

ABSTRACT

NORDER-PIETRZAK, M. M. Perceived body image: Selected lifestyle practices and their relationship to physical self-esteem. MS in Physical Education - Human Performance, 1993, 73pp. (L. Chase)

This study examined physical self-esteem in 302 college age females with special attention to the perceived physical appearance subdomain. Further investigation addressed body image and nutritional and exercise practices which contribute to perceived physical appearance and consequently physical self-esteem. Instruments used for data collection included the Physical Self-Perception Profile (PSPP), the Perceived Importance Profile (PIP), modified Body Silhouette Drawings (BSD), a Physical Activity Inventory (PAI), and a Exercise/Nutrition Trend Questionnaire. The results supported previous findings that women perceive physical appearance as the most important subdomain affecting physical self-esteem. Health and fitness related education positively affected perceived physical self-esteem and perceived importance as shown by the changes in the subscale weightings on the PSPP and PIP. Women ages 18 to 25 years viewed their current body image as being greater in size than their perceived ideal body image. Appropriate activities were chosen that would positively affect physical appearance, but a significant decrease in activity levels was confirmed for women as they age (G2 and G3, increase, $t = .90, p \leq .05$; G3 and G4, decrease, $t = .70, p \leq .05$). Women in this study engaged in unhealthy lifestyle practices that could have a negative effect on physical appearance and be detrimental to their health, consequently decreasing their physical self-esteem.

PERCEIVED BODY IMAGE: SELECTED LIFESTYLE
PRACTICES AND THEIR RELATIONSHIP
TO PHYSICAL SELF-ESTEEM

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CHAPTER I

INTRODUCTION

How individuals perceive and judge themselves can greatly influence their quality of life. An individual's quality of life in turn can affect the types of behaviors they choose to engage in. Self-esteem is defined as an indicator of quality of life. Fox (1990) summarized the role of self-esteem as a strong determining factor of an individual's well-being and behavior. People with higher self-esteem appear to have enhanced quality of life and tend to carry out daily and lifetime goals more effectively. People want to improve their chance of feeling good and avoid situations where they might fail. When individuals feel good about themselves and what they have accomplished, their self-esteem will be enhanced (Fox, 1990).

Early self-esteem research dealt with self-esteem as an unidimensional score (Coopersmith, 1967). One score was representative across all domains. More recent research has shown self-esteem to be a multidimensional model (Fox, 1990; Gergen, 1971; Mullener & Laird, 1971; Rosenberg, 1979). A multidimensional model is a structure which defines one concept across many domains. Each domain interrelates with the others and in conjunction interrelates with the main concept. According to Shavelson, Hubner, and Stanton

(1976), domains that interact to make up global self-esteem include: (1) social self, (2) emotional, (3) physical, and (4) academic. Fox (1990) further supports the contributing domains of physical, social self, and work or job related activities of people's everyday lives.

For professionals in the areas of physical education and sport psychology, the domain of greatest interest and concern is the physical domain (Fox, 1990; Marsh & Shavelson, 1985). According to Fox and Corbin (1989), our physical self-esteem plays a role in how we regard physical activity. The feeling we have about our physical self may influence our physical behavior.

The physical domain can be subdivided into four subdomains: (1) perceived sports competence, (2) perceived attractive body, (3) perceived physical strength, and (4) perceived physical conditioning (Fox, 1990). The importance an individual places on each area can affect their physical self-esteem. For example, men may find the subdomain of perceived physical strength to be more important than perceived attractive body. Their actual height, fat percentage, and weight may be unimportant to them. Whether or not they can bench press the same amount of weight as their best friend may determine their success or failure in relation to perceived physical strength and the enhancement of their physical self-esteem.

To measure physical self-esteem, Fox (1990) developed a multidimensional tool, the Physical Self-Perception Profile (PSPP). The PSPP taps the four subdomains previously identified by Fox (1990). Additionally, because perceived importance influences the effect of a subdomain on physical self-esteem, Fox (1990) uses a second tool called the Perceived Importance Profile (PIP), which determines the importance an individual places on the various subdomains of physical self-esteem.

Of the four subdomains in the PSPP, women place the greatest importance on attractive body or physical appearance (Fox, 1990). In other words, since women value "attractive bodies" the most, their perception of their appearance tends to have the greatest influence on their physical self-esteem. Due to the hierarchial arrangement of the structure of self-esteem, these perceptions of ones physical appearance could filter upwards and have a profound effect on global self-esteem (see Figure 1). Therefore, there appears to be a relationship between physical appearance and global self-esteem.

Body image is, "the characteristics of physical appearance which are an evaluation of a person's size, weight, or other components that make up physical appearance" (Thompson, 1990). If a person is unhappy with their current body image and/or there is a large discrepancy between perceived current body image and perceived ideal

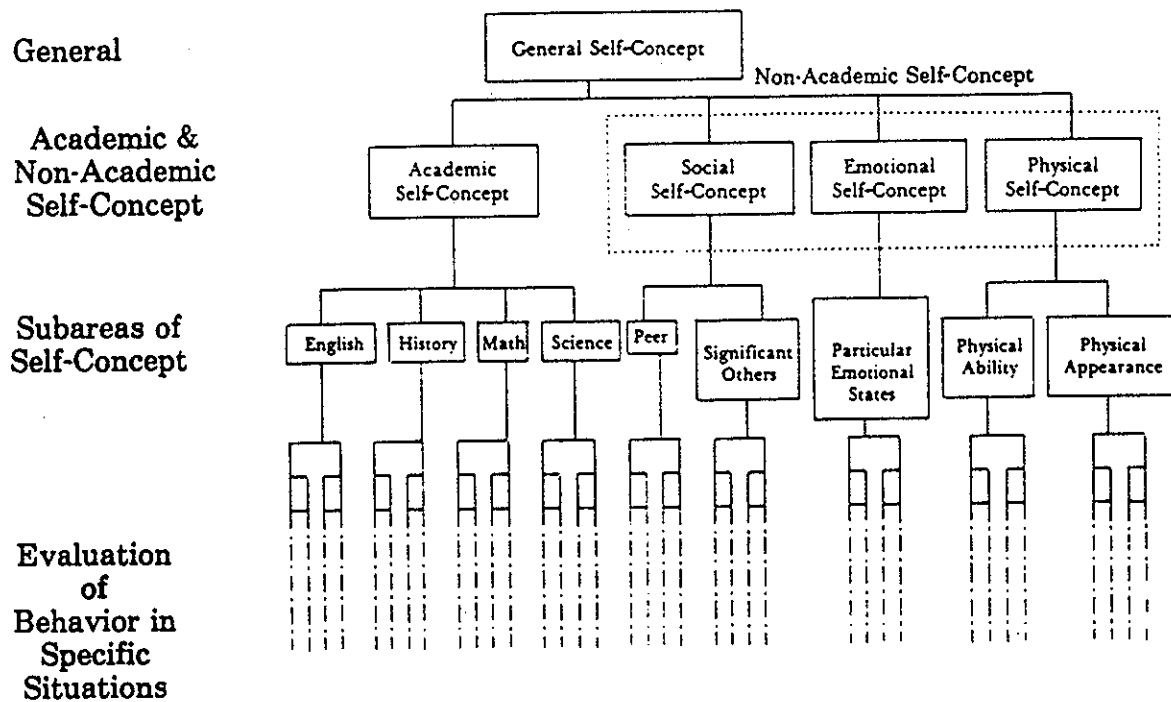


Figure 1. Hierarchical structure of self-esteem (Shavelson, Hubner, & Stanton, 1976)

body image, physical self-esteem could be negatively affected. By looking at an individual's perceived importance of appearance in conjunction with a discrepancy score between perceived current body image and perceived ideal body image, body image perception may be identified as a critical variable affecting an individual's acceptance or nonacceptance of their appearance. Those individual's who are nonaccepting of their appearance may be subjected to lower self-esteem.

Research dealing with the measurement of body image has ranged from the use of the Body Cathexis Scale (BCS) (Secord & Jourard, 1953), the Body Esteem Scale (BES) (Franzoi & Shields, 1984), and the Body Silhouette Drawings (BSD) (Fallon & Rozin, 1985; Stunkard, Sorensen, & Schulsinger, 1983). Fallon and Rozin (1985) suggest the use of body silhouettes for a more realistic portrayal of body image for the subject.

As Fox and Corbin (1989) suggest, how an individual feels about their physical self influences their behavior. Individuals who accept their body image, which may in turn positively affect acceptance of their physical appearance, may behave in different ways than the individual who does not accept their physical appearance. Women who are dissatisfied with their physical appearance may tend toward unhealthy practices. According to Hawkins and Clement (1980), vomiting and binge eating were reported in

12 and 90% of college females, respectively. Striegel-Moore, Silberstein, Frensch, and Rodin (1989) felt the reports of binge eating and purging were due to feelings of being out of control, displeasure with appearance, and societal pressures. By starvation, excessive exercise, use of laxatives, and strict dieting and/or fasting, some women feel they can control their weight. Even though temporary weight loss may enhance their perceptions of their appearance the methods used are unhealthy and ineffective alternatives that may do more harm than good. The "yo-yo" syndrome of weight loss as named by Orbach (1978) may prove to be very frustrating due to the fact that permanent weight loss is not achieved through unhealthy and drastic practices. Women who lost weight still see their image as being fat, thus resulting in increased eating to sustain the "image" they still see themselves being. Powers and Erickson (1986) found that college age women tend to see thinness as the average weight. The idea of thinness as being the norm will hinder the weight loss of those who are truly overweight. It is important to see the exercise and nutritional trends of those individuals accepting and nonaccepting of their physical appearance to determine if the subject is choosing the appropriate behaviors to achieve their goal of an ideal body image. A modified Physical Activity Inventory (PAI) which assesses physical activity choices, includes activities engaged in for sports

involvement, fitness, strength, muscle condition, skill acquisition, and other reasons could be used to help determine the type, frequency, intensity, and duration of physical activity engaged in by the subjects. A questionnaire of exercise and nutritional habits could give insight into possible trends in eating and exercise behaviors of individuals.

Statement of the Problem

The purpose of this research was to investigate physical self-esteem and perceived importance of physical appearance in college age females. Additionally, the secondary purpose was to investigate how body image and nutritional and exercise trends contributed to the assessment of the subdomain of attractive body. The research objectives were:

1. To measure and evaluate the physical self-perceptions of college age females by using the PSPP.
2. To determine the perceived importance of the four subdomains of the physical domain in college age females by using the PIP.
3. To measure the discrepancy score between perceived current body image and perceived ideal body image by using the BSD.
4. To investigate the nutritional and exercise trends of individuals and how it relates to their physical self-esteem.

Hypotheses

1. There will be a significant difference between greater perceived importance of physical appearance and lower perceived importance of the other subdomains of physical self-esteem for women.
2. There will be a significant difference between the perceived current body image and the perceived ideal body image chosen by the subject.

Assumptions

The following were assumptions to the study:

1. The subject population had minimal exposure to nutrition and exercise education.
2. Each subject answered the questions honestly.
3. Each subject answered the questions completely.
4. Each subject understood the questions that were presented.
5. Women tend to overestimate their current body size.

Delimitations of the Study

The following were delimitations to the study:

1. The subjects were 302 female volunteers who ranged in age from 18 to 25 years.
2. Activities which use the same name, but vary in actual performance, were put into one general heading. For example, road cycling and stationary cycling were placed under the heading of "cycling".

Limitations of the Study

The following were limitations to the study:

1. Validity of the data was dependent on the honesty of the subjects.
2. Activity choices were dependent on the time of the year.

Definition of Terms

Body Cathexis - the amount of satisfaction or dissatisfaction with body parts or processes (Secord & Jourard, 1953).

Discrepancy Score - the statistical difference between the perceived current body image and the perceived ideal body image.

Perceived Current Body Image - the body image a subject feels they currently resemble.

Perceived Ideal Body Image - the body image a subject feels would be ideal for them.

Perceived Importance - the amount of importance an individual places on different aspects of self (Fox, 1990).

Physical Self-Esteem - how an individual judges their own self-worth in regard to the physical domain (Fox, 1990).

Self-Concept - a statement of self-description (Fox, 1990).

Self-Esteem - an evaluative element of self-concept where an individual judges their worth (Fox, 1990).

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The following chapter presents related literature beginning with a review of global self-esteem as a hierarchical structure and a mediator of behavior. Physical self-esteem is addressed as a component of global self-esteem, yet made up of various subdomains of its own. The Physical Self-Perception Profile (PSPP) is looked upon as the measuring instrument of physical self-esteem and the Perceived Importance Profile (PIP) is discussed as the instrument used to measure the perceived importance placed on the subdomains of physical self-esteem.

The second section addresses body attractiveness or physical appearance as the subdomain with the greatest importance for women in the total make up of their physical self-esteem. Body image, an important aspect of the definition of physical appearance, is also explored. The Body Silhouette Drawings (BSD) are examined as the measurement tool used to evaluate body image perception.

The third section reviews the affects of exercise on physical self-esteem and the nutritional eating habit trends of women. The Physical Activity Inventory (PAI) and Exercise/Nutrition Trend Questionnaire are reviewed to help

determine if appropriate or inappropriate lifestyle choices are being utilized, depending on the goals established by the subject's choice of their perceived ideal body image.

Self-Esteem

Self-esteem as an indicator of a person's self-worth has been looked at in various respects. Bandura (1982) gave support to the interaction and organization of the social, behavioral, and cognitive skills that are necessary to influence an individual's behavior.

Rosenberg (1979) explained self-esteem as all the little things that relate and interact within an individual's total existence. Each person places different values on different aspects depending on their priorities.

Gergen (1971) revealed self-esteem as being based on a continuum of life's experiences which an individual has chosen. An individual will take in information, process it, and then act upon it with his/her chosen behavior.

Mullener and Laird (1971) studied 8th graders, 12th graders, and young adults and their personal evaluation of themselves. They found that as an individual ages their self-esteem is affected by variable ratings across various content areas. The content areas included social, physical, academic, and work related aspects. As an individual becomes older, more aspects of their life and lifestyle interact with and help define their self-esteem.

Marsh and Shavelson (1985) attempted to demonstrate the

(1990). Fox (1990) revealed a hierarchical structure of physical self-esteem. Physical self-esteem was made up of four subdomains: (1) perceived sport competence, (2) perceived attractive body, (3) perceived physical strength, and (4) perceived physical condition (see Figure 2). This structure was found by Fox (1987) to score women as placing the greatest importance on the subdomain of perceived attractive body. Men were found to place their greatest importance on the subdomain of perceived physical strength. If an individual does not perceive a subdomain as being important it cannot negatively affect their self-esteem. The subdomain of greatest interest to this research was body attractiveness or physical appearance as it will be referred to in this study.

Physical Self-Perception Profile (PSPP)

In order to measure the physical self-perceptions of the physical domain, Fox (1990) devised the Physical Self-Perception Profile. The PSPP consists of five six-item subscales that support open-ended responses to questions related to four subdomains (see Figure 2). The four subscales look at perceptions within subdomains of the physical self. The fifth subscale is used to measure physical self-worth. The PSPP was designed to better understand the physical self and how it interacts with perception and chosen behaviors.

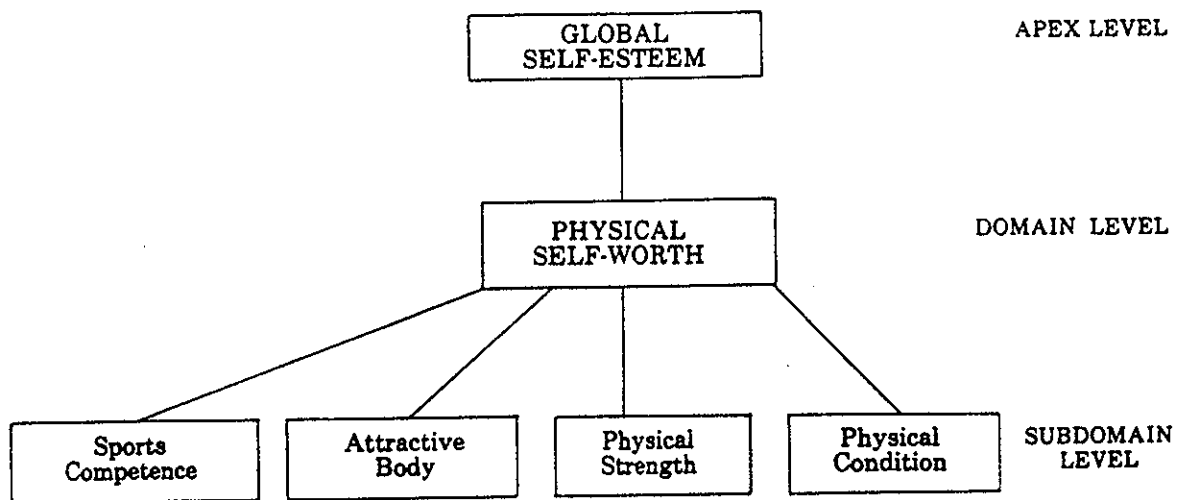


Figure 2. Hierarchical structure of physical self-esteem (Fox, 1990)

Perceived Importance Profile (PIP)

The PIP, also developed by Fox (1990), was designed in conjunction with the PSPP to help determine the importance individuals place on the subdomains of physical self-esteem. The more important a subdomain is perceived by the subject the greater the affect will be on their self-esteem.

Physical Appearance

Physical appearance has been shown to contribute the greatest amount to a college age female's physical self-esteem (Fox, 1987). That is, a college age female's physical self-esteem is influenced greatly by perceived physical appearance, or how good they think they look. Physical appearance can be subdivided into three components: (1) perceptual, (2) subjective, and (3) behavioral (Thompson, 1990). Perceptual relates to a person's estimation of their own size. Subjective deals with the person feeling stress as opposed to satisfaction relative to their physical appearance. Behavioral reflects an individual's choice to avoid situations which cause them anxiety related to their physical appearance.

To further investigate the perceptions of physical appearance, Fallon and Rozin (1985) studied male and female undergraduate students using nine figure drawings ranging from very thin to obese. They reported that the perception of body size which men experienced, kept them satisfied with

their weight, but the perception women experienced, pressured them into an attempt to lose weight. Men estimated their current body size to be heavier than ideal 32.5% of the time, whereas women estimated their current size as being heavier 69.7% of the time.

Cash and Brown (1989) subdivided physical appearance into two categories: (1) objective attributes of appearance (e.g., height, obesity, and physical attractiveness) and (2) the subjective self-perceived which includes attributes of body image. They studied 72 male and female college students. They found that females reported greater anxiety about becoming fat, gave heavier labels for their weight, and were more likely to be on a weight loss diet than males.

Wooley and Kearney-Cooke (1986) found that 63% of the women interviewed stated that their weight often affected how they felt about themselves, 33% were affected sometimes, and 4% indicated that they were never impacted by their weight.

Since perceived physical appearance contributes greatest to a female's physical self-esteem, a problem arises when an individual's perception of their physical appearance becomes distorted and results in decreased self-esteem. Thompson and Thompson (1986), in a study of 60 undergraduate males and females with no eating disorders, found that women, when compared to men, had a greater distortion of their body image and lower self-esteem.

they were with certain body parts and body adjectives. Their results indicate that "satisfaction with body image and satisfaction with self-concept were positively related and that their measurement could be refined if the subjective importance of each component aspect was given consideration." Fox (1990) agrees that perceived importance of each subdomain must be considered because "it acts as a filter between subdomains by attaching value to performance in each subdomain."

Fallon and Rozin (1985) asked male and female undergraduates to indicate their current figure and their ideal figure from body image silhouettes. For men, the current and ideal body images were almost exact. For women, the current figure was heavier than the ideal figure.

According to Silberstein et al., (1988), when viewing body image dissatisfaction by the discrepancy of perceived current body image and perceived ideal body image, a discrepancy from the perceived ideal is likely to provoke perceived self-put down and denial of self-worth which negatively affects self-esteem. It does appear that both men and women, eating disordered and noneating disordered, can and do indicate dissatisfaction with and discrepancy between perceived current body image and ideal body images.

Body Silhouette Drawings (BSD)

Body silhouette drawings were used to investigate perceptions of body image. Body silhouette drawings

depicting seven frames ranging from thin to obese were used by Powers and Erickson (1986) to determine perceived body images of 164 female undergraduate students age 18 to 50 years. They found the subjects' perceptions of normal body image was significantly lower than their perceived current body image. Subjects found their ideal body image to be significantly lower than their own estimated or objective measures.

The modified body silhouette drawings used in this study were devised by Stunkard et al., (1983) and revised by Fallon and Rozin (1985). The BSD were chosen based on the ability of the silhouettes to show body images across a wide range of body size. It was suggested by Fallon and Rozin (1985) that the use of body silhouette drawings allows a more realistic picture of body image for the subject. There were five drawings, which were all outlined with the same stature and posed in a frontal view, used in this study.

Effects of Exercise/Nutrition

Exercise

Research indicates that exercise increases the psychological well-being of an individual when done on a regular basis. Folkins and Sime (1981), after reviewing much of the literature that related physical fitness training to increased states of well-being, suggested a result of improved self-concept with a physical fitness training program. It appeared that self-concept, which is a

statement of self-description (Fox, 1990), was the only personality trait affected.

Further research by Raglin (1990) reviewed exercise and mental health. This study found that although there appeared to be no cause/effect relationship, exercise was associated with increased self-esteem.

Sonstroem and Morgan (1989) tested the hierarchical model of self-concept and found self-esteem improvements did occur for subjects involved in regular exercise participation. Their proposed model indicated physical competence and physical acceptance as interacting components of self-esteem as related to exercise. The more competent an individual feels with regard to physical activity, the greater will be the acceptance of their physical ability, thus positively affecting their self-esteem.

Seggar, McCammon, and Cannon (1988), after reviewing the relationships between physical activity, weight discrepancies, body cathexis, and psychological well-being in college women, found "physical activity was not directly related to psychological well-being. However, physical activity did reduce weight discrepancies and improved body image. There were distinctive patterns of satisfaction with body parts and processes depending on whether the woman's body type conformed to or deviated from idealized heights and weights" (Seggar et al., 1988).

These studies point to the fact that physical activity

tends to have a positive effect on self-esteem, although no causal relationship has been found. Furthermore, physical activity has been indicated to reduce weight discrepancies and improve satisfaction of body cathexis items.

Nutritional Habits

Nutritional trends is an area that has received a great deal of attention in relation to eating disordered populations. Nutritional information from a noneating disordered population may help decipher eating habit trends that are appropriate or inappropriate for a healthy lifestyle. The dietary trends may be different for those having a lower discrepancy score between perceived current body images and perceived ideal body images versus those who show little to no significant difference. Those who show little to no significant difference between perceived current body image and perceived ideal body image may not place a large amount of importance on the subdomain of body attractiveness. Women who tend to value their appearance may not be involved in appropriate practices to enhance and/or maintain their appearance. Exercise and dietary habits can have a direct impact and/or effect on perceived physical appearance.

Review

There was strong support for the hierarchical structure of self-esteem. Of the various domains contributing to self-esteem, the physical domain or physical self-esteem was

most relevant for this research project. Further delineation of physical self-esteem revealed four subdomains: (1) perceived sport competence, (2) perceived attractive body, (3) perceived physical strength, and (4) perceived physical condition. The impact each subdomain has on physical self-esteem is dictated by the importance attached to it. Physical appearance has been shown to be of greatest significance to women. How women are currently perceiving their body image can be revealed by determining the discrepancy between a woman's perceived current body image and perceived ideal body image. If there is a discrepancy, what they are doing to achieve their perceived ideal body image can be valuable information. It is necessary to track nutritional and exercise practices to determine if the practices are appropriate. If the nutritional and exercise practices are appropriate, they will help the subject attain their perceived goal, thus positively affecting their self-esteem.

CHAPTER III

METHODS

Introduction

Data for this study were collected during pre- and posttest situations. The data were collected by questionnaire.

Subject Selection

A total of 302 female undergraduates from the Health and Physical Well-Being: Learning to Create Healthy Lifestyles class, at the University of Wisconsin-La Crosse, were used for this study. During the first week of the course, the researcher presented the study and requested volunteers from the class.

Procedures

The subjects were asked to complete the informed consent, a demographic sheet, Physical Self-Perception Profile (PSPP), Perceived Importance Profile (PIP), Body Silhouette Drawings (BSD), Physical Activity Inventory (PAI), and a Exercise/Nutrition Trend Questionnaire. All described questionnaires were completed during the pretest setting at the beginning of the Fall 1992 semester prior to any exercise/health related education. A posttest packet which contained the same information as the pretest packet was administered following the educational portion of the

course to see if self-esteem had been enhanced due to education. All pre- and posttest questionnaires were administered in a group setting by this researcher during class time with the instructor's approval.

Instrumentation

Following an overview of instructions each volunteer received a packet which contained the following: (1) a computer scan sheet, (2) an informed consent, (3) a title/instruction sheet, (4) a demographic data sheet, (5) the PSPP, (6) the PIP, (7) the BSD, (8) the PAI, and (9) the Exercise/Nutrition Trend Questionnaire. Appropriate answer forms and/or necessary space followed each section. All pre- and posttest scan sheets were labeled Test Form A and B, respectively. The social security number of each subject was used to compare pre- and posttest data.

Informed Consent

The informed consent (see Appendix A) explained the process of involvement in the study and the subject's rights. The form was verbally explained by the investigator and signed by the subject prior to participation.

Title/Instruction Sheet

The title/instruction sheet (see Appendix B) gave the title of the research project with a brief overview of the project itself and a thank you note to the subjects for their participation.

The title/instruction sheet also explained how the

subject was to fill in their answers on the computer scan sheet, along with other specific directions for each section. The importance of completeness and honesty was also addressed.

Demographic Data

Demographic data collected included gender, age, year in school, height, weight, fitness and nutrition education experience questions, and miscellaneous sport involvement questions (see Appendix C). A scan sheet was provided for the necessary data to be recorded.

Physical Self-Perception Profile (PSPP)

The next section was the PSPP (see Appendix D) which consisted of 30 multiple choice questions pertaining to physical self-esteem designed by Fox (1990).

Perceived Importance Profile (PIP)

The PIP followed (see Appendix E) and was an eight item questionnaire also designed by Fox (1990). It is used to determine the degree of importance the subject places on the individual subdomains of physical self-esteem.

Body Silhouette Drawings (BSD)

The BSD (see Appendix F) was a two item identification questionnaire used to determine the body image the subject perceived they currently possess and the body image they felt was ideal for them. The BSD was designed and revised by Stunkard et al., (1983) and Fallon and Rozin (1985), respectively.

Physical Activity Inventory (PAI)

The Physical Activity Inventory (PAI) was designed to determine a subject's frequency, duration, intensity, and reason for their chosen activities. The PAI (see Appendix G) was an inventory of the subjects chosen activities and reasons for their choice. The subject was to fill in the inventory using activities they engaged in during the past 3 months. The inventory also included a place for the frequency, intensity, and duration the subject engaged in their chosen activity.

Exercise/Nutrition Trend Questionnaire

The Exercise/Nutrition Trend Questionnaire was another way to measure possible trends in exercise and dietary habits. It was also designed to determine if any of the sample subjects were or had been treated for an eating disorder. This questionnaire (see Appendix H) consisted of 16 questions to help determine exercise and nutritional eating habit trends of the subjects.

Statistical Analysis

The statistical analysis of the data included a correlation coefficient of perceived current body image and perceived ideal body image to determine validity of the modified body silhouette drawings. Statistics were administered, using one-tail dependent t-values at a significance level of $p \leq .05$, to determine significant differences pre- to posttest for the following:

(1) perceived current body image and perceived ideal body image silhouette drawings were done to help establish the instruments reliability, (2) individual and age group subject population choices of perceived current body image and perceived ideal body image, and (3) physical activity indices as a whole and per age group. Descriptive data on the PSPP, PIP, PAI, BSD, and the Exercise/Nutrition Trend Questionnaire were also collected.

CHAPTER IV

RESULTS AND DISCUSSION

Introduction

This research was designed to explore physical self-esteem, a component of global self-esteem, in college age females. One contributor to physical self-esteem in females is physical appearance. To address the subdomain of perceived physical appearance this study investigated perceived body image, selected lifestyle practices, and their relationship to physical self-esteem in college aged females 18 to 25 years. A pretest/posttest design was used to determine the effect of education on self-esteem.

The data were collected in three phases. Phase I evaluated physical self-esteem by using the Physical Self-Perception Profile (PSPP) and the associated Perceived Importance Profile (PIP). Phase II investigated perceived body images. Modified body silhouette drawings were used, so validity and reliability were established for the new scale. The second phase also used the modified body silhouette drawings to investigate perceived current body image versus perceived ideal body image to help explore the subdomain of physical appearance. Phase III investigated activity choices and nutritional practices of the subject population. Descriptive data concerning current exercise

and nutritional practices of the specified population were assessed. The Physical Activity Inventory (PAI) and the Exercise/Nutrition Trend Questionnaire were used to collect the necessary data.

Phase I: PSPP AND PIP

The purpose of phase I was to assess physical self-esteem and its perceived importance as a part of the hierarchical structure of global self-esteem. A literature search indicated the PSPP and PIP devised by Fox (1990) were appropriate providers for measuring the physical self-perceptions of the physical domain and the importance attached to each subdomain, respectively. Previous research by Fox (1990) indicated that there may be a relationship between physical self-esteem, its perceived importance, and lifestyle practices. To obtain this information the PSPP and PIP were administered and analyzed.

Item Characteristics of the PSPP Pre- and Posttest

Means, standard deviations, and dependent t-values for the PSPP and PIP can be seen in Table 1. The PSPP instrument was designed with five subscales each including six items. Each subscale had a possible score ranging between 6 and 24. The mathematical mean was 15. As indicated by the results the means for the pre- and posttest PSPP fall around 15 similar to values reported by Fox (1987) for college age subjects. There were no significant differences pre- to posttest in any of the subdomains.

Table 1. Item characteristics of the PSPP pre- and posttest

		<u>n</u>	mean	S.D.	t-value
Physical Self-Worth	Pre	291	14.50	3.79	-4.40
	Post		15.07	3.83	
Sport	Pre	291	14.62	4.37	-6.28
	Post		15.29	4.23	
Condition	Pre	291	15.02	4.09	-5.36
	Post		15.70	3.88	
Physical Appearance	Pre	291	13.38	4.09	-5.93
	Post		14.08	3.92	
Strength	Pre	291	14.53	3.75	-3.49
	Post		14.81	3.69	

Item Characteristics of the PIP Pre- and Posttest

Means, standard deviations, and dependent t-values for the PIP pre- and posttest scores can be viewed in Table 2. The measurement tool was designed to screen the subdomains perceived importance of sport, perceived importance of condition, perceived importance of physical appearance, and perceived importance of strength. The higher the rating of the subdomain the greater that subdomain influenced an individual's self-worth. Fox recommended items scored five and above be considered "important". As shown by the results pre- and posttest means indicated all subdomains



ranked "important". Previous research by Fox (1987) found women placed the greatest importance on the subdomain of attractive body or physical appearance. The subdomain of physical appearance scored as the most important for both the pre- and posttest. A significant decrease was seen pre- to posttest for sport ($t = 1.58$), condition ($t = 1.03$), and strength ($t = 1.92$). The importance of physical appearance also decreased, but it was not statistically significant, indicating education helped to focus subjects to choose activities based on participation.

Table 2. Item characteristics of the PIP pre- and posttest

		<u>n</u>	mean	S.D.	t-value
Sport	Pre	291	5.26	1.79	*1.58
	Post		5.17	1.62	
Condition	Pre	291	5.95	1.43	*1.03
	Post		5.87	1.44	
Physical Appearance	Pre	291	6.44	1.22	3.01
	Post		6.24	1.25	
Strength	Pre	291	5.54	1.30	*1.92
	Post		5.49	1.24	

* = significant difference at $p \leq .05$

Phase II. Validation of Modified Body Silhouette Drawings

Phase II was the validation of the modified body silhouette drawings. The modified body silhouette drawings were deemed necessary to show apparent differences versus subtle differences between each silhouette. Validation of the modified instrument was completed prior to the pretest data collection. Subjects volunteered to take the body silhouette questionnaire two separate times. There was approximately a 2 week time span between pre- and posttest data collection. The results of the correlation and dependent t-values for men, women, and a combination can be viewed in Tables 3 and 4. The results indicated the

modified instrument had a correlation coefficient of .812 pre- to posttest, which supported the modified instrument as valid. There was no significant difference pre- to posttest at $p \leq .05$ level of significance, which indicated the instruments reliability.

Table 3. Correlation of the modified body silhouette drawings

	<u>n</u>	Perceived current body image	Perceived ideal body image
Women	16	.771	.535
Men	30	.829	.699
Both	46	.812	.791

Table 4. Dependent t-values for modified body silhouette drawings

	Women	Men	Both
Perceived current pre			
Perceived current post	-1.86	-1.36	-2.21
Perceived ideal pre			
Perceived ideal post	-1.46	-1.36	-1.95

Current Versus Ideal Body Image

Body image, as found from the literature review, was defined as the physical characteristics of physical

appearance. Based on actual body dimensions, body image may not be assessed accurately by an individual (Powers & Erickson, 1986). They further suggested accurate body image development can occur through appropriate education about the human body and the importance of exercise. The results of the chosen body silhouettes for perceived ideal body image and perceived current body image pre- and posttest, can be seen in Table 5. The most often chosen perceived current body image and perceived ideal body image for both the pre- and posttest was silhouette B. The reader should refer to Appendix F to view the silhouette drawings.

Table 5. Perceived current body image and perceived ideal body image reported as a percent

	<u>n</u>	Current	<u>n</u>	Ideal
Silhouette A				
Pre	16	5.50	24	8.20
Post	11	3.80	15	5.20
Silhouette B				
Pre	137	47.10	259	89.00
Post	153	52.60	270	92.80
Silhouette C				
Pre	129	44.30	8	2.70
Post	115	39.50	6	2.10
Silhouette D				
Pre	8	2.70	0	0.00
Post	12	4.10	0	0.00
Silhouette E				
Pre	1	.30	0	0.00
Post	0	0.00	0	0.00

Perceived current body images and perceived ideal body images chosen pre- and posttest separately, can be viewed in Table 6. The results pre- and posttest indicated women ages 18 to 25 years viewed their current body image as being greater in size than their perceived ideal body image. The indicated findings support previous research that women appeared to indicate dissatisfaction and discrepancy between perceived current body image and perceived ideal body image.

Table 6. Perceived current body image and ideal body image means, standard deviations, and dependent t-values

	<u>n</u>	Mean	S.D.	t-value
Current pre	291	2.45	.66	13.23
Ideal pre		1.95	.33	
Current post	291	2.44	.64	12.67
Ideal post		1.97	.27	
Current pre	291	2.45	.66	.69
Current post		2.44	.64	
Ideal pre	291	1.95	.33	-1.70
Ideal post		1.97	.27	

Phase III: Exercise and Nutritional Trends

Part One: Activity Indices

Section one of phase III looked at activity indices based on frequency, intensity, and duration of the activity for each chosen exercise. The activity indices for the pretest top ten chosen activities and posttest top ten chosen activities can be seen in Tables 7 and 8, respectively. The complete list of activities and index scores can be found in Appendix I. The order of activities listed was influenced by the number of subjects who participated in each activity. Of the top ten chosen activities pre- and posttest, all can be viewed as appropriate lifestyle activity choices which could possibly affect physical appearance. Rank order is the order in which the chosen activity falls according to the activity index score.

Table 7. Pretest top ten chosen activities and the corresponding activity indices

Activity	<u>n</u>	Activity index	Rank order
Walking	107	31.15	1
Aerobics	97	25.62	4
Weight Lifting	91	24.71	6
Volleyball	78	19.33	10
Running	73	23.60	7
Cycling	66	25.17	5
Softball	49	26.31	3
Basketball	46	29.76	2
Swim	44	23.15	8
Tennis	33	20.02	9

Table 8. Posttest top ten chosen activities and the corresponding activity indices

Activity	<u>n</u>	Activity index	Rank order
Aerobics	102	28.91	3
Weight Lifting	101	27.15	5
Walking	93	29.55	1
Volleyball	72	21.13	10
Running	68	24.65	7
Cycling	51	26.36	6
Basketball	44	27.37	4
Swimming	44	23.25	9
Softball	41	23.55	8
Tennis	21	29.21	2

Part Two: Activity Indices Within and Between Age Groups

The second area of phase III assessed individual activity indices based on age. Results of activity levels compared within each age group pre- to posttest showed no significant differences ($p \leq .05$). Results of activity

levels compared between age groups can be found in Table 9. There were significant differences found in the activity levels ($p \leq .05$) between group 2 (G2) and group 3 (G3) (increase, $t = .90$) and group 3 (G3) and group 4 (G4) (decrease, $t = .70$) for the pretest. For the posttest, there were significant differences found between group 2 (G2) and group 3 (G3) (increase, $t = .35$). The results indicated that activity levels do decrease significantly as college females age except between the ages of 21 through 24.

Table 9. Activity indices (AI) means, standard deviations, and dependent t-values per age group

Years of age	<u>n</u>	Mean (AI)	S.D.	t-value
Pre				
G1 = 18	144	26.61	15.04	2.12
G2 = 19-20	120	21.80	12.37	* .90
G3 = 21-22	18	24.09	14.63	* .70
G4 = 23-24	9	17.75	15.72	-
G5 = 25	0	0.00	0.00	
Post				
G1 = 18	136	26.08	13.93	2.38
G2 = 19-20	124	22.73	12.67	* -.35
G3 = 21-22	22	26.97	15.22	3.08
G4 = 23-24	9	8.35	10.22	-
G5 = 25	1	0.00	0.00	

* = significant difference ($p \leq .05$)

Part Three: Descriptive Data

The third part of phase III looked at descriptive data in regard to the Exercise/Nutrition Trend Questionnaire. The results can be viewed in Tables 10 and 11. Questions were deemed appropriate lifestyle choices or nonappropriate lifestyle choices based on the positive and/or negative effect they would have on physical appearance. The terms were indicative of lifestyle choices that would

appropriately maintain proper dietary and exercise habits and/or inappropriately result in unhealthy lifestyle behavior. Appropriate lifestyle choice questions would expect a yes answer (a no answer would have indicated an inappropriate lifestyle behavior) and included questions 48, 50, and 51. Inappropriate lifestyle choice questions that expected a no answer (a yes answer would have indicated an inappropriate lifestyle behavior) included questions 46, 47, 49, 54, 58, 59, and 60.

Questions 52, 53, 55, 56, 57, 61, and 62 were descriptive questions which allowed the investigator to gather information regarding any previous history of an eating disorder and determine the thoughts of the subject about their current weight status. When asked about their weight status, prior to health and fitness related education, 71.0% indicated they needed to lose weight, 26.0% were happy with their present weight, and 3.0% felt they needed to gain weight. Posttest data collected following health and fitness related education, showed a 1.5% decrease in those who felt they needed to lose weight, a 2.3% increase in those who were happy with their weight, and a 0.8% decrease in those who felt they needed to gain weight. An increase in the number of those happy with their weight shows education to have positively affected self-esteem. Questions 48 and 51 were answered by a majority of

subjects in a manner opposite of what was expected by the investigator, due to what the question was in reference to. The questions may have been confusing due to poor wording.

Based on the answers to questions 46 through 61, only one individual had been or was at the time of data collection, treated for an eating disorder. As previously stated, the activity choices appeared appropriate to positively affect physical appearance. However, of the remaining 290 individuals, although not statistically significant in numbers, there were inappropriate lifestyle behaviors reported that would negatively affect physical appearance. For example, 14 women having had the health and fitness related education still used dietary aids, 7 individuals binged and purged, 30 women exercised excessively after having consumed more food than usual, and 77 women deprived themselves of food if they ate too much the previous day.

Table 10. Pretest nutritional trend questionnaire answers reported as a percent

Question	Yes (n)	%	No (n)	%
46	131	45.0	160	55.0
47	43	14.8	248	85.2
48	221	75.9	70	24.1
49	23	7.9	268	92.1
50	269	92.4	22	7.6
51	127	43.6	164	56.4
52	38	13.1	253	86.9
53	240	82.5	51	17.5
54	29	10.0	262	90.0
55	220	75.6	71	24.4
56	81	27.8	210	72.2
57	9	3.1	282	96.9
58	6	2.1	285	97.9
59	30	10.3	261	89.7
60	88	30.2	203	69.8
61	10	3.4	281	96.6
62	1	.3	290	99.7

Table 11. Posttest nutritional trend questionnaire answers reported as a percent

Question	Yes (<u>n</u>)	%	No (<u>n</u>)	%
46	115	39.5	176	60.5
47	33	11.3	258	88.7
48	228	78.4	63	21.6
49	24	8.2	267	91.8
50	280	96.2	11	3.8
51	117	40.2	174	59.8
52	44	15.1	247	84.9
53	240	82.5	51	17.5
54	14	4.8	277	95.2
55	219	75.3	72	24.7
56	89	30.6	202	69.4
57	7	2.4	284	97.6
58	7	2.4	284	97.6
59	30	10.3	261	89.7
60	77	26.5	214	73.5
61	11	3.8	280	96.2
62	1	.3	290	99.7

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

Support of the hierarchial structure of self-esteem has been strong. As one subcomponent of global self-esteem, physical self-esteem has been of greatest interest to physical educators. For women, previous research has indicated body attractiveness or physical appearance to have been of greatest significance to physical self-esteem. How an individual perceives their own physical self-worth can influence lifestyle choices.

The Physical Self-Perception Profile (PSPP) revealed that the perceived physical condition subdomain ranked highest. However, perceived physical appearance was rated as being most important in influencing physical self-esteem. Following approximately 2 months of education regarding health and fitness related topics, the posttest results of the PSPP and PIP indicated the condition subdomain was the highest ranked domain for physical perception and the physical appearance subdomain held the greatest perceived importance. The education which occurred between the pre- and posttests appeared to influence the categories of perceived physical self-esteem and perceived importance which made the subdomain of condition more important and

reduced the influence of sport, condition, and strength on physical self-esteem. Education which emphasized participation in health related fitness activities helped to start the process of appropriate behaviors to positively affect physical appearance and self-esteem. After education starts the process, healthy lifestyle choices may follow.

There were significant decreases pre- to posttest for the perceived physical "sport", "condition", and "strength" subdomains. Although not statistically significant, perceived physical appearance decreased in perceived importance pre- to posttest.

The discrepancy between perceived current body image and perceived ideal body image was confirmed in this project. Both prior to and following education, women ages 18 to 25 indicated discrepancy between their perceived current body image and perceived ideal body image. More education may be needed in order to address body image and realistic assessment of physical characteristics.

In addition to investigating the difference between perceived current body image and perceived ideal body image, this study investigated lifestyle practices that may affect body image or physical appearance. Based on the perceived current body image and perceived ideal body image data, the data collected on activity indices were very useful. Physical activity is known to effect body composition, muscle tone, and self-concept. Therefore, a physical

activity questionnaire was used to evaluate activity choices and levels. Activity indices were calculated to quantify frequency, intensity, and duration for each given activity. First, when activity indices were viewed per exercise, it revealed women 18 to 25 years old as a whole, had chosen similar activities. The index scores were higher in the posttest which was reflective of the number of subjects who had chosen a particular activity. Secondly, when the subject population was broken down by age the data revealed significant decreases in activity as women aged, except between the ages of 21 through 24.

Another tool incorporated to assess the effects of lifestyle choices on physical self-esteem was a questionnaire on exercise and nutritional habits. The combination of these two concepts are thought to be the best combination to effectively enhance or maintain physical appearance and/or condition, thereby affecting physical self-esteem. However, many women today are engaging in questionable practices in order to achieve the "desirable" look. Examples are starvation, pills, and extreme exercise.

With the body image choices in mind, the data from the exercise and nutritional questionnaire were useful. Whether or not subjects had chosen appropriate lifestyle behaviors to obtain their perceived ideal body images was examined. As the activity index scores revealed, appropriate

activities were chosen, but in general activity levels decreased with age.

~~With regard to the Exercise/Nutrition Trend~~ Questionnaire, the greatest concern prior to the education phase was the use of dietary aids (question 54), exercising more than usual if consumption of calories was high (question 46), excessive exercise (question 49 and 59), binge and purge (question 58), and deprivation of food (question 60). Although the percentage of negative responses to these questions was not high, there were still individuals involved in unhealthy and potentially dangerous behavior. Following education, the posttest data showed a decrease in occurrence of excessive exercise, binge and purge, and deprivation of food. Although there was a decrease in reported practices they still occurred. Future education must address the dangers of unhealthy behaviors.

Recommendations

This research was an extension of previous work done by Fox (1987). This study added to the data base of college age females. The research project touched briefly on possible avenues of influence on physical self-esteem. The following recommendations for future investigation are suggested:

1. This study investigated only college age females. Further investigation needs to be done involving males. There is a great possibility that men's physical self-

esteem may be influenced by similar lifestyle behaviors such as prevalence of anorexia, bulimia, excessive exercise, and restricted dietary intake.

2. Education to some degree can influence behavior choices as shown in this study. Additional methods of education need to be developed to positively address body image and behavioral choices made in response to an individual's perceived body image. Possibilities would include addressing the topics at an earlier stage in life, extending the time spent on lifestyle choice education, and/or focus on the area of physical self-esteem.
3. Another avenue for study would be to determine why women decrease their activity levels with age.
4. Even though activity choices appeared appropriate to enhance physical appearance, why unhealthy behaviors were still chosen could be further investigated.
5. Analyzed dietary records may be useful to determine specific dietary habits to assess eating disordered populations.

These recommendations only scratch the surface of possible research. In the future, more research can be done to enhance the education for healthy lifestyle practices.

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APPENDIX A
INFORMED CONSENT

INFORMED CONSENT
University of Wisconsin - La Crosse
La Crosse, WI 54601

Project Title: Perceived body image: selected lifestyle practices and their relationship to physical self-esteem.

Principal Investigator: Michelle M. Norder-Pietrzak

I, _____, volunteer to be a subject in a research study to evaluate what, if any, relationship chosen physical activities, perceived current body image, and perceived ideal body image influence body attractiveness and its relationship on physical self-esteem. I understand participation in this project requires that I complete various paper and pencil questionnaires in a two part series.

The questionnaires will consist of various item selection questions varying from self-perceptions to an activity inventory. Both sessions will be supervised by the researcher Michelle M. Norder.

Strict confidentiality will be adhered to for all individual data. Only the researchers will have access to the specific data. At no time will an individual's data be disclosed or identified to anyone except that individual.

I have read the foregoing and I understand what is expected from me. Any questions which may have occurred to me at this time have been answered to my complete satisfaction. If any additional questions arise at any time I can ask during the pre and/or post test situations.

I therefore, voluntarily consent to be a subject in this study. I understand I may withdraw my participation at any time.

Signed: _____ Date: _____

Witness: _____ Date: _____

APPENDIX B
TITLE/INSTRUCTION SHEET

Project Title

The project you are about to participate in is a thesis study by a graduate student in the Physical Education - Human Performance program. The information you supply will be used to look at the role of perceived body images and selected lifestyle practices and their relationship to physical self-esteem. The post test is being done to determine if HPR 105 is addressing the objectives in nutrition and exercise it set out to teach.

I would like to sincerely thank you for your participation in this study. Without your help, it could not be done.

Sincerely,

Michelle M Norder
Michelle M. Norder

Instructions

In the packet you will find the necessary answer sheets following each section. Please use a number two pencil and fill in the circles completely. Any extraneous marks could score the questionnaires incorrectly so be sure to erase any extra marks completely.

It is very important that you complete all the questions honestly. Please take the time to read each question thoroughly. If you have any questions at any time please ask.

Packet Order

1. Computer Scan Sheet
2. Informed Consent
3. Title and Instruction Sheet
4. Demographic Data
5. PSPP
6. PIP
7. BSD
8. PAI
9. Exercise/Nutrition Trend

APPENDIX C
DEMOGRAPHIC DATA

Demographic Data

Please mark your answers on the scan sheet. Be sure to use a number two pencil.

1. What gender are you?

- A = female
- B = male

2. How old are you?

- A = 18 yrs old
- B = 19-20 yrs old
- C = 21-22 yrs old
- D = 23-24 yrs old
- E = 25 yrs old

3. What year in college are you?

- A = Freshman
- B = Sophomore
- C = Junior
- D = Senior
- E = Special

4. Have you ever been involved in organized athletics?

- A = Yes
- B = No

*If you answered yes, please indicate what level you participated at. (ie. youth, church sponsored, intramural, varsity, etc.)

5. Have you ever had any formal health, fitness, or nutrition education?

- A = Yes
- B = No

*If you answered yes, please indicate what type of education it was. (ie. PE 100 in college, YMCA/YWCA, community education, etc.)

*A. What is your height in inches? (to the closest 1/2 inch)

*B. What is your weight in pounds? (to the closest 1/2 pound)

* please place your answers for questions A and B in the space provided.

STOP!! PLEASE WAIT FOR FURTHER INSTRUCTIONS. THANK YOU.

APPENDIX D

PHYSICAL SELF-PERCEPTION PROFILE

THE PHYSICAL SELF-PERCEPTION PROFILE (PSPP)

WHAT AM I LIKE?

These are statements which allow people to describe themselves.
There are no right or wrong answers since people differ a lot.

Please mark your answers on the scan sheet provided.

First, decide which one of the two statements best describes you.

Then, go to that side of the statement and fill in the letter on the scan sheet if it is just "sort of true" or "really true" FOR YOU.

	Really True for Me	Sort of True for Me	EXAMPLE		Sort of True for Me	Really True for Me
	A	B	Some people are very competitive	BUT	Others are not quite so competitive	X D
REMEMBER to check only ONE of the four boxes.						
6.	A	B	Some people feel that they are not very good when it comes to playing sports	BUT	Others feel that they are really good at just about every sport	C D
7.	A	B	Some people are not very confident about their level of physical conditioning and fitness	BUT	Others always feel confident that they maintain excellent conditioning and fitness	C D
8.	A	B	Some people feel that compared to most, they have an attractive body	BUT	Others feel that compared to most, their body is not quite so attractive	C D
9.	A	B	Some people feel that they are physically stronger than most people of their sex	BUT	Others feel that they lack physical strength compared to most others of their sex	C D
10.	A	B	Some people feel extremely proud of who they are and what they can do physically	BUT	Others are sometimes not quite so proud of who they are physically	C D
11.	A	B	Some people feel that they are among the best when it comes to athletic ability	BUT	Others feel that they are not among the most able when it comes to athletics	C D
12.	A	B	Some people make certain they take part in some form of regular vigorous physical exercise	BUT	Others don't often manage to keep up regular vigorous physical exercise	C D
13.	A	B	Some people feel that they have difficulty maintaining an attractive body	BUT	Others feel that they are easily able to keep their bodies looking attractive	C D
14.	A	B	Some people feel that their muscles are much stronger than most others of their sex	BUT	Others feel that on the whole their muscles are not quite so strong as most others of their sex	C D
15.	A	B	Some people are sometimes not so happy with the way they are or what they can do physically	BUT	Others always feel happy about the kind of person they are physically	C D
16.	A	B	Some people are not quite so confident when it comes to taking part in sports activities	BUT	Others are among the most confident when it comes to taking part in sports activities	C D
17.	A	B	Some people do not usually have a high level of stamina and fitness	BUT	Others always maintain a high level of stamina and fitness	C D
18.	A	B	Some people feel embarrassed by their bodies when it comes to wearing few clothes	BUT	Others do not feel embarrassed by their bodies when it comes to wearing few clothes	C D
19.	A	B	When it comes to situations requiring strength some people are one of the first to step forward	BUT	When it comes to situations requiring strength some people are one of the last to step forward	C D

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me
20.	A	B	When it comes to the physical side of themselves some people do not feel very confident BUT	Others seem to have a real sense of confidence in the physical side of themselves	C	D
21.	A	B	Some people feel that they are always one of the best when it comes to joining in sports activities BUT	Others feel that they are not one of the best when it comes to joining in sports activities	C	D
22.	A	B	Some people tend to feel a little uneasy in fitness and exercise settings BUT	Others feel confident and at ease at all times in fitness and exercise settings	C	D
23.	A	B	Some people feel that they are often admired because their physique or figure is considered attractive BUT	Others rarely feel that they receive admiration for the way their body looks	C	D
24.	A	B	Some people tend to lack confidence when it comes to their physical strength BUT	Others are extremely confident when it comes to their physical strength	C	D
25.	A	B	Some people always have a really positive feeling about the physical side of themselves BUT	Others sometimes do not feel positive about the physical side of themselves	C	D
26.	A	B	Some people are sometimes a little slower than most when it comes to learning new skills in a sports situation BUT	Others have always seemed to be among the quickest when it comes to learning new sports skills	C	D
27.	A	B	Some people feel extremely confident about their ability to maintain regular exercise and physical condition BUT	Others don't feel quite so confident about their ability to maintain regular exercise and physical condition	C	D
28.	A	B	Some people feel that compared to most, their bodies do not look in the best shape BUT	Others feel that compared to most their bodies always look in excellent physical shape	C	D
29.	A	B	Some people feel that they are very strong and have well developed muscles compared to most people BUT	Others feel that they are not so strong and their muscles are not very well developed	C	D
30.	A	B	Some people wish that they could have more respect for their physical selves BUT	Others always have great respect for their physical selves	C	D
31.	A	B	Given the chance, some people are always one of the first to join in sports activities BUT	Others people sometimes hold back and are not usually among the first to join in sports	C	D
32.	A	B	Some people feel that compared to most they always maintain a high level of physical conditioning BUT	Others feel that compared to most their level of physical conditioning is not usually so high	C	D
33.	A	B	Some people are extremely confident about the appearance of their body BUT	Others are a little self-conscious about the appearance of their bodies	C	D
34.	A	B	Some people feel that they are not as good as most at dealing with situations requiring physical strength BUT	Others feel that they are among the best at dealing with situations which require physical strength	C	D
35.	A	B	Some people feel extremely satisfied with the kind of person they are physically BUT	Others sometimes feel a little dissatisfied with their physical selves	C	D

STOP! PLEASE WAIT FOR FURTHER INSTRUCTIONS. THANK YOU.

APPENDIX E
PERCEIVED IMPORTANCE PROFILE

HOW IMPORTANT ARE THINGS TO YOU? (PIP)
Please mark your answers on the scan sheet provided.

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me
36.	A	B	Some people feel that being good at sports is vitally important to them	BUT	Others feel that being good at sports is not so important to them	D
37.	A	B	Some people do not feel that maintaining a high level of physical conditioning is very important to them	BUT	Others feel that maintaining a high level of physical conditioning is extremely important to them	D
38.	A	B	Some people believe that having an attractive physique or figure is vitally important to them	BUT	Others believe that having an attractive physique or figure is not all that important in their lives	D
39.	A	B	Some people believe that being physically strong is not so important to them	BUT	Others feel that it is extremely important to them to be physically strong	D
40.	A	B	Some people feel that having very good sports ability and skill is not so important to them	BUT	Others feel that having a high level of sports ability is really important to them	D
41.	A	B	Some people feel that maintaining regular vigorous exercise is vitally important to them	BUT	Others feel that keeping up regular vigorous exercise is not of prime importance to them	D
42.	A	B	Some people do not feel it so important to them to spend a lot of time and effort maintaining an attractive body	BUT	Others think that it is vitally important to spend time and effort maintaining an attractive body	D
43.	A	B	Some people feel that being strong and having well developed/toned muscles is vitally important to them	BUT	Others feel that being strong and having well developed/toned muscles is not so important to them	D

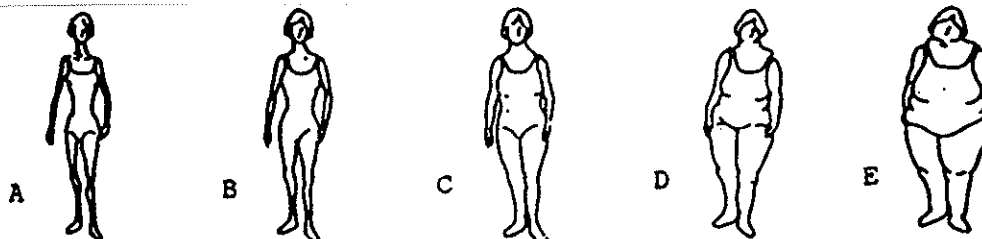
STOP! PLEASE WAIT FOR FURTHER INSTRUCTIONS. THANK YOU.

APPENDIX F
BODY SILHOUETTE DRAWINGS

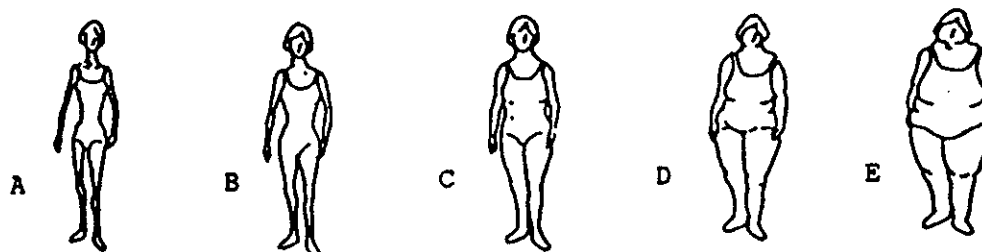
Body Silhouette Drawings

FEMALES ONLY:

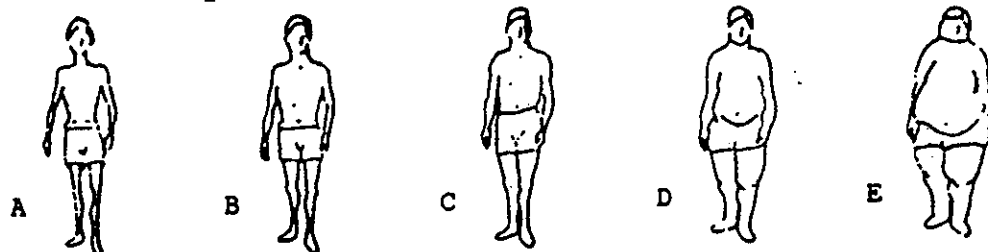
44. Please indicate which silhouette you feel you most closely resemble by filling in the appropriate letter on the computer scan sheet.



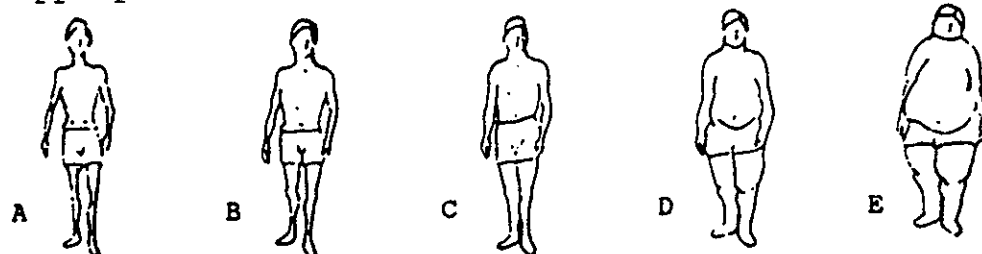
45. Please indicate which silhouette you feel most closely resembles an 'ideal' body silhouette by filling in the appropriate letter on the computer scan sheet.

MALES ONLY:

44. Please indicate which silhouette you feel you most closely resemble by filling in the appropriate letter on the computer scan sheet.



45. Please indicate which silhouette you feel most closely resembles an 'ideal' body silhouette by filling in the appropriate letter on the computer scan sheet.



Modified from the original printed in "Use of the Danish Adoption Register for the Study of Obesity and Thinness" by A. J. Stunkard, T. Sorensen, and F. Schulsinger, 1983, in Genetics of Neurological and Psychiatric Disorders (pp. 115-120).

STOP!! PLEASE WAIT FOR FURTHER INSTRUCTIONS. THANK YOU.

APPENDIX G
PHYSICAL ACTIVITY INVENTORY

PHYSICAL ACTIVITY INVENTORY

This part of the questionnaire is designed to assess whether or not you take part in regular physical activity, and if so, what type of physical activity.

- * IF YOU TOOK PART IN NO REGULAR PHYSICAL ACTIVITY THIS LAST SEMESTER OR SUMMER, PLEASE CHECK THIS BOX:
 - * IF YOU TOOK PART IN SOME FORM OF REGULAR PHYSICAL ACTIVITY THIS LAST SEMESTER OR SUMMER, PLEASE COMPLETE THE 'ACTIVITY CHART' (page 69)
1. Using the 'ACTIVITY CHART' list any regular physical activity that you have taken part in this last semester in the activities column.

Try to categorize the activity by the main reason(s) you took part in that activity (e.g. for sports enjoyment). You may feel you have to put the same activity in two different section (e.g. sports involvment and fitness)
 2. Using the 'QUANTITY CHART' try to assess the quantity per week of each type of activity you took part in. Place the appropriate figure in each of the columns for frequency, intensity, and time.

**PAGE 68 CONTAINS AN EXAMPLE ACTIVITY CHART AND THE QUANTITY CHART FOR YOUR REFERENCE.

EXAMPLE

ACTIVITY CHART

REASON	ACTIVITY	FREQ	INT	TIME
<u>SPORTS INVOLVEMENT AND ENJOYMENT</u>	1. <i>football</i>	<i>5</i>	<i>6</i>	<i>6</i>
	2. _____			
	3. _____			
<u>FITNESS IMPROVEMENT AND MAINTENANCE</u>	1. _____			
	2. _____			
	3. _____			
<u>IMPROVING FIGURE/ PHYSIQUE</u>	1. <i>aerobics</i>	<i>3</i>	<i>4</i>	<i>5</i>
	2. _____			
	3. _____			
<u>IMPROVING STRENGTH AND MUSCLE CONDITION</u>	1. <i>weight lifting</i>	<i>3</i>	<i>5</i>	<i>6</i>
	2. _____			
	3. _____			
<u>IMPROVING GENERAL PHYSICAL SKILL</u>	1. _____			
	2. _____			
	3. _____			
<u>OTHER REASONS</u>	1. _____			
	2. _____			

QUANTITY CHART

	FREQUENCY (how often)	INTENSITY (how hard)	TIME (each session)
For QUANTITY of activity select the appropriate numbers from this chart and insert them in the columns BELOW.	6 6 or more	6 very vigorous	6 >45 mins
	5 5 times a week	5 vigorous	5 35-45 mins
	4 4 times a week	4 mod. to vig.	4 25-35 mins
	3 3 times a week	3 moderate	3 15-25 mins
	2 2 times a week	2 light to mod.	2 5-15 mins
	1 1 once a week	1 light	1 <10 mins

ACTIVITY CHART

REASON	ACTIVITY	FREQ	INT	TIME
<u>SPORTS INVOLVEMENT AND ENJOYMENT</u>	1. _____			
	2. _____			
	3. _____			
<u>FITNESS IMPROVEMENT AND MAINTENANCE</u>	1. _____			
	2. _____			
	3. _____			
<u>IMPROVING FIGURE/ PHYSIQUE</u>	1. _____			
	2. _____			
	3. _____			
<u>IMPROVING STRENGTH AND MUSCLE CONDITION</u>	1. _____			
	2. _____			
	3. _____			
<u>IMPROVING GENERAL PHYSICAL SKILL</u>	1. _____			
	2. _____			
	3. _____			
<u>OTHER REASONS</u>	1. _____			
	2. _____			

QUANTITY CHART

	FREQUENCY (how often)	INTENSITY (how hard)	TIME (each session)
For QUANTITY of activity select the appropriate numbers from this chart and insert them in the columns BELOW.	6 6 or more	6 very vigorous	6 >45 mins
	5 5 times a week	5 vigorous	5 35-45 mins
	4 4 times a week	4 mod. to vig.	4 25-35 mins
	3 3 times a week	3 moderate	3 15-25 mins
	2 2 times a week	2 light to mod.	2 5-15 mins
	1 1 once a week	1 light	1 <10 mins

STOP! PLEASE WAIT FOR FURTHER INSTRUCTIONS. THANK YOU.

APPENDIX H
EXERCISE/NUTRITION TREND QUESTIONNAIRE

EXERCISE/NUTRITION TREND QUESTIONNAIRE

Directions: Please answer the following questions by filling in the appropriate circle on the computer scan sheet.

- To control your weight, do you ever engage in any of these activities? A = Yes, B = No
46. If you eat more than usual, do you then go out and exercise more than usual?
 47. If you eat more than you should, do you then become inactive?
 48. If you eat more than you usually do, do you then maintain your current activity level?
 49. If you eat a normal amount of food, do you then exercise excessively?
 50. If you eat your normal diet, do you then maintain your regular exercise program?
 51. Do you ever eat less (fewer calories), then increase the amount of time and frequency you exercise?
 52. If you eat less, do you then exercise less?
 53. If you consume less food in your diet, do you then maintain your regular exercise program?
 54. Do you use dietary aids? (laxatives, pills, shakes, creams, etc.)
 55. Do you feel you need to lose weight?
 56. Are you happy with your present weight?
 57. Do you feel you need to gain weight?
 58. Do you consume a lot of food and then throw up?
 59. Do you consume a lot of food and then exercise more than 30 to 60 minutes?
 60. Do you deprive yourself of food if you ate too much the day before?
 61. Have you ever been treated for an eating disorder?
 62. Are you currently being treated for an eating disorder?

APPENDIX I
ALL CHOSEN ACTIVITIES AND ACTIVITY INDICES



ACTIVITY INDEX SCORES

PRETEST			POSTTEST		
ACTIVITY	<u>n</u>	PAI	ACTIVITY	<u>n</u>	PAI
Walking	107	31.15	Aerobics	102	28.91
Aerobics	97	25.62	Wt. lift.	101	27.15
Wt. lift.	91	24.71	Walking	93	29.55
Volleyball	78	19.33	Volleyball	72	21.13
Running	73	23.60	Running	68	24.65
Cycling	66	25.17	Cycling	51	26.36
Softball	49	26.31	Basketball	44	27.37
Basketball	46	29.76	Swimming	44	23.25
Swimming	44	23.15	Softball	41	23.55
Tennis	33	20.02	Tennis	21	29.21
Golf	18	13.19	Rollerblade	16	23.93
Rollerblade	17	28.98	Toning	15	26.37
Work	9	56.25	Water ski	9	11.11
Class (PE100)	9	36.14	Gymnastics	7	37.72
Gymnastics	8	35.46	Golf	7	20.92
Toning	8	30.31	Work	6	55.16
Water ski	7	12.71	Stair Climb	6	32.00
Track	6	56.82	Dancing	6	27.00
Stair climb	6	31.82	Track	4	60.38
Horseback riding	5	43.24	Horseback riding	4	46.31
Soccer	5	36.72	Soccer	4	42.00
Martial arts	4	26.88	Bowling	4	36.00
Bowling	4	28.44	Stretching	4	26.13
Stretching	4	28.13	Cheerleading	3	37.95
Hiking	4	20.50	Martial arts	3	37.73
Dancing	3	42.64	Physical Therapy	2	55.00
Physical Therapy	3	42.03	Racquetball	2	21.00
Hockey	3	17.34	Hiking	2	21.00
Cheerleading	2	15.75	Ice skate	1	48.00
Rollerskate	1	45.00	Class (PE100)	1	44.00
Ice skate	1	36.00	Rowing	1	36.00
Dryland ski	1	33.00	Dryland ski	1	33.00
Racquetball	1	33.00			
Diving	1	28.00			
Swim bench	1	24.00			
Rowing	1	21.00			
Cross Ctry ski	1	18.00			
Fishing	1	14.00			