

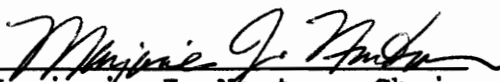
RELATIONSHIPS AMONG BODY-SELF RELATIONS, EXERCISE
INVOLVEMENT, AND EXERCISE CLOTHING ATTITUDE FOR WOMEN
IN REGULAR EXERCISE PROGRAMS

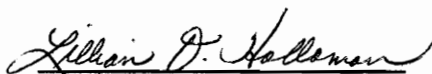
by

Bernadette Tatarka

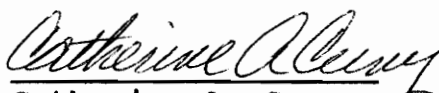
Dissertation submitted to the Faculty of the
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in
CLOTHING AND TEXTILES

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(ABSTRACT)

American females are socialized from birth to believe that physical attractiveness is culturally valued (Bernscheild, Walster, & Bohrnstedt, 1973). It also has been determined that body image concerns are strong motivators of dieting and exercising behaviors and may affect clothing attitudes (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993). Body-self relations is a self-attitude composed of affective, cognitive, and behavior dispositions toward one's body. Since physical attractiveness is highly valued and the media focus on a young and thin body as an important factor of physical attractiveness (Moriarty & Moriarty, 1988), individuals may increase exercise involvement to reach an ideal body image. The purpose of this study was to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs.

Subjects were women members of four different aerobic exercise programs in Blacksburg, Virginia. A questionnaire regarding body-self relations, exercise involvement, exercise clothing attitude, and demographics was developed and pilot tested.

Body image was measured with two domains of the Multidimensional Body-Self Relations Questionnaire: appearance and physical fitness. Exercise involvement was used as the indicator of the time and effort devoted to altering or forming one's appearance through exercise. Exercise clothing attitude was measured by beliefs toward three black-and-white line drawings representing different amounts of body coverage of the exercise clothing style images on a continuum of high to low body coverage. Relationships among the variables were analyzed statistically using Kendall's Tau and multiple regression. Validity and reliability of the questionnaire were analyzed with factor analysis and Cronbach's alpha.

The results imply the women subjects express greater concern for physical competence than with physical attractiveness. That is, being "in shape" or athletically active and competent appear to have a greater importance than engaging in grooming behaviors. Results also favor the notion that appearance management behavior (in this case, level of exercise involvement) is related to body-self relations, and consequently, the self-concept. The findings also support related research about congruence between the symbolic image of a garment and an individual's self-concept. Thus, the exercising subject's body-self relations can play an important role in clothing attitude.

DEDICATION

For my parents, Robert and Norma Tatarka. The gratitude and recognition that is due for their unfailing encouragement in all my endeavors can never be adequately expressed.

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CHAPTER I INTRODUCTION

Children in the United States are socialized from birth to believe that physical attractiveness is culturally valued (Bernscheild, Walster, & Bohrnstedt, 1973). From 1960 to 1980, thinness as a criterion for feminine beauty could be documented by tracing the trend in beauty pageant winners' relative thinness and in the ever-increasing numbers of diet articles in popular women's magazines (Garner, Garfinkel, Schwartz, & Thompson, 1980). In 1984, a study conducted by Glamour magazine revealed that 75 percent of the 33,000 women surveyed assessed themselves "too fat". This was despite the fact that only a quarter of the women were deemed overweight by standard weight tables and that another 30 percent were actually underweight ("Feeling Fat in", 1984).

The ideal body image changes over time and is readily recognized by members of the society (Roach & Eicher, 1973). As slenderness has consistently been visually glamorized, the ideal body figure has grown thinner. Bordo (1993) found that the slender female ideal body of a decade ago has now come to seem fleshy. She notes a contrast between the body size of the "Maidenform women" of 1960 and what is seen in

the current advertisements. What was considered an ideal body in 1960, is currently defined as "full figure".

In the 1980s, the media reflected the added dimension of physical fitness attractiveness in women (Moriarty & Moriarty, 1988). The physical fitness trend appears to continue to the current decade. Popular exercise equipment advertisements portray the ideal body as firmer and more contained than what was seen formerly. For instance, one company asserts that any softness or bulge is seen as unsightly and must be contained. Bordo (1993) observes that before 1980 excess weight was the target of most advertisements for diet products. Today, the enemy is more likely constructed as bulge, fat, or flab. In addition, Bordo believes that the standard has not come to favor "thinner bodies" or lower weight, but rather a tighter and more toned profile.

Seid (1989) reported in Never Too Thin that a new weight-control plan involving exercise had captivated individuals. Diets of the past recommended moderate exercise as part of the diet plan. Today, "the diet is seen as the natural adjunct to vigorous exercise; which supposedly produces not only healthier bodies but ideal and idealized ones" (Seid, 1989, p. 8). Seid believes that the media overwhelms consumers with images of taut, sweaty, leotard-clad exercising bodies. Further, "they promise us

that with exercise, we too will manage to mold an ideal form, one that is, above all, fat-free and flab-free" (Seid, 1989, p. 8).

Exercise in earlier times required little more than a good pair of shoes and often old, worn clothing. More recently, sales of exercise apparel have reflected interest in specialized clothing for exercise activities. Between 1981 and 1982 reported exercise wear sales increased by 60 percent, and in 1984 department store trade journals reported that exercise-wear was the hottest-selling item of the year (Seale, 1984). The Sporting Goods Manufacturers Association recently published a survey on consumers' sports apparel buying patterns. According to the survey, sports apparel is a \$32.2 billion industry at retail and is owned by 86 percent of the U.S. population (Donohue, 1995).

The popular apparel manufacturer, Nike, exemplifies the vast growth of exercise wear. In the 10 years following Nike's launch in 1972, sales grew at an average of 82 percent and profits doubled every year. A \$2 billion company in 1990, Nike revenues had almost doubled by 1993 (Katz, 1993). Nike chairman, Philip Knight, believes that sport "is the culture of the United States" and that, before long, it will define the culture of the entire world (Katz, 1993, p. 56).

Regular participation in physical activities is known to enhance mental and physical health. It also has been determined that body image concerns are strong motivators of dieting and exercising behaviors (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993). Body image is defined as a mental picture one has of his or her body. The body image construct is multidimensional, and a key empirical distinction exists between the attitudinal experience and the perceptual experience of one's body (Cash, 1993). The Multidimensional Body-Self Relations Questionnaire (MBSRQ) is an inventory for assessing self-attitudinal aspects of the body image construct. The MBSRQ body-image scale takes into account cognitive (attention/importance), affective (evaluation), and behavior (action or activity) components, which is consistent with the extant social-psychology definition of attitude. Since physical attractiveness is highly valued and the media focus on a young and thin body as an important factor of physical attractiveness (Moriarty & Moriarty, 1988), individuals may increase exercise involvement to reach an ideal body image.

Individuals construct and interpret body images through processes of appearance management (Kaiser, 1990). Appearance is an important part of the self-concept and consequently of body image satisfaction. Interest in appearance is multifaceted and expressed partially through

the amount of time, energy, and resources expended on appearance. Clothing is an extension of the bodily self and represents the nearest aspect of one's environment. Schilder (1935) stated that bodily appearances could be transfigured with the use of clothing. Further, Schilder referred to clothes as an extension of the body scheme, and considered that clothing is incorporated into body scheme and may be able to change the body image.

A volume of literature exists pertaining to body image satisfaction, with some reference to women and exercise; however, the literature lacks research exploring possible relationships of women's body-self relations to level of exercise involvement and attitudes toward exercise clothing. Since the factors that contribute to self-concept and body image satisfaction are complex and multifaceted, additional investigation is warranted. The purpose of this research is to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs.

Research findings regarding the relationships among body-self relations, exercise involvement, and exercise clothing attitude will contribute to the base knowledge concerning women and body image. More specifically, research can examine exercise as a means of women's appearance management behavior and how level of exercise

involvement and body image play a role in exercise clothing attitude. Resulting information can provide knowledge for retailers and manufacturers about apparel product design for women in regular exercise.

CHAPTER II LITERATURE REVIEW

The research problem is to examine relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs. The review of literature covers definitions of the major relevant concepts, relationships among variables, and methodological issues. The review of literature focuses on appearance and the self, body image, body image disturbances, the standard and ideal female figures, evaluative scales of body image, and body image as it relates to physical fitness. The review also includes information about clothing and the self, clothing and body image, and clothing as it relates to sports involvement.

Body and the Self

The self consists of an individual's consciousness of being, and that being comprises a tangible dimension (body and appearance symbols) as well as a conceptual dimension (how one defines and appraises the self) (Kaiser, 1990). Both with the body and with other material objects (clothes, vehicles, etc.), an individual communicates to others what he or she views as important. The body is at once part of nature and a part of culture (Turner, 1984). The body may

be regarded as a link between an inner person and some of society's most important values. Fisher (1986) contends that every culture has powerful forces which "aim to bring the individual's body under control" (p. 137). The desirability of certain body forms and prescriptions on how the body should be displayed are evidence of cultural influence.

The way individuals feel about their bodies is inductive of cultural ideology, social relations, and personal values. Bodies become signifiers; they refer to individuals as social beings within a larger cultural and historic context. Through social interactions in everyday life, the self forms impressions about his or her own appearance and formulates ideas about who he or she is, what he or she is striving to accomplish, and how to present the self to others. The extent to which individuals are satisfied with their own bodies influences their feelings about themselves. This satisfaction, in turn, will affect interaction with others.

As part of daily life, individuals perceive and organize the stimulus world through the process of categorization (Hamilton, 1979). Categorization literature supports the notion that individuals tend to exaggerate differences between groups and minimize differences within groups (Linville, 1982). For example, in a recent study,

categorization was examined as a possible basis for differential perceptions of overweight and obese individuals as a function of body type (Lennon, 1992). Analysis revealed that the respondents did categorize others by body type or body size. This and earlier work (Taylor & Falcone, 1982) indicate that categorization occurs as a function of what appears to be global appearances. Just how pronounced the appearance characteristics need to be for categorization to occur remains to be discovered (Lennon, 1992).

Culture provides a symbolic order by which individuals construct and sustain a sense of social reality (Hamilton & Hamilton, 1989). When groups are culturally relevant and serve to classify and distinguish people based on differences, the groups become cultural categories. In western culture, attractiveness is a cultural category (Rudd & Lennon, 1994). Cultural categories have an impact on people's lives and are often intricately connected with appearance, clothing, and fashion (Kaiser, 1990).

The meanings that individuals use to define the self are shaped by interactions with others. Social comparison is a process in which individuals can distinguish themselves from others. Social comparison occurs when individuals evaluate themselves in relation to others (Festinger, 1954), which may result in increased or decreased feelings of self-esteem. Individuals compare themselves to others and to the

ideal self, which is usually generated from cultural ideals for role enactment and appearances.

Cultural categories and social comparison are integral aspects of social identity theory. Social identity theory contends that, when individuals are grouped in a category, they immediately and automatically evaluate people within the group as better than people outside the group (Tajfel, 1981; Tajfel & Turner, 1979). Social identity theory also claims that: (a) people attempt to achieve and maintain a positive self-image, and (b) self-image is made up of personal and social identity. Social identity is thought to arise from group membership, and personal identity from individual achievements. It is thought that any improvement in personal or social identity will lead to an improvement in self-image (Rudd & Lennon, 1994).

Individuals' active creation of their appearances toward the cultural aesthetic ideal is believed to be a result of social identity (Rudd & Lennon, 1994). That is, the predominant appearance ideal of a culture becomes the aesthetic standard which individuals use to create their appearances and against which individuals compare themselves. It is through the process of social comparison that individuals continually assess the personal aesthetic value of themselves and others.

Body image. Self-concept is the objective acknowledgement of the self and its physical and abstract traits (Holloman, 1989). Self-concept also has been described as the total image one has about oneself, which contains one's actual experiences and interpretations about those experiences (Kalish, 1975). Within that total image, the self-concept is multidimensional and encompasses several facets of the self. James (1890) identified two aspects of the self as "the self as a knower or I" and "the self as known or me". The process of actual experiencing is considered "the self as a knower or I", whereas the interpretation of that experiencing is related to "the self as known or me".

Body image and self-esteem are considered the most important aspects of self-concept (Kalish, 1975). Kaiser (1990) describes body image as the mental picture one has of his or her body. This picture may or may not be accurate or consistent with others' perceptions of that body. A negative body image can undermine general self-concept, especially of females, just as a positive body image can enhance self-concept (Jourard & Secord, 1955).

Body image also has been characterized as a collective concept, incorporating a collection of feelings and attitudes that one has about the body (Fisher, 1968). Because awareness of the self begins with experiencing one's

body, body image can be considered one of the earliest parts and the basis of the self-concept (Burns, 1979). In addition, Burns noted that body image is explained in the context of "the self as a knower".

Body cathexis, a concept closely related to body image, refers to satisfaction with the body and its separate parts and processes (Secord & Jourard, 1953). Body cathexis may be considered an integral part of body image and self-concept. Body cathexis is the evaluative dimension of body image and is defined as positive and negative feelings toward one's body (Jourard, 1958).

Self-esteem is the way we feel toward the self we perceive, an appraisal resulting from the self-concept. Self-esteem, the evaluation of one's self, is related to "the self as known". The process of examining one's performance and abilities based on one's personal standards and values, which have been influenced by society and significant others, is considered "the self as known" (Burns, 1979).

Body image and body cathexis are comparable to and encompassed by self-concept and self-esteem. Body image and self-esteem may be interrelated because both "the self as a knower" and "the self as known" interact and influence each other. In addition, the concepts are closely related, in

that individuals' perceptions and standards are influenced by social standards and values (Burns, 1979).

Body image disturbances. Individuals whose body sizes have changed or are changing may have inaccurate or distorted body images. Distorted body image also appears to exist for individuals who are abnormally sensitive about being or becoming fat (Kaiser, 1990). Individuals of a variety of shapes may have distorted images of their bodies. An example is individuals with eating disorders such as anorexia nervosa or bulimia. Experts estimate that 5 to 10 percent of adolescent girls and young women suffer from anorexia nervosa. Six times this number may suffer from the binge-purge syndrome known as bulimia (Brody, 1987; Garfinkel & Garner, 1982). Disturbance of body image, fear of becoming obese, and refusal to maintain a normal body weight are some of the characteristics associated with anorexia. From 90 to 95 percent of anorexics and bulimics are women. Each year, according to the American Anorexia and Bulimia Association, 150,000 American women die of anorexia.

Distorted body image also can occur when an individual derogates his or her own appearance. Body dysmorphic disorder is a lack of aesthetic pleasure wherein the individual has an extreme aversion to a particular body part

(Pruzinsky, 1990). This is a process in which individuals derive little aesthetic pleasure from creating an appearance. The aversion may be translated into behaviors such as avoiding mirrors or ceasing to go out in public.

Feminists believe that gender and cultural ideologies about social relations are important when looking at body image disorders. One's gender ideology may affect the degree to which one is influenced by the cultural aesthetic ideal (Rudd & Lennon, 1994). Gender ideology consists of cultural expectations for male and female roles; it may be represented on a continuum from traditional to non-traditional. Traditional gender ideology for women is thought to promote a narrowly defined concept of beauty associated with being attractive and thin (Wolf, 1991), with emphasis on social rewards for appearance as opposed to actions or accomplishments (Freedman, 1986). Morris (1985) believed that dissatisfaction with the body is encouraged by television and magazine advertisements. In addition, Morris stated, "Almost without exception models used for these commercials are atypically tall, thin, small-breasted professionals, many of whom are anorectic themselves" (Morris, 1985, p. 95). Schneider (1953) suggested that the importance of body image to culture is obvious from the amount of time and effort expended to modify the body's appearance. Schneider also suggested that individuals

pursue the ideal image by means of clothing, bleaches, cosmetics, tattooing, and plastic surgery.

Several researchers have focused on body image in the context of culture. Rudolph (1991) believes that media images tend to be idealized and may reinforce the cultural ideal. There is a lack of diversity with which women are depicted with respect to body size and shape, facial coloring and features, hair texture, and age. Women may compare themselves to the narrow set of depictions in the media and may have feelings of dissatisfaction with themselves. College women are known to evaluate themselves against such standards (Richins, 1991). Lake (1979) found that the media influenced middle-aged women to diet, use cosmetics, and to stay younger-looking and disguise "figure flaws" through appropriate selection of clothing.

Ideal and standard female body images. The ideal body image identified from the media may represent one body image standard type. Through content analyses of a variety of media over periods of historic time, researchers have documented the existence of an ideal female body image (Garner, Garfinkel, Schwartz, & Thompson, 1980; Silverstein, Perdue, Peterson, & Kelly, 1986). According to the research, the American image of ideal female beauty has been adapted from Europe and encompasses such criteria as

attractiveness and thinness with large breasts, small waist and hips, and long legs. Facial features of the ideal include narrow noses, high cheekbones, and large eyes (Morris, Cooper, & Cooper, 1989).

Apparel sizing is another standard derived from actual body measurements and is often used by clothing manufacturers and pattern companies. The United States Department of Commerce standards for apparel sizes were developed from a study conducted by the U.S. Department of Agriculture in 1940 (O'Brien & Shelton, 1941) and were revised in 1958 (U.S. Department of Commerce, 1958) and again in 1971 (U.S. Department of Commerce, 1971). The established standard is based on the statistical average of actual body measurements, but often an "ideal" figure is used with proportions, contours, symmetry, and posture that are considered perfect (Liechty, Pottberg, & Rasband, 1986). As with the ideal body image, the proportions for the figure are the product of culture and are subject to change according to the whims of fashion within the culture.

To develop an illustrated standard figure, body proportions, for example, often are expressed in fractional amounts, or head lengths. The head lengths refer to the number of times the head length could fit into the total body length (Liechty, Pottberg, & Rasband, 1986). The average individual--or standard--is seven and one-half heads

tall. The fashion figure is eight head lengths with three head lengths above the waist and five below.

To further divide the body, the standard, average, or ideal proportions generally assume one-half the total body length to be above the hip joint and one-half below. The arm length is divided into equal parts by the elbow, which is located at waist level, with the wrist situated approximately at the crotch level. The length from the base of the neck to the waist at the center back is equal to or slightly less than the width across the shoulders. The bust circumference equals the circumference of the hips, and waist circumference is generally ten inches smaller (Liechty, Pottberg, & Rasband, 1986).

Evaluative scales of body image. Numerous scales have been used over the past few decades to measure self-image. The Body Cathexis Scale is a means to index a specific dimension within this broad construct. First developed by Secord and Jourard (1953), the scale is designed to assess the degree of satisfaction or dissatisfaction felt about sundry parts and processes of the body. The underlying hypothesis is that the most tangible and visible part of the self is the physical structure. The original Body Cathexis Scale comprised 46 items, although most contemporary studies have employed a modified 40-item version to assess body

attitude. Subjects evaluate body characteristics according to a five-point Likert scale ranging from 1, "strong negative", to 5, "strong positive".

Several studies have explored the feelings that people have about their bodies as a whole and as specific parts. Mahoney and Finch (1976) found that six factors appear to relate to males' perceived body satisfaction: (1) legs, (2) face, (3) weight, (4) height, (5) torso, and (6) voice and hair. For females, five factors appear to relate to body cathexis: (1) face, (2) weight, (3) height, (4) legs, and (5) extremities.

Shim and Kotsiopoulos (1991) explored body cathexis of adult men and women and the effects of age and number of children, the latter for women only. Results indicated that men tended to feel slightly more positive about their bodies than did women. When age was a factor, older women tended to feel more negative about their bodies than did men of the same age. In addition, women who had children showed stronger negative associations with body cathexis than women of the same age who did not have children. Body cathexis also has been found to be associated with such variables as social/group affiliation and cultural world view (Armstrong & Tan, 1978; Hamilton & Chowdhary, 1989). In a study of women, Hamilton and Chowdhary found an impact of education and occupational characteristics on body cathexis. This is

consistent with Hwang (1993), who found that elderly subjects who had higher income, social participation status, and education were more satisfied with their bodies.

Brodie, Slade, and Riley (1991) found that men and women showed parallel characteristics in body-image perception. They conducted their research using a visual size-estimation apparatus with which subjects estimated the size of specific body regions. Gender differences in the estimation of body image were examined using a distorting mirror. With the use of the mirror, the authors established both perceived self image and ideal image. The results indicated that men and women perceived themselves as being fatter than they really were, i.e., individuals of either gender overestimated body size to some extent. The ideal image was, however, significantly affected by gender. Men preferred to be broader than they were, whereas women preferred to be slimmer.

The body image construct is multidimensional, and a key empirical distinction exists between the attitudinal experience and the perceptual experience of one's body size (Cash, 1993). The Multidimensional Body-Self Relations Questionnaire is a 69-item self-report inventory for the assessment of self-attitudinal aspects of the body image construct. The MBSRQ inventory contains the 54-item short form of the original 140-item Body-Self Relations

Questionnaire (BSRQ) (Winstead & Cash, 1984). The MBSRQ is a body image scale, which takes into account cognitive (attention/importance), behavioral (action or activity), and affective (evaluation) components, is consistent with the extant social-psychology definition of attitude. The 69-item MBSRQ consists of three parts: (a) the factor subscales, (b) the Body Areas Satisfaction Scale, and (c) the Weight Attitude Scale. The reliability and validity of these measures have been established (Cash, 1993).

The factor scales measure subjects' attitudes toward their physical appearance, fitness, and health using a response format ranging from definitely disagree to definitely agree. Within each of these three somatic domains are the two composite subscales of evaluation and orientation. The evaluation examines the extent of liking, attainment, and satisfaction of the domains, whereas the orientation examines the degree of cognitive importance of and attention to the domain as well as behaviors related to maintaining or improving facets of the domain.

The Body Areas Satisfaction Scale in the MBSRQ assesses satisfaction with face, hair, lower torso, midtorso, upper torso, muscle tone, weight, height, and overall appearance--each rated dissatisfied to very satisfied. The final 5-point items of the instrument pertain to the Weight Attitude Scale, which includes information about fat

anxiety, weight vigilance, current dieting, and eating restraint. This scale assesses self-classified weight with a self-reporting evaluation of feeling very underweight to very overweight. The MBSRQ has been used to measure body image in several studies. For example, with the MBSRQ, it has been determined that body image concerns are strong motivators of dieting and exercising behaviors (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993). In addition, weight-related discontent is the most salient facet of a negative body image (Cash, Winstead, & Junda, 1986), which is related to a cultural emphasis on thinness (Polivy, Garner, & Garfinkel, 1986; Pruzinsky, 1990).

Body image and physical fitness. Regular participation in physical activities, such as running, swimming, or bicycling, is known to enhance mental and physical health. Also suggested is that people who participate in regular physical activity have a favorable view of their bodies and a higher self-concept. Joesting (1981) explored body cathexis in respect to the amount of participation in any regular physical activity. It was found that college students who participated in five or more hours of weekly physical activity scored higher on the body cathexis scale.

Physical fitness and strength have been associated with male physical attractiveness (Guy, Ranking, & Norvell,

1980). Tucker (1981) reported similar, low body cathexis scores for male and female subjects when subjects perceived their bodies to be fatter or thinner than the muscular ideal. In conducting a gender comparison of the internal structure of a short version of the body cathexis scale, Tucker (1985) extracted three body cathexis factors common to males and females: (a) physical skill, fitness, and health; (b) face and overall appearance; and (c) miscellaneous items (various body parts and body processes). A fourth factor for women was labelled weight and lower body. Upper body strength dimensions dominated the men's fourth factor, labelled physique and muscular strength.

Adame, Johnson, and Cole (1989) studied the relationship of body image to physical fitness and to locus of control for male and female college freshmen. Subjects were administered the Hall Physical Fitness Test Profile (Hall, 1986), the Body-Self Relations Questionnaire (Winstead & Cash, 1984), and the Adult Norwicki-Strickland Locus of Control Scale (Norwicki & Duke, 1974). The Physical Fitness Test Profile includes measures of resting heart rate, blood pressure, height, weight, muscle strength, percent of body-fat, composition, flexibility, muscle endurance, and aerobic power. The BSRQ assesses self-perceptions of body image in three domains: physical

appearance, physical fitness, and physical health. The Adult Norwicki-Strickland Internal-External Scale assesses the construct of locus of control of reinforcement as the perception of a relationship between one's actions and the consequences. An internally controlled person perceives he is in control of what happens; a person of external control feels that what happens is the result of luck, fate, chance, or powerful others.

Results indicated that women were significantly more positive about their physical appearance than were men. Men were more positive about their physical fitness than women. In addition, men and women scoring in the internal locus-of-control direction viewed the physical fitness domain of their body image positively. Unlike men, internally oriented women had more positive perceptions of the health aspect of their body image. Physically fit men and women had positive attitudes toward the physical fitness component of their body image. Physically fit men differed from physically fit women in that men were more internally controlled and held more positive attitudes toward the physical health dimension of their body images (Adame, Johnson, & Cole, 1989).

A follow-up study by Adame, Johnson, Cole, Matthiasson, and Abbas (1990) assessed the level of exercise in college students and investigated the relationships between physical

fitness and (1) amount of exercise, (2) the physical fitness dimension of body image, (3) locus of control, and (4) sex. In addition to the Hall Physical Fitness Test Profile, the Body-Self Relations Questionnaire, and the Norwicki-Strickland Locus of Control Scale, students estimated the amount of time spent exercising on a 9-point scale ranging from no regular exercise to 10 or more hours per week for the preceding three months.

Results indicated that increased fitness was associated with increased amounts of exercise, internal locus of control, and good body image. There was a statistically significant interaction between sex and amount of exercise. For students who exercised 2.0 to 4.9 hours per week, men were more fit than women. Fitness was comparable for men and women exercising less than two hours or at least five hours per week. Women had to exercise five or more hours weekly to achieve the fitness level of men who exercised 2.0 to 4.9 hours per week.

In a study examining the relationship between gender and perception of body image among athletes and nonathletes, athletic participation was not associated with women's satisfaction with their body images (Hallinan, Pierce, Evans, & DeGrenier, 1991). Men were not significantly different based on athletic participation, and both athletes and nonathletes were satisfied with their body image.

Salusso-Deonier and Schwarzkopf (1991) investigated sex differences in body cathexis associated with exercise involvement. Data were collected from a university fitness improvement class and from classes unrelated to exercise. Analysis of prestudy body cathexis scores identified significant sex differences; men had much higher body cathexis for waist, hip, thigh, fitness, and weight than did women. Analysis of poststudy data, normalizing to control for prestudy sex differences, yielded a significant effect for the exercise involvement in a fitness class for men and women. Regular exercise seems to have potential for improving body cathexis for both men and women.

Clothing and the Self

Individuals construct and interpret images through processes of appearance management (Kaiser, 1990). Appearance is an extremely important part of the self-concept. Through personal appearance--dress, cosmetics, fashion expression, body movement--an individual presents personal identity, attitudes, moods, and values or self-worth (Stone, 1962). Through social comparison, one observes the standard of appearance among reference groups and learns to engage in associated appearance management behavior. These behaviors can include dieting, exercising, weight training, cosmetic use, and selection of apparel to

enhance one's appearance. One's self-concept is based in part on how one compares to other individuals with regard to traits, opinions, and abilities (Pettigrew, 1967). Humans learn and form impressions about themselves by comparing themselves to others (Mead, 1934). Cooley (1902) called this the "looking-glass self" or reflective appraisal. The reactions one receives from parents, friends, acquaintances, and others help to create the self-concept.

Appearance is one of the most prominent ways to display and reinforce self-concept. Interest in appearance is multifaceted and may reflect characteristics central to self-definition through extensive time, energy, and resources expended on appearance (Kaiser, 1990). A chosen appearance can also represent a particular self-concept. In consumer research, it is argued that the social self is achieved through the purchase and use of products that portray an image consistent with (or a compromise between) the consumer's actual and/or ideal self-concept (Sproles & Burns, 1993).

Individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others. Congruence between the symbolic image of a garment and an individual's self-concept will then lead to a positive evaluation of the garment (Jacobi & Walters, 1958). An individual's purchase and use of

clothing fashions demonstrate the social self and are symbolic of an individual's actual and/or ideal self-concept (Sproles & Burns, 1993).

Central to self-concept are values and attitudes (Rokeach, 1968). Whereas values are the central component of belief systems, attitudes are individual clusters of beliefs oriented toward specific stimuli. Attitudes are predispositions to react favorably or unfavorably toward a stimulus and are made up of three elements: cognitive, affective, and behavioral. The cognitive and affective elements are basically perceptual, whereas the behavioral element has the most implication for social action and interactions (Kaiser, 1990). Attitudes shape appearance perceptions by addressing what we know, how we feel, and how we are predisposed to respond to an article of clothing or appearance. Attitudes are shaped by basic and fundamental values integral to the self-concept.

Clothing and body image. Clothing is an extension of the bodily self and represents the nearest aspect of one's environment. Schilder (1935) stated that bodily appearances can be transfigured with the use of clothing. Further, Schilder referred to clothes as an extension of the body scheme, and posited that clothing is incorporated into body scheme and may be able to change the body image. A change

in dress can result in a change in the attitude toward the body and self (Jourard, 1958). Compton (1964) suggested that clothes may function to help strengthen weak body image boundaries.

Markee, Carey, and Pedersen (1990) investigated the difference between perception of the nude body and perception of the clothed body in relation to body cathexis. Using a modified Body Cathexis Scale, 29 working women rated 24 body parts on a 5-point Likert-type scale. To estimate whether body cathexis changed with the addition of clothing, a measure of clothed body cathexis was developed. The measure described a hypothetical outing: dinner on a cool summer evening in one of three comparable local restaurants. Each subject was asked to choose an outfit (including accessories) from her present wardrobe to wear to dinner. Each also was asked to fill out the modified Body Cathexis Scale, basing her judgment on how she perceived that each body part transfigured with clothing.

Results indicated that these working women were significantly more satisfied with their clothed bodies than with their nude bodies. The results imply that clothing is not merely a body covering and it may function to improve body image perception. Individuals may use clothing instrumentally to camouflage areas of the body that deviate from cultural ideals, and thus improve body image. These

results concur with Jourard's (1958) contention that individuals will use clothing, padding, corseting, cosmetics, and other means to conform the body to current standards of beauty.

LaBat and DeLong (1990) explored body cathexis and the perceptions of fit of clothing for female consumers. They based their study on a tenet of the psychology of product design, which asserts that consumers often blame themselves when products do not work (Norman, 1988). LaBat and DeLong believed that, when clothing does not fit, the consumer may perceive the cause as related to the body and not to the clothing. Further, they believed that fit problems would result in negative feelings about the body.

Subjects were measured on three scales:

(1) satisfaction with fit of apparel at upper, lower, and total body; (2) satisfaction with fit at specified body sites, such as pant length and fit around crotch, armseye, and elbow; and (3) a body cathexis scale. Results indicated that the subjects were least satisfied with garment fit on the lower body. Also, subjects were least satisfied with the lower body on a measure of body cathexis. The measured fit satisfaction and body cathexis at upper, lower, and total body were positively correlated. The strongest relationship existed for the lower body. Correlations for

individual lower body sites also showed stronger relationships than for upper body sites.

LaBat and DeLong noted that fashion at the time of the study reflected close fit in the lower body with the use of blue jeans and slim skirts. They contended that the apparel industry's sizing systems and the sized garments themselves provide symbols of expectations for women. The ideal female body type, with slimmer hips than the average American female, is reflected in sizing systems used by manufacturers. This in turn may influence the more stringent evaluation of fit at the lower body.

The correlation between lower body satisfaction and lower body cathexis supports a relationship between the subjects' satisfaction with fit and feelings toward personal body. LaBat and DeLong suggest that dissatisfaction is a result of trying to fit real bodies into garments that the garment industry sized according to an ideal body shape with slim hips in proportion to upper body measurements. They also suggest that a departure from stereotypical definitions of female body types could result in new sizing systems which would fit more consumers.

Kotsiopulos, Knoll, and Shim (1990) identified body image problems of large, tall, and short men, and they related body cathexis to satisfaction and dissatisfaction with ready-made clothing available to this population. The

research showed that the male subjects had the most positive body cathexis about the head/upper body, followed by height, torso, lower body, and weight. In addition, it was concluded that well proportioned subjects were satisfied with apparel fit and those not well proportioned were not satisfied.

Research has been conducted to clarify the nature of the relationship between body perceptions and usage of clothing. Kwon and Parham (1994) examined the relationship between perception of physical self and clothing selection practices. The objective was to identify the dimensions of clothing functions given two different situations: (a) when one feels fat or feels one has gained weight (Fat State), and (b) when one feels more slender or feels one has lost weight (Slender State).

The clothing function component was developed by modifying and adding to items from the "Interest in Clothing as Enhancement of Security" used by Gurel and Gurel (1979). This dimension of clothing interest was selected because the topics deal with an affected evaluation of physical self in relation to clothing selection practices. A further justification was Cosbey's (1990) findings that this was the clothing interest dimension which most influenced individuals' feelings toward clothing. These feelings in turn also affected sociability, emotion, and dominance.

Other clothing measures were developed through group discussion with female participants in a weight loss program.

The second component of Kwon and Parham's study, the Weight Factor, was adopted from the weight factor portion of the body cathexis instrument for women proposed by Mahoney and Finch (1976). The Weight Factor included degree of satisfaction regarding the subjects' actual body weight, hips, thighs, and waists. Summed scores across these four items were used as the Weight Factor.

Significant differences were found between clothing functions for the Fat and Slender States, indicating that the motivations concerning clothing functions for the two states were basically different. When subjects perceived themselves as fat, scores for camouflage, comfort, individuality, and assurance were negatively correlated with the Weight Factor scores. However, when subjects felt slender, the only significant association was a low negative correlation of camouflage scores with Weight Factor.

Clothing and sports involvement. Casselman-Dickson and Damhorst (1993) compared female cyclists at two levels of involvement in the sport as to differences in their interest in and use of bicycling apparel. They included a test of the components of Solomon's (1983) model related to how

people use products as both response and stimulus in acting out a role. According to Solomon, symbolic qualities of possessions may increase confidence and facilitate the audience's acceptance of an individual's position in a particular role. Individuals who have achieved substantially in a role make less use of clothing and other objects to symbolically indicate knowledge and achievements than do individuals with lesser accomplishments and experience in a role. An increase in substantive role knowledge decreases the need to symbolically express level of accomplishment or aspiration.

Involvement, one component of role knowledge, was used to compare how different levels of involvement in the cycling role affected interest in dress. Task and ego-involvement are two differing types of involvement that individuals may have in attempting to reach a major goal such as competence in an activity. Task involvement is based on mastery and personal skill improvement and is intrinsically motivated. Ego involved behavior is socially motivated and is characterized by attempts to demonstrate that the individual is more competent at a task than are others. A behavioral measure of task involvement, self-report of average miles bicycled in a week, was used to determine if level of involvement in cycling and its

subsequent role knowledge may shape an individual's interest in dress for a sports role.

Data collection consisted of three parts: an interview schedule and two questionnaires. The interview schedule included questions about cycling clothing the subject owned and about usage of cycling dress for self-expression, attractiveness, conformity, and performance enhancement. The first questionnaire included 57 items from the Dress Interest Inventory, which measured interest in dress with items worded to apply specifically to cycling dress. Additional items related to concern with dressing appropriately and to enhancement of physical performance through dress. The second questionnaire consisted of open-ended items related to personal characteristics, such as number of years bicycling, racing participation, and expenditures on cycling clothing.

Based on the self-reports of average miles bicycled in a week, the subjects were split into high and low involvement categories. The female cyclists in both levels of involvement were similar in that they were not interested in bringing attention to themselves with clothing. A majority of the cyclists felt attractive in their clothing; however, a minority in each involvement group expressed dissatisfaction with the appearance of their bodies in cycling clothing. Casselman-Dickson and Damhorst believe

that feelings of unattractiveness may be related to the high degree of body exposure required in cycling dress and consequent heightened awareness of body shape. Similarities were found between the two levels of involvement in interest in attracting attention, modesty, satisfaction with appearance, and choice of role-appropriate dress. Cyclists differed in their concern with attractiveness, dressing correctly, and conforming in dress. Although neither group acknowledged using clothing for conformity, the higher-involved group was concerned about wearing traditional clothing for group ride situations.

Summary

The way individuals feel about their bodies is inductive of cultural ideology, social relations, and personal values. Cultural expectations of attractiveness and thinness may affect body image as well as appearance management behaviors. Individuals' active creation of appearance to the cultural aesthetic ideal is believed to be a result of social identity. That is, the predominant appearance ideal of a culture becomes the aesthetic standard for individuals to create their appearances and against which individuals compare themselves.

Through social comparison, one observes the standard of appearance among one's immediate reference group and learns

to engage in associated appearance management behaviors. Appearance management techniques may include the use of products or procedures to enhance one's body image. Clothing can be used as a means to attain the aesthetic ideal, as well as to improve one's body image. This can be achieved by making some characteristics of the body salient, while masking other less desirable characteristics. Fashion adoption can be related to an individual's self-concept. Congruence between the symbolic image of a garment and an individual's self-concept can lead to a positive evaluation of the garment. Interest in dress and clothing functions have been measured with the use of the "Dress Interest Inventory" and the "Interest in Clothing as Enhancement of Security" (Gurel & Gurel, 1979). Results of Casselman-Dickson and Damhorst (1993) indicated that usage of dress includes self-expression, attractiveness, conformity, and performance enhancement for cycling dress. In addition, clothing functions can change with an individual's perception of feeling fat or thin (Kwon & Parham, 1994).

Individuals who participate in regular physical activity have been found to have a better view of their bodies as well as a higher self-concept when compared to those who do not engage in regular physical activity. Female cyclists at two levels of involvement in the sport

have been studied as to their interest in and use of bicycling apparel. When measuring levels of involvement by self-report of average miles bicycled per week, female cyclists with the highest and lowest levels of involvement showed many similar characteristics in their interest in attracting attention, satisfaction with appearance, modesty, and choice of role-appropriate dress.

It has been determined that body image concerns are strong motivators of dieting and exercising behaviors. Although there are several studies related to the concepts of body image and exercise, there is little information related to exercise and clothing behavior. In addition, almost no investigators have addressed either body-self relations as it relates to level of exercise involvement or clothing attitude for women in regular exercise programs. Therefore, an important contribution to the literature can be made with the proposed research.

CHAPTER III STATEMENT OF PROBLEM

Conceptual Framework

The way individuals feel about their bodies is inductive of cultural ideology, social relations, and personal values. Bodies become signifiers; they refer to individuals as social beings within a larger cultural and historic context. The extent to which individuals are satisfied with their own bodies influences their feelings about themselves and, in turn, will affect interaction with others.

Self-concept is the objective acknowledgement of the self and its physical and abstract traits (Holloman, 1989). Self-concept also has been described as the total image one has about oneself; it contains one's actual experiences and interpretations about those experiences (Kalish, 1975). The self-concept is multidimensional and encompasses several facets. James (1980) identified two aspects of the self as "the self as a knower or I" and "the self as known or me". The process of actual experiencing is considered "the self as a knower or I", whereas the interpretation of that experiencing is related to "the self as known or me".

Body image and self-esteem are considered the most important components of self-concept (Kalish, 1975). Kaiser

(1990) describes body image as the mental picture one has of one's own body. This picture may or may not be accurate or consistent with others' perception of that body. Body image also has been characterized as a collective concept, incorporating a collection of feelings and attitudes that one has about the body (Fisher, 1968).

Self-esteem is the way we feel toward the self we perceive, an appraisal resulting from the self-concept. Self-esteem, the evaluation of one's self, is related to "the self as known". The process of examining one's performance and abilities based on one's personal standards and values, which have been influenced by society and significant others, is considered "the self as known" (Burns, 1979).

Body image is encompassed by self-concept and self-esteem. Body image and self-esteem may be interrelated because both "the self as a knower" and "the self as known" interact and influence each other. In addition, the relationship between the concepts is close in that individuals' perceptions and standards are influenced by social standards and values (Burns, 1979).

The body image construct is multidimensional, and a key empirical distinction exists between the attitudinal experience and the perceptual experience of one's body (Cash, 1993). The Multidimensional Body-Self Relations

Questionnaire is an inventory for the assessment of self-attitudinal aspects of the body-image construct. The MBSRQ is a body-image scale that measures subjects' attitudes toward their physical appearance, fitness, and health. The MBSRQ takes into account the three domains--cognitive (attention/importance), behavioral (action or activity), and affective (evaluation)--which is consistent with the extant social-psychology definition of attitude. Within each of these three somatic domains are two composite subscales of evaluation and orientation. The evaluation examines the extent of liking, attainment, and satisfaction of the domain. The orientation examines the degree of cognitive importance of and attention to the domain, as well as behaviors related to maintaining or improving facets of the domain.

One's self-concept is based in part on how one compares to other individuals with regard to traits, opinions, and abilities (Pettigrew, 1967). Interactions with others shape the meanings that individuals use to define the self. Social comparison is an example of a process in which individuals can distinguish themselves from others. Developed by Rudd and Lennon (1994), Figure 1 is a model explaining the active creation of appearance in response to the cultural aesthetic ideal. The model is predicated on the belief that the predominant appearance ideal of any

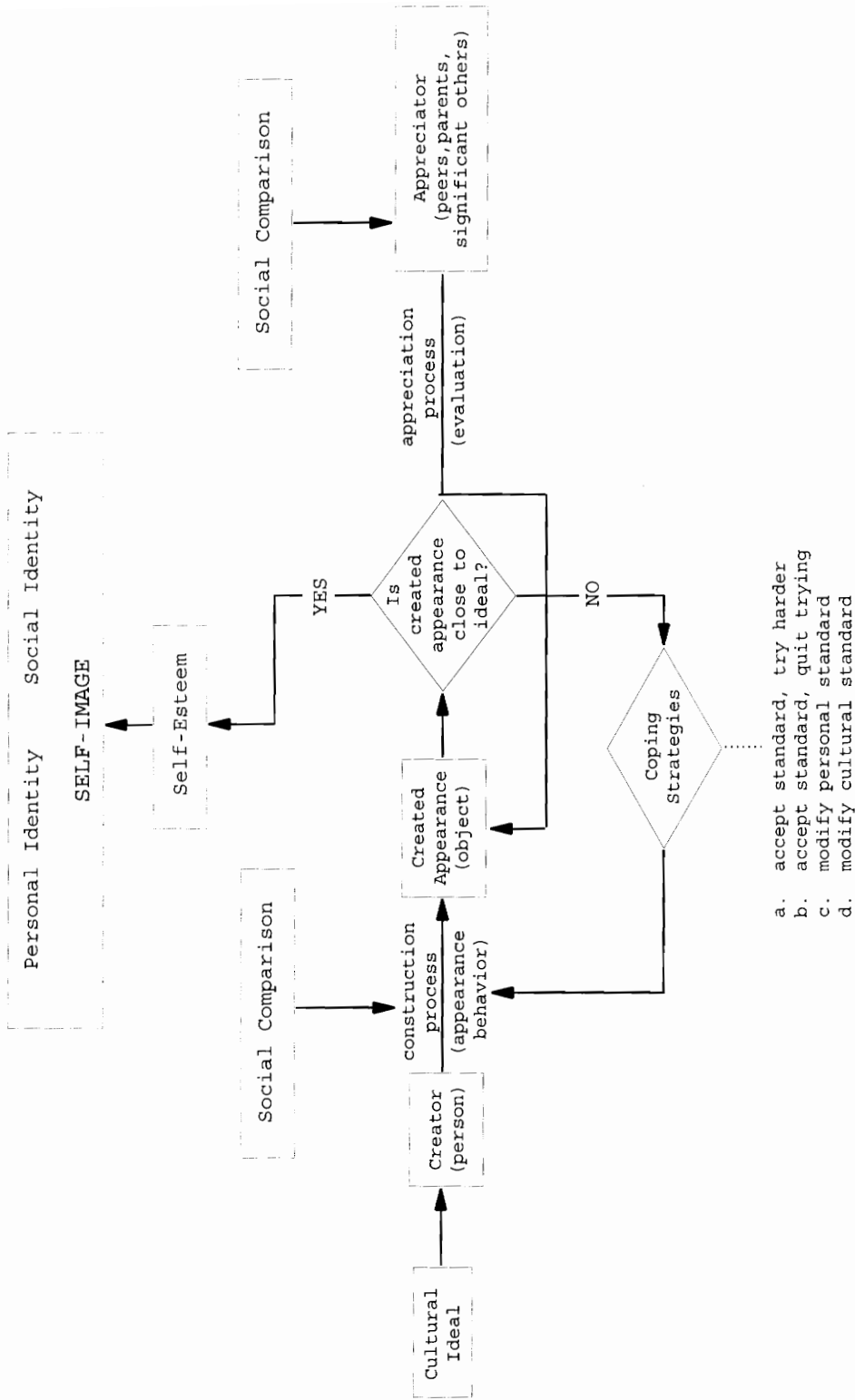


Figure 1. The effects of social comparison on the construction and evaluation of appearance (Rudd & Lennon, 1994, p. 165; reprinted by permission of the International Textile and Apparel Association; permission granted, S.S. Hutton, August 29, 1996).

culture, particularly the American culture, becomes the internal aesthetic standard by which individuals create their appearance and against which individuals compare themselves. The central premise of the model is the belief that individuals use the process of social comparison to continually assess the personal aesthetic value of themselves and others. Humans learn and form impressions about themselves by comparing themselves to others (Mead, 1934). Social comparison occurs when individuals evaluate themselves in relation to others (Festinger, 1954) and may result in increased or decreased feelings of self-worth. If one's evaluations come close to the appearance ideal, self-esteem is elevated, leading to stronger personal and social identity, both of which contribute to a strong self-image. If one's appearance is not close to the aesthetic ideal, one may engage in coping strategies to create and recreate the ideal.

The social comparison process presented in the model involves the influence of a reference group. Every group, organization, or society has its own set of shared artifacts and understandings that are conveyed to and through its members. A reference group serves as a reference point in the formation of beliefs, attitudes, and behavior (Kaiser, 1985). Individuals may or may not actually belong to a group that supplies reference-group influence. However,

groups provide a means for self-evaluation as individuals compare their values and appearances to those of a reference group (Assael, 1992). Group habits involving clothing and appearance can give individuals guidelines or a source of reference for understanding the self (Kaiser, 1985). Collectively, group members can express cohesiveness and mutual interests through clothing and appearance.

The social groups to which an individual orients herself, regardless of membership, are the reference groups to which the individual ascribes (Singer, 1981). Reference groups can serve two functions: (1) a normative function, by reinforcing an individual's conformity to group norms; and (2) a comparison function, by being a standard of comparison by which the person can evaluate herself and others (Sproles & Burns, 1994). Individuals compare themselves to others and to the ideal self, which is usually generated from cultural ideals for appropriate behavior and appearances.

As part of daily life, individuals perceive and organize the stimulus world through the process of categorization (Hamilton, 1979). Culture provides a symbolic order by which individuals construct and sustain a sense of social reality (Hamilton & Hamilton, 1989). Rudd and Lennon (1994) believe that in western culture, attractiveness is a cultural category and may have an impact

on people's lives. In addition, cultural categories are often intricately connected with appearance, clothing styles, and fashion (Kaiser, 1990).

Individuals' active creation of appearances to match the cultural aesthetic ideal is believed to be a result of social comparison (Rudd & Lennon, 1994). That is, the predominant appearance ideal of a culture becomes the aesthetic standard which individuals use to create their appearances and against which individuals compare themselves. Through the process of social comparison, individuals continually assess the personal aesthetic value of themselves and others. One's body image is based in part on how one compares to other individuals (Pettigrew, 1967). The reactions one receives from parents, friends, acquaintances, and others also help to create the body image.

An adaptation of the Rudd and Lennon model (1994) was used in the current research (Figure 2). Appearance is an extremely important part of the self-concept. It is believed that through personal appearance (in this case specifically through dress and body movements), an individual presents personal identity, attitudes, moods, and value or self-worth (Stone, 1962). In concordance with the model by Rudd and Lennon, the following model uses the

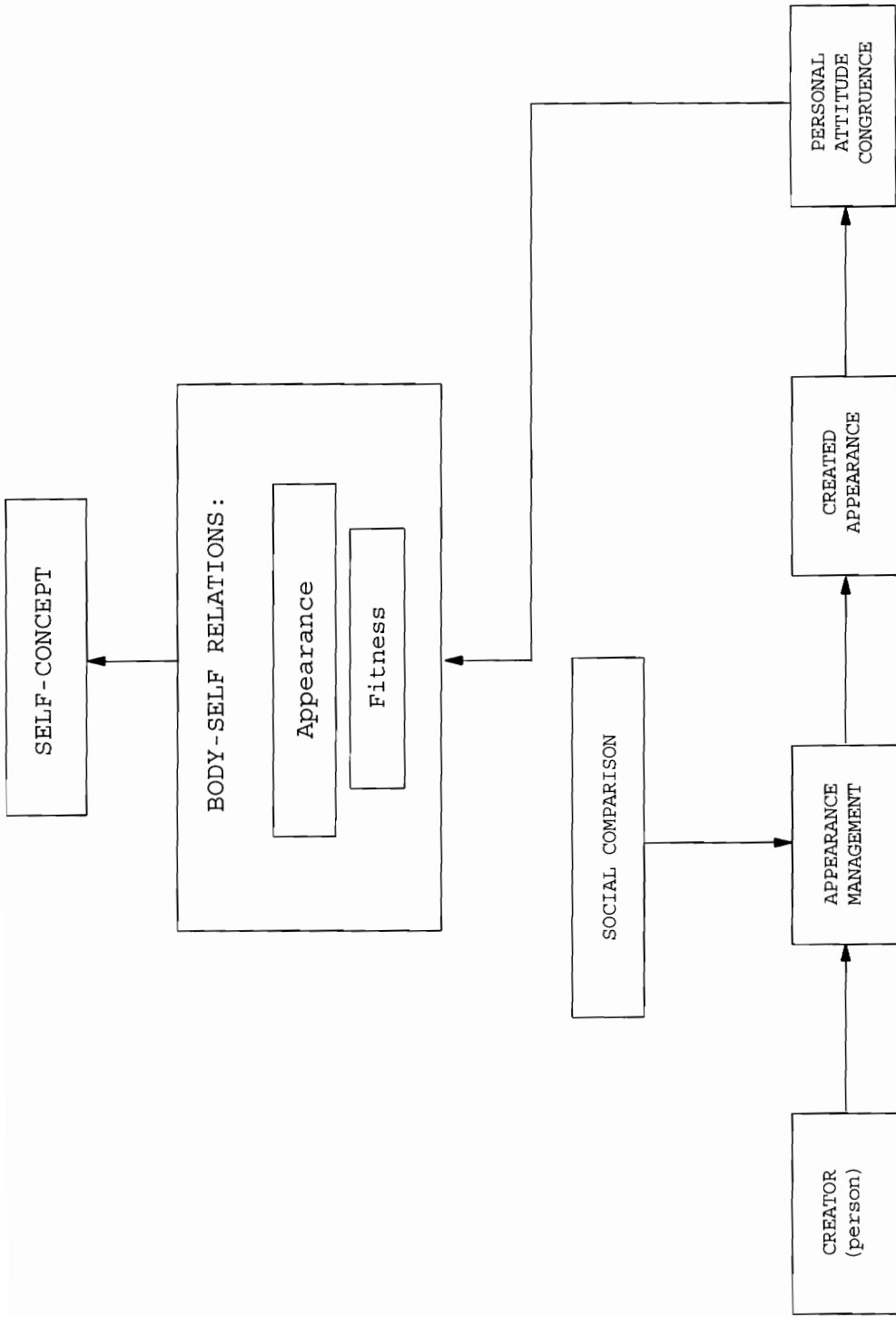


Figure 2. Social comparison on the construction of body-self relations (adapted from Rudd & Lennon, 1994, p. 165).

notion of social comparison. Through social comparison, one observes the standard of appearance among reference groups and learns to engage in associated appearance management behavior (see Figure 2). These behaviors can include dieting, exercising, weight training, cosmetic use, and selection of clothing styles to enhance one's appearance. In general, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance (McCrea, Summerfield, & Rosen, 1982) or wishes to approximate the cultural aesthetic. In the current research, an individual's level of exercise involvement is used as an indicator of the time and effort involved in altering or forming one's appearance.

A chosen appearance can represent a particular self-concept or attitude. Attitudes include predispositions to react favorably or unfavorably toward a stimulus and are comprised of three elements: affective (evaluation), cognitive (attention/importance), and behavioral (action or activity) (Kaiser, 1990). In consumer research it is argued that the social self is achieved through the purchases and use of products that portray an image consistent with (or a compromise between) the consumer's actual and/or ideal self-concept (Sproles & Burns, 1994). Individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

Congruence between the symbolic image of a garment or attitude and an individual's self-concept can affect body-self relations (Jacobi & Walters, 1958). An individual's beliefs toward clothing styles and use of clothing fashions demonstrate the social self and are symbols of an individual's self-concept (Sproles & Burns, 1994). In the current research (Figure 2), congruence between the affective and behavioral aspects of an attitude is considered to be related to body-self relations and consequently, the self-concept.

Conceptual Definitions

1. Actual self-concept: The total image one has about oneself; it contains one's actual experiences and interpretations about those experiences (Kalish, 1975).
2. Body image: The mental picture one has of his or her body (Kaiser, 1985).
3. Body-self relations: A perspective where body image is a self-attitude comprised of three psychological dimensions or dispositions toward one's body--affective (evaluation), cognitive (attention/importance), and behavioral (action or activity) (Cash, 1993).

4. Body-self relations appearance evaluation and orientation: Feelings of physical attractiveness or unattractiveness; satisfaction or dissatisfaction with one's looks; and the extent of investment in one's appearance (Cash, 1993).
5. Body-self relations fitness evaluation and orientation: Feelings of being physically fit or unfit and extent of investment in being physically fit or athletically competent (Cash, 1993).
6. Reference groups: The social groups to which an individual orients him or herself, regardless of membership (Kaiser, 1985).
7. Social comparison: A process by which individuals evaluate themselves in relation to others (Festinger, 1954), and which may result in increased or decreased feelings of self-worth.
8. Appearance management behavior: Appearance behaviors, such as dieting, exercising, weight training, cosmetic use, and selection of clothing, to enhance one's appearance.

9. Exercise involvement: An indicator of the time, effort, or mental state involved in altering or forming one's appearance through exercise.
10. Exercise clothing styles: A characteristic mode of presentation that typifies several similar clothing objects of the same category or class (Sproles & Burns, 1994).
11. Exercise clothing attitude: Beliefs toward given exercise clothing styles. Attitudes include predispositions to react favorably or unfavorably toward a stimulus and are comprised of three elements-- affective (evaluation), cognitive (attention/importance), and behavioral (action or activity) (Kaiser, 1990).
12. Personal attitude congruence about exercise clothing: Congruence between affective and behavioral attitudes toward certain exercise clothing.
13. Exercise clothing attitude consistency measure: The consistency of the affective and behavioral attitude congruence scores across three exercise clothing images presented to the respondents.

Research Problem

The purpose of this research was to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs.

Objectives

1. To measure for a sample of women in regular exercise programs the following variables:
 - (a) body-self relations;
 - (b) level of exercise involvement;
 - (c) components of exercise clothing attitude congruence and attitude consistency;
 - (d) demographics (income, marital status, education, age, and race/ethnic group).

2. To examine the relationships between:
 - (a) body-self relations and level of exercise involvement;
 - (b) body-self relations and exercise clothing attitude consistency measure; and
 - (c) level of exercise involvement and exercise clothing attitude consistency measure.

3. To examine the relationships between demographics (income, marital status, education, age, and race/ethnic group) and body-self relations, level of exercise involvement, and exercise clothing attitude consistency measure.

Hypotheses and Rationale for Hypotheses

Based on the conceptual framework and the review of literature, the framework and the proposed relationships among the variables are illustrated in Figure 3.

Hypothesis 1. Among the women subjects, there will be a positive relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and level of exercise involvement. Women subjects who have higher body-self relations appearance scores have a higher level of exercise involvement;
- (b) the scores for body-self relations fitness (both evaluation and orientation) and level of exercise involvement. Women subjects who have higher body-self relations fitness scores have a higher level of exercise involvement.

According to several researchers, body image is positively related to level of physical fitness. It has been determined that body image concerns are strong motivators of exercising behaviors (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993). Also, some evidence exists that regular exercise is a method for improving body image (Salusso-Deonier & Schwarzkopf, 1991).

Hypothesis 2. Among the women subjects, there will be a relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images;

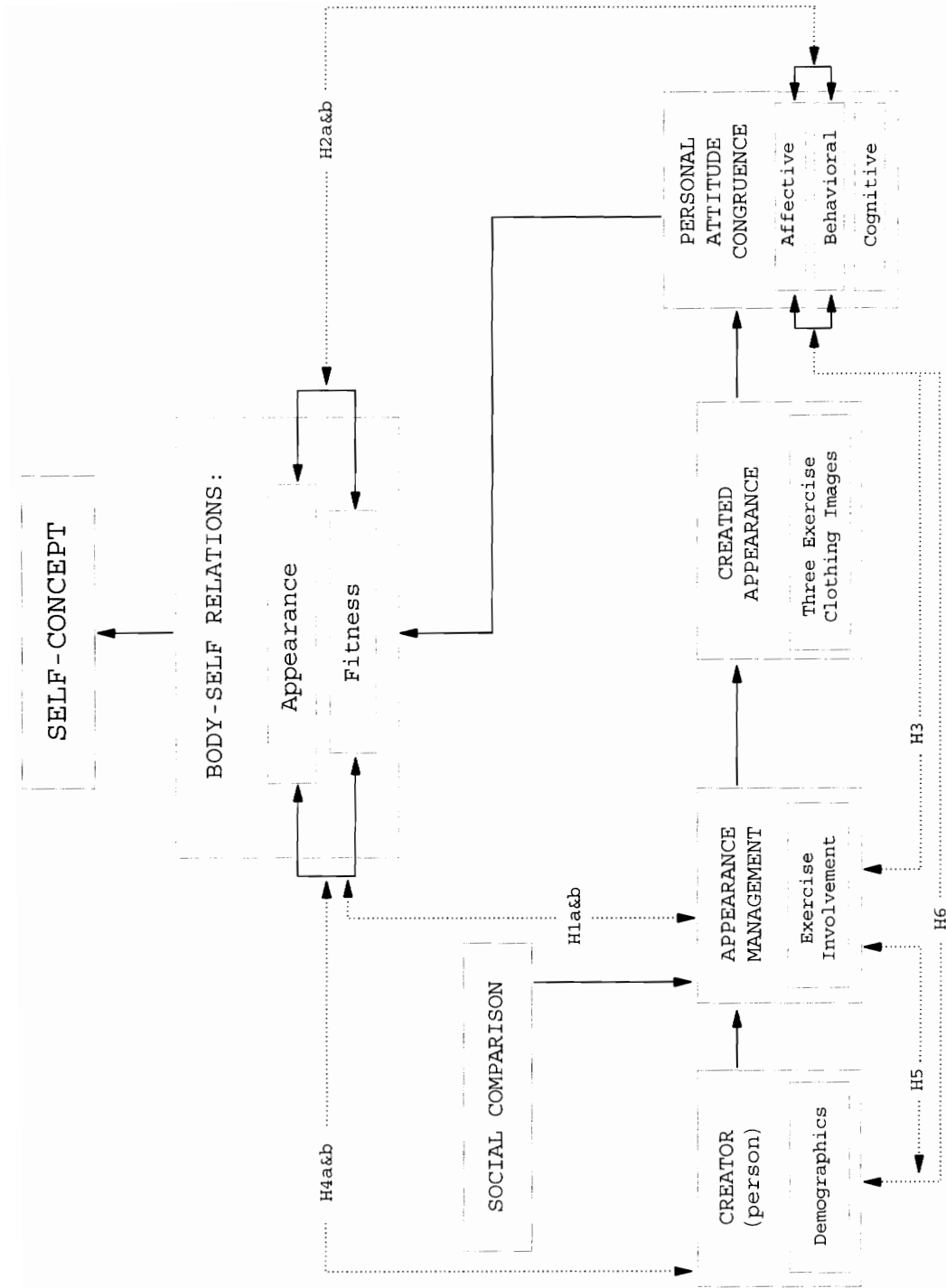


Figure 3. Social comparison on the construction of body-self relations and proposed relationships (adapted from Rudd & Lennon, 1994, p. 165).

- (b) the scores for body-self relations fitness (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images.

Clothing is considered an extension of the bodily self, thus the exercising subject's body-self relations can play an important role in clothing attitude. Congruence between the symbolic image of a garment and an individual's self-concept can affect body-self relations (Jacobi & Walters, 1958). Note that in the above and in subsequent hypotheses, the exercise clothing attitude consistency measure is a representative slope measuring the consistency of the affective and behavioral attitude congruence scores across the three exercise clothing images presented to the respondents.

Hypothesis 3. Among the women subjects, there will be a positive relationship between level of exercise involvement and the exercise clothing attitude consistency measure across the three exercise clothing images presented to the respondents.

Through social comparison, one observes the standard of appearance among reference groups and learns to engage in associated appearance management behavior. These behaviors can include exercising and selection of apparel to enhance one's appearance. Body image concerns are strong motivators of exercising behaviors (Cash, Novy, & Grant, 1993; Cash &

Hicks, 1990), and appearance is multifaceted and may reflect characteristics central to self-definition through time, energy, and resources expended on appearance (Kaiser, 1990).

Hypothesis 4. Among the women subjects, there will be a relationship between demographics (income, marital status, education, age, and race/ethnic group) and:

- (a) the scores for body-self relations appearance (evaluation and orientation);
- (b) the scores for body-self relations fitness (evaluation and orientation).

Body image has been found to be associated with demographic variables such as social/group affiliation and cultural world view (Armstrong & Tan, 1978; Hamilton & Chowdhary, 1989). Hamilton and Chowdhary (1989) found impacts of education and occupation on body image. In addition, Hwang (1993) found that elderly subjects who had higher income, social participation status, and education were more satisfied with their bodies.

Hypothesis 5. Among the women subjects, there will be a relationship between demographics (income, marital status, education, age, and race/ethnic group) and level of exercise involvement.

Exercise involvement has been found to be associated with demographic variables. Adame, Johnson, Cole, Matthiasson, and Abbas (1990) assessed the level of exercise

involvement in college students and found the variable of involvement related to age and education.

Hypothesis 6. Among the women subjects, there will be a relationship between demographics (income, marital status, education, age, and race/ethnic group) and the exercise clothing attitude consistency measure for the three exercise clothing images.

Results of Casselman-Dickson and Damhorst (1993) indicated that usage of cycling dress includes self-expression, attractiveness, conformity, and performance enhancement for cycling dress. In addition, usage of dress was found to be associated with demographic variables. It is believed that similar relationships will be found with demographic variables and the attitude consistency measure for the three exercise clothing images.

Limitations

1. The interpretation of the findings cannot be generalized to the whole adult female exercise community nor to other sports and exercise clothing. This is due to the selection of the sampling sites in a certain geographic location.
2. No one comprehensive source exists for the specific exercise clothing images. The availability of

magazines can affect the exercise clothing images included in the study.

3. Limitations due to the nature of the rating scale should be considered. Subjects may think that intervals of the rating scale are not equal for them, although the rating scale is assumed to have equal intervals. Also, the rating scale has a lack of objectivity since there is no objective standard for subjects' ratings.

Assumptions

1. The subjects will understand and respond to the questionnaire accurately.
2. Results are influenced by the subjects' ability and willingness to respond to the questionnaire.
3. The major constructs such as body-self relations, exercise involvement, and exercise clothing attitude are validly measured.
4. The three exercise clothing image styles included will reflect common styles in use and will portray the three levels of body coverage intended.

CHAPTER IV PROCEDURE

The purpose of this study was to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs. Subjects were women members of four different aerobic exercise programs in Blacksburg, Virginia. A questionnaire regarding body-self relations, exercise involvement, exercise clothing attitude, and demographics was developed and pilot tested. The results of the pilot test were used in revising the instrument before data collection. The relationships among the variables were analyzed by statistical tests including Kendall's Tau and Multiple Regression. Validity and reliability of the questionnaire were analyzed with factor analysis and Cronbach's alpha.

Sample

Subjects were women involved in four different aerobic exercise programs in Blacksburg, Virginia. Three programs are in private establishments, and the fourth program is affiliated with Virginia Polytechnic Institute and State University. Aerobic exercise programs were chosen due to the availability of a large sample and the variety of

aerobic exercise clothing. The women subjects were expected to reflect differences in body-self relations, exercise involvement, exercise clothing attitude, and demographics. Data were collected via personal contact at the exercise program locations. The questionnaire was hand delivered by the researcher or trained assistants who were fellow graduate students. A data collection guide journal was used by the investigators to note the exercise clothing style of the subjects.

The questionnaire included a cover letter explaining the research and an informed consent form for participants of investigative projects required by the Human Subjects Review Committee. The questionnaire and a statement of purpose were submitted to the Human Subjects Review Committee at Virginia Polytechnic Institute and State University for approval prior to data collection.

The Instrument and Variables Measured

Body image refers to the mental view one has of her body. Body-self relations is a perspective where body image is a self-attitude comprised of three psychological dimensions or dispositions toward one's body: affective (evaluation), cognitive (attention/importance), and behavioral (action or activity). The current study utilized all three dimensions.

Winstead and Cash (1984) developed the original Body-Self Relations Questionnaire containing 140 items. A modified 69-item version, the Multidimensional Body-Self Relations Questionnaire, has been developed through an extensive iterative process of rational-empirical item selection and validation research, including factor-analytic research (Cash, Winstead, & Junda, 1986). The MBSRQ, which is used in the present study, consists of three parts: (a) the factor subscales, (b) the Body Areas Satisfaction Scale, and (c) the Weight Attitude Scale. The factor scales measure subjects' attitudes toward their physical appearance, fitness, and health using a response format of a four-point scale ranging from definitely disagree to definitely agree. Within each of the three somatic domains are items comprised of two composite subscales of evaluation and orientation. The evaluation examines the extent of liking, attainment, and satisfaction of the domains, whereas the orientation examines the degree of cognitive importance of and attention to the domains, as well as behaviors related to maintaining or improving facets of the domain.

The MBSRQ factor subscales for appearance evaluation and orientation and for fitness evaluation and orientation were used in this research (see questions 1 through 35 on the questionnaire in Appendix A). Subjects were asked to indicate the extent to which each statement pertained to

them personally, using the scale: disagree, tend to disagree, tend to agree, or agree. These items were scored from one to four, with a higher score reflecting a higher level of agreement.

The appearance evaluation measures feelings of physical attractiveness or unattractiveness and satisfaction or dissatisfaction with one's looks. High scorers are assumed to feel more satisfied with their physical appearance and low scorers to have a general unhappiness with their physical appearance. Items were scored from one to four, with a higher score reflecting a higher level of agreement. Five questions (5, 13, 15, 17, 23) were positive in nature, whereas two questions (2, 20) were negative in nature. Negative items were reverse coded from four to one so that higher scores reflected a higher appearance evaluation.

Appearance orientation measures the extent of investment in one's appearance. High scorers are assumed to place importance on how they look, pay attention to their appearance, and engage in "grooming behaviors" to look their best. Low scorers are assumed to be apathetic about their physical appearance; their looks are not especially important, and they do not expend much time or energy to "look good". These items were scored from one to four, with a higher score reflecting a higher level of agreement. Eight questions (3, 8, 10, 28, 29, 30, 31, 35) were

positive, whereas four (1, 9, 11, 32) were negative questions. The negative items were reverse coded from four to one so that higher scores reflected a higher appearance orientation.

The fitness evaluation of the MBSRQ measures feelings of being physically fit or unfit. High scorers are assumed to regard themselves as physically fit, "in shape", or athletically active and competent. Low scorers are assumed to feel physically unfit, "out of shape", or athletically unskilled. Items were scored from one to four, with a higher score reflecting a higher level of agreement. Two questions (33, 34) were positive evaluations, whereas one (18) was a negative evaluation. The negative item was reverse coded from four to one so that higher scores reflected a higher fitness evaluation.

Fitness orientation measures the extent of investment in being physically fit or athletically competent. High scorers are assumed to value fitness and to actively engage in activities to enhance or maintain their fitness. Low scorers are assumed to not value physical fitness and to not regularly incorporate exercise activities into their lifestyles. These items were scored from one to four, with a higher score reflecting a higher level of agreement. Seven items (7, 12, 14, 16, 21, 22, 25) were positive, whereas six (4, 6, 19, 24, 26, 27) were negative. The

negative items were reverse coded from four to one so that higher scores reflected a higher fitness orientation.

Calculations for the MBSRQ involved computation of a mean score of items within each factor subscale. The computation resulted in four overall mean scores of appearance evaluation and orientation and fitness evaluation and orientation. The correlations were conducted with the separate averages for the evaluation and orientation scores and with the averages over both sets.

Exercise involvement is an indicator of the time and effort involved in altering or forming one's appearance through exercise (see question 41 on the questionnaire in Appendix A). This study used a behavioral measure with an open-ended self-report of average number of hours exercised in a given week.

Exercise clothing attitude is an indicator of beliefs toward a given exercise clothing style. Exercise clothing styles are a characteristic mode of presentation that typifies several similar clothing objects of the same category or class (Sproles & Burns, 1994). Individuals' attitudes include predispositions to react favorably or unfavorably toward a stimulus and are more specific referents than are values. An attitude is comprised of

three elements or dispositions toward a specific stimulus: affective (evaluation), cognitive (attention/importance), and behavioral (action or activity). The affective element refers to a perceiver's feelings or emotions and likes and dislikes, thereby shaping preferences and tastes. The cognitive element includes beliefs or other pieces of information about a stimulus. The behavioral element addresses a perceiver's intent and readiness to respond to a stimulus (Kaiser, 1990). Attitudes are shaped by basic and fundamental values integral to the self-concept, and research reveals that attitudes influence how appearances are perceived.

Only the affective and behavioral attitude elements were used in this study. Self-concept can be explained in terms of an evaluation process involving perception of oneself through the actual or anticipatory use of a product (Sirgy, 1986). The perceived self-image arising from the actual use of the product is the object of the evaluation. In this research, women subjects evaluated given exercise clothing images by supplying their feelings toward each of the three images (see questions 42-55, 56-69, and 70-83 on the questionnaire in Appendix A). To guide the development of this portion of the questionnaire, selected exercise clothing styles were used to represent the exercise clothing styles currently available on the market. This portion of

the instrument was developed through the following several steps.

1. To determine whether certain exercise clothing styles were representative and feasible categories for the study, numerous photographs from current mail order, fashion, health, and exercise magazines (e.g., Self, Vogue, Cooking Light, New Body, J.C. Penney, Lady Foot Locker) were reviewed. Frontal views of clothing shown being worn by women engaged in any indoor-related, active exercise were considered initially to be appropriate for group aerobic exercise environments and to be representative of clothing styles worn by exercising women.

A panel of judges plus the researcher classified the exercise clothing in the photographs into distinct categories using a Q-sort. A Q-sort uses a rank-order procedure of piles or groups of objects. To conduct a Q sort, an individual is given a set of objects to sort into piles according to some criterion. The criterion for this study consisted of the degree of body coverage of the exercise clothing images on a continuum of high to low. An examination of research indicated that degree of body coverage was speculated as an important part of body image (Casselmann-Dickson & Damhorst, 1993; Kwon & Parham, 1994).

The panel was comprised of experts in the field of clothing and textiles. Research shows that individuals

selectively screen social stimuli for further processing based on their own accessible constructs (Bargh & Pratto, 1986). Because the panel experts were involved in the field of clothing and textiles, their interest was assumed to lead them to pay attention to the appearance of others. For this research, the criterion categories were printed on separate index cards, and the panel sorted the exercise clothing style photos into groups of high, medium, and low body coverage. If an expert could not confidently place the clothing into one of the three categories, no response was noted. In compiling the overall results, classification into any one category required at least 50 percent agreement among the panel members. If 50 percent agreement was not reached, the exercise clothing style was not included.

2. Based on the categorization of the outfits in the photographs and comments from the panel members, three black-and-white line drawings of exercise clothing style images were rendered to represent the different amounts of body coverage on a continuum of high to low body coverage (see questionnaire in Appendix A). In compiling the exercise clothing images, it was also determined that definition of the body shape was an underlying factor in determining the different amounts of body coverage. Body definition refers to the amount of body shape defined by both the type of fabric and the garment style. Therefore,

body definition was also considered when rendering the three line drawings of the exercise clothing images. Development of the three black-white line drawings involved a process of assessment where the researcher evaluated the compiled Q-sort images and separated them into specific garment attributes such as neckline depth, sleeve and hem length, and the degree of skin exposure. From this assessment, the exercise clothing images were rendered to depict specific garment attributes.

The image intended to have the highest body coverage (page 4 of questionnaire in Appendix A) has the lower body completely covered by a pair of stretch leggings. On the upper portion of the outfit is a high crew-neck T-shirt, the hem of which extends to just below the hip line. The second image of medium body coverage (page 5 of questionnaire in Appendix A) consists of the same style T-shirt as mentioned above and a pair of stretch bike-style shorts extending to just above the knees. The third and final image of low body coverage (page 6 of questionnaire in Appendix A) incorporates a scoop-neck tank-styled stretch halter top with a pair of brief stretch shorts.

To focus attention on the exercise clothing styles, the same size, shape, and pose of the figures were used, and facial features, hair, and footwear were omitted. In addition, a fully erect, seven and one-half head-frontal

view fashion figure was used. The styles depicted in the line drawings exclude color, texture, fabric, and constructional detail elements of the exercise clothing images. Variations in these factors might have influenced the respondents' perceptions of the images by communicating other image cues.

3. To select adjectives for the affective attitudes that describe possible feelings about the chosen exercise clothing images, a list of terms that describe attitudes toward exercise clothing was compiled. The list was drawn from statements used in former studies related to body image and/or exercise behavior (Casselman-Dickson & Damhorst, 1993; Gurel & Gurel, 1979; Kwon & Parham, 1994).

The three exercise clothing images along with the selected adjectives were arranged randomly to measure exercise clothing attitudes on a 4-point Likert-type scale: disagree, tend to disagree, tend to agree, agree. The question posed with respect to each of the three images was: "Do you believe the exercise clothing image in the box is:"

This was followed by a common list of nine terms (comfortable, attractive, etc.) for all three images. These items were scored from one to four, indicating that a higher score reflects a higher level of agreement. High scores were interpreted as more positive feelings toward the image, and low scores as more negative feelings. This

exercise clothing attitude scale contained eight positive adjectives and one negative adjective. Positive items included: comfortable, attractive, stylish, enhances physical performance, allows for self expression, appropriate, practical, and "similar to what I would like to wear". The negative item was "embarrassing to wear". The negative item was reverse coded from four to one so that higher scores reflected more positive feelings.

Since the evaluation process of an attitude involves the perception of oneself through the actual or anticipatory use (behavioral element of attitude) of the product, five statements related to use of the outfits in the images also were utilized. Modifications of questions pertaining to Park's (1990) direct measure of the self-image/clothing-image congruity were employed. Park found internal consistency coefficients of 0.92 with respect to the statements she used. For the present study, items were reworded to apply specifically to exercise clothing.

Using a 4-point scale, respondents indicated their degree of agreement/disagreement with seeing themselves through the actual use of the outfits. An example of the questions posed with respect to each of the three images is: "In reference to the exercise clothing image, please indicate your level of agreement with the following statements: This outfit is consistent with how I see myself

while exercising". These items were scored from one to four so that a higher score reflects a higher level of agreement. High scores indicate a willingness to wear the particular exercise outfit in the image, whereas low scores indicate an unwillingness to wear the clothing.

A combination of scores from the evaluation (affective) and the behavioral portion of the attitude resulted in an attitude congruence score for each outfit and an attitude consistency measure across the three exercise clothing images presented to the respondents. To compute the attitude congruence scores, the Absolute-Difference Model was used. The Absolute-Difference Model computes the average of the absolute arithmetical difference between the affective dimension of an attitude and the behavioral dimension of an attitude. The Absolute-Difference Model in congruence studies has been used by a number of researchers and has been demonstrated as being predictive (Park, 1990; Sirgy, 1986).

The derivation of a modified Absolute-Difference score of the attitude congruence involves computing the absolute arithmetical difference between the average affective dimension score and the average behavioral dimension score of an attitude. The mathematical formula for deriving the attitude congruence score follows:

$$AC_k = |\overline{AD}_k - \overline{BD}_k|$$

where,

AC = attitude congruence score for individual *k*

AD = average score for the affective dimension adjectives of individual *k*

BD = average score for the behavioral dimension statements of individual *k*

The lower the AC (attitude congruence) score, the less discrepancy between the affective and the behavioral dimension, thus indicating a higher congruence state of a respondent.

An attitude consistency measure for each respondent also was calculated across the three exercise images to avail testing the correlation of exercise clothing attitude to body-self relations, demographics, and level of exercise involvement. The attitude consistency measure is a representative slope measuring the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images presented to the respondents. The mathematical formula for deriving a measure for each respondent follows:

1. Take consecutive differences between the Medium and Low attitude congruence scores and between the High and Medium attitude congruence scores.

2. Take the square root of each difference and attach a sign of difference (negative or positive).
3. Add the resulting values.

Demographic variables include income, marital status, education, age, and race/ethnic group (see questions 36-40 of the questionnaire in Appendix A).

Income is measured as total yearly dollar amount received, in one of the following categories: 0 to \$9,999, \$10,000 to \$29,999, \$30,000 to \$49,999, \$50,000 to \$69,999, \$70,000 to \$89,999, \$90,000 to \$109,999, or over \$110,000. Subjects were asked to choose the category that best described their yearly income including spouse if married. The seven income categories were scored from 1 to 7 so that a higher score reflected a higher income.

Marital status. Subjects were asked to choose between "currently married" and "not-married at this time" as their marital status. "currently married" was coded as "1" while "not married at this time" was coded as "2".

Education. Subjects were asked to indicate their total amount of schooling in years.

Age. Subjects were asked to indicate their age in years.

Race/ethnic group. Subjects were asked to choose one of the following categories that best described their race/ethnic group: Black/African-American/African, Asian/Asian-American, Hispanic, White/Caucasian, or Other.

Pilot Test

The questionnaire described above was administered in a pilot test. The pilot test subjects consisted of individuals in the Department of Clothing and Textiles and ones known to be involved in aerobic exercise programs. Time taken to complete the questionnaire, as well as clarity and understanding of the questions were noted. Minor changes were made related to the accuracy of the instructions and correction of typographical errors.

Data Collection

The researcher obtained the names and addresses of four different aerobic exercise programs in Blacksburg, Virginia. A letter with a copy of the questionnaire was mailed to each manager with a request to collect data at the establishment. After permission was granted, data collection occurred over a total of two weeks. The questionnaire included a cover letter explaining the research and the informed consent form for participants. Subjects were approached and summoned to participate in a study concerning women and exercise.

The questionnaire was hand delivered by the researcher and trained assistants who were fellow graduate students. A data collection guide journal was used by each to note the exercise clothing style of the subjects (see Appendix B). The data collection guide journal was comprised of the three exercise clothing images representing high, medium, and low coverage. The actual exercise clothing style of the subjects was recorded by the similarities of their outfits to the images. This tally was taken to give an indication of which of the depicted images was most like the exercise outfit of each subject, for possible use in interpreting results.

The approximate time for completing the questionnaire was 10 minutes, and it was completed either before or after the class so as not to interfere with the workout. Subjects also were given the option to complete the questionnaire at home and return it to a designated data collection box at the exercise facility.

Analysis of the Instrument for Reliability and Validity

Coded data questionnaires were analyzed using the JMP program, a SAS menu-driven statistical package. Reliability and validity were examined with the use of Cronbach alpha and factor analysis for assessment of the final instrument, not for development and changing of the questionnaire. The

parts of the instrument measuring body-self relations and exercise clothing attitude were checked for reliability. Cronbach alpha, a measure of internal consistency, was calculated for each. A scale can be considered to have good reliability if the alpha value is greater than 0.60 (Schuessler, 1971). The coefficients shown in Table 1 indicate good reliability of the instrument. The scales for exercise clothing attitude medium-coverage and low-coverage behavior have alpha values greater than 0.90, indicating high reliability. The other scales for body-self relations and exercise clothing attitude had alpha values ranging from 0.81 to 0.89, except for body-self relations fitness evaluation and exercise clothing attitude medium-coverage evaluation (fitness evaluation, $\alpha = 0.69$; medium-coverage evaluation, $\alpha = 0.67$).

For comparison, Table 1 also includes the Cronbach alpha coefficients for the relevant portions of the Multidimensional Body-Self Relations Questionnaire from Cash (1994). The comparison shows values similar to those in the current research. The largest difference is in the fitness orientation measure, and the smallest differences are in the appearance evaluation and orientation (differences of 0.09, 0.04, and 0.04 respectively).

In addition to the Cronbach alpha, factor analysis was performed to investigate the validity of the instrument.

Table 1. Cronbach alpha coefficients.

Scale and Subscales	Alpha	MBSRQ Alpha (Cash, 1994)
<p>Body-Self Relations</p> <p> Appearance evaluation</p> <p> Appearance orientation</p> <p> Fitness evaluation</p> <p> Fitness orientation</p>	<p></p> <p>0.84</p> <p>0.89</p> <p>0.69</p> <p>0.81</p>	<p></p> <p>0.88</p> <p>0.85</p> <p>0.77</p> <p>0.90</p>
<p>Exercise Clothing Attitude</p> <p> High coverage, evaluation</p> <p> High coverage, behavior</p> <p> Medium coverage, evaluation</p> <p> Medium coverage, behavior</p> <p> Low coverage, evaluation</p> <p> Low coverage, behavior</p>	<p></p> <p>0.85</p> <p>0.90</p> <p>0.67</p> <p>0.91</p> <p>0.81</p> <p>0.94</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p></p>

The purpose of factor analysis is to describe, if possible, the covariance relationships among many variables in terms of a few underlying, but unobservable, random quantities called factors (Johnson & Wichern, 1992). The primary question in factor analysis is whether the data are consistent with the prescribed structure.

Factor analysis with a varimax rotation was run on items 1-35 on the questionnaire to assess the final instrument. The analysis was important to ensure that the items of the body-self relations appearance evaluation and orientation and fitness evaluation and orientation were not overlapping each other. If the summation variable had been homogeneous, all items would have loaded on only one factor; however, five orthogonal factors explaining 75 percent of the variability and having large eigenvalues resulted from the factor analysis. The factors include appearance evaluation, appearance orientation, fitness evaluation, and two generated from fitness orientation, thus creating five factors.

The current research utilized a part of an existing structure (MBSRQ), which has been developed through an extensive iterative process of rational-empirical item selection and validation research, including factor-analytic research (Cash, Winstead, & Junda, 1986). Therefore, all loadings are reported here and items were not removed from

the questionnaire even if they did not meet a loading requirement of 0.50.

Factor 1, the appearance evaluation measure, assesses feelings of physical attractiveness or unattractiveness and satisfaction or dissatisfaction with one's looks. Table 2 cites the questions and their respective factor loadings. All loadings of the individual items are greater than 0.60 in absolute value, representing the appearance evaluation factor.

Factor 2, the appearance orientation measure, assesses the extent of investment in one's appearance. Table 2 cites the questions and their respective factor loadings. All of the individual items, except questions 11 and 32, are loaded higher than 0.55, representing the appearance orientation factor.

The fitness evaluation measure assesses feelings of being physically fit or unfit. Table 3 cites the questions and their respective factor loadings. All three items, except question 18, are loaded higher than 0.70, representing the fitness evaluation factor. Fitness orientation assesses extent of investment in being physically fit or athletically competent. Table 3 presents the questions and their respective factor loadings. Factor analysis split this factor into two separate groups; however, they have been used as a single factor in

Table 2. Factor analysis of body-self relations appearance evaluation and orientation.

Factor Label/Item Numbers	Loadings
Appearance Evaluation	
2. I dislike my physique.	-0.70
5. I like the way my...	-0.61
13. I like the way I...	-0.80
15. Most people would...	-0.69
17. My body is sexually...	-0.77
20. I am physically...	-0.62
23. I like my looks...	-0.76
Appearance Orientation	
1. I use very few grooming...	0.55
3. I am careful to buy...	0.56
8. Before going out, I ...	0.70
9. I usually wear whatever...	0.64
10. I am self-conscious if...	0.69
11. I don't care what people...	0.31 ¹
28. I check my appearance...	0.63
29. I is important that I...	0.78
30. I am always trying to...	0.71
31. Before going out in...	0.80
32. I never think about my...	0.35 ¹
35. I take special care with...	0.77

¹ Item below criterion for factor loading of 0.50.

Table 3. Factor analysis of body-self relations fitness evaluation and orientation.

Factor Label/Item Numbers	Loadings
Fitness Evaluation	
18. I do poorly in physical...	-0.18 ¹
33. I am very well coordinated.	0.79
34. I easily learn physical...	0.70
Fitness Orientation	
4. Being physical fit is...	0.20 ²
6. I seldom think about my...	-0.66
7. It is important that I...	0.59
12. I would pass most...	-0.27 ³
14. I do things to increase...	0.79
16. My physical endurance...	-0.27 ³
21. I play sports regularly...	-0.69
22. I try to be physically...	0.50
24. Participating in sports...	-0.83
25. I work to improve my...	0.67
26. I am not involved in a...	0.21 ⁴
27. I don't care to improve...	0.46 ⁴

¹ Item falls into fitness orientation with loading of 0.65.

² Item falls into fitness evaluation with loading of 0.62.

³ Items fall into appearance evaluation with loading of 0.45 and 0.41 respectively.

⁴ Item below criterion for factor loading of 0.50.

subsequent analysis. All of the individual items, except questions 4, 12, 16, 26, and 27, are loaded higher than absolute values 0.50, representing the fitness orientation factor.

Since the majority of the factor loadings maintained the original factors developed by Cash (1983), the current research preserved the original four-factor clusters. Some lack of adherence to the prescribed body-self relations questionnaire factors may be a result of the current research using only a portion of the original MBSRQ questionnaire.

Data Analysis for Hypothesis Testing

Hypotheses were tested using Kendall's Tau and multiple regression. Kendall's Tau, a nonparametric test, is based on the ranks of observations, and it can assume values between -1 and +1. Nonparametric statistics compare distributions rather than parameters, and are not dependent upon some specific parent distribution. Multiple regression was employed to investigate the influences of the demographic variables on body-self relations, level of exercise involvement, and exercise clothing attitude because the influences of each independent variable can be examined while holding the others constant. All rejection levels for

Kendall's Tau and multiple regression were set at the 0.05 significance level.

Hypothesis 1. Kendall's Tau was used to test the relationship of body-self relations appearance and fitness scores to level of exercise involvement. Given that body-self relations appearance and fitness each consists of two scores (evaluation and orientation), calculations involved computation of a mean score of items within each factor subscale. The computation resulted in four overall mean scores of appearance evaluation and orientation and fitness evaluation and orientation. The correlation was conducted with the separate averages for the evaluation and orientation scores and with the averages over both sets. Level of exercise involvement is a self-report of average number of hours exercised in a given week.

Hypothesis 2. Kendall's Tau was used to test the relationship of body-self relations appearance and fitness scores to the exercise clothing attitude consistency measure. The exercise clothing attitude consistency measure is a representative slope measuring the consistency of the affective and behavioral congruence score across the three images presented to the respondents.

Hypothesis 3. Kendall's Tau was used to test the relationship between level of exercise involvement and the exercise clothing attitude consistency measure.

Hypothesis 4. Multiple regression was employed to analyze demographic (income, marital status, education, age, and race) influences on body-self relations appearance and fitness scores.

Hypothesis 5. Multiple regression was employed to analyze demographic (income, marital status, education, age, and race) influences on level of exercise involvement.

Hypothesis 6. Multiple regression was employed to analyze demographic (income, marital status, education, age, and race) influences on the exercise clothing attitude consistency measure.

CHAPTER V RESULTS AND DISCUSSION

The purpose of this study was to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs. Subjects were women members of four different aerobic exercise programs in Blacksburg, Virginia.

This chapter presents the description of the sample, the results of the statistical analysis and discussion of the findings.

Description of Sample

The respondents in this study consisted of 139 women involved in regular exercise programs who were residents of the greater Blacksburg, Virginia area. Data were collected during April 1995, with a response rate of 56 percent on 250 questionnaires that were distributed. The description and sample distribution of data collection sites are presented in Table 4.

The majority of the respondents were members of The Body Shop, followed by The Weight Club, The Fitness Connection, and CommonHealth, respectively. Access to the actual aerobic classes appeared to affect the response rate

Table 4. Description of data collection facilities and respondents' actual exercise clothing worn.

Variable	Frequency	Percentage
Facility		
The Body Shop	57	41.0%
The Weight Club	35	25.1%
The Fitness Connection	34	24.4%
CommonHealth	13	9.3%
Actual Exercise Clothing Worn		
High coverage	43	30.9%
Medium coverage	85	61.2%
Low coverage	11	7.9%

$n = 139$

in that an announcement concerning the research to the aerobics class participants was not always granted. If an announcement was not allowed, access to the women exercisers was limited. Subject response rate also could be related to the informed consent form for participants of investigative projects required by the Human Subjects Review Committee. Several women refused to participate because they said the signature page of the consent form did not ensure anonymity and confidentiality.

As data were being collected, the actual exercise clothing worn by the respondents was noted. A data collection guide journal was used by the researcher to record the exercise clothing style of each respondent (Appendix B). The guide journal included drawings of the three exercise clothing images representing high, medium, and low coverage. To record the actual exercise clothing styles of the subjects, a notation was made as to which of the depicted images was most like the exercise outfit of each subject. This information was gathered to evaluate possible relationships between the respondents' exercise clothing and their attitude about the three depicted exercise clothing images. Table 4 presents the frequencies and percentages of the actual exercise clothing worn. The image of medium coverage is the most prevalent style in that 61.2 percent of the subjects were dressed in a similar

manner. This was followed by high coverage and low coverage (30.9 percent, 7.9 percent respectively).

The distribution of the subjects with respect to demographics (marital status, years of education, age, race and income) is presented in Table 5. The majority (53.9 percent) of the subjects were currently not married; and 46.0 percent were currently married. Years of education varied over a range of 12 years to 29 years. The mean number of years of education was 17.13 years, indicating a highly educated pool of subjects.

The subjects' ages extended several decades, from 18 to 74 years. The mean age was 32.9 years old. The majority (89 percent) reported that they were White/Caucasian, indicating a highly skewed race/ethnic distribution, with only two Hispanic, four Black/African-American/African, eight Asian/Asian-American, and one subject selecting the "Other" option. Income varied over the established range with the largest group of subjects indicating they had a total yearly dollar amount between 0 and \$9,999 (29.4 percent). This was followed by \$10,000 to \$29,999 and \$50,000 to \$69,999 (27.2 percent and 15.4 percent, respectively).

Table 5. Description of respondents.

Variable	Respondents	
	Frequency	Percentage
<u>Marital Status</u> (n = 139)		
Currently married	64	46.0%
Not married	75	53.9%
<u>Education</u> (n = 137)		
12-16 years	72	52.6%
17-21 years	58	42.3%
22-29 years	7	5.1%
Mean = 17.13		
<u>Age</u> (n = 139)		
18-25 years	58	41.7%
26-35 years	37	26.6%
36-45 years	21	15.2%
46-55 years	11	7.9%
56-65 years	6	4.3%
66-72 years	6	4.3%
Mean = 32.9		
<u>Race</u> (n = 139)		
Black/African-American/African	4	2.9%
Asian/Asian-American	8	5.8%
Hispanic	2	1.4%
White/Caucasian	124	89.2%
Other	1	0.7%
<u>Income</u> (n = 136)		
0 to \$9,999	40	29.4%
\$10,000 to \$29,999	37	27.2%
\$30,000 to \$49,999	13	9.6%
\$50,000 to \$69,999	21	15.4%
\$70,000 to \$89,999	8	5.9%
\$90,000 to \$109,000	7	9.3%
Over \$110,000	10	7.4%

Results for Other Measured Variables

Mean values and standard deviations of other measured variables are reported in Table 6. Body-self relations is a perspective where body image is a self attitude comprised of three psychological dimensions or dispositions toward one's body: affective, cognitive, and behavioral. Subjects were asked to indicate the extent to which each statement pertained to them personally, using the scale: disagree, tend to disagree, tend to agree, or agree, with a high score indicating high level of agreement.

For the appearance evaluation measure, high scorers are assumed to feel more satisfied with their physical appearance and low scorers to have a general unhappiness with their physical appearance. The mean score for appearance evaluation is 2.64 from a possible range of 1 to 4, indicating the subjects tended to feel relatively, but not strongly satisfied with their physical appearances.

Appearance orientation items measure the extent of investment in one's appearance. High scorers are assumed to place importance on how they look, pay attention to their appearance, and engage in "grooming behaviors" to look their best. Low scorers are assumed to be apathetic about their physical appearance; their looks are not especially important to them, and they do not expend much time or energy to "look good". The mean score for appearance

Table 6. Means and standard deviations for body-self relations and exercise clothing attitude.

Variable	Mean	SD
Body-Self Relations		
Appearance evaluation	2.64	0.59
Appearance orientation	2.96	0.54
Fitness evaluation	2.96	0.63
Fitness orientation	3.16	0.46
Exercise Clothing Attitude		
High coverage, evaluation	2.72	0.62
High coverage, behavior	2.23	0.84
Medium coverage, evaluation	3.12	0.62
Medium coverage, behavior	2.81	0.92
Low coverage, evaluation	2.85	0.81
Low coverage, behavior	1.84	0.88

orientation is 2.96 from a possible range of 1 to 4, indicating the subjects tended to place importance on how they look, paid attention to their appearance, and engaged in grooming behaviors to look their best.

The fitness evaluation items measure feelings of being physically fit or unfit. High scorers are assumed to regard themselves as physically fit, "in shape", or athletically active and competent. Low scorers are assumed to feel physically unfit, "out of shape", or athletically unskilled. The mean score for fitness evaluation is 2.96 from a possible range of 1 to 4, indicating the subjects tended to regard themselves as physically fit, "in shape", or athletically active and competent.

Fitness orientation items measure the extent of investment in being physically fit or athletically competent. High scorers are assumed to value fitness and be actively involved in activities to enhance or maintain their fitness. Low scorers are assumed to not value physical fitness and to not regularly incorporate exercise activities into their lifestyles. The mean score for fitness orientation is 3.16 from a possible range of 1 to 4, indicating the subjects tended to value fitness and were actively involved in activities to enhance or maintain their fitness level. This high mean score is not surprising given the method of sampling at the four exercise facilities.

The clothing attitude scale assessed subjects' feelings about the three depicted exercise clothing images (Section C of questionnaire in Appendix A). In the first portion of this section on the affective (evaluation) dimension of exercise clothing attitude, subjects evaluated each exercise clothing image with respect to nine different adjectives. These items were scored from one to four so that a higher score reflects a higher level of agreement. High scores were interpreted as more positive feelings toward an image, and low scores as more negative feelings.

The second portion of the clothing attitude scale contained five statements to assess the individual's perception of herself through the actual or anticipatory use of the product, or the behavioral dimension of exercise clothing attitude. These statements measure a respondent's behavioral attitude directly by her score in relation to the three depicted exercise clothing images. These items were scored from one to four, indicating that a higher score reflects a higher level of agreement. High scores indicate a willingness to wear the particular exercise clothing image, whereas low scores indicate an unwillingness to wear the clothing.

Table 6 shows both the evaluation and behavior scores of exercise clothing attitude. The mean evaluation score for the high-coverage evaluation was 2.72 from a possible

range of 1 to 4, indicating that subjects tended to have somewhat positive feelings toward the image. The mean behavior score for the high-coverage behavior was 2.23 from a possible score of 1 to 4, indicating that subjects tended to have a low to neutral willingness to wear the exercise clothing image.

The mean evaluation score for the medium-coverage evaluation was 3.12 from a possible score of 1 to 4, indicating the subjects tended to have positive feelings toward the image. Of the three exercise clothing images, this style had the highest evaluation rating. This is not surprising when relating this evaluation to the respondents' exercise clothing worn which was recorded to indicate which of the depicted images was most like the exercise outfit of each subject (see Table 4). The majority of the respondents were dressed in a similar manner to the medium-coverage exercise clothing image (61.2 percent) which may explain their higher evaluation rating for this image. The mean behavior score for the medium-coverage behavior was 2.81 from a possible score of 1 to 4, indicating that subjects also tended to have a willingness to wear the exercise clothing image.

The mean evaluation score for the low-coverage evaluation was 2.85 from a possible score of 1 to 4, indicating the subjects tended to have positive feelings

toward the image. The mean behavior score for low-coverage behavior was 1.84, indicating an unwillingness to wear the clothing in the image. Of the three exercise clothing images, this style had the lowest behavior rating.

These results imply that for the respondents sampled, exercise apparel product designs should incorporate design details adhering to the medium-body-coverage image. That is, the designs should be comparable to a high crew-neck T-shirt, the hem of which extends to just below the hip line and a pair of stretch bike-style shorts extending to just above the knees.

Level of exercise involvement was used as an indicator of the time and effort involved in altering or forming one's appearance through exercise. The overall mean of the self reported average number of hours exercised in a given week is 6.3 from a range of 2 to 21 hours (see Table 7). It should be noted, however, that with a standard deviation of 3.29, there is a great deal of variability with respect to average numbers of hours the subjects exercised in a given week.

Results of Hypothesis Testing

Hypotheses were tested using Kendall's Tau and multiple regression. Since the current research has data in which the underlying distribution is not easily specified,

Table 7. Description of level of exercise involvement.

Hours	Frequency	Percentage
2 hours	1	7.2%
3 hours	18	13.0%
4 hours	26	18.8%
5 hours	29	21.0%
6 hours	14	10.1%
7 hours	17	12.3%
8 hours	10	7.2%
9 hours	5	3.6%
10 hours	8	5.8%
11 hours	1	0.7%
12 hours	2	1.4%
13 hours	1	0.7%
14 hours	1	0.7%
15 hours	1	0.7%
17 hours	2	1.4%
20 hours	1	0.7%
21 hours	1	0.7%

n = 138
 Mean = 6.3
 SD = 3.29

Kendall's Tau, a nonparametric statistic, was used in some parts of the analysis. Nonparametric statistics compare distributions rather than parameters, and are not dependent upon specific parent distributions. Kendall's Tau is based on the ranks of observations and was used to analyze the relationships between body-self relations, level of exercise involvement, and exercise clothing attitude. Multiple regression was employed to find demographic influences on body-self relations, level of exercise involvement, and exercise clothing attitude.

Hypothesis 1. Among the women subjects, there will be no relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and level of exercise involvement;
- (b) the scores for body-self relations fitness (both evaluation and orientation) and level of exercise involvement.

against the alternative of a positive relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and level of exercise involvement;
- (b) the scores for body-self relations fitness (both evaluation and orientation) and level of exercise involvement.

Given that body-self relations appearance and fitness each consists of two scores (evaluation and orientation), calculations involved computation of a mean score of items within each factor subscale. The computation resulted in

four overall mean scores of appearance evaluation and orientation and fitness evaluation and orientation. The correlation was conducted with the separate averages for the evaluation and orientation scores and with the average over both sets. The Kendall's Tau correlations between level of exercise involvement and body-self relations appearance evaluation and orientation are presented in Table 8.

H1a. The Kendall's Tau correlation shows a significant positive relationship between level of exercise involvement and body-self relations appearance evaluation. However, the relationship between level of exercise involvement and body-self relations appearance orientation is not significant. When the two scores of appearance evaluation and orientation are treated together as one score, the relationship is not significant. Therefore, the respondents' level of exercise is related to feelings of physical attractiveness and satisfaction with one's looks, but not to the extent of investment of one's appearance. The research hypothesis H1a is not supported entirely from these findings.

The findings for research hypothesis H1a do not support related studies (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993) which showed that body image concerns are strong motivators of exercising behaviors. As previously mentioned, the mean score for appearance orientation and

Table 8. Kendall's Tau correlations between level of exercise involvement and body-self relations appearance and fitness.

Correlation Variables	
Level of Exercise Involvement Versus:	
Body-Self Relations Appearance	
Evaluation	0.17 ¹
Orientation	-0.01
Evaluation and orientation	0.10
Body-Self Relations Fitness	
Evaluation	0.28 ¹
Orientation	0.31 ¹
Evaluation and orientation	0.30 ¹

¹ Note: $p < 0.05$

evaluation indicated that respondents tended to feel relatively, but not strongly satisfied with their physical appearance (see Table 6). It appears that these scores are not related to the respondents' level of exercise involvement.

H1b. The Kendall's Tau correlation shows a positive relationship between level of exercise involvement and body-self relations fitness evaluation (see Table 8). Results also show a positive relationship between level of exercise involvement and body-self relations fitness orientation. When the two scores of evaluation and orientation are treated as one score, the relationship also is significant. Therefore, the respondents' level of exercise is related to both feeling physically fit and extent of investment in being physically fit and athletically competent. Thus, research hypothesis H1b is supported.

The findings for research hypothesis H1b support related studies (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993) which showed that body image concerns are strong motivators of exercising behaviors. As previously mentioned, the mean score for fitness orientation and evaluation indicated the respondents tended to regard themselves as physically fit, "in shape", or athletically active and competent (see Table 6). It appears that these scores were related to the respondents' level of exercise

involvement. The findings support related studies which show that people who participate in regular physical activity have a favorable view of their bodies as well as a high self-concept (Joesting, 1981; Salusso-Deonier & Schwarzkopf, 1991).

The results of hypothesis H1 (both a and b) imply the women subjects express greater concern with physical competence than physical attractiveness. That is, being "in shape" or athletically active and competent fitness appear to have a greater importance than engaging in grooming behaviors. The results also raise the question concerning the motive for exercise behavior. That is, do the respondents exercise because of a negative body image, or does the exercise lead to a positive body image?

Results also favor the notion that appearance management behavior (in this case level of exercise involvement) is related to body-self relations, and consequently, the self-concept. This in turn supports the proposed model about social comparison and the construction of body-self relations. That is, through exercise, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance.

Hypothesis 2. Among women subjects, there will be no relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images;
- (b) the scores for body-self relations fitness (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images.

against the alternative of a relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images;
- (b) the scores for body-self relations fitness (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images.

Before testing hypothesis 2, the attitude congruence scores and exercise clothing attitude consistency measures were computed. An attitude congruence score is the absolute arithmetical difference between the average affective dimension score and the average behavioral dimension score of an attitude. The computed attitude congruence score shows high congruence with both the high and medium coverage images. Table 9 shows that a lower score for the attitude congruence is an indication of less discrepancy between the affective and the behavioral dimensions, thus resulting in higher congruence states of the respondents for the two images (0.67 and 0.64, respectively). The low coverage image had a high mean of 1.86, indicating a lower congruence status for the image. This low score is a result of the

Table 9. Means and standard deviations of exercise clothing attitude congruence.

Variable	Mean	SD
Exercise Clothing Attitude Congruence		
High-coverage image	0.67	0.47
Medium-coverage image	0.64	0.62
Low-coverage image	1.86	0.75

subjects scoring high on the evaluative portion of the scale and low on the behavioral score. This is an indication that the subjects tended to have positive feelings toward the image, but exhibited an unwillingness to wear the exercise clothing image. ✓

The attitude consistency measure is a representative slope measuring the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images presented to the respondents. Given that body-self relations appearance and fitness each consists of two scores (evaluation and orientation), calculations involved computation of a mean score of items within each factor subscale. The computation resulted in four overall mean scores of appearance evaluation and orientation and fitness evaluation and orientation. The correlation was conducted with the separate averages for the evaluation and orientation scores and with the average over both sets. Kendall's Tau was used to test the relationship between body-self relations and the exercise clothing attitude consistency measure for the exercise clothing images.

H2a. The Kendall's Tau correlation shows a positive relationship between body-self relations appearance evaluation and the exercise clothing attitude consistency measure (see Table 10). However, the relationship between body-self relations appearance orientation and the exercise

Table 10. Kendall's Tau correlations between exercise clothing attitude consistency measure and body-self relations appearance and fitness.

Correlation Variables	
Exercise Clothing Attitude Consistency Measure Versus:	
Body-Self Relations Appearance	
Evaluation	0.23 ¹
Orientation	0.01
Evaluation and orientation	0.18 ¹
Body-Self Relations Fitness	
Evaluation	0.27 ¹
Orientation	0.25 ¹
Evaluation and orientation	0.29 ¹

¹ Note: $p < 0.05$

clothing attitude consistency measure is not significant. When the two scores of evaluation and orientation are averaged as one score, the relationship is significant and positive. Research hypothesis H2a is partially supported from these findings.

The results imply some relationship between the consistency of the congruence scores across the three exercise clothing images and body-self relations appearance scores. The congruence between the affective and behavioral aspects of the exercise clothing images appears to be related to the body-self relations concept of appearance and the extent of investment in one's appearance as well as the overall satisfaction with one's physical appearance.

H2b. The Kendall's Tau correlation shows there is a significant positive relationship between both body-self relations fitness evaluation and orientation and the exercise clothing attitude consistency measure (see Table 10). When fitness evaluation and orientation scores were averaged as one score, the relationship also is significant and positive. Research hypothesis H2b is supported by these findings.

The results imply a relationship between the consistency of the congruence scores across the three exercise clothing images and body-self relations fitness scores. The congruence between the affective and behavioral

aspects of the exercise clothing image appear to be related to feelings of being physically fit or unfit and the extent of investment in being physically fit or athletically competent.

The findings of research hypothesis H2 (both a and b) support related research about congruence between the symbolic image of a garment and an individual's self-concept (Jacobi & Walters, 1958). That is, clothing is considered an extension of the bodily self, thus the exercising subject's body-self relations can play an important role in clothing attitude.

Results also favor the notion that congruence between the affective and behavioral aspects of an attitude is considered to be related to body-self relations, and consequently, the self-concept. This in turn supports the proposed model about social comparison and the construction of body-self relations. That is, individuals perceive ✓ clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

Hypothesis 3. Among the women subjects, there will be: no relationship between level of exercise involvement and the exercise clothing attitude consistency measure across the three exercise clothing images presented to the respondents;

against the alternative of:

a positive relationship between level of exercise involvement and the exercise clothing attitude

consistency measure across the three exercise clothing images presented to the respondents.

Kendall's Tau was used to test hypothesis 3. Level of exercise involvement is a self-report of average number of hours exercised in a given week. The exercise clothing attitude consistency measure is a representative slope measuring the consistency of the affective and behavioral attitude congruence scores across the three exercise clothing images presented to the respondents.

The Kendall's Tau correlation of 0.20 shows a significant positive relationship between level of exercise involvement and the exercise clothing attitude consistency measure. The research hypothesis is supported from these findings.

The results of hypothesis 3 imply some relationship between the consistency of the congruence scores across the three exercise clothing images and level of exercise involvement. Since the exercise clothing attitude consistency measure is based on the attitude congruence score, it can be assumed that as the slope increases, the congruence between the affective and the behavioral dimension increase. Therefore, the congruence between the affective and behavioral aspects of the exercise clothing image is related to the average number of hours exercised in a given week.

The results indicate that an increased level of exercise involvement may contribute to knowledge about exercise clothing. That is, if a woman subject has a high level of exercise involvement, she is more likely to score similar mean scores on the affective and behavioral aspects of the exercise clothing attitude measure. This knowledge gained from increased exercise could contribute to this consistency across the exercise clothing images.

Results also favor the notion that appearance management behavior (in this case, level of exercise involvement) is related to congruence between the affective and behavioral aspects of an attitude. This in turn supports the proposed model about social comparison and the construction of body-self relations. That is, through exercise, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance. In addition, level of exercise involvement appears to be related to how individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

The findings of research hypothesis 3 support related research about appearance management behavior and exercise. Through social comparison, one observes the standard of appearance among reference groups and learns to engage in associated appearance management behavior. These behaviors

can include exercising and selection of apparel to enhance one's appearance. Body image concerns are strong motivators of exercising behaviors (Cash, Novy, & Grant, 1993; Cash & Hicks, 1990), and appearance is multifaceted and may reflect characteristics central to self-definition through time, energy, and resources expended on appearance (Kaiser, 1990).

Hypothesis 4. Among the women subjects, there is no relationship between demographics (income, marital status, education, age, and race/ethnic group) and:

- (a) the scores for body-self relations appearance (evaluation and orientation);
- (b) the scores for body-self relations fitness (evaluation and orientation).

against the alternative of a relationship between demographics (income, marital status, education, age, and race/ethnic group) and:

- (a) the scores for body-self relations appearance (evaluation and orientation);
- (b) the scores for body-self relations fitness (evaluation and orientation).

H4a. Multiple regression was used to investigate the relationship between body-self relations appearance and demographics (education, age, marital status, income, and race) of the subjects. Given that body-self relations appearance and fitness each consists of two scores (evaluation and orientation), calculations involved computation of a mean score of items within each factor

subscale. The computation resulted in four overall mean scores of appearance evaluation and orientation and fitness evaluation and orientation. The correlation was conducted with the separate averages for the evaluation and orientation scores and with the average over both sets.

Table 11 shows relationships between body-self relations appearance evaluation and orientation and some demographic variables. The whole-model test shows significance with a p-value less than 0.05, which is an indication of at least one significant independent variable for the appearance evaluation and orientation model. In this instance, age and race are significant.

Further analysis with estimates of the regression coefficients of appearance evaluation and orientation is in Table 12. Results indicate a relationship between body-self relations appearance and evaluation and age and Asian/Asian-American respondents. These findings indicate that respondents' body-self relations appearance evaluation and orientation scores decrease with age. In addition, results indicate that Asian/Asian-American subjects are the only group with significantly lower body-self relations appearance evaluation and orientation scores than the reference group of Blacks, which was omitted by regression analysis.

Table 11. Relationship between demographics and body-self relations appearance evaluation and orientation.

Source	DF	Sum of Squares	F-Value	p
Appearance Evaluation and Orientation				
Whole-model test	13	3.64	2.24	0.01 ¹
Education	1	0.08	0.64	0.43
Age	1	0.77	6.19	0.02 ¹
Marital status	1	0.32	2.59	0.11
Income	6	1.44	1.92	0.08
Race	4	1.50	3.01	0.02 ¹

¹ Note: $p < 0.05$

Table 12. Estimates of the regression coefficients for the relationship between body-self relations appearance evaluation and orientation and the demographic variables.

Appearance Evaluation and Orientation		
Constant	3.64	t= 9.16
<u>Income</u>		
\$10,000 to \$29,999	0.00 ¹	t= -0.01
\$30,000 to \$49,999	-0.06	t= -0.52
\$50,000 to \$69,999	0.15	t= 1.20
\$70,000 to \$89,999	0.22	t= 1.41
\$90,000 to \$109,999	-0.07	t= -0.38
Over \$110,000	0.18	t= 1.02
Not Married	0.16	t= 1.61
Education	-0.01	t= -0.80
Age	-0.00 ¹	t= -2.49 ²
<u>Race</u>		
Asian/Asian-American	-0.86	t= -3.27 ²
Hispanic	0.34	t= 1.16
White/Caucasian	0.01	t= 0.04
Other	-2.24	t= -0.65
Rsquare= 0.20		

¹ Rounded to 0.00

² Note: $p < 0.05$

Multiple regression also was used to investigate the relationship between body-self relations appearance evaluation and orientation separately and demographics (education, age, marital status, income, and race) of the subjects. Table 13 demonstrates a relationship between body-self relations appearance evaluation and one demographic variable, age. Further analysis with estimates of the regression coefficients of appearance evaluation is in Table 14. Results indicate a relationship between body-self relations appearance evaluation and age. These findings indicate that respondents' body-self relations appearance evaluation decreases with age.

Table 15 reports the analysis of variance between body-self relations appearance orientation and the demographic variables. In this instance, marital status is significant. Further analysis with estimates of the regression coefficients of appearance orientation is in Table 16. Results indicate no significant relationships between body-self relations orientation and the demographic variables. Hypothesis H4a is not supported by these findings.

H4b. Multiple regression was used to investigate the relationship between body-self relations fitness scores and demographics (education, age, marital status, income, and race) of the subjects. Table 17 demonstrates a relationship

Table 13. Relationship between demographics and body-self relations appearance evaluation.

Source	DF	Sum of Squares	F-Value	p
Appearance Evaluation				
Whole-model test	13	6.52	1.54	0.11
Education	1	0.00	0.01	0.90
Age	1	2.71	8.32	0.00 ¹
Marital status	1	0.04	0.13	0.72
Income	6	3.17	1.62	0.15
Race	4	1.96	1.50	0.21

¹ Note: $p < 0.05$

Table 14. Estimates of the regression coefficients for the relationship between body-self relations appearance evaluation and the demographic variables.

Appearance Evaluation		
Constant	3.15	t= 5.48
<u>Income</u>		
\$10,000 to \$29,999	0.13	t= 0.80
\$30,000 to \$49,999	-0.01	t= -0.07
\$50,000 to \$69,999	0.03	t= 0.15
\$70,000 to \$89,999	0.31	t= 1.23
\$90,000 to \$109,999	-0.08	t= -0.26
Over \$110,000	0.42	t= 1.45
Not Married	0.06	t= 0.36
Education	0.00	t= 0.12
Age	-0.02	t= -2.88 ¹
<u>Race</u>		
Asian/Asian-American	-0.98	t= -2.30
Hispanic	0.26	t= 0.55
White/Caucasian	0.11	t= 0.26
Other	-0.32	t= -0.54
Rsquare= 0.14		

¹ Note: $p < 0.05$

Table 15. Relationship between demographics and body-self relations appearance orientation.

Source	DF	Sum of Squares	F-Value	p
Appearance Orientation				
Whole-model test	13	4.63	1.27	0.24
Education	1	0.40	1.44	0.23
Age	1	0.01	0.05	0.83
Marital status	1	0.87	3.10	0.08 ¹
Income	6	1.31	0.78	0.58
Race	4	1.15	1.03	0.39

¹ Note: $p < 0.05$

Table 16. Estimates of the regression coefficients for the relationship between body-self relations appearance orientation and the demographic variables.

Appearance Evaluation		
Constant	3.76	t= 6.33
<u>Income</u>		
\$10,000 to \$29,999	-0.13	t= -0.88
\$30,000 to \$49,999	-0.11	t= -0.61
\$50,000 to \$69,999	0.27	t= 1.44
\$70,000 to \$89,999	0.13	t= 0.55
\$90,000 to \$109,999	-0.07	t= -0.23
Over \$110,000	-0.05	t= -0.20
Not Married	0.26	t= 1.76
Education	-0.03	t= -1.20
Age	0.00	t= -0.21
<u>Race</u>		
Asian/Asian-American	-0.75	t= -1.89
Hispanic	0.41	t= 0.95
White/Caucasian	-0.09	t= -0.23
Other	-0.16	t= -0.28
Rsquare= 0.12		

Note: $p < 0.05$

Table 17. Relationship between demographics and body-self relations fitness evaluation and orientation.

Source	DF	Sum of Squares	F-Value	p
Fitness Evaluation and Orientation				
Whole-model test	13	4.61	1.70	0.07
Education	1	0.55	2.64	0.11
Age	1	0.93	4.49	0.04 ¹
Marital status	1	0.00	0.05	0.83
Income	6	0.66	0.53	0.79
Race	4	1.85	2.23	0.07

¹ Note: $p < 0.05$

between body-self relations fitness evaluation and orientation and the age variable.

Further analysis with the estimates of the regression coefficient of fitness evaluation and orientation are in Table 18. Results indicate a relationship between body-self relations fitness evaluation and orientation and age. These findings indicate that respondents' body-self relations fitness evaluation and orientation decrease with age.

Multiple regression also was used to investigate the relationship between body-self relations fitness evaluation and orientation, separately, and demographics (education, age, marital status, income, and race) of the subjects. Table 19 demonstrates some significant relationships between body-self relations fitness evaluation and the demographic variables. The whole-model test demonstrates how a p-value of 0.05 or less is often an indication of at least one significant regression factor for the model. In this instance, age and race are significant. Further analysis with estimates for the regression coefficients of fitness evaluation is in Table 20. Results indicate a relationship between body-self relations fitness evaluation and age and Asian/Asian-American subjects. These findings indicate that respondents' body-self relations fitness evaluation decreases with age. In addition, results indicate that Asian/Asian-American subjects are the only group with

Table 18. Estimates of the regression coefficients for the relationship between body-self relations fitness evaluation and orientation and demographics.

Fitness Evaluation and Orientation		
Constant	2.91	t= 5.68
<u>Income</u>		
\$10,000 to \$29,999	0.00	t= 0.01
\$30,000 to \$49,999	-0.06	t= -0.36
\$50,000 to \$69,999	-0.11	t= -0.69
\$70,000 to \$89,999	0.17	t= 0.86
\$90,000 to \$109,999	0.11	t= 0.44
Over \$110,000	-0.05	t= -0.22
Not Married	-0.03	t= -0.22
Education	0.03	t= 1.62
Age	-0.01	t= -2.12 ¹
<u>Race</u>		
Asian/Asian-American	-0.46	t= -1.35
Hispanic	0.02	t= 0.06
White/Caucasian	0.45	t= 1.34
Other	-0.45	t= -0.95
Rsquare= 0.15		

¹ Note: $p < 0.05$

Table 19. Relationship between demographics and body-self relations fitness evaluation.

Source	DF	Sum of Squares	F-Value	p
Fitness Evaluation				
Whole-model test	13	8.78	1.96	0.03 ¹
Education	1	0.57	1.67	0.20
Age	1	2.36	6.85	0.01 ¹
Marital status	1	0.01	0.02	0.88
Income	6	0.59	0.29	0.94
Race	4	3.49	2.53	0.04 ¹

¹ Note: $p < 0.05$

Table 20. Estimates of regression coefficients for the relationship between body-self relations fitness evaluation and demographics.

Fitness Evaluation		
Constant	3.26	t= 4.95
<u>Income</u>		
\$10,000 to \$29,999	-0.03	t= -0.21
\$30,000 to \$49,999	0.04	t= 0.20
\$50,000 to \$69,999	-0.14	t= -0.66
\$70,000 to \$89,999	0.26	t= 1.01
\$90,000 to \$109,999	-0.06	t= -0.19
Over \$110,000	0.02	t= 0.07
Not Married	0.02	t= 0.15
Education	0.03	t= 1.29
Age	-0.01	t= -2.62 ¹
<u>Race</u>		
Asian/Asian-American	-0.90	t= -2.06 ¹
Hispanic	-0.10	t= -0.23
White/Caucasian	0.69	t= 1.63
Other	-0.43	t= -0.70
Rsquare= 0.18		

¹ Note: $p < 0.05$

significantly lower body self-relations fitness evaluation than the reference group of Blacks which was omitted by regression analysis. Multiple regression analysis did not show a relationship between body-self relations fitness orientation and the demographic variables. Estimated regression coefficients and parameter estimates of the regression coefficients for hypothesis H4b are located in Appendix C. From the overall results, hypothesis H4b is partially supported.

The findings for Hypothesis H4 (both a and b) do not support former research in which body image was found to be associated with such demographic variables as social/group affiliation and cultural world view, (Armstrong & Tan, 1978), and education and occupation characteristics (Hamilton and Chowdhary, 1989). The results are also inconsistent with Hwang (1993) who found that elderly subjects who had higher income, social participation status, and education were more satisfied with their bodies. Rather, the current research found that age was most often related to body-self relations appearance orientation and evaluation and fitness evaluation. In addition, Asian/Asian-Americans and marital status were found significant in selected cases.

The former research mentioned above used the body-cathexis scale to measure body image, whereas the current

research employed portions of the Multidimensional Body-Self Relations Questionnaire. The differences in the demographic results found in the current research may be a result of using the body-self relations measure of body image. In addition, other variables such as occupation and social affiliation were not measured in the current research.

Implications of hypothesis H4 (both a and b) signify that age is an important factor when considering body-self relations. Considering the majority of the subjects (68 percent) were between the ages of 18 and 35, the older women subjects may have a lower body-self relations scores as a result of being a minority. As stated earlier, the social groups to which an individual orients herself, regardless of membership, are the reference groups to which the individual ascribes (Singer, 1981). Individuals compare themselves to others and to the ideal self, which is usually generated from cultural ideals for appropriate behavior and appearances. In this case, the older subjects may compare themselves to the younger women, and thus influence their body-self relations scores. This in turn supports the proposed model about social comparison and the construction of body-self relations.

Hypothesis 5. Among the women subjects, there will be no relationship between demographics (income, marital status, education, age, and race/ethnic group) and level of

exercise involvement against the alternative hypothesis of a relationship between demographics (income, marital status, education, age, and race/ethnic group) and level of exercise involvement.

Multiple regression analysis did not find a relationship between level of exercise involvement and the demographic variables. Estimated regression coefficients and parameter estimates of the regression coefficients for hypothesis H5 are located in Appendix C (Tables 23, 24, 25, and 26). From these results, hypothesis H5 is not supported. The findings do not support former research in which Adame, Johnson, Cole, Matthiasson, and Abbas (1990) assessed the level of exercise involvement in college students and found the variable of involvement related to age and education.

Hypothesis 6. Among the women subjects, there will be no relationship between demographics (income, marital status, education, age, and race/ethnic group) and the exercise clothing attitude consistency measure, against the alternative hypothesis of a relationship between demographics (income, marital status, education, age, and race/ethnic group) and the exercise clothing attitude consistency measure.

Multiple regression was used to investigate the relationship between the exercise clothing attitude

consistency measure and demographics (education, age, marital status, income, and race) of the subjects. Table 21 demonstrates a relationship between the exercise clothing attitude consistency measure and education and race/ethnic group.

Further analysis with estimates of the regression coefficients and level of exercise involvement is in Table 22. Results indicate a significant positive relationship between the exercise clothing attitude consistency measure and White/Caucasians, and a significant negative relationship with education and Asian/Asian-Americans. These findings indicate that the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images is related to level of education and the race/ethnic group of the respondents. From this result, research hypothesis 6 is partially supported and reinforces former research that indicated exercise clothing was related to demographic variables (Casselman-Dickson & Damhorst, 1993).

Implications of hypothesis 6 signify that race is an important factor when considering exercise clothing attitude consistency across the three exercise clothing images. The White/Caucasian subjects had significantly greater exercise

Table 21. Relationship between demographics and exercise clothing attitude consistency measure.

Source	DF	Sum of Squares	F-Value	p
Trend Score				
Whole-model test	13	21.34	2.72	0.00
Education	1	3.10	5.13	0.03 ¹
Age	1	0.35	0.57	0.45
Marital status	1	0.00	0.00	0.97
Income	6	6.34	1.75	0.11
Race	4	9.15	3.79	0.01 ¹

¹ Note: $p < 0.05$

Table 22. Estimates of regression coefficients for the relationship between exercise clothing attitude consistency measure and demographics.

Exercise Clothing Attitude Consistency Measure		
Constant	2.11	t= 2.41
<u>Income</u>		
\$10,000 to \$29,999	0.04	t= 0.20
\$30,000 to \$49,999	-0.43	t= -1.59
\$50,000 to \$69,999	0.00	t= 0.01
\$70,000 to \$89,999	-0.15	t= -0.43
\$90,000 to \$109,999	0.20	t= 0.48
Over \$110,000	0.70	t= 1.78
Not Married	0.01	t= 0.03
Education	-0.07	t= -2.26 ¹
Age	-0.01	t= -0.76
<u>Race</u>		
Asian/Asian-American	-1.73	t= -2.98 ¹
Hispanic	-0.34	t= -0.54
White/Caucasian	1.17	t= 2.07 ¹
Other	0.18	t= 0.22
Rsquare= 0.31		

¹ Note: $p < 0.05$

clothing attitude consistency than did the Black reference subjects, whereas the Asian/Asian-American subjects had significantly lower attitude consistency. As stated earlier, the attitude consistency measure is a representative slope measuring the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images presented to the respondents.

Results indicate a White/Caucasian subject is more likely to score similar mean scores on the affective and behavioral aspects of the exercise clothing attitude measure. This may be a result of cultural differences related to exposure to different types of exercise clothing images. Whereas the White/Caucasian subjects may feel comfortable with congruence between affective and behavioral aspects of the exercise clothing, the Asian/Asian-American subjects may not due to cultural, religious, or family values. However, since the number of Asian/Asian-American respondents was quite small (5.8 percent), further research is warranted.

CHAPTER VI
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Self-concept is the objective acknowledgement of the self and its physical and abstract traits (Holloman, 1989). Self-concept also has been described as the total image one has about oneself; it contains one's actual experiences and interpretations about those experiences (Kalish, 1975). One's self-concept is based in part on how one compares to other individuals with regards to traits, opinions, and abilities (Pettigrew, 1967). Interactions with others shape the meanings that individuals use to define the self. Social comparison is an example of a process in which individuals can distinguish themselves from others.

Social comparison occurs when individuals evaluate themselves in relation to others (Festinger, 1954), which may result in increased or decreased feelings of self-worth. Through the process of social comparison, individuals continually assess the personal aesthetic value of themselves and others. One's body image is based in part on how one compares to other individuals (Pettigrew, 1967). Through social comparison, one observes the standard of appearance among reference groups and learns to engage in associated appearance management behavior.

In general, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance (McCrea, Summerfield, & Rosen, 1982) or wishes to approximate the cultural aesthetic. In the current research, an individual's level of exercise involvement is used as an indicator of the time and effort spent in altering or forming one's appearance.

A chosen appearance can represent a particular self-concept or attitude. Attitudes are predispositions to react favorably or unfavorably toward a stimulus and are comprised of three elements: affective (evaluation), cognitive (attention/importance), and behavioral (action or activity) (Kaiser, 1990). An individual's beliefs toward clothing styles and use of clothing fashions demonstrate the social self and are symbols of an individual's actual and/or ideal self-concept (Sproles & Burns, 1994). In the current research, congruence between the affective and behavioral aspects of an attitude is considered to be related to body-self relations and consequently, the self-concept.

The purpose of this research was to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs. Subjects were women members of four different aerobic exercise programs in Blacksburg, Virginia.

Data were collected via personal contact at the exercise program locations. The questionnaire was distributed by the researcher or trained assistants. A data collection guide journal was used by the investigators to note the exercise clothing styles of the subjects. The questionnaire included a cover letter explaining the research and an informed consent for participants required by the Human Subjects Review Committee for investigative projects.

An instrument was developed for collecting data on body-self relations, level of exercise involvement, and exercise clothing attitude. Body image refers to the mental view one has of her body. Body-self relations is a perspective where body image is a self-attitude comprised of three psychological dimensions or dispositions toward one's body: affective (evaluation), cognitive (attention/importance), and behavioral (action or activity). The current study utilized all three dimensions.

A modified 69-item version of the Multidimensional Body-Self Relations Questionnaire was utilized. It consisted of the factor subscales for measuring subjects' evaluation and orientation of appearance and fitness. The appearance evaluation measures feelings of physical attractiveness or unattractiveness and satisfaction or dissatisfaction with one's looks. Appearance orientation

measures the extent of investment in one's appearance. The fitness evaluation measures feelings of being physically fit or unfit. Fitness orientation measures the extent of investment in being physically fit or athletically competent. Reliability of this portion of the questionnaire was analyzed with Cronbach's alpha and showed good reliability. Factor analysis was performed to investigate the validity of the instrument. The primary question in factor analysis is whether the data are consistent with the prescribed structure. The majority of the factor loadings maintained the original factors developed by Cash (1983).

A clothing attitude scale was developed to assess subjects' feelings about three different exercise clothing images. The first portion of this scale asked subjects to evaluate each exercise clothing image using nine adjectives to determine the affective attitudinal dimension. The second portion of the clothing attitude scale contained five statements to assess each respondent's perception of herself through the actual or anticipatory use of the product, or the behavioral dimension of an attitude.

A combination of scores from the evaluation (affective) portion and the behavioral portion of the clothing attitude resulted in an attitude congruence score and an exercise clothing attitude consistency measure. The attitude congruence score involves computing the absolute

arithmetical difference between the average affective dimension score and the average behavioral dimension score of an attitude. The lower the attitude congruence score, the less discrepancy between the affective and the behavioral dimension, thus indicating a higher congruence state of a respondent.

An attitude consistency measure for each respondent also was calculated across the three exercise images to avail testing the relationships of exercise clothing attitude to body-self relations, demographics, and level of exercise involvement. The attitude consistency measure is a representative slope measuring the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images presented to the respondents.

Responses to an open-ended question on level of exercise involvement were used as an indicator of the personal time and effort spent in altering or forming appearance through exercise. The five demographic variables were income, marital status, education, age, and race/ethnic group.

To test hypotheses formulated for this study, Kendall's Tau and multiple regression were used. The Kendall's Tau correlation is based on the ranks of observations, and it can assume values between -1 and +1. Multiple regression was employed to investigate the influences of the

demographic variables on body-self relations, level of exercise involvement, and exercise clothing attitude.

Kendall's Tau correlation shows a significant positive relationship between level of exercise involvement and body-self relations appearance evaluation. However, the relationship between level of exercise involvement and body-self relations appearance orientation is not significant. When the two scores of appearance evaluation and orientation are treated together as one score, the relationship is not significant. Therefore, respondents' level of exercise is related to feelings of physical attractiveness and satisfaction with one's looks, but not to the extent of investment in one's appearance.

The Kendall's Tau correlation shows a positive relationship between level of exercise involvement and body-self relations fitness evaluation. Results also show a positive relationship between level of exercise involvement and body-self relations fitness orientation. When the two scores of evaluation and orientation are treated as one score, the relationship also is significant. Therefore, the respondents' level of exercise is related to both feeling physically fit and extent of investment in being physically fit and athletically competent.

The results of hypothesis H1 (both a and b) imply the women subjects express greater concern with physical

competence than physical attractiveness. That is, being "in shape" or athletically active and competent appears to have greater importance than engaging in grooming behaviors. The results also raise the question concerning the motive for exercise behavior. That is, do the respondents' exercise because of a negative body image, or does the exercise lead to a positive body image?

Results also favor the notion that appearance management behavior (in this case, level of exercise involvement) is related to body-self relations, and consequently, the self-concept. This in turn supports the proposed model about social comparison and the construction of body-self relations. That is, through exercise, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance.

The Kendall's Tau correlation shows a positive relationship between body-self relations appearance evaluation and the exercise clothing attitude consistency measure. However, the relationship between body-self relations appearance orientation and the exercise clothing attitude consistency measure is not significant. When the two scores of evaluation and orientation are averaged as one score, the relationship is significant and positive.

The results imply some relationship between the consistency of the congruence scores across the three exercise clothing images and body-self relations appearance scores. The congruence between the affective and behavioral aspects of the exercise clothing images appear to be related to the body-self relations concept of appearance and the extent of investment in one's appearance as well as the overall satisfaction with one's physical appearance.

The Kendall's Tau correlation shows there is a significant positive relationship between both body-self relations fitness evaluation and orientation and the exercise clothing attitude consistency measure. When fitness evaluation and orientation scores were averaged as one score, the relationship also is significant and positive.

The findings of research hypothesis H2 (both a and b) support related research about congruence between the symbolic image of a garment and an individual's self-concept (Jacobi & Walters, 1958). That is, clothing is considered an extension of the bodily self, thus the exercising subject's body-self relations can play an important role in clothing attitude. Results also favor the notion that congruence between the affective and behavioral aspects of an attitude is considered to be related to body-self relations, and consequently, the self-concept. This in turn

supports the proposed model about social comparison and the construction of body-self relations. That is, individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

Kendall's Tau correlation shows a significant positive relationship between level of exercise involvement and the exercise clothing attitude consistency measure. The results imply some relationship between the consistency of the congruence scores across the three exercise clothing images and level of exercise involvement. The congruence between the affective and behavioral aspects of the exercise clothing image is related to the average number of hours exercised in a given week.

Results favor the notion that appearance management behavior (in this case, level of exercise involvement) is related to congruence between the affective and behavioral aspects of an attitude. This in turn supports the proposed model about social comparison and the construction of body-self relations. That is, through exercise, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance. In addition, level of exercise involvement appears to be related to how individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

With regard to demographic variables, multiple regression results indicated a relationship between body-self relations appearance and evaluation and age and Asian/Asian-American respondents. These findings indicate that respondents' body-self relations appearance evaluation and orientation scores decrease with age. In addition, results indicate that Asian/Asian-American subjects are the only group with significantly lower body-self relations appearance evaluation and orientation scores than the reference group of Blacks, which was omitted by regression analysis. Results indicate a relationship between body-self relations appearance evaluation and age. These findings indicate that respondents' body-self relations appearance evaluation decreases with age. Results indicate no significant relationships between body-self relations appearance orientation and the demographic variables.

Results indicate a relationship between body-self relations fitness evaluation and orientation and age. These findings indicate that respondents' body-self relations fitness evaluation and orientation decrease with age. Results indicate a relationship between body-self relations fitness evaluation and age and Asian/Asian-American subjects. These findings indicate that respondents' body-self relations fitness evaluation decreases with age. In addition, results indicate that Asian/Asian-American

subjects are the only group with significantly lower body self-relations fitness evaluation than the reference group of Blacks, which was omitted by regression analysis.

Implications of hypothesis H4 (both a and b) signify that age is an important factor when considering body-self relations. Considering the majority of the subjects (68 percent) were between the ages of 18 and 35, the older women subjects may have a lower body-self relations score as a result of being a minority. As stated earlier, the social groups to which an individual orients herself, regardless of membership, are the reference groups to which the individual ascribes (Singer, 1981). Individuals compare themselves to others and to the ideal self, which is usually generated from cultural ideals for appropriate behavior and appearances. In this case, the older subjects may compare themselves to the younger women, and thus influence their body-self relations scores. This in turn supports the proposed model about social comparison and the construction of body-self relations.

Multiple regression analysis did not find a relationship between level of exercise involvement and the demographic variables. Multiple regression analysis results indicate a significant positive relationship between exercise clothing attitude consistency measure and White/Caucasians, and a significant negative relationship

with education and Asian/Asian-Americans. These findings indicate that the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images is related to level of education and the race/ethnic group of the respondents.

Results indicate that a White/Caucasian subject is more likely to score similar mean scores on the affective and behavioral aspects of the exercise clothing attitude measure. This may be a result of cultural differences related to exposure to different types of exercise clothing images. Whereas the White/Caucasian subjects may feel comfortable with congruence between affective and behavioral aspects of the exercise clothing, the Asian/Asian-American may not, due to cultural, religious, or family values. However, since the number of Asian/Asian-American respondents' was quite small (5.8 percent), further research is warranted.

Suggestions for Future Research

1. The sample of the current study is highly skewed toward Caucasian subjects. Additional studies focusing on individuals representing a cross-section of all racial/ethnic groups are needed to assess body-self relations, level of exercise involvement, and exercise clothing attitude for these populations. Studies could

also focus on the factors that may help explore why differences may exist.

2. Since the findings of this study show significant relationships between several variables and age, additional research concerning age and body-self relations is warranted. A comparison of a larger pool of elderly and younger individuals would better assess similarities and differences among the body-self relations attributes.
3. The current study utilized the exercise clothing attitude congruence and exercise clothing attitude consistency measures, both of which are relatively new ways to evaluate exercise clothing attitude. The reliability and validity of the measures should be evaluated further for future research.
4. Since the majority of the factor loadings of the Multidimensional Body-Self Relations Questionnaire maintained the original factors developed by Cash (1983), the current research preserved the original four factor clusters. Some lack of adherence to the prescribed body-self relations questionnaire factors may be a result of the current research using only a

portion of the original MBSRQ questionnaire.

Additional research with a similar pool of subjects could assess these differences and study why the factors vary.

5. The current study utilized only a portion of the Multidimensional Body-Self Relations Questionnaire related to appearance and fitness. A similar study could be conducted using the MBSRQ in its entirety to explore the other body image factors and their possible relationships to level of exercise involvement and exercise clothing attitude.
6. To project the exercise clothing images, the current research used black and white frontal full body poses. These images may not have clearly represented three levels of body coverage. Additional research could explore other possibilities for display of the clothing. These could include both frontal and back poses, flat garment rendering that would not include the body, or samples of actual exercise clothing.
7. The current research utilized subjects involved in regular exercise programs. Given the popularity of exercise, a broader sample including individuals not

participating in an organized program may yield different results. The larger sample may also allow for additional clothing styles as well as a wider range of ages and ethnic/racial groups.

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APPENDIX A

Cover Letter and Questionnaire

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Informed Consent for Participants of Investigative Projects

Title: Relationships Among Body-Self Relations, Exercise Involvement, and Exercise Clothing Attitude of Women in Regular Exercise Programs

Principle Investigator: Bernadette Tatarka

Purpose of this Research:

You are invited to participate in a study on women's involvement in exercise and their feelings about appearance and exercise clothing, which includes an investigation of relationships among these factors. The subjects in the study are all women who participate in exercise programs.

Procedures:

The procedures to be used are (1) the completion of a questionnaire by subjects and (2) a statistical analysis of the data collected. The time required for your participate in the study will be approximately 15 minutes.

Benefits of this Project:

The knowledge gained from the information collected in this questionnaire will be used to learn more about what influences exercise involvement and exercise clothing choices. Information gathered will provide retailers and manufacturers with an understanding of apparel product design for women's exercise clothing.

Extent of Anonymity and Confidentiality:

Individual questionnaire responses will be kept strictly confidential with the researchers. At no time will the researchers release the responses to anyone other than individuals working on the project without written consent. Your name will be removed from the information you provide; only a subject number will identify you during analysis and on any written reports regarding the research.

Approval of Research:

This research has been approved, as required, by the Institutional Review Board for projects involving human subjects at Virginia Polytechnic Institute and State University, and by the Department of Clothing and Textiles.

QUESTIONNAIRE

Section A: The following pages contain a series of statements about how people might think, feel, or behave. Please indicate the extent to which each statement pertains to you personally. Circle 1 if you "disagree" with the statement; 2 if you "tend to disagree"; 3 if you "tend to agree"; or 4 if you "agree" with the statement.

	Disagree	Tend to Disagree	Tend to Agree	Agree
1. I use very few grooming products	1	2	3	4
2. I dislike my physique	1	2	3	4
3. I am careful to buy clothes that will make me look my best	1	2	3	4
4. Being physically fit is not a strong priority in my life	1	2	3	4
5. I like the way my clothes fit me	1	2	3	4
6. I seldom think about my athletic skills	1	2	3	4
7. It is important that I have superior physical strength	1	2	3	4
8. Before going out, I usually spend a lot of time getting ready	1	2	3	4
9. I usually wear whatever is handy without caring how it looks	1	2	3	4
10. I am self-conscious if my grooming isn't right	1	2	3	4
11. I don't care about what people think of my appearance	1	2	3	4
12. I would pass most physical-fitness tests	1	2	3	4
13. I like the way I look without my clothes	1	2	3	4
14. I do things to increase my physical strength.	1	2	3	4

		Tend to Disagree	Tend to Agree	Tend to Disagree	Tend to Agree
15. Most people would consider me good-looking	1	2	3	4	4
16. My physical endurance is good	1	2	3	4	4
17. My body is sexually appealing	1	2	3	4	4
18. I do poorly in physical sports or games	1	2	3	4	4
19. I do not actively do things to keep physically fit	1	2	3	4	4
20. I am physically unattractive	1	2	3	4	4
21. I play a sport regularly throughout the year	1	2	3	4	4
22. I try to be physically active	1	2	3	4	4
23. I like my looks just the way they are	1	2	3	4	4
24. Participating in sports is unimportant to me	1	2	3	4	4
25. I work to improve my physical stamina	1	2	3	4	4
26. I am not involved in a regular exercise program	1	2	3	4	4
27. I don't care to improve my abilities in physical activities	1	2	3	4	4
28. I check my appearance in a mirror whenever I can	1	2	3	4	4
29. It is important that I always look good	1	2	3	4	4
30. I am always trying to improve my physical appearance. . .	1	2	3	4	4
31. Before going out in public, I always notice how I look. . .	1	2	3	4	4
32. I never think about my appearance	1	2	3	4	4

		Tend to Disagree	Tend to Agree	
33. I am very well coordinated	1	2	3	4
34. I easily learn physical skills	1	2	3	4
35. I take special care with my hair grooming	1	2	3	4

Section B:

36. Please indicate with a circle the category that best describes your yearly income (please include spouse if married).

- 1) 0 to \$9,999
- 2) \$10,000 to \$29,999
- 3) \$30,000 to \$49,999
- 4) \$50,000 to \$69,999
- 5) \$70,000 to \$89,999
- 6) \$90,000 to \$109,999
- 7) Over \$110,000

37. Please indicate with a circle the category that best describes your marital status.

- 1) Currently married
- 2) Not married at this time

38. Please indicate the total amount of schooling you have had (in years). _____

39. Please indicate your age in years. _____

40. Please indicate with a circle the category that best describes your race/ethnic group.

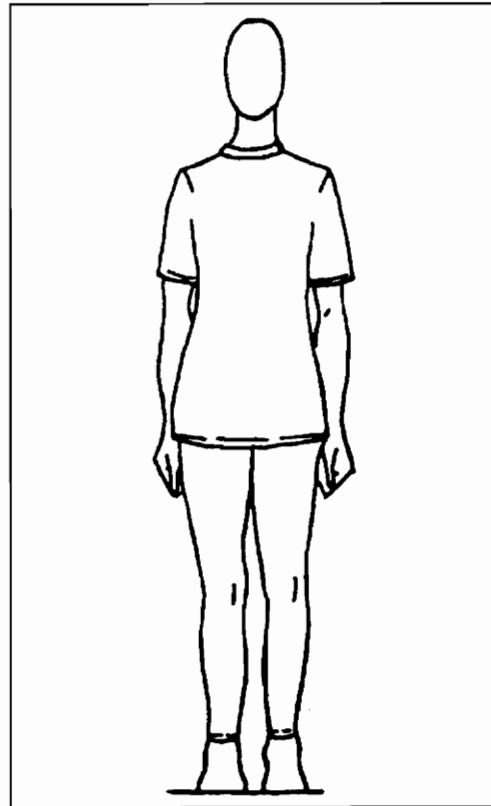
- 1) Black/African-American/African
- 2) Asian/Asian-American
- 3) Hispanic
- 5) White/Caucasian
- 6) Other

41. Please indicate the average number of hours you exercise in a given week. _____

Section C: Please indicate your feelings about the style of exercise clothing in the box. Using the scale below, indicate your answer by circling the number to the right of the statement.

1 - Disagree 3 - Tend to Agree
2 - Tend to Disagree 4 - Agree

Do you believe the exercise clothing image in the box is:



- 42. Comfortable 1 2 3 4
- 43. Attractive 1 2 3 4
- 44. Embarrassing to wear . . . 1 2 3 4
- 45. Stylish 1 2 3 4
- 46. Enhances physical performance 1 2 3 4
- 47. Allows for self-expression 1 2 3 4
- 48. Appropriate 1 2 3 4
- 49. Practical 1 2 3 4
- 50. Similar to what I would like to wear 1 2 3 4

In reference to the exercise clothing image shown in the box above, please indicate the measure of your agreement with the following statements, using the scale below.

1 - Disagree 3 - Tend to Agree
2 - Tend to Disagree 4 - Agree

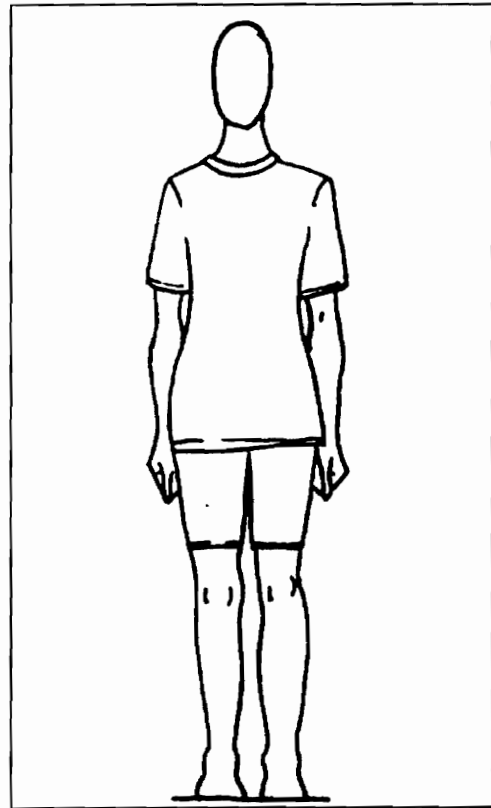
- 51. This outfit is consistent with how I see myself while exercising 1 2 3 4
- 52. This outfit is a mirror image of me when I go to exercise 1 2 3 4
- 53. This outfit reflects who I am while exercising 1 2 3 4
- 54. People similar to me wear outfits like this while exercising 1 2 3 4
- 55. The kind of person who typically wears this outfit while exercising is very much like me 1 2 3 4

Please indicate your feelings about the style of exercise clothing in the box. Using the scale below, indicate your answer by circling the number to the right of the statement.

1 - Disagree 3 - Tend to Agree
 2 - Tend to Disagree 4 - Agree

Do you believe the exercise clothing image in the box is:

- 56. Comfortable 1 2 3 4
- 57. Attractive 1 2 3 4
- 58. Embarrassing to wear . . . 1 2 3 4
- 59. Stylish 1 2 3 4
- 60. Enhances physical performance 1 2 3 4
- 61. Allows for self-expression 1 2 3 4
- 62. Appropriate 1 2 3 4
- 63. Practical 1 2 3 4
- 64. Similar to what I would like to wear 1 2 3 4



In reference to the exercise clothing image shown in the box above, please indicate the measure of your agreement with the following statements, using the scale below.

1 - Disagree 3 - Tend to Agree
 2 - Tend to Disagree 4 - Agree

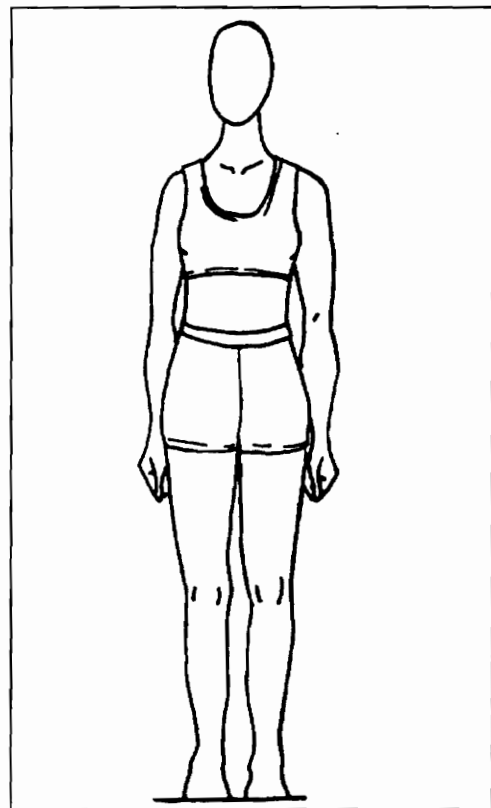
- 65. This outfit is consistent with how I see myself while exercising 1 2 3 4
- 66. This outfit is a mirror image of me when I go to exercise 1 2 3 4
- 67. This outfit reflects who I am while exercising 1 2 3 4
- 68. People similar to me wear outfits like this while exercising 1 2 3 4
- 69. The kind of person who typically wears this outfit while exercising is very much like me 1 2 3 4

Please indicate your feelings about the style of exercise clothing in the box. Using the scale below, indicate your answer by circling the number to the right of the statement.

1 - Disagree 3 - Tend to Agree
2 - Tend to Disagree 4 - Agree

Do you believe the exercise clothing image in the box is:

- 70. Comfortable 1 2 3 4
- 71. Attractive 1 2 3 4
- 72. Embarrassing to wear . . . 1 2 3 4
- 73. Stylish 1 2 3 4
- 74. Enhances physical performance 1 2 3 4
- 75. Allows for self expression 1 2 3 4
- 76. Appropriate 1 2 3 4
- 77. Practical 1 2 3 4
- 78. Similar to what I would like to wear 1 2 3 4



In reference to the exercise clothing image shown in the box above, please indicate the measure of your agreement with the following statements, using the scale below.

1 - Disagree 3 - Tend to Agree
2 - Tend to Disagree 4 - Agree

- 79. This outfit is consistent with how I see myself while exercising 1 2 3 4
- 80. This outfit is a mirror image of me when I go to exercise 1 2 3 4
- 81. This outfit reflects who I am while exercising 1 2 3 4
- 82. People similar to me wear outfits like this while exercising 1 2 3 4
- 83. The kind of person who typically wears this outfit while exercising is very much like me 1 2 3 4

I know of no reason I cannot participate in this study.

Signature

-----Tear Here-----

I have read and understand the informed consent and conditions of this project. All of my questions have been answered. I hereby acknowledge the above and give my voluntary consent for participation in this project.

If I participate, I may withdraw at any time without penalty. I agree to abide by the rules of this project.

Should I have any questions about this research or its conduct, I will contact:

Bernadette Tatarka
Principal Investigator

Telephone number here

Dr. Marjorie Norton
Faculty Advisor

Telephone number here

Dr. Ernest Stout
Chair, Institutional Review Board
Research Division

Telephone number here

APPENDIX B

Data Collection Information Guide

DATA COLLECTION INFORMATION GUIDE

April 8-14, 1995

Check with an individual at front desk and the aerobic instructor to verify your intent to speak to the women in the aerobics class. When addressing the potential subjects, please stress the major points that are on the first page of the questionnaire:

1. They are invited to participate in a study on women's involvement in exercise and their feelings about appearance and exercise clothing.
2. Participation involves completion of the questionnaire. Time required will be approximately 15 minutes, and can be done either before or after class as to not interfere with the workout.
3. Individual questionnaire responses will be kept strictly confidential. Their names will be removed from the information provided; only a subject number will be used during analysis and on any written reports regarding the research.
4. The subjects will need to sign the top portion of the last page, and remove the bottom to keep for future reference.

This data collection guide sheet should accompany the questionnaires from each class. Your professional appearance and attitude will ensure a good representation of Virginia Tech and the Department of Clothing and Textiles. Thank you for your help with this research project.

Your Name: _____

Date: _____

Exercise Facility: _____

Class Time: _____

Questionnaire Series Numbers: _____ to _____

Please note the women subjects' exercise clothing and indicate how many are dressed in a similar manner to images below.







APPENDIX C

Tables for Non-Significant Regression Results

Table 23. Relationship between demographics and body-self relations fitness orientation.

Source	DF	Sum of Squares	F-Value	p
Fitness Orientation				
Whole-model test	13	2.99	1.11	0.35
Education	1	0.52	2.55	0.11
Age	1	0.16	0.77	0.38
Marital status	1	0.08	0.39	0.53
Income	6	1.11	0.90	0.50
Race	4	1.21	1.48	0.21

Note: $p < 0.05$

Table 24. Estimates of the regression coefficients for the relationship between body-self relations fitness orientation and demographics.

Fitness Orientation		
Constant	2.55	t= 5.01
<u>Income</u>		
\$10,000 to \$29,999	0.04	t= 0.29
\$30,000 to \$49,999	-0.15	t= -0.98
\$50,000 to \$69,999	-0.09	t= -0.53
\$70,000 to \$89,999	0.82	t= 0.41
\$90,000 to \$109,999	0.27	t= 1.14
Over \$110,000	-0.12	t= -0.53
Not Married	-0.08	t= -0.62
Education	0.03	t= 1.60
Age	0.00	t= -0.88
<u>Race</u>		
Asian/Asian-American	-0.02	t= -0.05
Hispanic	0.15	t= 0.40
White/Caucasian	0.20	t= 0.59
Other	-0.48	t= -1.01
Rsquare= 0.11		

Note: $p < 0.05$

Table 25. Relationship between demographics and level of exercise involvement.

Source	DF	Sum of Squares	F-Value	p
Exercise Involvement				
Whole-model test	13	151.50	1.05	0.41
Education	1	13.75	1.24	0.27
Age	1	2.63	0.24	0.63
Marital status	1	8.32	0.75	0.39
Income	6	117.75	1.78	0.11
Race	4	14.72	.33	0.86

Note: $p < 0.05$

Table 26. Estimates of regression coefficients for the relationship between level of exercise involvement and demographics.

Exercise Involvement		
Constant	5.28	t= 1.40
<u>Income</u>		
\$10,000 to \$29,999	-1.82	t= -1.97
\$30,000 to \$49,999	-1.27	t= -1.10
\$50,000 to \$69,999	0.86	t= 0.71
\$70,000 to \$89,999	0.11	t= 0.07
\$90,000 to \$109,999	1.79	t= 1.02
Over \$110,000	-0.34	t= -0.20
Not Married	-0.80	t= -0.87
Education	0.15	t= 1.12
Age	-0.01	t= -0.49
<u>Race</u>		
Asian/Asian-American	-0.48	t= -0.19
Hispanic	0.31	t= 0.11
White/Caucasian	0.93	t= 0.39
Other	-1.81	t= -0.52

APPENDIX D

Research Journal Manuscript Draft

BODY-SELF RELATIONS, EXERCISE INVOLVEMENT, AND EXERCISE CLOTHING ATTITUDE FOR WOMEN IN REGULAR EXERCISE PROGRAMS

Media projection of slender and taut bodies, the popularity of exercise programs, and sales of exercise clothing and equipment have all been on the rise for the past fifteen years. Exercise in earlier times required little more than a good pair of shoes and often old, worn clothing. More recently, sales of exercise apparel have reflected interest in specialized clothing for exercise activities. Between 1981 and 1982, reported exercise wear sales increased by 60 percent, and in 1984, department store trade journals reported that exercise wear was the hottest-selling item of the year (Seale, 1984). The Sporting Goods Manufacturers Association recently published a survey on consumers' sports apparel buying patterns. According to the survey, sports apparel is a \$32.2 billion industry at retail and is owned by 86 percent of the U.S. population (Donohue, 1995).

American females are socialized from birth to believe that physical attractiveness is culturally valued (Bernscheild, Walster, & Bohrnstedt, 1973). It has also been determined that body image concerns are strong motivators of dieting and exercising behaviors (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993). Body image is

defined as a mental picture one has of his or her body. Since physical attractiveness is highly valued and the media focus on a young and thin body as an important factor of physical attractiveness (Moriarty & Moriarty, 1988), individuals may increase exercise involvement to reach an ideal body image.

The body image construct is multidimensional, and a key empirical distinction exists between the attitudinal experience and the perceptual experience of one's body size (Cash, 1993). The Multidimensional Body-Self Relations Questionnaire (MBSRQ) is a 69-item self-report inventory for the assessment of self-attitudinal aspects of the body-image construct. The MBSRQ inventory contains a 54-item short form of the original 140-item Body-Self Relations Questionnaire (Winstead & Cash, 1984). The MBSRQ is a body image scale which takes into account three somatic domains of cognitive (attention/importance), behavioral (action or activity), and affective (evaluation) components, which is consistent with the extant social-psychology definition of attitude. The 69-item MBSRQ consists of three parts: (a) the factor subscales, (b) the Body Areas Satisfaction Scale, and (c) the Weight Attitude Scale. The factor subscales measure subjects' attitudes toward their physical appearance, fitness, and health using a response format ranging from definitely disagree to definitely agree.

Within each of the three somatic domains are items comprised of the two composite subscales of evaluation and orientation. The evaluation examines the extent of liking, attainment, and satisfaction of the domains, whereas the orientation examines the degree of cognitive importance of and attention to the domain, as well as behaviors related to maintaining or improving facets of the domain.

The Body Areas Satisfaction Scale in the MBSRQ assesses satisfaction with face, hair, lower torso, midtorso, upper torso, muscle tone, weight, height, and overall appearance--each rated dissatisfied to very satisfied. The final five-point items of the instrument pertain to the Weight Attitude Scale, which includes information about fat anxiety, weight vigilance, current dieting, and eating restraint. This scale assesses self-classified weight with a self-reporting evaluation of feeling very underweight to very overweight. The reliability and validity of these measures have been established (Cash, 1993).

The MBSRQ has been used to measure body image in several studies. For example, with the MBSRQ, it has been determined that body image concerns are strong motivators of dieting and exercising behaviors (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993). In addition, weight-related discontent is the most salient facet of a negative body image (Cash, Winstead, & Junda, 1986), which is related to a

cultural emphasis on thinness (Polivy, Garner, & Garfinkel, 1986; Pruzinsky, 1990).

Regular participation in physical activities, such as running, swimming, or bicycling, is known to enhance mental and physical health. Also suggested is that people who participate in regular physical activity have a favorable view of their bodies as well as a higher self-concept. Joesting (1981) explored body cathexis, the evaluative dimension of body image, in respect to the amount of participation in any regular physical activity. It was found that college students who participated in five or more hours of weekly physical activity scored higher on the body cathexis scale, and thus were more satisfied with their bodies than were students with fewer hours of physical activity.

Clothing is an extension of the bodily self that represents the nearest aspect of one's environment. Schilder (1935) stated that bodily appearances can be transfigured with the use of clothing. Further, Schilder referred to clothes as an extension of the body scheme, and posited that clothing is incorporated into body scheme and may be able to change the body image. A change in dress can result in a change in the attitude toward the body and self (Jourard, 1958). Compton (1964) suggested that clothes may function to help strengthen weak body image boundaries.

Research has been conducted to clarify the nature of the relationship between body perceptions and usage of clothing. Kwon and Parham (1994) examined the relationship between perception of physical self and clothing-selection practices. The objective was to identify the dimensions of clothing functions given two different situations: (a) when one feels fat or feels one has gained weight (Fat State), and (b) when one feels more slender or feels one has lost weight (Slender State). Significant differences were found between clothing functions for the Fat and Slender States, indicating that the motivations concerning clothing functions for the two states are basically different. When subjects perceived themselves as fat, scores for camouflage, comfort, individuality, and assurance were negatively correlated with the Weight Factor scores. However, when subjects felt slender, the only significant association was a low negative correlation of camouflage scores with Weight Factor.

Female cyclists at two levels of involvement in the sport have been studied as to their interest in and use of bicycling apparel (Casselman-Dickson & Damhorst, 1993). When measuring levels of involvement by self-report of average miles bicycled in a week, female cyclists with the highest and lowest levels of involvement showed many similar characteristics in their interest in attracting attention,

satisfaction with appearance, modesty, and choice of role-appropriate dress.

It has been determined that body image concerns are strong motivators of dieting and exercising behaviors. Although there are several studies related to the concepts of body image and exercise, there is little information related to exercise and clothing behavior. In addition, almost no investigators have addressed either body-self relations as it relates to level of exercise involvement or clothing attitude for women in exercise programs. Therefore, an important contribution to the literature can be made with the present research, the purpose of which was to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs.

Conceptual Framework

Self-concept is the objective acknowledgement of the self and its physical and abstract traits (Holloman, 1989). Self-concept also has been described as the total image one has about oneself; it contains one's actual experiences and interpretations about those experiences (Kalish, 1975).

One's self-concept is based in part on how one compares to other individuals with regard to traits, opinions, and abilities (Pettigrew, 1967). Interactions with others shape

the meanings that individuals use to define the self. Social comparison is a process in which individuals evaluate themselves in relation to others (Festinger, 1954), which may result in increased or decreased feelings of self-worth.

Through the process of social comparison, individuals continually assess the personal aesthetic value of themselves and others. One's body image is based in part on how one compares to other individuals (Pettigrew, 1967). Through social comparison, one observes the standard of appearance among reference groups, and learns to engage in associated appearance management behavior.

In general, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance (McCrea, Summerfield, & Rosen, 1982) or wishes to approximate the cultural aesthetic. In the current research, an individual's level of exercise involvement is used as an indicator of the time and effort involved in altering or forming one's appearance.

A chosen appearance can represent a particular self-concept or attitude. Attitudes include predispositions to react favorably or unfavorably toward a stimulus and are comprised of three elements: affective (evaluation), cognitive (attention/importance), and behavioral (action or activity) (Kaiser, 1990). In consumer research it is argued that the social self is achieved through the purchase and

use of products that portray an image consistent with (or a compromise between) the consumer's actual and/or ideal self-concept (Sproles & Burns, 1994). Individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

Congruence between the symbolic image of a garment or attitude and an individual's self-concept can affect body-self relations (Jacobi & Walters, 1958). An individual's beliefs toward clothing styles and use of clothing fashions demonstrate the social self and are symbols of an individual's self-concept (Sproles & Burns, 1994). In the current research, congruence between the affective and behavioral aspects of an attitude is considered to be related to body-self relations, and consequently, the self-concept (see Figure 1). Note that in the following hypotheses, the exercise clothing attitude consistency measure is a representative slope measuring the consistency of the affective and behavioral attitude congruence scores across three exercise clothing images presented to the respondents.

INSERT FIGURE 1 HERE

The Research Hypotheses

Based on the conceptual framework and the review of literature, the following research hypotheses were developed.

Hypothesis 1. Among the women subjects, there will be a positive relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and level of exercise involvement;
- (b) the scores for body-self relations fitness (both evaluation and orientation) and level of exercise involvement.

Hypothesis 2. Among women subjects, there will be a relationship between:

- (a) the scores for body-self relations appearance (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images;
- (b) the scores for body-self relations fitness (both evaluation and orientation) and the exercise clothing attitude consistency measure for the three exercise clothing images.

Hypothesis 3. Among the women subjects, there will be a positive relationship between level of exercise involvement and the exercise clothing attitude consistency

measure across the three exercise clothing images presented to the respondents.

Hypothesis 4. Among the women subjects, there will be a relationship between demographics (income, marital status, education, age, and race/ethnic group) and:

- (a) the scores for body-self relations appearance (evaluation and orientation);
- (b) the scores for body-self relations fitness (evaluation and orientation).

Hypothesis 5. Among the women subjects, there will be a relationship between demographics (income, marital status, education, age, and race/ethnic group) and level of exercise involvement.

Hypothesis 6. Among the women subjects, there will be a relationship between demographics (income, marital status, education, age, and race/ethnic group) and the exercise clothing attitude consistency measure for the three exercise clothing images.

Procedure

Sample

Subjects were women involved in four different aerobic exercise programs in a mid-Atlantic college town. Three programs were in private establishments, and the fourth program was affiliated with the local university. Aerobic

exercise programs were chosen due to the availability of a potentially large sample and the variety of aerobic exercise clothing. The women subjects were expected to reflect differences in body-self relations, exercise involvement, exercise clothing attitude, and demographics. Data were collected via personal contact at the exercise program locations. A data collection guide journal was used by the investigators to note the exercise clothing styles of the subjects.

The Instrument and Variables Measured

Body-self relations is a perspective where body image is a self-attitude comprised of three psychological dimensions or dispositions toward one's body: affective (evaluation), cognitive (attention/importance), and behavioral (action or activity) (Cash, 1993). The factor subscales of appearance evaluation and orientation and of fitness evaluation and orientation from the Multidimensional Body-Self Relations Questionnaire were used in this research. The appearance evaluation measures feelings of physical attractiveness or unattractiveness and satisfaction or dissatisfaction with one's looks. High scorers are assumed to indicate more satisfaction with one's physical appearance and low scorers a general unhappiness with physical appearance. Appearance orientation measures the

extent of investment in one's appearance. High scorers are assumed to place importance on how they look, pay attention to their appearance, and engage in "grooming behaviors" to look their best. Low scorers are assumed to be apathetic about their physical appearance; their looks are not especially important, and they do not expend much time or energy to "look good".

The fitness evaluation of the MBSRQ measures feelings of being physically fit or unfit. High scorers are assumed to regard themselves as physically fit, "in shape", or athletically active and competent. Low scorers are assumed to feel physically unfit, "out of shape", or athletically unskilled. Fitness orientation measures the extent of investment in being physically fit or athletically competent. High scorers are assumed to value fitness and to be actively involved in activities to enhance or maintain their fitness. Low scorers are assumed to not value physical fitness and to not regularly incorporate exercise activities into their lifestyles.

Exercise involvement is an indicator of the time and effort involved in altering or forming one's appearance through exercise. This study used a behavioral measure with a self-report of average number of hours exercised per week.

Exercise clothing attitude is an indicator of beliefs toward a given exercise clothing style. Exercise clothing

attitude was measured by beliefs toward three black-and-white line drawings representing different amounts of body coverage of the exercise clothing style images on a continuum of high to low body exposure.

The elements of affective (evaluation) and behavioral attitude were used in this study. From a consumer behavior standpoint, self-concept can be explained in terms of an evaluation process involving perception of oneself through the actual or anticipatory use of a product (Sirgy, 1986). The perceived self-image arising from the actual use of the product is the object of the evaluation. In this research, women subjects evaluated three given exercise clothing images by supplying their feelings toward the images. In developing this portion of the questionnaire, a Q-sort procedure was used to select exercise clothing styles representative of the exercise clothing styles currently available on the market.

Development of three black and white line drawings of the clothing styles involved a process of assessment, wherein the researcher evaluated several compiled Q-sort images and separated them into specific garment attributes including neckline depth, sleeve and hem length, and the degree of skin exposure. From this assessment, the exercise clothing images were rendered to depict the specific garment attributes (Figure 2).

INSERT FIGURE 2 HERE

To focus respondents' attention on the exercise clothing styles, the same size, shape, and pose of the figures were used and facial features, hair, and footwear were omitted. In addition, a fully erect, frontal-view fashion figure of seven and one-half head-lengths was used. The styles depicted in the line drawings exclude the color, texture, fabric, and constructional detail elements of the exercise clothing images. Variations in these factors might have influenced the respondents' perceptions of the images by communicating other image cues.

To select adjectives for the affective attitudinal dimension for respondents to describe feelings about the chosen exercise clothing styles, a list of terms that describe attitudes toward exercise clothing was compiled. Terms were drawn from statements used in former studies related to body image and/or exercise behavior (Casselmann-Dickson & Damhorst, 1993; Gurel & Gurel, 1979; Kwon & Parham, 1994). This exercise clothing attitude scale contained nine adjectives, including: comfortable, attractive, stylish, enhances physical performance, allows

for self-expression, appropriate, practical, similar to what I would like to wear, and embarrassing to wear.

Since the evaluation process of an attitude involves the perception of oneself through the actual or anticipatory use (behavioral element of attitude) of a product, five statements related to use of the depicted styles also were utilized. Modifications of statements pertaining to Park's (1990) direct measure of the self-image/clothing-image congruity were employed. Park found internal consistency coefficients of 0.92 with respect to the statements she asked. For the present study, items were reworded to apply specifically to exercise clothing.

A combination of scores from the evaluation (affective) and the behavioral portion of the attitude resulted in an attitude congruence score for each outfit and an attitude consistency measure across the three exercise clothing images presented to the respondents. To compute the attitude congruence scores, a modified Absolute-Difference Model was used. The Absolute-Difference Model computes the average of the absolute arithmetical difference between the affective dimension of an attitude and the behavioral dimension of an attitude (Park, 1990; Sirgy, 1986).

The derivation of a modified Absolute-Difference score of the attitude congruence involves computing the absolute arithmetical difference between the average affective

dimension score and the average behavioral dimension score of an attitude. The lower the attitude congruence score, the less discrepancy between the affective and the behavioral dimension, thus indicating a higher congruence state of a respondent.

An attitude consistency measure for each respondent also was calculated across the three exercise images to avail testing the relationships between exercise clothing attitude to body-self relations, demographics, and level of exercise involvement. The attitude consistency measure is a representative slope measuring the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images presented to the respondents.

Demographic variables include income, marital status, education, age, and race/ethnic group.

Data Analysis

Reliability and validity were examined with the use of Cronbach alpha and factor analysis for assessment of the final instrument. The parts of the instrument measuring body-self relations and exercise clothing attitude were each checked for internal consistency using Cronbach alpha. A scale can be considered to have good reliability if alpha value is greater than 0.60 (Schuessler, 1971). Coefficients indicated good reliability of the instrument. The scales

for exercise clothing attitude medium-coverage and low-coverage behavior had alpha values greater than 0.90 indicating high reliability. The other scales for body-self relations and exercise clothing attitude had alpha values ranging from 0.81 to 0.89 except for body-self relations fitness evaluation and exercise clothing attitude medium-coverage evaluation (fitness evaluation, $\alpha = 0.69$; medium-coverage evaluation, $\alpha = 0.67$).

In addition to determining the Cronbach alphas, factor analysis with varimax rotation was performed to investigate instrument validity. Factor analysis was used for assessing the final instrument, not for development of the instrument. The analysis was important to insure that the items of the body-self relations appearance evaluation and orientation and fitness evaluation and orientation were not overlapping. Five orthogonal factors explaining 75 percent of the variability and having large eigenvalues resulted from the factor analysis. The factors include appearance evaluation, appearance orientation, fitness evaluation, and two generated from fitness orientation.

The current research utilized a part of an existing structure (MBSRQ), which has been developed through an extensive iterative process of rational-empirical item selection and validation research, including factor-analytic research (Cash, Winstead, & Junda, 1986). Therefore, all

loadings are reported here, and items were not removed from the questionnaire if they did not meet a loading requirement of 0.50. Tables 1 and 2 cite the questions and their respective factor loadings.

Factor 1, the appearance evaluation measure, assesses feelings of physical attractiveness or unattractiveness and satisfaction or dissatisfaction with one's looks. All loadings of the individual items are greater than 0.6 in absolute value, representing the appearance evaluation factor. Factor 2, the appearance orientation measure, assesses the extent of investment in one's appearance. All of the individual items, except questions 11 and 32, are loaded higher than 0.55, representing the appearance orientation factor.

INSERT TABLE 1 HERE

The fitness evaluation measure assesses feelings of being physically fit or unfit (see Table 2). All three items, except question 18, are loaded higher than 0.70, representing the fitness evaluation factor. Fitness orientation assesses extent of investment in being

physically fit or athletically competent. Factor analysis split this factor into two separate groups; however, they have been reported as a single factor. All of the individual items, except questions 4, 12, 16, 26, and 27, are loaded higher than 0.50, representing the fitness orientation factor.

INSERT TABLE 2 HERE

Since the majority of the factor loadings maintained the original factors developed by Cash (1983), the current research preserved the original four-factor clusters. Some lack of adherence to the prescribed body-self relations questionnaire factors may be a result of using only a portion of the original MBSRQ questionnaire in the current research.

Results and Discussion

Description of Sample

The sample in this study consisted of 139 women involved in regular exercise programs. Data were collected during April 1995, with a response rate of 56 percent on 250

questionnaires distributed. As data were being collected, the actual exercise clothing worn by the respondents was noted. A data collection guide journal was used to record the exercise clothing style of each respondent. To record the actual exercise clothing styles of the subjects, a notation was made as to which of the depicted images was most like the exercise outfit of each subject. This information was gathered to evaluate possible relationships between the respondents' exercise clothing and their attitudes about the three depicted exercise clothing images. The image of medium coverage is the most prevalent style in that 61.2 percent of the subjects were dressed in a similar manner. This was followed by high coverage and low coverage (30.9 percent and 07.9 percent, respectively).

The distribution of the subjects with respect to demographics (marital status, years of education, age, race, and income) is presented in Table 3. The majority (53.9 percent) of the subjects were currently not married, and 46.0 percent were currently married. Years of education vary over a range of 12 years to 29 years. The mean number of years of education was 17.13 years, indicating a highly educated pool of subjects.

INSERT TABLE 3 HERE

The subjects' ages extended several decades, from 18 to 74 years. The mean age was 32.9 years old. The majority (89.0 percent) reported that they were White/Caucasian, indicating a highly skewed race/ethnic distribution, with only two Hispanic, four Black/African-American, eight Asian/Asian-American, and one subject selecting the "Other" option. Income varies over the established range, with the largest group of subjects indicating they had a total yearly dollar amount between 0 and \$9,999 (29.4 percent). This was followed by \$10,000 to \$29,999 and \$50,000 to \$69,999 (27.2 percent and 15.4 percent, respectively).

Results for other Measured Variables

Mean values and standard deviations for other measured variables are reported in Table 4. The mean score for appearance evaluation is 2.64, indicating that subjects tended to feel relatively, but not strongly satisfied with their physical appearances. Appearance orientation items measure the extent of investment in one's appearance. The mean score for appearance orientation is 2.96, indicating

the subjects tended to place importance on how they look, pay attention to their appearance, and engaged in grooming behaviors to look their best.

INSERT TABLE 4 HERE

The fitness evaluation items measure feelings of being physically fit or unfit. The mean score for fitness evaluation is 2.96, indicating the subjects tended to regard themselves as physically fit, "in shape", or athletically active and competent. Fitness orientation items measure the extent of investment in being physically fit or athletically competent. The mean score for fitness orientation is 3.16, indicating that subjects tended to value fitness and were actively involved in activities to enhance or maintain their fitness level. This high mean score is not surprising given the method of sampling at the four exercise facilities.

The clothing attitude scale assessed subjects' feelings about three depicted exercise clothing images. In the first portion of this section, on the affective dimension of an attitude, subjects evaluated each exercise clothing image with respect to nine different adjectives. The second

portion of the clothing attitude scale contained five statements to assess each individual's perception of herself through the actual or anticipatory use of the product or the behavioral dimension of an attitude. These statements measure the respondents' behavioral attitude directly by the evaluation scores in relation to each exercise clothing image.

Table 4 shows both the evaluation and behavior average scores for exercise clothing attitude, with each score having a possible range of 1 to 4. The mean evaluation score for the high-coverage evaluation was 2.72, indicating that subjects tended to have somewhat positive feeling toward the image. The mean score for the high-coverage behavior was 2.23, indicating that subjects tended to have a low to neutral willingness to wear the exercise clothing in the image.

The mean score for the medium-coverage evaluation was 3.12, indicating the subjects tended to have positive feelings toward the image. Of the three exercise clothing images, this style had the highest evaluation rating. This is not surprising when relating this evaluation to the respondents' exercise clothing worn which was recorded to indicate which of the depicted images was most like the exercise outfit of each subject. The majority of the respondents were dressed in a similar manner to the medium-

coverage exercise clothing image (61.2 percent) which may explain their higher evaluation rating for this image. The mean score for the medium-coverage behavior was 2.81, indicating that subjects also tended to have a willingness to wear the exercise clothing image.

The mean evaluation score for the low-coverage evaluation was 2.85, indicating the subjects tended to have positive feelings toward the image. The mean behavior score for the low-coverage behavior was 1.84, indicating an unwillingness to wear the image. Of the three exercise clothing images, this style had the lowest behavior rating.

Level of exercise involvement was used as an indicator of the time and effort involved in altering or forming one's appearance through exercise. The overall mean of the self-reported average number of hours exercised per week is 6.3.

Results of Hypothesis Testing

Kendall's Tau correlation shows a significant positive relationship between level of exercise involvement and body-self relations appearance evaluation (Table 5). However, the relationship between level of exercise involvement and body-self relations appearance orientation is not significant. When the two scores of appearance evaluation and orientation are treated together as one score, the relationship is not significant. Therefore, the

respondents' level of exercise is related to feelings of physical attractiveness and satisfaction with one's looks, but not to extent of investment in one's appearance.

INSERT TABLE 5 HERE

Kendall's Tau correlation shows a positive relationship between level of exercise involvement and body-self relations fitness evaluation (see Table 5). Results also show a positive relationship between level of exercise involvement and body-self relations fitness orientation. When the two scores of evaluation and orientation are treated as one score, the relationship also is significant. Therefore, the respondents' level of exercise is related to both feeling physically fit and extent of investment in being physically fit and athletically competent.

The results for hypothesis 1 (both a and b) imply the women subjects express greater concern with physical competence than with physical attractiveness. That is, being "in shape" or athletically active and competent fitness appears to have a greater importance than engaging in grooming behaviors. The results also raise a question

concerning the motive for exercise behavior. That is, do the respondents exercise because of a negative body image, or does the exercise lead to a positive body image?

Results also favor the notion that appearance management behavior (in this case level of exercise involvement) is related to body-self relations, and consequently, the self-concept. This in turn supports the conceptual framework about social comparison and the construction of body-self relations. That is, through exercise, the time and effort involved in altering one's appearance may reflect the extent to which one strives to create an ideal appearance.

Before testing hypothesis 2, the attitude congruence scores and exercise clothing attitude consistency measures were computed. The computed attitude congruence score shows high congruence with both the high and medium-coverage images. A lower score for the attitude congruence is an indication of less discrepancy between the affective and the behavioral dimensions, thus resulting in higher congruence states of the respondents for the two images (0.67 and 0.64, respectively). The low coverage image had a high mean of 1.86, indicating a lower congruence status for the image. This low score is a result of the subjects scoring high on the evaluative portion of the scale and low on the behavioral score. This is an indication that the subjects

tended to have positive feelings toward the image but exhibited an unwillingness to wear the exercise clothing image.

The Kendall's Tau correlation shows a positive relationship between body-self relations appearance evaluation and the exercise clothing attitude consistency measure (see Table 6). However, the relationship between body-self relations appearance orientation and the exercise clothing attitude consistency measure is not significant. When the two scores of evaluation and orientation are averaged as one score, the relationship is significant and positive.

INSERT TABLE 6 HERE

The results imply some relationship between the consistency of the congruence scores across the three exercise clothing images and body-self relations appearance scores. The congruence between the affective and behavioral aspects of the exercise clothing image appears to be related to the body-self relations concept of appearance and the

extent of investment in one's appearance as well as overall satisfaction with one's physical appearance.

Kendall's Tau correlation shows there is a significant positive relationship between both body-self relations fitness evaluation and orientation and the exercise clothing attitude consistency measure (see Table 10). When fitness evaluation and orientation scores were averaged as one score, the relationship also is significant and positive.

The findings of research hypothesis 2 (both a and b) support related research about congruence between the symbolic image of a garment and an individual's self-concept (Jacobi & Walters, 1958). That is, clothing is considered an extension of the bodily self, thus the exercising subject's body-self relations can play an important role in clothing attitude. Results also favor the notion that congruence between the affective and behavioral aspects of an attitude is considered to be related to body-self relations, and consequently, the self-concept. This in turn supports the proposed model about social comparison and the construction of body-self relations. That is, individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

Kendall's Tau correlation of 0.20 shows a significant positive relationship between level of exercise involvement and the exercise clothing attitude consistency measure. The

results for hypothesis 3 imply some relationship between the consistency of the congruence scores across the three exercise clothing images and level of exercise involvement. Since the exercise clothing attitude consistency measure is based on the attitude congruence score, it can be assumed that as the slope increases, congruence between the affective and the behavioral dimension increases. Therefore, congruence between the affective and behavioral aspects of the exercise clothing image is related to the average number of hours exercised in a given week.

The results indicate that an increased level of exercise involvement may contribute to knowledge about exercise clothing. That is, if a woman subject has a high level of exercise involvement, she is more likely to have similar mean scores on the affective and behavioral aspects of the exercise clothing attitude measure. The knowledge gained from increased exercise could contribute to this consistency across the exercise clothing images.

Results also favor the notion that appearance management behavior (in this case, level of exercise involvement) is related to congruence between the affective and behavioral aspects of an attitude. This in turn supports the proposed model about social comparison and the construction of body-self relations. That is, through exercise, the time and effort involved in altering one's

appearance may reflect the extent to which one strives to create an ideal appearance. In addition, level of exercise involvement appears to be related to how individuals perceive clothing they own, would like to own, or do not own in terms of the symbolic meaning to themselves and others.

With regard to demographic variables, multiple regression results indicated a relationship between body-self relations appearance and evaluation and age and Asian American respondents. These findings indicate that respondents' body-self relations appearance evaluation and orientation scores decreases with age. In addition, results indicate that Asian American subjects are the only group with significantly lower body-self relations appearance evaluation and orientation scores than the reference group of Blacks, which was omitted by regression analysis.

Results indicate a relationship between body-self relations appearance evaluation and age. These findings indicate that respondents' body-self relations appearance evaluation decreases with age. Results indicate no significant relationships between body-self relations appearance orientation and the demographic variables.

Results indicate a relationship between body-self relations fitness evaluation and orientation and age. These findings indicate that respondents' body-self relations fitness evaluation and orientation decrease with age.

Results indicate a relationship between body-self relations fitness evaluation and age and Asian-American subjects. These findings indicate that respondents' body-self relations fitness evaluation decreases with age. In addition, results indicate that Asian-American subjects are the only group with significantly lower body-self relations fitness evaluation than the reference group of Blacks, which was omitted by regression analysis.

Implications of hypothesis H4 (both a and b) signify that age is an important factor when considering body-self relations. Considering the majority of the subjects (68 percent) were between the ages of 18 and 35, the older women subjects may have a lower body-self relations scores as a result of being a minority. As stated earlier, the social groups to which an individual orients herself, regardless of membership, are the reference groups to which the individual ascribes (Singer, 1981). Individuals compare themselves to others and to the ideal self, which is usually generated from cultural ideals for appropriate behavior and appearances. In this case, the older subjects may compare themselves to the younger women, and thus influence their body-self relations scores. This in turn supports the proposed model about social comparison and the construction of body-self relations.

Multiple regression analysis did not find a relationship between level of exercise involvement and the demographic variables. Multiple regression analysis results indicate a significant positive relationship between the exercise clothing attitude consistency measure and White/Caucasians, and a significant negative relationship between education and Asian/Asian-Americans. These findings indicate that the consistency of affective and behavioral attitude congruence scores across the three exercise clothing images is related to level of education and the race/ethnic group of the respondents.

Results indicate that a White/Caucasian subject is more likely to score similar mean scores on the affective and behavioral aspects of the exercise clothing attitude measure. This may be a result of cultural differences related to exposure to different types of exercise clothing images. Whereas the White/Caucasian subjects may feel comfortable with congruence between affective and behavioral aspects of the exercise clothing, the Asian-American may not due to cultural, religious, or family values. However, since the number of Asian-American respondent's was quite small (5.8 percent), further research is warranted.

Conclusions

American females are socialized from birth to believe that physical attractiveness is culturally valued (Bernscheild, Walster, & Bohrnstedt, 1973). It also has been determined that body image concerns are strong motivators of dieting and exercising behaviors (Cash & Hicks, 1990; Cash, Novy, & Grant, 1993). Body-self relations is a self-attitude composed of affective, cognitive, and behavior dispositions toward one's body. Since physical attractiveness is highly valued and the media focus on a young and thin body as an important factor of physical attractiveness (Moriarty & Moriarty, 1988), individuals may increase exercise involvement to reach an ideal body image. The purpose of this study was to examine the relationships among body-self relations, level of exercise involvement, and exercise clothing attitude for women in regular exercise programs.

Subjects were women members of four different aerobic exercise programs in Blacksburg, Virginia. A questionnaire regarding body-self relations, exercise involvement, exercise clothing attitude, and demographics was developed and pilot tested.

Body image was measured with two domains (appearance and physical fitness) of the Multidimensional Body-Self Relations Questionnaire. Exercise involvement was used as

the indicator of the time and effort devoted to altering or forming one's appearance through exercise. Exercise clothing attitude was measured by beliefs toward three black-and-white line drawings representing different amounts of body coverage of the exercise clothing style images on a continuum of high to low body coverage. Relationships among the variables were analyzed statistically using Kendall's Tau and multiple regression. Validity and reliability of the questionnaire were analyzed with factor analysis and Cronbach's alpha.

The results imply that women subjects express greater concern with physical competence than with physical attractiveness. That is, being "in shape" or athletically active and competent appear to have a greater importance than engaging in grooming behaviors. Results also favor the notion that appearance management behavior (in this case, level of exercise involvement) is related to body-self relations, and consequently, the self-concept. The findings also support related research about congruence between the symbolic image of a garment and an individual's self-concept. Thus, the exercising subject's body-self relations can play an important role in clothing attitude.

The current study utilized the exercise clothing attitude congruence and exercise clothing attitude consistency measures, both of which are relatively new ways

to evaluate exercise clothing attitude. The reliability and validity of the measures should be evaluated further for future research.

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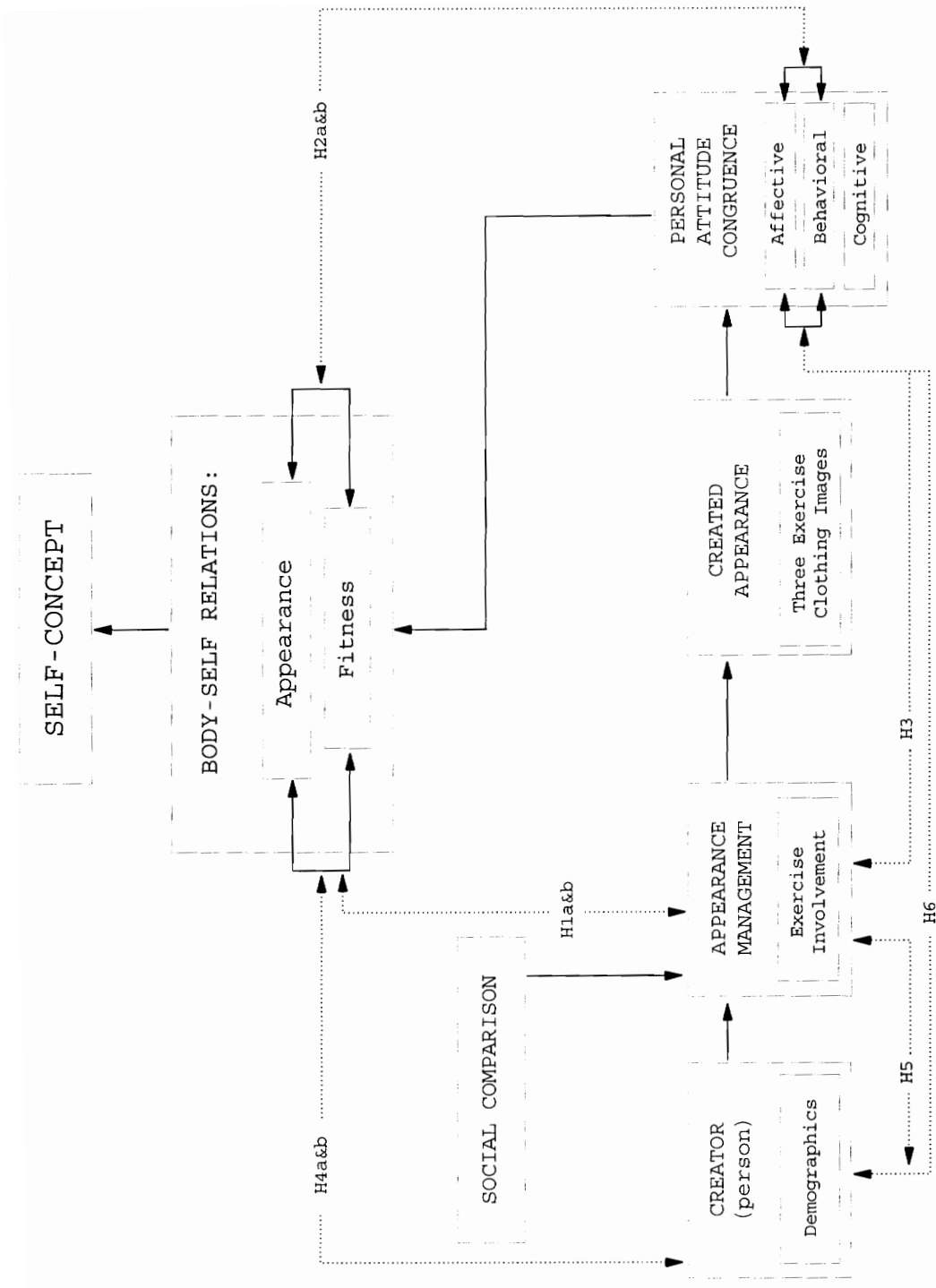
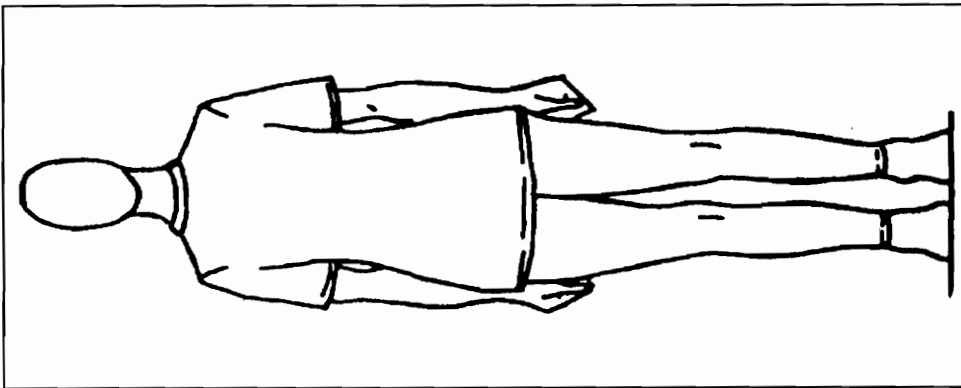
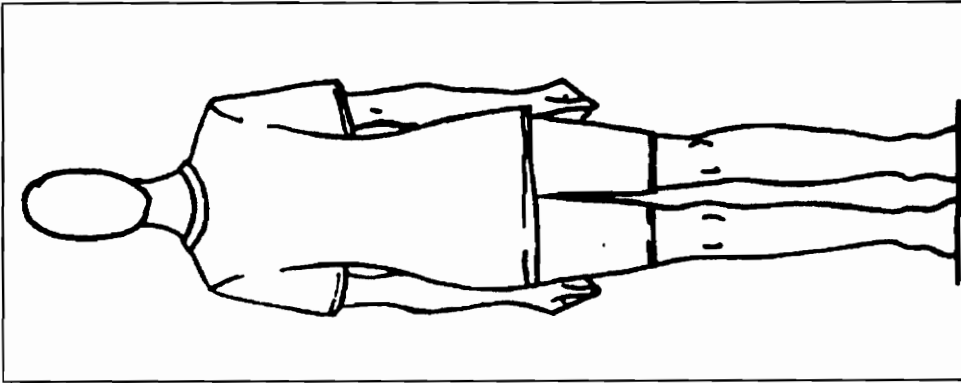


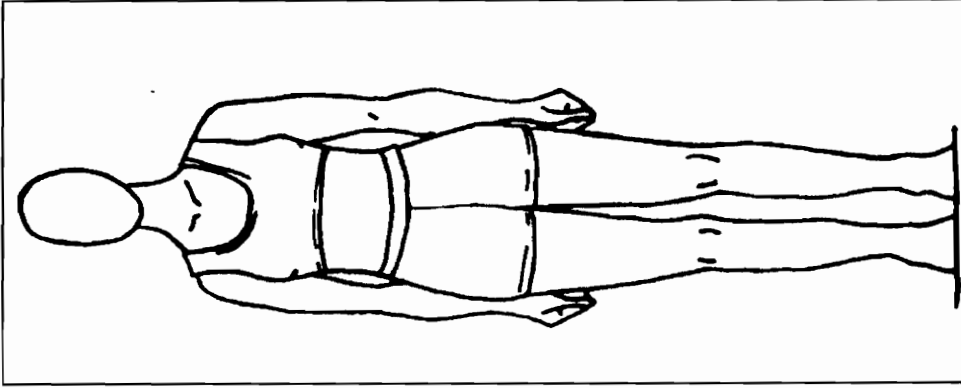
Figure 1. Social comparison on the construction of body-self relations and proposed relationships (adapted from Rudd & Lennon, 1994, p. 165).



High-Coverage Image



Medium-Coverage Image



Low-Coverage Image

Figure 2. Exercise clothing style images on a continuum of high to low coverage.

Table 1. Factor analysis of body-self relations appearance evaluation and orientation.

Factor Label/Item Numbers	Loadings
Appearance Evaluation	
2. I dislike my physique.	-0.70
5. I like the way my...	-0.61
13. I like the way I...	-0.80
15. Most people would...	-0.69
17. My body is sexually...	-0.77
20. I am physically...	-0.62
23. I like my looks...	-0.76
Appearance Orientation	
1. I use very few grooming...	0.50
3. I am careful to buy...	0.56
8. Before going out, I ...	0.56
9. I usually wear whatever...	0.70
10. I am self-conscious if...	0.64
11. I don't care what people...	0.69
28. I check my appearance...	0.31 ¹
29. I is important that I...	0.63
30. I am always trying to...	0.78
31. Before going out in...	0.71
32. I never think about my...	0.80
35. I take special care with...	0.35 ¹
	0.77

¹ Item below criterion for factor loading of 0.50.

Table 2. Factor analysis of body-self relations fitness evaluation and orientation.

Factor Label/Item Numbers	Loadings
Fitness Evaluation	
18. I do poorly in physical...	-0.18 ¹
33. I am very well coordinated.	0.79
34. I easily learn physical...	0.70
Fitness Orientation	
4. Being physical fit is...	0.20 ²
6. I seldom think about my...	-0.66
7. It is important that I...	0.59
12. I would pass most...	-0.27 ³
14. I do things to increase...	0.79
16. My physical endurance...	-0.27 ³
21. I play sports regularly...	-0.69
22. I try to be physically...	0.50
24. Participating in sports...	-0.83
25. I work to improve my...	0.67
26. I am not involved in a...	0.21 ⁴
27. I don't care to improve...	0.46 ⁴

¹ Item falls into fitness orientation with loading of 0.65.

² Item falls into fitness evaluation with loading of 0.62.

³ Items fall into appearance evaluation with loading of 0.45 and 0.41 respectively.

⁴ Item below criterion for factor loading of 0.50.

Table 3. Description of respondents.

Variable	Respondents	
	Frequency	Percentage
<u>Marital Status</u> (n = 139)		
Currently married	64	46.0%
Not married	75	53.9%
<u>Education</u> (n = 137)		
12-16 years	72	52.6%
17-21 years	58	42.3%
22-29 years	7	5.1%
Mean = 17.13		
<u>Age</u> (n = 139)		
18-25 years	58	41.7%
26-35 years	37	26.6%
36-45 years	21	15.2%
46-55 years	11	7.9%
56-65 years	6	4.3%
66-72 years	6	4.3%
Mean = 32.9		
<u>Race</u> (n = 139)		
Black/African-American/African	4	2.9%
Asian/Asian-American	8	5.8%
Hispanic	2	1.4%
White/Caucasian	124	89.2%
Other	1	0.7%
<u>Income</u> (n = 136)		
0 to \$9,999	40	29.4%
\$10,000 to \$29,999	37	27.2%
\$30,000 to \$49,999	13	9.6%
\$50,000 to \$69,999	21	15.4%
\$70,000 to \$89,999	8	5.9%
\$90,000 to \$109,000	7	9.3%
Over \$110,000	10	7.4%

Table 4. Means and standard deviations for body-self relations and exercise clothing attitude.

Variable	Mean	SD
Body-Self Relations		
Appearance evaluation	2.64	0.59
Appearance orientation	2.96	0.54
Fitness evaluation	2.96	0.63
Fitness orientation	3.16	0.46
Exercise Clothing Attitude		
High coverage, evaluation	2.72	0.62
High coverage, behavior	2.23	0.84
Medium coverage, evaluation	3.12	0.62
Medium coverage, behavior	2.81	0.92
Low coverage, evaluation	2.85	0.81
Low coverage, behavior	1.84	0.88

Table 5. Kendall's Tau correlations between level of exercise involvement and body-self relations appearance and fitness.

Correlation Variables	
Level of Exercise Involvement Versus:	
Body-Self Relations Appearance	
Evaluation	0.17 ¹
Orientation	-0.01
Evaluation and orientation	0.10
Body-Self Relations Fitness	
Evaluation	0.28 ¹
Orientation	0.31 ¹
Evaluation and orientation	0.30 ¹

¹ Note: $p < 0.05$

Table 6. Kendall's Tau correlations between exercise attitude consistency measure and body-self relations appearance and fitness.

Correlation Variables	
Exercise Clothing Attitude Consistency Measure Versus:	
Body-Self Relations Appearance	
Evaluation	0.23 ¹
Orientation	0.01
Evaluation and orientation	0.18 ¹
Body-Self Relations Fitness	
Evaluation	0.27 ¹
Orientation	0.25 ¹
Evaluation and orientation	0.29 ¹

¹ Note: $p < 0.05$

APPENDIX E

Vita

VITA

Name: Bernadette Tatarka
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Place of Birth: Great Falls, Montana
Major: Clothing and Textiles
Degree and Date Conferred: Doctor of Philosophy, December 1995

EDUCATIONAL INSTITUTIONS	DATES	DEGREE & DATE
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- **Graduate Teaching and Research Assistant, 09/88-06/90**
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