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"A Comparison of the Use of Exercise as a Leisure Activity for Anorexic and Bulimic Teenage Girls to a Control Group"

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"A Comparison of the Use of Exercise as a Leisure Activity for Anorexic and Bulimic Teenage Girls to a Control Group"

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by

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THESIS ACCEPTANCE

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ABSTRACT

The purpose of this study was to determine if the leisure activities of anorexic and bulimic teenage girls differ from those of a control group, and to determine the difference between the two groups in their commitment to exercise. Two surveys, the State Technical Institute's Leisure Assessment Process (STILAP) and the Commitment to Exercise Scale, were distributed to anorexic and bulimic teenage girls in an Omaha, Nebraska, treatment facility. The surveys were also given to a control group made up of teenage girls in two Omaha area high schools. Six girls participated in the anorexic and bulimic group and 18 participated in the control group. It is evident from this study that anorexic and bulimic teenage girls participate more in physical activities such as jogging, running, physical fitness, and biking than the control group. They, however, do not participate in social activities such as dancing and party going as much as the control group. The control group participated in more activities in the areas involving mental skills, emotional/mental stimulation, social situations, and leadership opportunities. Anorexic and bulimic teenage girls are more committed to exercise, miss less exercise sessions, will exercise more if they are injured or ill, and will even miss social opportunities in order to exercise. These findings suggest that a difference does occur in the leisure lifestyles of anorexic and bulimic teenage girls when compared to the lives of the control group. It also suggest that greater commitment to exercise is present in anorexic and bulimic girls lives.

DEDICATION

I would like to dedicate this to my parents, Robert A. and Barbara McCracken, for the encouragement they have always given me and for teaching me the importance of an education. I would not have been able to accomplish this if they would not have taught me that I can accomplish anything if I set my mind to it.

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The Problem

Introduction

Weight concerns and dieting are so important to females in our society that they have become commonplace (Robin, Silberstein, and Striegel-Moore, 1985). Many advertisements in the media also reinforce that thinness is associated with physical attractiveness and with health. This desire to be thin appears to be a complex phenomenon and is present in girls as young as 11 years old (Shore and Porter, 1990). The desire to be thin in our society is influenced by things such as: overidentification with the feminine stereotype, a high need for both achievement and approval (Boskind-Lodahl, 1976), compliance with cultural expectations of thinness (Hawkins and Clement, 1984), and a morbid fear of weight gain (Rosen and Leitenberg, 1982). Robin, Silberstein, and Streigel-Moore (1986) found that weight and body shape were the central determinants of a female's self-perception of her attractiveness in undergraduates, and Wooley and Wooley (1984) reported that body weight was a key determinant in how women felt about themselves. Also, the relationship between levels of activity and self-esteem are important.

A relationship has been shown between being physically active and self-esteem: the higher the level of self-esteem the more positive image of their body (Biddle, 1993). However, many women are still dissatisfied with their bodies even though they are physically fit (Finkenberg, DiNucci, McCune, and McCune, 1993). The association of thinness with attractiveness and self-worth, the importance of living up to the standards of a society, and the basic unawareness of feelings are leading characteristics of eating disorders.

Over the past thirty years, the incidence of eating disorders among females has increased rapidly. Jones, Fox, Babigan, and Hutton (1980) noted that cases of diagnosed anorexia nervosa (AN) have more than doubled between 1960 and 1976 in a New York county. Bulimia nervosa (BN) has been found to increase threefold between 1980 and 1983 in college students (Pyle, Halverson, Neuman, and Mitchell, 1986).

American society has heard more about these diseases due to the occurrence of them in famous individuals such as athletes, dancers, actors and singers. Frisch, Wyshak, and Vincent (1980) studied the "Delayed Menarche and Amenorrhea in Ballet Dancers." They found that they hard training and low food intake typical of ballet dancers cause excess thinness that delays puberty. Katz (1986) did two case studies on the occurrence of anorexia and bulimia in long distance runners. Both patients began to feel "overweight" due to the lack of physical activity.

The purpose of this study is to evaluate the leisure lifestyles of anorexic and bulimic teenage girls to better understand the role of physical exercise in this lifestyle.

Common Eating Disorders

The first step in this process is to explain the two most common eating disorders reported by teenage girls, Anorexia and Bulimia. According to the Diagnostic and Statistical Manuel of Mental Disorders - 4th edition (DSM-IV), anorexia nervosa is characterized by refusal to maintain a minimally normal body weight.

The DSM-IV lists the following four major criteria for diagnosis:

- Refusal to maintain body weight at or above a minimally normal weight for age and height. An example would be weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected

weight gain during periods of growth, leading to body weight less than 85% of that expected.

- Intense fear of gaining weight and becoming fat, even though underweight.
- Disturbance in a way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or current low body weight.
- In postmenarcheal females, amenorrhea. (pp. 544-545)

The DSM-IV also list subtypes for each category of eating disorders. For AN, the subtypes are Restricting Type and Binge-Eating/Purging Type. Restricting type describes weight loss accomplished primarily by dieting, fasting, or excessive exercise. During the current episode, these individuals have not regularly engaged in binge eating or purging. Binge-Eating/Purging type is when the individual has regularly engaged in binge eating or purging (or both) during the current episode. Most individuals with AN who binge eat also purge. Some individuals included in this subtype do not binge eat, but do regularly purge after the consumption of small amounts of food. It appears that most individuals with AN engage in these behaviors at least weekly (p. 545).

Bulimia nervosa (BN) is characterized by repeated episodes of binge eating followed by inappropriate compensatory behaviors such as self-induced vomiting; misuse of laxatives, diuretics, or other medication; fasting; or excessive exercise.

DSM-IV (p. 549-550) states five diagnostic criteria for bulimia. They are:

- Recurrent episodes of binge eating. An episode of binge eating is characterized by eating, in a discrete period of time (e.g., 2-hour period), an amount of food that is definitely larger than most people would eat during a

similar period of time and under similar circumstances and a sense of lack of control over eating during a episode (e.g., the feeling that one cannot stop eating or control what or how much one is eating).

- Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.
- The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for three months.
- Body shape and weight unduly influence self-evaluation.
- The disturbance does not occur exclusively during episodes of anorexia nervosa (pp. 549-550).

The two types of BN are purging type and nonpurging type. Purging is when the person regularly engages in self-induced vomiting or the misuse of laxatives, diuretics, or enemas during the current episode. Nonpurging describes presentations in which the person has used other inappropriate compensatory behaviors, such as fasting or excessive exercise.

AN and BN are the two are the most prevalent eating disorders in our society.

Prevalence

The prevalence of the diseases has increased throughout the decades. A main difference in the studies is the criteria for the eating disorders. Some studies show clinically diagnosed AN and BN based on DSM-IV criteria. Some studies are just examining either the possibility that the diseases may develop certain aspects of the diseases, or the diseases at certain ages.

Females compose 90-95% of the eating disorder population (Paxton, Wertheim, Gibbons, Szmuckler, Hillier, and Petrovich, 1991). According to the DSM-IV, the prevalence among females in late adolescence and early adulthood who suffer from anorexia and bulimia are 0.5%-1.0% and 1%-3% respectively. Among 15 to 19 year old girls, the prevalence of anorexia has increased from 7/100,000 people in 1950-1954 to 26.3/100,000 people in 1980-1984 (Lucas, Beard, O'Fallen, and Yurkland, 1991). In a study conducted by Eisele, Hertsgaard, and Light (1986), 385 girls, who attended a career conference at a Midwestern University, ranging in ages from 12-14 years were asked to take a survey on eating disorders. These girls did not have anorexia or bulimia population. The results showed that 28% of the girls were assessed as underweight, 53% were within the ideal weight range, and 19% were overweight. However, 78% preferred to weigh less, 14% were satisfied with their weight, and only 8% wanted to weigh more. Johnson, Lewis, Love, and Stuckey (1984) results, which were gathered with a survery, indicated the 4.6% of female high school students (n=1268) ranging from ages 13-19 years met the criteria for a probable diagnosis of bulimia. Kagan and Squires (1985) found that out of 2004 students in grades 9-12, two percent took part in a binge-purge syndrome. Twenty percent of the subjects reported eating so much at least once a week that their stomachs hurt; 27% felt completely out of control concerning food at least once a week, and 18% of them fast for 24 hours or more weekly to control weight. In another recent study, 42.5% of girls interviewed indicated they were often or always preoccupied with the desire to be thinner and 23.4% dieted often or always (Wichstrom, 1995). Eighteen percent of female athletes and 5% of nonathletic girls suffer from disorders in which body leanness was an issue (Sundgot-Borgan, 1993).

When reviewing these studies, it is apparent that the same conclusion can be made. Anorexia and bulimia are prevalent diseases in western society. Even though many people are affected by these diseases, many of the AN and BN females have common descriptive traits.

Descriptive Features

Many of the women who have AN and BN have similar personality traits. Depression and anxiety are often present along with stereotypical rigidity, ritualism, perfectionism, and meticulousness (Hudson, Pope, Jones, and Yurgelun, 1983). DSM-IV lists characteristics that manifest from severe weight loss that include depressed mood, social withdrawal, irritability, insomnia, preoccupation with food and weight, and diminished interest in sex. Also, obsessive compulsive behavior is listed as a characteristic trait the for anorexic and bulimic population. Davis (1997) found that anxiety, perfectionism, obsessive compulsiveness, borderline tendencies, and narcissism are all characteristics found in eating disordered individuals.

Anorexic and bulimic sufferers have other complications in addition to those that arise from certain descriptive traits. Medical problems also arise from the diseases.

Medical Complications

Lack of nutrients and severe weight loss create serious problems. Amenorrhea and late menarche among girls and women are associated with undernutrition (Frisch, 1972) and with weight loss with in the range of 10-15% of the normal weight for height (Frisch and McArthur, 1974). According to the DSM-IV, in addition of amenorrhea, constipation, abdominal pain, cold intolerance, lethargy, and excess energy are common complaints of anorexic sufferers. Hypotension, hypothermia, and dryness of skin are

commonly reported. Individuals with AN exhibit some combination of bradycardia, anemia, impaired renal function, dental problems, and osteoporosis. BN sufferers can develop significant and permanent loss of dental enamel especially in the front teeth. The salivary glands may become notably enlarged. Cardiac and skeletal myopathies have been reported among individuals who regularly use syrup of ipecac to induce vomiting.

Along with medical problems from malnutrition and weight loss, the over use of exercise can create physical complication for anorexics and bulimics.

Hyperactivity

Hyperactivity or over-exercising is also a common condition present in AN and BN. Hyperactivity is a term used to describe physical activity that is extreme in frequency and duration, relatively resistant to change, and likely to be accompanied by an irresistible impulse to perform even in the face of injury, fatigue, or other personal demands (Yates, 1991). Edholm, Fletcher, Widdowson, and McCance (1955) found that cadets ate less on days of military training than on days with less activity, which was also reported by Katch, Michael, and Jones (1969) that participation in sports activities decreased energy intake in young women who were usually inactive.

The number of people who exercise regularly has doubled in the past 25 years with estimates of half of Americans exercising daily (Yates, 1991). The common explanation for the use of excessive exercise reflects the conscious attempt by the sufferer to work off calories and further hasten weight loss (Bruch, 1965) or is a form of denial of the effects of the excessive dieting (Seaver and Blinder, 1972). Blinder, Freeman, and Stunkard (1970) did a study where access to physical activity was contingent upon weight gain. A patient was allowed six hours of unscheduled time a day

outside the hospital when her morning weight was one half pound higher than her weight the previous morning. The patients were equipped with pedometers during this free time. Patients walked an average of 6.8 miles per day (women of average weight walk an average of 4.9 miles per day) and repeatedly climbed stairs. This was before behavior modification techniques were initiated. (Beumont, Arthur, Russel, and Touyz, 1994) found that:

> "It is our impression that overactivity is more common in patients who are overwhelmed by anorexic preoccupation about weight and shape than in those whom the illness appears to relate to family problems and attempts to manipulate the environment. The majority of our anorexic nervosa patients show some evidence of unhealthy overactivity, particularly when at very low body weight. It is unusual to find a severely emaciated patient (Body Mass Index 15 or lower) who is not overactive, and a common pattern is that the activity level increases as the weight decreases until the patient becomes too weak to perform any but the most basic task. Even then, restless, aimless hyperactivity exists. In bulimia nervosa, excessive exercise may be striking. The exercise pattern often reflects the chaotic eating behavior: patients have "binges" of hyperactivity, where as at other times they are inactive. Some patients may admit that they use excessive exercise as a means of compensating for eating in a similar to their use of laxatives or self-induced vomiting. In these instances, they often refer to exercise as self-punishment for their binges. On the otherhand, some bulimic patients alternate between "good" phases when they adhere to a very restricted diet and

strenuous exercise schedule, and 'bad" phases when they overeat and are slothful." (p. 26)

Many different variations in the forms of hyperactivity have been observed. Besides the obvious use of cardiovascular exercise such as biking, jogging, and stair climbing, AN and BN sufferers have methods of expending more calories in activities of life. Some of these techniques are:

- Doing everyday tasks hurriedly,
- Standing instead of sitting,
- Getting off public transportation several stops before the destination and walking or jogging the rest of the way, and
- Carrying articles up a stairway one at a time, when a single trip is possible (Beumont et al., 1994).

The physical effects of excessive exercise depend on the extent and nature of the exercises and on the health and lifestyle of the people doing the exercises. Stress factors and structural damage to joints are common along with mitral valve prolapse, a decreased size of the heart, bradycardia, hypotension, and cardiac arrhythmias (Schocken, Holloway, and Powers, 1989). The patient's motivation for performing activities or exercise changes from recreation, leisure, enjoyment, health, or fitness to a preoccupation with low weight and slender shape. Patients will admit that exercise in no longer enjoyable, but they continue to do it for its effects on the body. This has taken away from their leisure enjoyment because they spend every moment they have exercising or doing some form of physical activity. AN and BN sufferers do not enjoy their leisure because

they can not stop thinking about their weight and body shape (Beumont et al., 1994). As such, the leisure experience is reduced to work like experience.

Leisure

The role of leisure and the activities being performed during leisure need to be assessed in the lives of anorexic and bulimic sufferers. Kron, Katz, Gorzynski, and Weiner found in a 1978 study that 25 of 33 people were hyperactive. Exercise gave them a desired feeling that they do not get from leisure activities because they have not had the proper leisure education to know the kinds of activities that are available. Issues related to the consumption of food and the overuse of exercise are directly related to recreation and leisure behavior (Wolf, Willmuth, and Watkins, 1986). Assessments have shown that individuals who have an obsession with body type and food, such as anorexics and bulimics experience fewer benefits from leisure activities than others (Kaufman McBride, Hultsman, and Black, 1988). Isolation, guilt, shame, and loneliness are all barriers for leisure experiences. AN and BN sufferers tend to be self-critical, judgmental, perfectionist, hyperactive, and nonassertive individuals who desire to please others and lack personal boundaries (Kaufman et al., 1988).

According to Mannell and Kleiber (1997), leisure activities can become addictive and a problem and lead to negative outcomes. "Leisure problems often take the form of barriers or constraints that prevent people from engaging in or experiencing satisfying leisure, or as may be the case, participation in leisure may result in negative outcomes for the individual or society" (p. 14). There also seems to be a link between the presence of eating disorders and negative perceptions of leisure therefore less benefits are achieved (Kaufman et al., 1988).

Anorexic and bulimic patients do not meet their needs for leisure through exercise. According to Witt, Campbell, and Witt (1981), three areas of services should be provided for individuals. They are:

1. personally satisfying and stimulating leisure experiences where the patient can perceive themself as an active participant in the social and recreative life in the community (recreation)
2. counseling, education, and specific information on how to fully utilize capabilities, programs, and facilities offered (leisure education),
3. opportunities to learn and practice skills for experiences which will modify behavior, change attitudes, and develop insight so that the individual can obtain a high level of social independence and can be more readily accepted by self and others in recreational and societal settings (recreational therapy).

Experiences should focus on balance of activites, pacing, and the relationship between exercise and food without being influenced by weight or appearance. Therapy helps to promote the emotional well being of AN and BN patients by using structured interventions to relate feelings to experiences. Sufferers become aware of leisure activities alternative to eating and exercising. They learn to set physical and emotional boundaries to regain control (Carter, Van Andel, and Robb, 1995).

In order to begin therapy, the anorexic and bulimic patients' leisure lifestyles and the importance of exercise needs to be assessed. This helps determine the proper course the therapist should take.

Statement of Problem

Anorexia and bulimia are two devastating and prevalent diseases in our society. Teenage girls feel there self worth and beauty depends on how they look and their size. They need to learn to feel good about themselves and their activities.

People diagnosed with AN and BN appear to choose different leisure activities in comparison to their peers. They tend to choose activities geared more towards exercise. However, this inhibits their ability to have a well-rounded leisure lifestyle. This study will investigate the leisure preferences for teenage girls and their commitment to exercise to determine the difference between a group of females with anorexia and bulimia to a control group of females of the same age.

Research Objectives

Objective #1 = To determine if the leisure competency areas on the STILAP (1990) (burlingame and Blaschko, 1997) of anorexic and bulimic teenage females differ from those females in the control group.

Hypothesis = Anorexic and bulimic teenage females will report that their leisure competency areas and preferences revolve around physical activities more than those who do not have AN or BN.

Objective #2 = To determine if the level of commitment to exercise differ between AN and BN teenage females and the control group.

Hypothesis = AN and BN respondents will report that they are more committed to exercise than the control group.

Definition of Terms

Amenorrhea = absence of menses

Anemia = a reduction in the hemoglobin of red blood cells with a consequent deficiency of oxygen in the blood, leading to weakness

Anorexia Nervosa = an eating disorder characterized by a fear of becoming fat, a distorted body image, and excessive dieting

Bradycardia = slow heart rate, usually under 60 beats per minute

Bulimia Nervosa = habitual disturbance in eating behavior characterized by bouts of excessive eating followed by self-induced vomiting, purging with laxatives, strenuous exercise, or fasting

Hyperactivity = being unusually or abnormally active

Hypotension = decreased blood pressure

Hypothermia = subnormal body temperature

Lethargy = the quality or state of being drowsy and dull or listless and unenergetic

Mitral Valve Prolapse = when the valve between the left atria and left ventricle is weak or small and allows blood to re-enter atria

Myopathy = any abnormal or disease of muscle tissue

Osteoporosis = a disorder in which the bones become increasingly porous, brittle, and subject to fracture caused by lack of calcium and other minerals

CHAPTER 2
The Methods

Methods and Procedures

The study methods and procedures that were used are presented below. They include a description of the participants, a description of the surveys used, and a discussion of the techniques used for the data analysis.

Participants

The participants for this study were all females between the ages of 14 and 18 years of age of mixed races. The anorexic and bulimic girls were in treatment at an Omaha, Nebraska, area facility. The control group comprised of area teenagers in a Family and Consumer Science class at two Omaha Public Schools. Permission was obtained from both institutions and from the institutional review board (IRB). Eighteen out of 33 returned to questionnaires for the control group while six out of nine did so for the anorexic and bulimic group.

Informed Consent/Assent

Parental consent and youth assent were obtained prior to filling out surveys. For the control group, the researcher attended class at two separate Omaha area high schools. Parental consent and youth assent forms were distributed to participants. They were then collected two days later and surveys were distributed in envelopes stamped and addressed to the researcher. This was done to prevent peer pressure of filling out the surveys in class. For the anorexic and bulimic group, parental consent forms were sent to eligible participant's parents. Then, youth assent forms were distributed to eligible participants. Surveys were again placed in stamped and addressed envelopes for privacy.

Surveys

Many assessments have been developed over the years and are available to choose from. Two specific assessments are the State Technical Institute's Leisure Assessment Process (STILAP) (burlingame and Blaschko, 1997) and the Commitment to Exercise Scale (Davis, Brewer, and Ratusny, 1993).

Demographic Information

Information pertaining to the demographics was obtained from a questionnaire distributed to the participants (Appendix A). The questionnaire consisted of questions regarding participants age, grade in school, age of onset (if in anorexic and bulimic group), how many times in treatment of AN or BN, marital status of parents, and amount of exercise per day and week.

STILAP (1990)

For the purpose of this study, the leisure preferences of anorexic and bulimic teenage girls needed to be assessed. The STILAP (State Technical Institute's Leisure Assessment Process) was updated in 1990 by Nancy Navar, CTRS, and joan burlingame, CTRS, from the original version written in 1974 by Nancy Navar, CTRS, and Carol Peterson, CTRS. It was originally developed for the Michigan area. Practitioners are free to change the activities to suit a specific region or culture.

The STILAP (1990) lists 123 leisure *activities* which fall under 14 leisure competency areas. The 'M' standing for much of the time and the 'S' standing for some of the time were combined. The STILAP contains 14 leisure competency areas (appendix B). The activities do not accommodate specific disabilities but have been successfully used for clients who are physically, behaviorally, and learning disabled;

visually, hearing, and emotionally impaired; substance abusers; and legal offenders. The assessment consists of approximately 130 leisure activities. Beside each activity are the letters M, S, and I.

The client circles the letter which best corresponds with their level of participation in the activity with M meaning Much (activities you participate in regularly such as daily, every other day, or when in season), S meaning Sometimes (activities you have done but not on a regular basis), and I meaning Interested (activities you would like to learn).

The formal validation of either the 1974 or the 1990 version of this assessment have not been established (burlingame and Blaschko, 1997).

Commitment of Exercise Scale

This is an eight item questionnaire designed to assess a person's psychological commitment to exercise (Appendix C). It assesses how much a person's feeling of well-being are influenced by exercising, how much they stay with their exercise routine when they are faced with adverse conditions, and to what extent the exercise interferes with social situations.

The scale was developed by Davis, Brewer, and Rutusny (1993) for their study on the Behavioral Frequency and Psychological Commitment: Necessary Concepts in the Study of Excessive Exercising. An examination of published case studies of men and women who over exercise were used to develop the scale. Each item on the scale reflects the attitudes and behaviors of the over-exercisers.

A horizontal line that is 155 mm in length is below each question. Appropriate adjectives such as never and always are placed at the beginning and end of each line. Subjects mark the point on the line which best describes how they feel about the question.

The distance from the beginning of the line to the mark measures the score for the participant.

The developers of this questionnaire reported a Cronbach's alpha coefficient for the scale as .77 (Davis, Brewer, and Rutusny, 1993).

Study Variables

The dependent variables are the scores on the surveys. The independent variables are the anorexia nervosa status, the bulimia nervosa status, and the control group status.

Data Analysis

T-test, means, standard deviation, and percentages were done on Excel. Descriptive statistics were calculated to report characteristics of the sample of the study.

The responses of M (much) and S (some) were combined for the STILAP in order to show activities where participation takes place even if it is not all the time.

The percentage of participation was figured in each competency area. The percentage of total reported participation for all activities per group for each competency are was figured by taking the number of responses and dividing that by the number of activities in each competency area multiplied by the number of participants.

In the text of the paper, the leisure competency areas and activities are shown in which there was at least 50% participation by one or both of the groups. This will show the areas where there is a significant amount of participation. Appendix D shows the participation for all the activities in all of the competency areas.

Activities where I, interested in learning more about an activity the has or has not been participated in previously, was marked at least 33% of the time in one or both groups will be shown to report the differences or similarities between the two groups.

CHAPTER 3
The Results

Results

This section includes the results of analysis of respondents to the surveys. The characteristics of the participants used and analysis of their responses are covered. Also, mean t-test which examine the relationship between each group for STILAP competency areas and commitment to exercise. Analysis are presented for each research question based on specific responses.

Participant Characteristics

Six teenage females in treatment and 18 in the control group responded to the surveys. Mean age for AN/BN group was 15.8 and 15.9 for the control group. Anorexic and bulimic females reported that they spend an average of 6.2 days per week exercising for an average of 1.25 hours per day. The control group reported exercising an average of 2.6 days per week for 0.8 hours per day. Table 1 contains the demographic information of both groups.

Research Objective #1

To determine if the leisure competency areas of anorexic and bulimic teenage females differ from the females in the control group.

Table 2 shows the overall participation of both groups in each of the 14 competency areas. Table 3 breaks down each competency area into specific activities and shows the participation for the groups. The activities in which 50% or higher participation are reported with the combining of M (participate in much of the time) and S (participate in some of the time) are listed there. A complete list of activities is in Appendix D.

Table 1 *Demographic Information: ANBN (n=6), Control Group (n=18)*

	AN/BN	**Control Group**
1. Age (years)	Mean =14.8	Mean = 15.9
	Range =14-17	Range = 14.18
2. Grade in School	Mean = 10	Mean = 10.2
	Range = 9-11	Range = 9-12
3. Age of Onset (years)	Mean = 13.3	
	Range = 12-14	
4. Is this first time in treatment	yes=5	
	no=1	
5. If not, how many other times in Treatment	1	
6. Parents married, divorced, or single	M=2	M=10
	D=3	D=5
	S=1	S=3
7. Days a week exercise	Mean = 6.2	Mean = 2.6
	Range = 5-7	Range = 0-6
8. Hours a day exercise	Mean = 1.25	Mean = 0.8
	Range = 1-1.5	Range = 0-2

Table 2 *Total Reported Participation for all Activities per Group per Competency Area*

Competency Areas	Control Group Total	Control Group %	AN/BN Total	AN/BN %
A. Physical Skills Done Alone	168	26%	48	22%
B. Physical Skills Done with Others, Regardless of Skill Level	154	27%	45	23%
C. Physical Skills Needing 1/More Others	92	26%	19	16%
D. Activities Dependent on Outdoor Environment	111	25%	23	15%
E. Physical Skills Not Seasonal	126	25%	39	23%
F. Physical Skills with Carryover Opportunities for Later Years	176	25%	48	21%
G. Physical Skills with Carryover Opportunities and Vigorous Enough for Cardiovascular Fitness	93	32%	30	31%
H. Mental Skills Participated in Alone	146	43%	26	23%
I. Mental Skills Needing 1/More Others	39	17%	6	8%
J. Appreciation Skill or Interest Area That Allows for Emotional/Mental Stimulation Through Observation/Passive Response	95	48%	6	9%
K. Skill That Enables Creative Construction or Self-Expression Through Object Manipulation, Sound or Visual Media	58	15%	10	8%
L. Skill Which Enable Enjoyment or Improvement of the Home	100	24%	21	15%
M. Physical or Mental Skill Enabling Participation in a Social Situation	97	34%	11	11%
N. Leadership and/or Interpersonal Skill Which Enable Community Services	30	17%	1	2%

Table 3 *Results for STILAP Competency Areas with 50% or Higher Participation in the Activity (M and S combined)*

Competency Areas	Activities	Control n=18	AN/BN n=6
A. Physical Skills Done Alone	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Miniature Golf	10	0
	Hiking	9	3
	Golf	8	4
	Darts	5	3
	Yoga	4	3
	Relaxation Techniques	3	3
B. Physical Skill Done with Others, Regardless of Skill Level			
	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Miniature Golf	10	0
	Hiking	9	3
	Golf	8	4
	Darts	5	3
	Yoga	4	3
	Relaxation Techniques	3	3
C. Physical Skill Requires 1 or More Others	Volleyball	12	4
	Basketball	12	4
	Social Dancing	11	1
	Football	10	1
	Softball/Baseball	10	1
	Tennis	8	3
	Squash	2	3
D. Activities Dependent on Outdoor Environment			
	Biking	13	5
	Football	10	1
	Softball/Baseball	10	1
	Mini Golf	10	0
	Hiking	9	3
	Golf	8	4

Competency Areas	Activities	Control n=18	AN/BN n=6
E. Physical Skill Not Considered Seasonal	Physical Fitness	14	6
	Jogging, Running	13	6
	Volleyball	12	4
	Basketball	12	4
	Social Dancing	11	1
	Swimming	11	0
	Tennis	8	3
	Darts	5	3
	Yoga	4	3
	Relaxation Techniques	3	3
	Squash	2	3
F. Physical Skill with Carryover Opportunities for Later Years			
	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Mini Golf	10	0
	Hiking	9	3
	Golf	8	4
	Tennis	8	3
	Darts	5	3
	Yoga	4	3
	Relaxation Techniques	3	3
G. Physical Skills with Carryover Opportunity and Vigorous Enough for Cardiovascular Fitness			
	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Hiking	9	3
	Tennis	8	3
	Yoga	4	3
H. Mental Skills Participated in Alone	Listening to Music	17	1
	Watching T.V.	15	3
	Theater (movies, plays)	15	1
	Dieting, Nutrition	13	6
	Reading	9	3
	Relaxation Techniques	3	3

Competency Areas	Activities	Control n=18	AN/BN n=6
J. Appreciation Skill or Interest Area That Allows for Emotional/Mental Stimulation Through Observation/Passive Response			
	Listening to Music	17	1
	Watching T.V.	15	3
	Theater (movie/play)	15	1
	Watching Basketball	8	0
	Traveling	8	0
	Watching Football	7	0
	Watching Baseball	7	0
	Watching Other Sports	7	0
	Art Appreciation	6	1
	Touring	4	0
	Sweepstakes, Lottery	1	0
L. Skill Which Enable Enjoyment or Improvement of the Home Environment			
	Pets	14	1
	Dieting, Nutrition	13	6
	Mini Golf	10	0
	Golf	8	4
	Darts	5	3
M. Physical or Mental Skill Enabling Participation in a Predominantly Social Situation			
	Party Going	14	1
	Social Dancing	11	1
	Mini Golf	10	0
	Member School Group	9	0
	Golf	8	4
	Darts	5	3
N. Leadership and/or Interpersonal Skill Which Enables Community Service	Member School Group	9	0

A large difference in the percentage of participation was seen in the competency areas the involved Mental Skills Participated in Alone (area H), Appreciation Skill or Interest Area That Allows for Emotional/Mental Stimulation Through Observation/Passive Response (area J), Physical or Mental Skills Enabling Participation in a Predominately Social Situation (area M), and Leadership and/or Interpersonal Skill Which Enables Community Service (Area N). A smaller but noticeable difference was seen in the areas of Physical Skill Requiring 1 or More Others (Area C) and Activities Dependent on Outdoor Environment (Area D). In all of these competency areas, the control group had a higher percentage of participation.

When looking at each activity in each competency area, many differences were found. Physical activities such as jogging, running, physical fitness, yoga, and biking were participated in much more by anorexic and bulimic teenage girls than by the control group. However, swimming was not included with these exercises. These physical activities were included in three of the leisure competency areas. The areas are 1) Area A - physical skill that can be done alone, 2) Area B - physical skill that can be done with others regardless of skill level, and 3) Area E -physical skill not considered seasonal.

Social activities is another area where a difference was seen. AN and BN girls do not participate in social activities such as social dancing or party going as much as the control group did. They also were not in as many groups and clubs as the control group.

Swimming showed a variance in the number of participants. Water activities were participated in more by the control group than the anorexic and bulimic group.

Activities that produce emotional or mental stimulation were rated as higher participation by the control group. They watch more television and had a higher interest in music and the theater.

A large difference was also seen in outdoor activities. Golf, miniature golf, softball/baseball, hiking, and biking were all participated in more by the control group than the anorexic and bulimic group. However, tennis was participated in more by the anorexic and bulimic group.

Interest in learning about different activities was also shown by both groups in many areas. Table 4 shows the areas where at least 33% of the anorexic and bulimic group were interested while Table 5 shows the interest of the control group.

The two groups showed a common interest in learning about seven activities. They are yoga, relaxation techniques, backpacking, cross country skiing, judo, meditation, and photography. The anorexic and bulimic group displayed interest in outdoor activities (backpacking, cross country skiing, bird watching, orienteering, camping, and boating) while they did not show much participation in them on a regular basis. Listening to music, art appreciation, and theater are areas interest lie. They also showed interest physical activities such as squash and handball.

The control group showed interest in arts and crafts activities such as jewelry making, pottery, and ceramics.

Table 4 *Activities where at least 33% of Anorexic and Bulimic Group Displayed Interest*

Activity	AN/BN Interest n=6	AN/BN Interest %
Yoga	3	50%
Relaxation Techniques	3	50%
Darts	2	33%
Sailing	2	33%
Listening to Music	2	33%
Art Appreciation	3	50%
Theater	2	33%
Bridge	2	33%
Jewelry Making	2	33%
Boating	2	33%
Trailer Camping	2	33%
Backpacking	2	33%
Cross Country Skiing	2	33%
Bird Watching	2	33%
Judo, Self-Defense	3	50%
Handball	2	33%
Squash	2	33%
Meditation	2	33%
Singing	2	33%
Photography	2	33%
First Aid Certification	2	33%
Life Saving Certification	2	33%
Member of a Church	2	33%
Member of a School Group	3	50%
Member Community Group	2	33%

Table 5 *Activities where at least 33% of Control Group Displayed Interest*

Activity	**Control Group Interest n=18**	**Control Group Interest %**
Yoga	9	50%
Relaxation Techniques	9	50%
Canoeing	6	33%
Jewelry Making	9	50%
Pottery	10	55%
Ceramics	7	38%
Guitar Playing	7	38%
Backpacking	9	50%
Cross Country Skiing	6	33%
Ice Fishing	9	50%
Judo, Self-Defense	13	72%
Meditation	7	38%
Photography	11	61%
Gardening	7	38%
Volunteer Work	6	33%
Water Skiing	6	33%
Scuba Diving	10	55%

Hypothesis #1-Anorexic and bulimic teenage girls will report that there leisure competency areas revolve around physical activities more than those who are not diagnosed with anorexic or bulimia.

This is the case when the individual activities in each competency area are looked at separately. The AN/BN group participated in traditional physical activities more that the control group. This is true for jogging and running where six out of six (100%) of the anorexic and bulimic group participated and only 13 out of 18 or 72% of the control group participated. The same is true for physical fitness with six out of six for the AN/BN group and 14 out of 18 (78%) of the control group. Yoga was three out of 6 (50%) compared to four out of 18 (22%) and biking was five of six or 83% compared to 13 of 18 or 72 %. However, swimming was zero out of six for the anorexic and bulimic group and 11 out of 18 (61%) for the control group.

The control group participated more in social activities than the AN/BN group. Sixty-one percent (11 of 18) of the control group participated in social dancing whereas only 16% (1 out of 6) of the AN/BN does the same. A large difference was also seen in party going with 78% (14 of 18) of the control group participating in this leisure activity and none of the anorexic and bulimic.

Research Objective #2

To determine if the level of commitment to exercise differs between Anorexic and Bulimic teenage females and a control group of the same age.

The mean score, standard deviation, and t-statistic were calculated and combined of the questions on the Commitment to Exercise Scale (Table 6). The maximum score

for each question was 144mm. The mean scores for the anorexic and bulimic group were much higher for each question than the scores for the control group.

The standard deviation was much greater for the control group than for the anorexic and bulimic group showing a greater range of commitment to exercise for the group who has not been diagnosed with anorexia or bulimia.

The t-statistic comparing the answers for each question separately showed that the difference between the two groups commitment to exercise was significant.

In the original study using the Commitment to Exercise Scale conducted by Davis, Brewer, and Ratusny (1993), the female group of the general population showed a mean score of 61.5mm. This is comparable to the mean score of the control group which was 60.7mm.

Hypothesis #2*=Anorexic and bulimic respondents will report that they are more committed to exercise than the control group.*

Results indicate that anorexic and bulimic teenage females were significantly more dedicated to exercise. They were more upset if they miss a session, make up more sessions. have set routines, and exercised when they were tired, unwell, or injured. AN/BN females also felt guilty when missing sessions and will turn down social invitations in order to exercise. Also, they feel guilty when missing sessions and will turn down social invitations in order to exercise more than the control group.

A t-test was performed on each question of the Commitment to Exercise Scale and significance figured (Table 7). Each question showed a significance of $p<0.05$.

Table 6 *Overall Commitment to Exercise Results by Group*

	AN/BN n=6	Control n=18	t-stat	Sig. Level
Mean	113.5 mm	60.7mm	13.2	0.01
Standard Error	2.2mm	3.3mm		
Standard Deviation	15.5mm	39.7mm		
Minimun	89.0mm	0		
Maximun	143.0mm	140.0mm		

Table 7 T-Test Results For Individual Commitment To Exercise Scale In mm.

	Control Group		AN/BN Group			
Questions	**Mean**	**SD**	**Mean**	**SD**	**T-Stat**	**Sig.**
1. How important do you think it is to your general well-being not to miss your exercise session?	79.3	37.9	114.5	21.1	-2.15	0.02*
2. Does it upset you if, for one reason or another, you are unable to exercise?	57.6	41.6	115.5	17.5	-3.35	0.01*
3. If you miss an exercise session, or several sessions, do you try to make them up by putting in more time?	63.4	37.2	117.3	17.7	-3.39	0.01*
4. Do you have a set routine for your exercise session, e.g. time of day, location, laps, exercise?	58.7	40.5	113.3	14.5	-3.20	0.02*
5. Do you continue to exercise at times when you feel tired or unwell?	59.4	41.6	116.0	15.5	-3.12	0.01*
6. Do you continue to exercise even when you have an exercise-related injury?	59.5	40.1	111.5	16.6	-2.56	0.01*
7. Do you feel guilty that you have let yourself down when you miss?	67.6	37.0	109.7	15.7	-2.68	0.01*
8. Are there times when you turn down an invitation to an interesting social event because it interferes with exercise routine?	39.8	38.8	109.2	12.3	-4.24	0.01*

Signifcance <0.05*

CHAPTER 4
The Discussion

This chapter is a summary of the research and the conclusions which were derived from the study. The discussion also focuses on the limitations of the study and the implications of the information gathered as they relate to the leisure activities participated in, commitment to exercise, and future research.

Summary of Research

The purpose of this study was to look at the leisure activities participated in by anorexic and bulimic teenage girls to see if physical activities were dominant and to evaluate these girls commitment to exercise.

As a result of this study, it is evident that AN/BN girls participate more in traditional physical activities such as jogging, running, and biking. It is also apparent that they do not participate in social activities such as dancing and going to parties as much as other girls of the same age. Commitment to exercise is also much stronger for the AN/BN group when compared to there counterparts. When looking at the frequency of girls who participate in physical exercise, it shows that most teenage girls engage in these activities. However, anorexic and bulimic girls participate more. Also, the t-test performed on the questions on the Commitment to Exercise Scale showed a significant difference between the scores of each group. These general conclusions are arrived at from the results of the two questionnaires distributed.

Discussion

The participants in both groups represent a local sample of individuals with and without eating disorders. Since the sample size was small, it may not be appropriate to generalize these results to everyone who has anorexia or bulimia. However, the study

does begin to identify leisure areas anorexic and bulimic teenage girls participate in often and those they do not participate in enough.

Research Objective #1 – To determine if the leisure competency areas of anorexic and bulimic teenage girls differ from those girls in the control group.

When looking at the 14 leisure competency areas on the STILAP (1990), only a small difference was seen between the two groups. The main differences were seen in the specific areas dealing leadership opportunities and activities that involve mental or emotional stimulation. However, it is more interesting to look at the individual activities under each competency area.

When looking at activities such as swimming, boating, and waterskiing, the AN/BN group does not participated in these activities which may involve wearing a swimsuit. For boating, 7 out of 18 of the control group and only 1 out of 6 for the AN/BN group participate. Swimming and waterskiing have 11 and 6 out of 18 respectively for the control group who participate and the control group has none. This could be the case because many women are dissatisfied with their bodies even though they are physically fit (Finkerberg et al., 1993).

Characteristics of individuals with eating disorders include depressed mood and social withdrawl (DSM-IV). Anorexic and bulimic teenage girls in this study did not report involvement in clubs (church, school, or community). They also do not attend social gatherings such as parties and do not socially dance. Other activities not participated in as much are miniature golf, drama, and crafts. Anxiety, perfectionism, borderline tendencies, and narcissism are all characteristics found in AN/BN girls (Davis, 1997). This could be a factor in the lack of socialization found in the girls.

Hypothesis #1 – Anorexic and bulimic teenage girls report that their leisure competency areas and preferences revolve around physical activities more than those who do not have AN or BN.

Anorexic and bulimic teenage girls participate in activities less than the control group in areas involving mental skills, emotional and mental stimulation, predominately social situations, and leadership opportunities than the control group does. Physical activities such as jogging, running, biking, and yoga were participated in more by the anorexic and bulimic group.

Research Objective #2 – To determine if the level of commitment to exercise differ between AN/BN teenage girls and the control group.

A significant difference was found in each question on the Commitment to Exercise Scale. The AN/BN group reported they are more upset if they miss a session, make up more sessions, have more set routines, and exercise when they are tired, unwell, or injured. Stress factors and structural damage to joints are effects of this commitment to exercise (Schocken et al., 1989). AN/BN girls will exercise through these problems. Also, their obsessive compulsive personalities (DSM IV) come into play with this commitment. Ritualism is also shown with the set routine of exercise (number of laps, time of day, order of exercises).

Hypothesis #2 – AN and BN respondents will report that they are more committed to exercise than the control group.

The anorexic and bulimic group report they are more committed to exercise, will exercise more if they are injured or hurt, feel upset more if they miss exercising, make up more exercise sessions, and will interrupt or miss social situations in order to exercise. A

greater dedication is shown by the AN/BN group than the control group. The difference on each question on the Commitment to Exercise Scale showed a significant difference of $p<0.05$. When comparing the means of the overall commitment, it was also significant to a $p<0.05$ level.

Implications for Recreational Therapy

Therapeutic Recreational Specialists (TRS) deal with individuals daily who have physical or psychological disabilities. Their job is to help people deal with disabilities and develop well-rounded leisure lifestyles.

Treatment for eating disorders should involve recreational therapy to provide activities and for leisure education to regulate daily recreational activities after treatment.

> "Obviously, issues related to consumption and the use of physical activity, such as obsessive exercising, are directly related to recreation and leisure behavior. The socio-cultural emphasis on thinness is directly reflected in the marketing of sports, recreation and fitness programs, as well as other consumptive leisure behaviors such as clothes shopping. Therapeutic recreation with eating disorders uses activity as treatment – enabling symptoms of the disorder to be exposed, confronted and reconstructed through the activity. Creative and expressive pursuits are particularly useful. Such modalities provide effective substitutes for forms of expression than actual words" (Wolf et al, 1986).

It is important to explore leisure attitudes and behaviors in order to be able to use leisure in a satisfying way. Steve Sumpter (1989), director of rehabilitation services at Capistrano by the Sea Hospital in California describes the need by saying "It's quite common among eating disorder or chemically dependent patients to have forgotten how

to enjoy spare time. Obsessive thoughts of food or drugs preoccupy their leisure activity. A big part of treatment is retraining people to develop healthy and constructive leisure" (p. 3).

A program needs to combine leisure counseling and education with skills development. Activities should be approached in a relaxed way to help participants improve their obsessive attitudes about perfection. Sessions should include topics such as assertiveness training, stress management, relaxation techniques, leisure planning, exercise, and expressive activities such as art and music. Therapists should encourage participation in activities that require a loss of control of the situation. Outings in the community should be planned.

A lack of participation in outdoor activities was recorded in this study, but a large interest in learning about them was also indicated. A program could include experiences in outdoor activities such as camping, hiking, and boating.

Assessments should be done when people enter into treatment programs to evaluate the activities they participate in, their awareness of their leisure lifestyle, and what they value in their free time. "Understanding leisure related characteristics of bulimia may be useful to clinicians in several aspects. The practitioner is better informed about the personal attributes and areas of leisure deficit of bulimic individuals. Based on this knowledge, comprehensive leisure programs or the addition of a leisure component to existing treatment approaches may be implemented" (Kaufman et al., 1988). Leisure counseling should include discussion sessions, values clarification, listing available resource and self-assessment. Participants should plan leisure activities that interest them and then follow through by actually participating.

Evaluations on the participants should be done during and after the length of participation. Modifications can be done to individual treatments when this is done.

Leisure education could also take place in the school systems or the community before the onset of anorexia or bulimia to try to prevent its occurrence. These programs may enhance leisure functioning and quality of life.

Limitations

The predominant limitation of this study is the fact that the instruments were self-report surveys. Self-report surveys rely on accuracy of recalling how committed a person is to exercise and the accuracy of how often do they really participate in these activities. It is also done as a one day assessment and subject to the participants mood for that particular day.

A limitation of STILAP is that participation in only one activity in a competency area counts as participation in that area and may be a misrepresentation of how much participation actually takes place in that area.

Another limitation is that the AN/BN girls had already began treatment. This may alter their answers on the surveys.

The small number of participants is also a limitation. A higher number may yield a different answer. The participants were all from the same area which could affect the outcome.

However, despite the limitation, the results suggest implications for future research on the leisure interest of anorexic and bulimic teenage girls and on methods for treatment and leisure education.

Implications for Future Research

The results of this study suggest a need to continue to evaluate the leisure activities on anorexic and bulimic teenage girls or even girls younger than the average age of onset.

Individual activities should be looked at to determine exactly what kind of activities are and are not participated in. The leisure activities that are lacking should be introduced in therapy or the school system. Evaluation of leisure lifestyle after this is done should take place to see if a difference is seen.

Also, commitment to exercise should be evaluated on these girls before and after leisure education takes place.

Research to compare self-esteem and self-confidence and the acquisition of a balanced leisure life should be done.

Summary

With society and the media placing an emphasis on thinness (Shore and Porter, 1990) and the association of thinness with attractiveness and self-worth (Finkenberg et al., 1993), eating disorders has become commonplace (Robin et al., 1985).

The number of teenage girls affected by anorexia or bulimia has increased steadily over the last 40 years (Lucas et al., 1991). These girls suffer from many complications associated with their eating disorders. They also have physical injuries due to the excessive amount of exercise.

Anorexic and bulimic teenage girls participate in leisure activities that involve physical skills than activities that are social, have carryover for later years, provide leadership opportunities, and have emotional or mental stimulation. The leisure lives of

these girls is not balance. They are overly committed to exercise and will do so even when they are ill or tired. They also will miss social opportunities in order to exercise more than girls the same out but without eating disorders. Anorexic and bulimic girls do not participate in activities such as swimming, boating, or waterskiing or activities that put them on display such as drama.

Leisure education needs to help these girls develop more balanced leisure lifestyles to help them deal with their eating disorders. The introduction of new activities can help anorexic and bulimic girls to lead more enjoyable and healthier lives.

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APPENDIX A

Please fill out the following demographic information about yourself. All information will remain anonymous. Do not put your name on the sheet.

Age_____

Grade in School_____

Have you ever been diagnosed with anorexia or bulimia?_____
If so, what was your age of onset?_____

Is this your first time in treatment?_____
If not, how many other times have you been in treatment?_____

Are your parents married, single, or divorced?_____

How many days a week do you exercise?_____
How long is your exercise session per day?_____

APPENDIX B

STILAP (1990)
State Technical Institute's Leisure Assessment Process

Purpose: The purpose of the STILAP is to help the client/patient achieve a balanced leisure lifestyle.

DIRECTIONS: Below is a list of various leisure activities.
Circle 'M' (much) for those activities you participate in regularly (daily, every other day, when in season, etc.)
Circle 'S' (sometimes) for those activities you have done but not on a regular basis
Circle 'I' (interested) for those activities you would like to learn (you may or may not have done these before, but you are still interested in learning more about the activity)

M S I 1. Pool, Billiards, Snooker
M S I 2. Dieting, Nutrition
M S I 3. Bowling
M S I 4. Roller Skating
M S I 5. Archery

M S I 6. Riflery
M S I 7. Shuffleboard
M S I 8. Pin Ball Playing
M S I 9. Ice Skating
M S I 10. Auto Mechanics

M S I 11. Jogging, Running
M S I 12. Physical Fitness (exercises)
M S I 13. Yoga
M S I 14. Relaxation Techniques, Isometrics
M S I 15. Darts

M S I 16. Horse Shoes
M S I 17. Horseback Riding
M S I 18. Miniature Golf
M S I 19. Golf
M S I 20. Hunting

M S I 21. Biking
M S I 22. Motorcycling
M S I 23. Sailing
M S I 24. Canoeing
M S I 25. Boating

M S I 26. Trailer Camping
M S I 27. Tent Camping
M S I 28. Backpacking
M S I 29. Orienteering (map & compass)
M S I 30. Cross Country Skiing

M S I 31. Tobagganing
M S I 32. Snow Skiing (downhill)
M S I 33. Snow Shoeing
M S I 34. Fishing
M S I 35. Ice Fishing

M S I 36. Hiking
M S I 37. Bird Watching
M S I 38. Football
M S I 39. Softball/Baseball
M S I 40. Frizbee

M S I 41. Judo, Self-Defense
M S I 42. Table Tennis (Ping Pong)
M S I 43. Paddleball, Racquetball
M S I 44. Handball
M S I 45. Squash

M S I 46. Tennis
M S I 47. Badminton
M S I 48. Deck Tennis
M S I 49. Volleyball
M S I 50. Basketball

M S I 51. Ice Hockey, Hockey
M S I 52. Meditation
M S I 53. Jigsaw Puzzles
M S I 54. Crossword Puzzles
M S I 55. Reading

M S I 56. Watching Football
M S I 57. Watching Baseball
M S I 58. Watching Basketball
M S I 59. Watching Other Sports
M S I 60. Watching T.V.

Client's Name	Physician	Admit #	Room/Bed

DIRECTIONS: Below is a list of various leisure activities.
Circle 'M' (much) for those activities you participate in regularly (daily, every other day, when in season, etc.)
Circle 'S' (sometimes) for those activities you have done but not on a regular basis
Circle 'I' (interested) for those activities you would like to learn (you may or may not have done these before, but you are still interested in learning more about the activity)

M S I 61. Touring
M S I 62. Traveling
M S I 63. Listening to Music
M S I 64. Art Appreciation
M S I 65. Theater (movies or plays)

M S I 66. Party Going
M S I 67. Backgammon
M S I 68. Checkers
M S I 69. Dominos
M S I 70. Other Table Games

M S I 71. Cribbage
M S I 72. Bridge
M S I 73. Chess
M S I 74. Euchre
M S I 75. Hearts

M S I 76. Poker
M S I 77. Other Card Games
M S I 78. 'Ham' Radio Operating ('CB')
M S I 79. Writing
M S I 80. Leather Crafts

M S I 81. Jewelry Making
M S I 82. Pottery/Ceramics
M S I 83. Ceramics (molds)
M S I 84. Horn Playing
M S I 85. Guitar Playing

M S I 86. Other Musical Instruments
M S I 87. Ballroom Dancing
M S I 88. Social Dancing
M S I 89. Square Dancing
M S I 90. Drawing, Painting

M S I 91. Collecting Items (coins, stamps, etc.)
M S I 92. Singing
M S I 93. Participation in Drama Production
M S I 94. Macrame
M S I 95. Photography

M S I 96. Batik (wax fabric dyeing)
M S I 97. Lapidary (rock polishing)
M S I 98. Copper Enameling
M S I 99. String Art
M S I 100. Sewing, Needle Point, Crewel, etc.

M S I 101. Knitting, Crocheting
M S I 102. Other Crafts
M S I 103. Baking, Cooking
M S I 104. Canning
M S I 105. House Plants

M S I 106. Gardening
M S I 107. Wood Refinishing
M S I 108. Wood Working
M S I 109. Pets
M S I 110. Sweepstakes, Lottery

M S I 111. Basketball Officiating
M S I 112. Softball Officiating
M S I 113. Volleyball Officiating
M S I 114. First Aid Certification
M S I 115. Life Saving Certification

M S I 116. Member of a Church
M S I 117. Member of a School Club
M S I 118. Member of a Community Organization, Politics
M S I 119. Signing Group, Deaf Sign Language
M S I 120. Volunteer Work

M S I 121. Swimming
M S I 122. Water Skiing
M S I 123. Skin Diving, Scuba Diving
M S I 124.
M S I 125.

M S I 126.
M S I 127.
M S I 128.
M S I 129.
M S I 130.

STILAP (1990) PROFILE SCORE SHEET

Client's Name	Physician	Admit #	Room/Bed

Client's Name

Physician

Admit #

Room/Bed

STILAP (1990) COMPETENCY SUMMARY

Enter color codes here:	M	S	Interest Areas	Prescription Choice
A. Physical Skill That Can Be Done Alone				
B. Physical Skill That S/he Can Participate with Others, Regardless of Skill Level				
C. Physical Skill That Requires the Participation of One or More Others				
D. Activity Dependent on Some Aspect of the Outdoor Environment				
E. Physical Skill Not Considered Seasonal				
F. Physical Skill With Carryover Opportunity for Later Years				
G. Physical Skill With Carryover Opportunity and Vigorous Enough for Cardiovascular Fitness				
H. Mental Skill Participated in Alone				
I. Mental Skill Requiring One or More Others				
J. Appreciation Skill or Interest Area Which Allows for Emotional or Mental Stimulation Through Observation or Passive Response				
K. Skill Which Enables Creative Construction or Self-expression Through Object Manipulation, Sound, or Visual Media				
L. Skill Which Enables Enjoyment/Improvement of the Home Environment				
M. Physical or Mental Skill Which Enables Participation in a Predominantly Social Situation.				
N. Leadership and/or Interpersonal Skill Which Enables Community Service				
O. Other				

ASSESSMENT SUMMARY STATEMENT:

RECOMMENDATIONS:

APPENDIX C

Commitment to Exercise Scale

Developed by:
Caroline Davis, Howard Brewer, and Dorothy Ratusny

Instructions: The following are statements describing attitudes to exercise. Please respond by marking on the line beside each statement the point on the line which best describes your position on the continuum.

1. How important do you think it is to your general well-being not to miss your exercise sessions?

✞ ✞
not at all very

2. Does it upset you if, for one reason or another, you are unable to exercise?

✞ ✞
never upset always upset

3. If you miss an exercise session, or several sessions, do you try to make them up by putting in more time when you get back?

✞ ✞
never always

4. Do you have a set routine for your exercise sessions, e.g. the same time of day, the same location, the same number of laps, particular exercises, and so on?

✞ ✞
no routine strict routine

5. Do you continue to exercise at times when you feel tired or unwell?

✞ ✞
never always

6. Do you continue to exercise even when you have sustained an exercise-related injury?

✞ ✞
never always

7. Do you feel "guilty" that you have somehow "let yourself down" when you miss your exercise session?

✞ ✞
not at all a great deal

8. Are there times when you turn down an invitation to an interesting social event because it interferes with your exercise schedule?

✞ ✞
never always

APPENDIX D

Frequency of Activities Participated in Under Each Competency Area

Competency Areas	Activities	Control n=18	AN/BN n=6
A. Physical Skills Done Alone	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Miniature Golf	10	0
	Hiking	9	3
	Golf	8	4
	Snow Skiing	8	2
	Roller Skating	7	0
	Boating	7	1
	Bowling	6	0
	Horseback Riding	6	1
	Fishing	6	1
	Gardening	6	2
	Pool, Billiards	5	0
	Darts	5	3
	Tent Camping	5	0
	Yoga	4	3
	Backpacking	4	2
	Relaxation Techniques	3	3
	Canoeing	3	1
	Trailer Camping	3	0
	Cross Country Skiing	3	0
	Archery	2	0
	Sailing	2	1
	Tobagganing	2	0
	Shuffleboard	1	0
	Ice Skating	1	1
	Horseshoes	1	0
	Riflery	0	0
	Auto Mechanics	0	1
	Hunting	0	0
	Motorcycling	0	1
	Orienteering	0	0
	Snow Shoeing	0	0
	Ice Fishing	0	0

Competency Area	Activities	Control n=18	AN/BN n=6
B. Physical Skill Done with Others, Regardless of Skill Level			
	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Miniature Golf	10	0
	Hiking	9	3
	Golf	8	4
	Snow Skiing	8	2
	Roller Skating	7	0
	Boating	7	1
	Horseback Riding	6	1
	Fishing	6	1
	Bowling	6	0
	Darts	5	3
	Tent Camping	5	0
	Yoga	4	3
	Backpacking	4	2
	Relaxation Techniques	3	3
	Canoeing	3	1
	Trailer Camping	3	0
	Riflery	2	0
	Sailing	2	1
	Tobagganing	2	0
	Shuffleboard	1	0
	Ice Skating	1	1
	Horseshoes	1	0
	Auto Mechanics	0	1
	Hunting	0	0
	Motorcycling	0	1
	Orienteering	0	0
	Snow Shoeing	0	0
	Ice Fishing	0	0

Competency Area	Activities	Control n=18	AN/BN n=6
C. Physical Skill Requires 1 or More Others	Volleyball	12	4
	Basketball	12	4
	Social Dancing	11	1
	Football	10	1
	Softball/Baseball	10	1
	Tennis	8	3
	Water Skiing	6	0
	Frizbee	5	0
	Table Tennis	4	0
	Ice Hockey	4	1
	Deck Tennis	3	0
	Squash	2	3
	Badminton	2	0
	Bird Watching	1	0
	Judo, Self-Defense	1	0
	Square Dancing	1	0
	Paddleball, Racquetball	0	0
	Handball	0	1
	Ballroom Dancing	0	0
	Skin/Scuba Diving	0	0

Competency Areas	Activities	Control n=18	AN/BN n=6
D. Activities Dependent on Outdoor Environment			
	Biking	13	5
	Football	10	1
	Softball/Baseball	10	1
	Mini Golf	10	0
	Hiking	9	3
	Golf	8	4
	Snow Skiing	8	2
	Boating	7	1
	Fishing	6	1
	Water Skiing	6	0
	Tent Camping	5	0
	Backpacking	4	2
	Canoeing	3	1
	Trailer Camping	3	0
	Cross Country Skiing	3	0
	Deck Tennis	3	0
	Sailing	2	1
	Tobagganing	2	0
	Bird Watching	1	0
	Hunting	0	0
	Motorcycling	0	1
	Orienteering	0	0
	Snow Shoeing	0	0
	Ice Fishing	0	0
	Skin/Scuba Diving	0	0

Competency Area	Activities	Control n=18	AN/BN n=6
E. Physical Skill Not Considered Seasonal	Physical Fitness	14	6
	Jogging, Running	13	6
	Volleyball	12	4
	Basketball	12	4
	Social Dancing	11	1
	Swimming	11	0
	Tennis	8	3
	Roller Skating	7	0
	Bowling	6	0
	Pool, Billiards	5	0
	Darts	5	3
	Yoga	4	3
	Table Tennis	4	0
	Relaxation Techniques	3	3
	Archery	2	0
	Squash	2	3
	Badminton	2	0
	Shuffelboard	1	0
	Ice Skating	1	1
	Bird Watching	1	0
	Judo, Self-Defense	1	0
	Square Dancing	1	0
	Riflery	0	0
	Auto Mechanics	0	1
	Orienteering	0	0
	Paddleball, Racquetball	0	0
	Handball	0	1
	Ballroom Dancing	0	

Competency Area	Activities	Control n=18	AN/BN n=6
F. Physical Skill with Carryover Opportunities for Later Years			
	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Mini Golf	10	0
	Hiking	9	3
	Golf	8	4
	Tennis	8	3
	Roller Skating	7	0
	Boating	7	1
	Bowling	6	0
	Horseback Riding	6	1
	Fishing	6	1
	Gardening	6	2
	Darts	5	3
	Pool, Billiards	5	0
	Tent Camping	5	0
	Yoga	4	3
	Backpacking	4	1
	Table Tennis	4	0
	Relaxation Techniques	3	3
	Canoeing	3	1
	Trailer Camping	3	0
	Cross Country Skiing	3	0
	Deck Tennis	3	1
	Archery	2	0
	Sailing	2	1
	Badminton	2	0
	Shuffleboard	1	0
	Ice Skating	1	1
	Horse Shoes	1	0
	Bird Watching	1	0
	Riflery	0	0
	Auto Mechanics	0	1
	Hunting	0	0
	Motorcycling	0	1
	Orienteering	0	0
	Snow Shoeing	0	0
	Ice Fishing	0	0

Competency Area	Activities	Control n=18	AN/BN n=6
G. Physical Skills with Carryover Opportunity and Vigorous Enough for Cardiovascular Fitness			
	Physical Fitness	14	6
	Jogging, Running	13	6
	Biking	13	5
	Swimming	11	0
	Hiking	9	3
	Tennis	8	3
	Roller Skating	7	0
	Yoga	4	3
	Table Tennis	4	0
	Canoeing	3	1
	Cross County Skiing	3	0
	Badminton	2	0
	Ice Skating	1	1
	Backpacking	1	2
	Orienteering	0	0
	Snow Shoeing	0	0

Competency Area	Activities	Control n=18	AN/BN n=6
H. Mental Skills Participated in Alone	Listening to Music	17	1
	Watching T.V.	15	3
	Theater (movies, plays)	15	1
	Dieting, Nutrition	13	6
	Reading	9	3
	Watching Basketball	8	0
	Traveling	8	0
	Crossword Puzzles	7	2
	Watching Football	7	0
	Watching Baseball	7	0
	Watching Other Sports	7	0
	Writing	7	1
	Jigsaw Puzzles	6	2
	Art Appreciation	6	1
	Yoga	4	3
	Touring	4	0
	Relaxation Techniques	3	3
	Pin Ball Playing	2	0
	Meditation	1	0

Competency Areas	Activities	Control n=18	AN/BN n=6
I. Mental Skill Requiring 1 or More Others	Checkers	7	0
	Other Card Games	6	2
	Drama	6	1
	Other Table Games	5	0
	Dominos	4	0
	Hearts	3	0
	Poker	3	2
	Chess	2	0
	Backgammon	1	0
	Cribbage	1	0
	Euchre	1	0
	Bridge	0	0
	Ham Radio (CB)	0	1

Competency Areas	Activities	Control n=18	AN/BN n=6
J. Appreciation Skill or Interest Area That Allows for Emotional/Mental Stimulation Through Observation/Passive Response			
	Listening to Music	17	1
	Watching T.V.	15	3
	Theater (movie/play)	15	1
	Watching Basketball	8	0
	Traveling	8	0
	Watching Football	7	0
	Watching Baseball	7	0
	Watching Other Sports	7	0
	Art Appreciation	6	1
	Touring	4	0
	Sweepstakes, Lottery	1	0

Competency Areas	Activities	Control n=18	AN/BN n=6
K. Skill That Enables Creative Construction or Self-Expression Through Object Manipulation, Sound, or Visual Media			
	Baking, Cooking	7	0
	Drama	6	1
	Other Crafts	6	0
	House Plants	6	2
	Gardening	6	2
	Singing	5	1
	Pottery, Ceramics	4	1
	Sewing, Needle Point	4	0
	Photography	3	0
	Wood Working	3	0
	Ceramics (molds)	2	1
	String Art	2	0
	Knitting, Crocheting	2	0
	Collecting Items	1	0
	Canning	1	0
	Macrame	0	0
	Batik	0	0
	Lapidary	0	0
	Copper Enameling	0	0
	Wood Refinishing	0	1
	Auto Mechanics	0	1

Competency Area	Activities	Control n=18	AN/BN n=6
L. Skill Which Enable Enjoyment or Improvement of the Home Environment			
	Pets	14	1
	Dieting, Nutrition	13	6
	Mini Golf	10	0
	Golf	8	4
	Baking, Cooking	7	0
	Other Crafts	6	0
	House Plants	6	2
	Gardening	6	2
	Darts	5	3
	Jewelry Making	5	1
	Pottery/Ceramics	4	1
	Sewing, Needle Point	4	0
	Photography	3	0
	Wood Working	3	0
	String Art	2	0
	Knitting, Crocheting	2	0
	Horseshoes	1	0
	Canning	1	0
	Macrame	0	0
	Batik	0	0
	Lapidary	0	0
	Copper Enameling	0	0
	Wood Refinishing	0	1

Competency Area	Activities	Control n=18	AN/BN n=6
M. Physical or Mental Skill Enabling Participation in a Predominantly Social Situation			
	Party Going	14	1
	Social Dancing	11	1
	Mini Golf	10	0
	Member School Group	9	0
	Golf	8	4
	Member of Church	8	1
	Roller Skating	7	0
	Drama	6	1
	Bowling	6	0
	Darts	5	3
	Member Comm. Group	4	0
	Volunteer Group	4	0
	Signing Group	3	0
	Horse Shoes	1	0
	Square Dancing	1	0
	Ballroom Dancing	0	0

Competency Area	Activities	Control n=18	AN/BN n=6
N. Leadership and/or Interpersonal Skill Which Enables Community Service	Member School Group	9	0
	Member of Church	8	1
	Member Comm. Group	4	0
	Volunteer Group	4	0
	Signing Group	3	0
	1st Aid Certification	2	0
	Softball Officiating	0	0
	Volleyball Officiating	0	0
	Life Saving Cert	0	0
	Basketball Officiating	0	0