational	1 (.394)*	0 (.606)*	1
School	10 (11.030)*	18 (16.970)*	28
	13	20	33

*Expected responses

$$X^2_{.95,2} = 5.991$$

$$X^2_{.99,2} = 9.210$$

$X^2_{.2, 1.25}$ is not significant

responses for method of instruction and degree of participation for conditioning activities: self--weekly, two weeks, and monthly, 2, self--yearly and never, 2; private and recreational--weekly, two weeks, and monthly, 1, private and recreational--yearly and never, 0; school--weekly, two weeks, and monthly, 10, school--yearly and never, 18. These responses did not differ significantly from expected responses.

Chi squares were computed for the seven areas of lifetime sports by cross-tabulating the method of instruction and degree of participation (see Table 25).

The X^2 of 16.15 for moderate activity was less than the critical value for $X^2_{.95,12} = 21.026$, which

Table 25

Chi Square Results for Method of Instruction
and Degree of Participation for the
Seven Areas of Lifetime Sports

Area	Chi Square	Degree of Freedom
Moderate Activity	16.15	12
Camping	9.02	8
Team Sports	1.10	2
Dance	4.54	12
Water Activities	17.91	12
Racket Activities	19.62	12
Conditioning	2.09	4

$\chi^2_{.95,12} = 21.026$	$\chi^2_{.99,12} = 26.217$
$\chi^2_{.95,8} = 15.507$	$\chi^2_{.99,8} = 20.090$
$\chi^2_{.95,2} = 5.991$	$\chi^2_{.99,2} = 9.210$
$\chi^2_{.95,4} = 9.488$	$\chi^2_{.99,4} = 13.277$

reveals that the observed responses did not differ significantly from expected responses.

The χ^2 of 9.02 for camping was less than the critical value for $\chi^2_{.95,8} = 15.507$, which reveals that the observed responses did not differ significantly from expected responses.

The χ^2 of 1.10 for team sports was less than the actual value of $\chi^2_{.95,2} = 5.991$, which reveals that the

observed responses did not differ significantly from expected responses.

The X^2 of 4.54 for dance was less than the critical value for $X^2_{.95,12} = 21.026$, which reveals that the observed responses did not differ significantly from expected responses.

The X^2 of 17.91 for water activities was less than the critical value for $X^2_{.95,12} = 21.026$, which reveals that the observed responses did not differ significantly from expected responses.

The X^2 of 19.62 for racket activities was less than the critical value for $X^2_{.95,12} = 21.026$, which reveals that the observed responses did not differ significantly from expected responses.

The X^2 of 2.09 for conditioning was less than the critical value for $X^2_{.95,4} = 9.488$, which reveals that the observed responses did not differ significantly from expected responses.

Chi squares were computed for the seven areas of lifetime sports for college and above by cross-tabulating the method of instruction and degree of participation (see Table 26).

The X^2 of 13.94 for moderate activity was less than the critical value for $X^2_{.95,12} = 21.026$, which reveals that the observed responses did not differ significantly from expected responses.

Table 26

Chi Square Results for Method of Instruction
and Degree of Participation for the
Seven Areas of Lifetime Sports
for College and Above

Area	Chi Square	Degree of Freedom
Moderate Activity	13.94	12
Camping	22.76	8
Team Sports	.34	1
Dance	8.59	12
Water Activities	9.48	9
Racket Activities	15.35	9
Conditioning	2.01	2

$\chi^2_{.95,12} = 21.026$	$\chi^2_{.99,12} = 26.217$
$\chi^2_{.95,8} = 15.507$	$\chi^2_{.99,8} = 20.090$
$\chi^2_{.95,1} = 3.841$	$\chi^2_{.99,1} = 6.635$
$\chi^2_{.95,9} = 16.919$	$\chi^2_{.99,9} = 21.666$
$\chi^2_{.95,2} = 5.991$	$\chi^2_{.99,2} = 9.210$

Camping activity resulted in χ^2 of 22.76 which was significantly different at the .01 level than the expected responses. The critical value for $\chi^2_{.95,8}$ is 15.507 and $\chi^2_{.99,8}$ is 20.090.

The χ^2 of .34 for team sports was less than the critical value for $\chi^2_{.95,1} = 3.841$, which reveals that the observed responses did not differ significantly from expected responses.

The area of dance resulted in X^2 of 8.59, which was not significantly different. The critical value for $X^2_{.95, 12} = 21.026$. Thus, the observed responses did not differ significantly from the expected responses.

The X^2 of 9.48 for water activities was less than the critical value of $X^2_{.95, 9} = 16.919$, which reveals that the observed responses did not differ significantly from the expected responses.

The racket activities resulted in X^2 of 15.35, which was not significantly different. The critical value for $X^2_{.95, 9} = 16.919$. Since the observed responses did not differ significantly from the expected responses, X^2 was not significant.

The X^2 of 2.01 for the conditioning area was less than the critical value of $X^2_{.95, 2} = 5.091$, which reveals that the observed responses did not differ significantly from the expected responses.

Chi squares were computed for high school graduates and below for the seven areas of lifetime sports by cross-tabulating the method of instruction and degree of participation (see Table 27).

The X^2 of 13.78 for the moderate activity area was less than the critical value of $X^2_{.95, 12} = 21.06$, which reveals that the observed responses did not differ significantly from the expected responses.

Table 27

Chi Square Results for Method of Instruction
and Degree of Participation for the
Seven Areas of Lifetime Sports
for High School Graduates
and Below

Area	Chi Square	Degree of Freedom
Moderate Activity	13.78	12
Camping	8.60	8
Team Sports	7.77	2
Dance	3.23	6
Water Activities	10.32	8
Racket Activities	10.40	6
Conditioning	5.60	2

$\chi^2_{.95,12} = 21.026$	$\chi^2_{.99,12} = 26.217$
$\chi^2_{.95,8} = 15.507$	$\chi^2_{.99,8} = 20.090$
$\chi^2_{.95,2} = 5.991$	$\chi^2_{.99,2} = 9.210$
$\chi^2_{.95,6} = 12.592$	$\chi^2_{.99,6} = 16.812$

The camping area resulted in χ^2 of 8.6, which was less than the critical value of $\chi^2_{.95,8} = 15.507$, and reveals that the observed responses were not significantly different than the expected responses.

Team sports resulted in χ^2 of 7.77, which was significantly different at the .01 level than the expected responses. The critical value for $\chi^2_{.95,2}$ is 5.991 (and $\chi^2_{.99,2}$ is 9.210).

The X^2 of 3.23 for dance was less than the critical value for $X^2_{.95,6} = 12.592$, which reveals that the observed responses did not differ significantly from the expected responses.

In water activities, the X^2 of 10.32 was less than the critical value for $X^2_{.95,8} = 15.507$, which reveals that the observed responses did not differ significantly from the expected responses.

In the area of racket activities, the X^2 of 10.40 was less than the critical value for $X^2_{.95,6} = 12.592$, which reveals that the observed responses did not differ significantly from the expected responses.

The X^2 of 5.60 for conditioning was less than the critical value for $X^2_{.95,2} = 9.210$, which reveals that the observed responses did not differ significantly from the expected responses.

The t test was used to ascertain if the educational achievement level made a significant difference in the degree of participation (see Table 28).

In the moderate activity area, the t of 1.09 for college and above did not differ more than the number of standard errors reported at .05 criterion point. The criterion point for $t_{.95,92}$ is 2.00.

The camping area with a t of 2.28 for college and above differed more than the number of standard

Table 28

t Test of Educational Achievement Levels for
High School Graduates and Below and
College and Above for Seven
Areas of Lifetime Sports

Area	<u>t</u>	df
Moderate Activity	1.09	92
Camping	2.28	92
Team Sports	.55	92
Dance	3.06	92
Water Activities	2.29	92
Racket Activities	2.17	92
Conditioning	3.53	92

t .95,92 = 2.00
t .99,92 = 2.66
t .995,92 = 3.46

errors reported at .025 criterion point. The criterion point for t .95,92 is 2.00

The t of .55 for the team sports area revealed that there was not a difference between the two samples of college and above and high school graduates and below at the .05 criterion point. The criterion point for t .95,92 is 2.00.

The dance area with a t of 3.06 for college and above differed more than the number of standard errors

reported at the .005 criterion point. The criterion point for $t_{.995,92}$ is 3.46.

The t of 2.29 for water activities for college and above differed more than the number of standard errors reported at the .025 criterion point. The criterion point for $t_{.995,92}$ is 3.46.

The racket activity area with a t of 2.17 for college and above differed more than the number of standard errors reported at the .025 criterion point. The criterion point for $t_{.995,92}$ is 3.46.

The t of 2.29 for water activities for college and above differed more than the number of standard errors reported at the .025 criterion point. The criterion point for $t_{.995,92}$ is 3.46.

The racket activity area with a t of 2.17 for college and above differed more than the number of standard errors reported at the .025 criterion point. The criterion point for $t_{.995,92}$ is 3.46.

The t of 3.53 for the conditioning area for college and above differed more than the number of standard errors reported at the .005 criterion point. The criterion point for $t_{.995,92}$ is 3.46.

The Spearman rank order correlation was used to determine if there were any significance in method of instruction and degree of participation for the seven areas of lifetime sports (see Table 29).

Table 29

Spearman Rank Order Correlation Results for
the Method of Instruction and Degree of
Participation for the Seven Areas
of Lifetime Sports

Area	r	df
Moderate Activity	.69	92
Camping	.82	92
Team Sports	.85	92
Dance	.65	92
Water Activities	.75	92
Racket Activities	.94	92
Conditioning	.97	92
$r .95,92 = .205$ $r .99,92 = .267$ $r .999,92 = .337$		

The r of .69 for moderate activity resulted in a positive relationship between the method of instruction and degree of participation, which was significant at the .001 level of significance. The critical value for $r .95,92 = .205$, $r .99,92 = .267$, and $r .999,92 = .337$.

The camping area revealed a positive relationship of .82 between the method of instruction and degree of participation, which was significant at the .001 level of significance. The critical value for $r .95,92 = .205$, $r .99,92 = .267$, and $r .999,92 = .337$.

The r of .85 for team sports resulted in a positive relationship between the method of instruction and degree of participation, which was significant at the .001 level of significance. The critical value for r .95,92 = .205, r .99,92 = .267, and r .999,92 = .337.

The dance area resulted in a positive relationship of .65 between the method of instruction and degree of participation, which was significant at the .001 level of significance. The critical value for r .95,92 = .205, r .99,92 = .267, and r .999,92 = .337.

The r of .75 for water activities resulted in a positive relationship between the method of instruction and degree of participation, which was significant at the .001 level of significance. The critical value for r .95,92 = .205, r .99,92 = .267, and r .999,92 = .337.

Racket activities resulted in a positive relationship of .94 between the method of instruction and degree of participation, which was significant at the .001 level of significance. The critical value for r .95,92 = .205, r .99,92 = .267, and r .999,92 = .337.

The r of .97 for the conditioning activity area resulted in a positive relationship between the method of instruction and degree of participation, which was significant at the .001 level of significance. The critical value for r .95,92 = .205, r .99,92 = .267, and r .999,92 = .337.

The positive responses (see Table 30) for further instruction in the 36 lifetime sports resulted in at least a response of one for 27 out of the 36 lifetime sports' list. The requests for instruction were as follow: badminton, diving, handball, horsemanship, motor boating, paddle ball, riflery, scuba diving, skeet and trap shooting, softball, and volleyball--1 request, or 1.06 percent; karate and motorcycling--2 requests, or 2.1 percent; canoeing--3 requests, or 3.1 percent; swimming--4 requests, or 4.26 percent; mdoern dance--5 requests, or 5.32 percent; tennis--6 requests, or 6.38 percent; billiards, folk dance, and camping--7 requests, or 7.45 percent; baitcasting, shuffleboard and social dance--8 requests, or 8.51 percent; golf--9 requests, or 9.57 percent; bowling--13 requests, or 13.83 percent; and square dance--14 requests, or 14.89 percent.

Bowling and square dance were the two most requested activities for further instruction. None of the 94 survey subjects had had prior instruction in repelling or sky jumping, nor did any of the 94 desire any instruction in these two activities. Archery, basketball, bicycling, fencing, parachuting, physical conditioning, racketball, repelling and sky jumping received no requests for further instruction.

Table 30

Results of Positive Responses for Further
Instruction in the 36 Lifetime Sports

Lifetime Sports	Number of Positive Responses	Percent
Badminton	1	1.06
Bait Casting	8	8.51
Billiards	7	7.45
Bowling	13	13.83
Camping	7	7.45
Canoeing	3	3.19
Diving	1	1.06
Folk Dance	7	7.45
Golf	9	9.57
Handball	1	1.06
Horsemanship	1	1.06
Karate	2	2.13
Modern Dance	5	5.32
Motor Boating	1	1.06
Motorcycling	2	2.13
Paddle Ball	1	1.06
Riflery	1	1.06
Scuba Diving	1	1.06
Shuffleboard	8	8.51
Skeet and Trap Shooting	1	1.06
Social Dance	8	8.51
Softball	1	1.06
Swimming	4	4.26
Square Dance	14	14.89
Tennis	6	6.38
Volleyball	1	1.06
Weight Lifting	1	1.06

Chapter 5

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The purpose of this study was to ascertain the needs and interests of senior citizens in middle Tennessee in relation to lifetime sports.

A survey with a list of 36 lifetime sports with 3 sections, method of instruction, degree of participation, and further instruction, were utilized to obtain information about these 36 lifetime sports. The survey sample was composed of 94 senior citizens between the ages of fifty-five and sixty-five in seven selected towns or cities in middle Tennessee. The researcher traveled to the seven cities or towns: Cleveland, Cookeville, Clarksville, Columbia, Tullahoma, Murfreesboro, and Gallatin. The survey was personally administered to 55 of the members at these senior citizen centers. A group of graduate associates personally administered 39 of the surveys to senior citizens within the age limitations in the designated towns or cities.

Analysis of the data resulted in chi square for the camping area, eliminating the no response, being significant

at the .01 level. Chi squares computed for educational achievement revealed two areas being significant. The camping area for college and above was significant at the .05 level and the team sports area was significant at the .05 level of significance for high school graduates and below. Five of the seven areas were significant for the t test between the educational achievement levels: camping, .025 level; dance, .005 level; water activities, .025 level; racket activities, .025 level; and conditioning, .005 level. All of the areas were significant at the .001 level for the Spearman rank order correlation between method of instruction and degree of participation.

FINDINGS

The following findings were revealed from this survey sample.

This survey sample consisted of 94 subjects, 28 (29.79%) males and 66 (70.21%) females. This is a ratio of 3 men to every 7 women.

The mean age for the male group was 60.89 years, and the mean age for the female group was 60.69 years. This is an overall age mean of 60.79.

The mean educational level of achievement was grade 11.98 for males and 12.19 grade for females. This is an overall grade level of 12.085.

The self-taught (38%) method of instruction received the highest frequency, with an equal distribution of never (26%) and weekly (26%) for the degree of participation. Chi square for the complete survey, and with no responses eliminated, resulted in non-significance, since the observed responses did not differ significantly from the expected responses.

In the camping activity area, the self-taught (51%) method of instruction resulted in the highest frequency with never (28%) being the highest frequency response for degree of participation. The chi square for the survey sample was not significant, since the observed responses were not different from the expected responses. However, eliminating the no-response group revealed chi square to be significant.

High school and below or college and above (71%) was most frequent for the team sports area, with a high frequency (73%) of these subjects not participating at this time in their lives. Chi squares were not significant for this area, since the observed responses did not differ significantly from the expected responses.

High school and below or college and above (36%) and self-taught instruction (31%) both resulted in a high number of responses for the dance area, with the majority of the subjects responding to never (39%) for the degree of participation. X^2 was not significant because the observed

responses did not differ significantly from the expected responses.

In water activities, the majority (33%) of the respondents were self-taught, with the majority (30%) responding to the never degree of participation. Chi squares were significant because the observed responses did not differ significantly from the expected responses.

Racket activities revealed that most of the respondents (24%) received instruction while in school, with the majority (27%) responding to the never degree of participation. X^2 was not significantly different, since the observed responses did not differ significantly from the expected responses.

The school method of instruction resulted in the highest frequency (30%) for the area of conditioning, with the never (20%) degree of participation being the highest. X^2 was not significant because the observed responses did not differ significantly from the expected responses.

The two educational achievement levels of college and above and high school graduates and below resulted in two areas being significant. The camping area was significant at the .01 level for college and above. The team sports area was significant at the .05 level for high school graduates and below.

The educational achievement levels of college and above and high school graduates and below resulted in five

of the seven areas being significant. Camping, water and racket activities were significant at the .025 level, and dance and conditioning were significant at the .005 level. Educational achievement did result in a higher degree of participation for the survey sample.

The Spearman rank order correlation resulted in all areas being significant at the .001 level. As instruction approached the self-taught method which received the majority of responses, the degree of participation was also raised.

The further instruction category resulted in 27 out of 36 of the lifetime sports requested by at least one subject. Bowling and square dance were the most requested.

CONCLUSIONS

Based upon the findings in this study, the following conclusions are presented.

In this survey sample, the women outnumber the men by a ratio of 7 to 3. This is relatively consistent with other studies that have been conducted with senior citizens.

The mean age for the senior citizens within this study was 60.79. This would be expected with the limited number of subjects within this study as well as the ten-year age span.

The mean educational level for this survey sample was grade twelve, which seems to be above the national educational level as indicated by the World Book Almanac facts previously presented.

The results of the responses to the moderate activity area indicated the self-taught (38%) method of instruction to have the highest frequency. Since the physical education programs during the time period that these subjects would have been in school did not have a wide variety of lifetime sports, it is only logical that in order to be involved in these activities they would have to have learned them on their own. The degree of participation for this area resulted in an equal distribution between never and weekly. Since these activities are of the moderate type, it follows that, if interested, these subjects could continue to participate if the opportunity were offered. Eliminating the no response between method of instruction and degree of participation, it was not significant, since the observed responses did not differ significantly from the expected responses.

The responses to the camping area revealed that the self-taught method of instruction received 51 percent of the total responses. Since camping and related activities of this type were not offered at the time these subjects were in school, it follows that in order to be involved they would have to learn these activities on their own.

Twenty-eight percent of the responding senior citizens indicated they never participated in camping activities. There are many possible reasons why never was the most frequent response. Perhaps it has become too much trouble, lack of money, failing health, or the availability of private segregated camps for senior citizens. The researcher postulates that if there were more segregated camps for senior citizens there would be a higher frequency of participation in this area. The chi square between method of instruction and degree of participation for the camping area, excluding the no-response group, was significant because the observed frequencies were much higher for the self-taught method than the expected frequencies.

The responses to the team sports area revealed that 71 percent of the respondents had received instruction in team sports while in high school or college. Since team sports have had such an emphasis in school programs, it is logical that an overwhelming majority of the respondents received instruction while in school. It was also revealed that 73 percent of the respondents are not participating now. Team sports usually require more than two individuals and also require more energy expenditure than these subjects would be expected to exhibit at this stage in their lives. Chi square between the method of instruction and degree of participation was not significant for this area, since the

observed responses did not differ significantly from the expected responses.

The responses in the area of dance resulted in a 36 percent response for the school as the method of instruction, with the self-taught method receiving 31 percent of the responses. Because dance was not a widely offered activity during the time these subjects were in school, the researcher wonders if possibly some of the respondents to the school category were not also self-taught. The respondents indicated that 39 percent of them were not participating at this time. As the number of senior citizen centers increase and these senior citizens retire, this degree of response could very well increase. Chi square for this area between the method of instruction and degree of participation was not significant because the observed responses did not differ significantly from the expected responses.

The responses to water-related activities revealed that 33 percent of the respondents were self-taught. Schools in the past and only a few schools of today offer swimming and related water activities in their physical education programs. The majority of the respondents (30%) are not participating at this time. Perhaps the health of the subjects or availability of swimming areas in close proximity of their homes are the reasons for this low level of participation. The water activity area, eliminating the no response between the method of instruction and degree of

participation, was not significant because the observed responses did not differ significantly from the expected responses.

The racket-related area revealed that 24 percent of the respondents received instruction while in high school or college. Sixty percent of the respondents had had no instruction in the area of racket activities. Perhaps most of these respondents were from the college group. The majority of the respondents were not participating in these activities at this time. Since most of these sports require a great amount of energy output, this is not unrealistic. The chi square between the method of instruction and degree of participation, eliminating the no response, was not significant because the observed responses did not differ significantly from the expected responses.

Sixty-five percent of the respondents made no response in the conditioning area. The area of conditioning and related activities resulted in a 30 percent response in the high school or college method of instruction. The degree of participation revealed a 20 percent response in the never category. These activities require a great amount of expenditure of energy and perhaps these individuals are not physically able at this time. χ^2 for the conditioning area, eliminating the no response, was not significant, since the observed responses did not differ significantly from the expected responses.

Using the educational achievement level and figuring chi squares, two areas were significant. The camping area was significant at the .01 level for college and above, and the team sports area was significant at the .05 level for high school graduates and below.

The t test between the two educational achievement groups, high school graduates and below and college and above, for the degree of participation resulted in five out of seven areas being significant. The areas resulting in significance were as follow: camping, .025 level; dancing, .005 level; water activities, .025 level; racket activities, .025 level; and conditioning, .005 level. Therefore, the educational achievement differences and the degree of participation for five out of seven of these areas is significant. Educational achievement does result in a higher degree of participation.

The Spearman rank order correlation between the method of instruction and degree of participation resulted in all areas being significant at the .001 level. As the method of instruction approached the self-taught level, the degree of participation increased. Since most of the respondents received their instruction by the self-taught method, this would account for the significance.

The further instruction category resulted in 14 of the respondents desiring instruction in square dance and 13

in bowling. A total of 27 out of the 36 lifetime sports was requested for further instruction.

RECOMMENDATIONS

The following recommendations are indicated from this study.

1. Colleges, universities, and other instructional agencies should examine the results of this study to be able to offer a better selection of lifetime sports for the youth of today who will be the senior citizens of tomorrow.

2. Institutions that offer classes in recreational activities should include dance, bowling, golf, baitcasting, shuffleboard, billiards, and perhaps some others as indicated by the responses from this survey sample.

3. Institutions offering classes in recreational activities within the various communities of Tennessee and other states should conduct surveys to ascertain the needs and interests of their citizenry.

4. Since team sports do not have a high carry-over value as indicated by this study, lifetime sports should be emphasized more.

5. Senior citizen centers may want to consider hiring full-time directors with a background in recreation and an understanding of the elderly to conduct their programs.

6. Individuals tend to participate more in activities with which they are most familiar. Therefore, colleges, universities, and other instructional agencies should provide opportunities for instruction in the lifetime sports areas.

7. Segregated areas should be provided for senior citizens. Areas in Florida which are highly populated by the elderly provide these segregated areas, and many more senior citizens are involved.

Recommendations for Future Research

Based upon the findings in this study, future research is recommended as follows:

1. A study to determine why senior citizens do not utilize camping and outdoor activities.

2. A study of this age group to determine why the self-taught method is so prevalent and why this method seems to influence the degree of participation.

3. Using the same general format but inquiring into other background information such as former occupation, status of present employment, plans for retirement, and reasons for limited participation may prove to be another valuable study.

APPENDIXES

APPENDIX A

SENIOR CITIZEN GROUP MEETINGS PER MONTH

AND DIRECTORS

**SENIOR CITIZEN GROUP MEETINGS PER MONTH
AND DIRECTORS**

Senior Citizen Group	Meetings Per Month	Directors
Clarksville	(1) Monday	Mrs. Betty Dowlen 375-3707
Cleveland	(4) Monday	Mrs. Arthur Davis 472-5728
Columbia	2nd & 4th Wednesday	Mr. Kenneth Sisk 682-2589
Cookeville	4 Times a Month Monday	Mrs. Clarence Spivey 526-9318
Gallatin	(1) 2nd Thursday Night	Mrs. Ruby Hooper 452-0663
Murfreesboro	(4) Friday	Mr. Ben Felts 896-5206
Tullahoma	1st Tuesday	Mr. Arlie O. Hoffner 455-5218

APPENDIX B

**TOWN/CITY, LOCATION, DATE AND TIME SURVEY
INSTRUMENT ADMINISTERED**

TOWN/CITY, LOCATION, DATE AND TIME SURVEY
INSTRUMENT ADMINISTERED

Town/City	Location	Date and Time
Cleveland	Cleveland Housing Authority Office Walker Street	July 19 12:30 p.m.
Cookeville	Senior Citizen Center 35 North Walnut Street	July 21 2:00 p.m.
Clarksville	Catherine Edmondson Senior Citizen Center Pagent Lane	July 23 12:30 p.m.
Columbia	Woodland Park St. Mark's Methodist Church	July 28 12:30 p.m. July 28 2:00 p.m.
Murfreesboro	Senior Citizen Center 337 Burton Street	July 30 12:30 p.m.
Tullahoma	Presbyterian Church Corner of Washington and Grundy	August 3 1:00 p.m.
Gallatin	Senior Citizen Center 115 South Water Street	August 12 6:30 p.m.

APPENDIX C

**LIFETIME SPORTS ACTIVITIES FOR SURVEY
INSTRUMENT AND RESPONSES**

LIFETIME SPORTS ACTIVITIES FOR SURVEY INSTRUMENT AND RESPONSES

Area	Method of Instruction						Present Participation					Would You Like Instruction?		
	High School	College	Adult Education	Continuing Education	Recreational	Private	Self	5--Weekly	4--Once every two weeks	3--Once a month	2--Once a year	1--Never	Yes	No
Archery	1	10			1	1	4	1	1		1	14		
Badminton	5	16			2	1	9	2	1	1	1	28	1	
Bait Casting	2	2			2	1	16	4	2	1	8	7	8	
Basketball	58	16					4	2			1	75		
Bicycling	3				1	1	29	6			1	10		
Billiards	2				4		13	6		2		10	7	
Bowling	4	1			8	2	20	9	1	2	4	19	13	
Camping	7	4			4	1	29	1	1	7	15	21	7	
Canoeing	1	2			1		4			3	3	8	3	
Diving	3	5					8	3		2	3	8	1	
Fencing					1		2					3		
Folk Dance	16	17			5		7	2	1	1	1	40	7	
Golf	1	8			1	3	3	7		1		8	9	
Handball	2	2			1		3					8	1	
Horsemanship	1	2			2		27	1	1	1	6	23	1	
Karate						1		1					2	
Modern Dance	5	15			2	2	7	2	2	2	1	24	5	
Motor Boating	1				1	3	18	1	1	1	2	18	1	

APPENDIX C (Continued)

Area	Method of Instruction						Present Participation					Would You Like Instruction	
	High School	College	Adult Education	Cont. Education	Recreational	Private Self	5--Weekly	4--Once every two weeks	3--Once a year	2--Once a year	1--Never	Yes	No
Motorcycling		1		1	1	14	6	1	1	2	6	2	
Paddle Ball	3	3			1	1	1			1	6	1	
Parachuting						1					1		
Physical Cond.	18	15			1	6	12	1	1		26		
Raketball					1	1	1				1		
Repelling													
Riflery		1			2	17		2	3	4	11	1	
Scuba Diving		1		1	1					1	2	1	
Shuffleboard	2	1		13	1	18	6		6	5	18	8	
Skeet & Trap Shooting	1	2		2		1					4	1	
Sky Jumping													
Social Dance	12	17		2	5	16	2	1	4	23	24	8	
Softball	36	12		1		10	1	1		4	53	1	
Swimming	8	18	1	2	1	20	7		1	12	30	4	
Square Dance	15	14		6	1	9	6		4	5	30	14	
Tennis	8	16		1	1	6	3		2	2	26	6	
Volleyball	8	17				1	1			2	23	1	
Weight Lifting		5				1	4				1	1	

Age _____

Sex _____

Education _____

APPENDIX D

DISTRIBUTION OF SURVEY SAMPLE

DISTRIBUTION OF SURVEY SAMPLE

Area	Senior Citizen Center Member	Senior Citizen Center Non-member
Cleveland	3	
Cookeville	6	7
Clarksville	13	10
Columbia	11	5
Murfreesboro	7	12
Tullahoma	2	
Gallatin	13	5
Total	55	39

APPENDIX E

CHI SQUARE

CHI SQUARE

Chi Square is a statistical procedure that makes use of the observed frequencies within the various categories as opposed to the expected frequencies if the responding subjects are normal. The observed frequencies are subtracted from the expected frequencies and squared to eliminate any negative values. In order to put the squared difference in proportion to the number of cases expected in the cell, the expected frequency is divided into the squared difference.*

In this study, the researcher wanted to see if there were a relationship between the method of instruction and degree of participation within the seven areas of lifetime sports. Chi squares were figured using the educational mean to determine if educational achievement had an effect on the method of instruction and the degree of participation.

*Source: Clinton I. Chase, Elementary Statistical Procedures (New York: McGraw-Hill Book Company, 1967), pp. 174-184.

APPENDIX F

t TEST

t TEST

In the t test, the sum of the square deviations around the mean for the first and second samples are computed. The sums are added together and divided by the degrees of freedom or two total minus two. These results are multiplied one over the number in the first and second groups added together and the square root taken of the overall results of these steps.*

The t test was administered to this survey sample to ascertain if the educational achievement level made a significant difference in the degree of participation.

*Source: Clinton I. Chase, Elementary Statistical Procedures (New York: McGraw-Hill Book Company, 1967), pp. 141-151.

APPENDIX G

SPEARMAN RANK ORDER CORRELATION

SPEARMAN RANK ORDER CORRELATION

The first set of data is correlated with the second set of data by ranking each set from highest to lowest. The difference in these two sets is found and arranged as d and then d is squared and added. The sum of the d^2 is multiplied by six and divided by the original number times the quantity of the number squared minus one. This final result is subtracted from one to determine if the first set correlates with the second.*

In this study, the method of instruction was correlated with the degree of participation to determine if there were any significance.

*Source: Clinton I. Chase, Elementary Statistical Procedures (New York: McGraw-Hill Book Company, 1967), pp. 110-113.

APPENDIX H

HISTOGRAM

HISTOGRAM

A histogram is a graphic representation of the frequency distribution of groups of data. Bars are constructed to represent the length of each frequency.*

*Source: Clinton I. Chase, Elementary Statistical Procedures (New York: McGraw-Hill Book Company, 1967), pp. 15-16.

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