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UNIVERSITY OF ALBERTA

The Effect of Television Programming that Emphasizes Beauty/Thinness on Women's Body Image and Self-Esteem

by

Crystal Rosanne Coolican

A thesis to be submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Doctor of Philosophy

in

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ABSTRACT

Eating disorders such as anorexia nervosa and bulimia nervosa are rapidly increasing in prevalence. Many researchers assert that societal pressures on women can partially account for the increase in eating disorders. These pressures are transmitted through the mass media, which promote the thin ideal and send the message that "thin is good". This, in turn, may lead to body size/shape dissatisfaction, which may cause women to start dieting, purging, and/or engaging in other disregulatory behaviors to achieve this ideal standard. This may result in the development of an eating disorder. Although messages from the mass media are thought to promote the thin ideal, which may lead women to feel poorly about themselves and their bodies, there has been little research investigating the effects of media exposure on body image and psychological variables such as self-esteem in either eating disordered or non-eating disordered populations. Also surprising is the lack of investigation into the effects of specific types of television programming on body size/shape satisfaction and self-esteem. Therefore, the purpose of the current study was to investigate the effects of exposure to television programming of a particular type (i.e., programming that portrays the cultural ideal of female beauty and thinness)

on the body size/shape satisfaction and self-esteem of women. An experimental study (randomized subjects, posttest-only control group design) was conducted using a sample of 78 non-eating disordered female volunteers between the ages of 18-30. An episode from the television program *Baywatch* comprised the experimental condition, whereas an episode from *The X-Files* comprised the control condition. Body size/shape satisfaction and self-esteem were assessed using various self-report instruments, including the Multidimensional Body-Self Relations Questionnaire, the Body Esteem Scale, the Contour Drawing Rating Scale, and the State Self-Esteem Scale. The results of this study indicated no significant differences between groups on any body size/shape satisfaction variables or the state self-esteem variables. These results were surprising not only to the researcher but also to people in the general public who were polled. Possible reasons for the findings are discussed in the dissertation.

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CHAPTER I

INTRODUCTION

Eating disorders, such as bulimia nervosa and anorexia nervosa, are serious and debilitating illnesses that are characterized by disturbed eating behavior. Bulimia nervosa is identified by repeated episodes of binge eating followed by self-induced vomiting, fasting, excessive exercising, or abuse of laxatives and diuretics. In addition, those suffering from bulimia nervosa excessively emphasize their body shape and weight in their self-evaluation. The fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) (American Psychiatric Association, 1994) distinguishes between two bulimia nervosa subtypes: (a) a purging subtype in which binge eating behavior is compensated for by self-induced vomiting, laxative abuse, and other forms of purging; and (b) a non-purging subtype in which binge eating behavior is compensated for by fasting or excessive exercise, but not purging behavior. Common usage of the term bulimia or bulimia nervosa refers to the much more common purging subtype. It is estimated that bulimia nervosa occurs in approximately 1% to 3% of adolescent and young adult females, although estimates among college populations have ranged from 4.1% to 13% (Halmi, Falk, & Schwartz, 1981; Pyle, Mitchell, & Eckert, 1983). For males,

the rate of occurrence of bulimia nervosa is approximately one-tenth of that in females. Bulimia nervosa usually begins in late adolescence or early adult life. The illness can take a chronic or intermittent course. The etiology of bulimia nervosa is unknown at this time, but the illness is believed to be more socially driven and more adversely affected by emotional variables than anorexia nervosa.

Anorexia nervosa is characterized by a refusal to maintain a body weight that is at or above a minimally normal level for age and height, an intense fear of weight gain or becoming fat, body image disturbance, and amenorrhea (i.e., the absence of at least three consecutive menstrual cycles) in postmenarcheal females. The DSM-IV (American Psychiatric Association, 1994) distinguishes between two anorexia nervosa subtypes: (a) a restricting subtype in which weight loss is achieved mainly through food restriction and/or excessive exercise; and (b) a binge eating/purging subtype in which binge eating and/or purging are present in addition to food restriction and/or excessive exercise. The prevalence rate for anorexia nervosa among females in late adolescence and early adulthood is approximately 0.5% to 1.0%. More than 90% of cases of anorexia nervosa occur in females. The mean age of onset of anorexia nervosa is 17 years, with some data indicating

bimodal peaks at ages 14 and 18 years (American Psychiatric Association, 1994). The course of the illness is highly variable, ranging from a full recovery to an intermittent course to a chronic course. To date, no single etiological factor has been identified to account for the development of anorexia nervosa, and therefore it is considered to be a multidetermined illness.

The prevalence of eating disorders such as bulimia nervosa and anorexia nervosa is rapidly increasing (American Psychiatric Association, 1994; Pope, Hudson, Yurgelun-Todd, & Hudson, 1984). Unfortunately, treatments to date for these eating disorders have been relatively ineffective, particularly with anorexic individuals who typically resist treatment because of considerable denial about the problem. Both anorexia nervosa and bulimia nervosa have serious health consequences, and may even result in death. For anorexia nervosa, the mortality rate is approximately 6% (Schwartz & Thompson, 1981). Among those anorexic individuals who have been admitted to university hospitals, the long-term mortality from this disorder is over 10% (American Psychiatric Association, 1994). Given the seriousness and increasing prevalence of eating disorders along with the questionable effectiveness of treatment approaches, there is a need to look towards other approaches

to address these problems. One alternative is to focus more attention on preventive/educational programs. Research investigating the causes of eating disorders is therefore needed to help identify risk factors that can be addressed by these programs.

Purpose of the Study

Many researchers believe that societal pressures on women can partially account for the increase in eating disorders (e.g., Boskind-Lodahl, 1976; Bruch, 1973, 1978; Garner, Garfinkel, & Olmsted, 1983; Hsu, 1989; Palazzoli, 1974; Polivy, Garner, & Garfinkel, 1986; Polivy & Herman, 1987; Schwartz, Thompson, & Johnson, 1982). The way in which the ideal female body is portrayed by the mass media is believed to influence the development and maintenance of eating disorders. The media promote the message that thinness is both desirable and attainable, which leads to body dissatisfaction among women who feel that they cannot measure up to this ideal standard. Women might then turn to dieting or other methods of weight control to achieve this standard of beauty.

Although messages from the mass media are thought to be responsible for increased dissatisfaction with oneself and one's body, there has been little research investigating the effects of media exposure on body image and psychological

variables such as self-esteem either in non-eating disordered or eating disordered populations. Examining these effects may be important in understanding the extent to which media messages affect how individuals feel about themselves and their bodies.

The purpose of the current study was to investigate the effects of media exposure, in this case exposure to television programming that portrays the cultural ideal of female beauty and thinness, on body size/shape satisfaction and self-esteem of non-eating disordered women.

Organization of the Report

In Chapter II, a review of related literature is presented, and the research questions that follow from this are stated. Chapter III provides an explanation of the research design and methods used in this study. A summary of the results is presented in Chapter IV. Chapter V offers an evaluation and interpretation of the research findings, along with a discussion of the limitations, implications, and applications of this research.

CHAPTER II

RELATED LITERATURE

In this chapter is presented a review of literature that provides the background for the research questions of this experimental study. In the first section, the conceptualization and measurement of the constructs of self-esteem and body image will be discussed. This will be followed by a brief discussion of the interconnectedness between self-esteem and body image. In the second section, the theory of body size/shape dissatisfaction that guided the current study will be explained. In the third section, the current status of research on the effects of media exposure on body image and self-esteem will be presented. The major research findings in this area will be discussed, and the methods used will be critically evaluated. Finally, the way in which the current study has addressed the shortcomings of the previous research will be addressed. The research questions for the present study will follow from this discussion.

Self-Esteem, Body Image, and their Interconnectedness

In this section, the way in which the constructs of self-esteem and body image are conceptualized will be discussed. The measurement of self-esteem and body size/shape satisfaction will also be addressed. Lastly, the

interconnectedness between self-esteem and body size/shape satisfaction will be explained.

The Construct of Self-Esteem

Conceptualization of self-esteem. Before one can conceptualize self-esteem, one must first have a basic understanding of the construct of self-concept. Self-concept has been defined as a "composite view of oneself that is formed through direct experience and evaluations adopted from significant others" (Bandura, 1986, p. 409). It is the organized, coherent, and integrated pattern of one's perceptions, particularly with respect to abilities, social roles, and physical appearance (Thomae, 1980).

If self-concept "refers to one's identity as distinct from others, then self-esteem refers to the value one places on that identity" (Jaffe, 1991, p. 194). In broad terms, self-esteem is reflective of our feelings about our self-concept (Jaffe, 1991). Although the construct of self-esteem has received much attention in the scientific literature, particularly in research examining human personality, there is still considerable confusion over exactly how to conceptualize it. Most researchers tend to describe self-esteem in global terms. William James (1890), one of the first to describe self-esteem in this way, defined it as "a certain average tone of self-feeling which

each one of us carries about with him, and which is independent of the objective reasons we may have for satisfaction or discontent" (p. 171). Coopersmith (1981), another proponent of defining self-esteem in global terms, considered self-esteem to be the evaluation of self, which reflects the extent to which an individual believes him/herself to be "capable, significant, successful, and worthy" (p. 5). Also describing self-esteem as a global construct, Rosenberg (1989) described an individual with high self-esteem as one who has self-respect and feels worthwhile. Conversely, an individual with low self-esteem is one who feels unworthy, deficient, and inadequate.

There has been debate about whether self-esteem is a trait or a state. Research (Greenwald, 1980; Swann, 1985, 1987; Wylie, 1979) has provided evidence to support that self-esteem is "persistent and stable and that people will actively seek information that confirms their self-concept and reject information that threatens their general view of self" (Heatherton & Polivy, 1991, p. 895). However, there is also considerable research (Baumgardner, Kaufman, & Levy, 1989; Jones, Rhodewalt, Berglas, & Skelton, 1981; Kernis, Grannemann, & Barclay, 1989; Markus & Kunda, 1986; Rosenberg, 1986; Tesser, 1988) to support that self-esteem can be temporarily altered by situational factors. James

(1890) believed self-esteem to be analogous to a barometer that rises and falls according to an individual's success experiences and aspirations. However, as was discussed earlier, he also believed there to be an average tone to the feelings people maintain about themselves, which is mostly independent of any threatening feedback to the self-concept. Therefore, "although momentary self-evaluations may be context dependent, people derive their overall sense of self-esteem by averaging feelings about themselves across a number of different social situations" (Heatherton & Polivy, 1991, p. 895). At the present time, we know little about the relationship between trait and state self-esteem, but it has been theorized that changes in state self-esteem may affect trait self-esteem over time. Only with additional research will we find out whether or not this theory can be adequately supported.

Measurement of self-esteem. The most commonly used instruments for assessing overall self-esteem are self-report questionnaires and checklists. Two of the most popular measures are: (a) the Rosenberg Self-Esteem Scale (Rosenberg, 1965); and (b) the Coopersmith Self-Esteem Inventories (Coopersmith, 1967, 1981). These types of measures "focus on individuals' verbalizations of their feelings toward themselves, ignoring the aspects of self-

concept that they are either unwilling or unable to reveal about themselves" (Chiu, 1988, p. 298).

Most self-esteem instruments were designed to measure trait self-esteem rather than state self-esteem. However, an instrument called the State Self-Esteem Scale (Heatherton & Polivy, 1991) was developed to assess acute or state self-esteem. (This self-report questionnaire will be discussed in further detail later in the report.) T. F. Heatherton (personal communication, April 12, 1996) suggests that the key to deciding whether to choose a trait or state measure of self-esteem "depends on experimental interests. If you believe you are manipulating self-esteem, or if you expect it to change, you should use a state measure. If you are looking for an enduring aspect of self-esteem, you look at the trait measure."

The Construct of Body Image

Conceptualization of body image. The body image construct has been used to describe very different phenomena, such as phantom limb syndrome, neuropsychological deficits (e.g., anosognosia), the psychodynamic notion of body boundary, and physical appearance (Thompson, 1990). For the purposes of the current study, only the physical appearance-related aspect of the body image construct was

examined. Thus, the phrase "body image" will be used to refer exclusively to this aspect of body image.

How to conceptualize the physical appearance-related definition of body image has been the focus of much discussion and debate (Cash & Brown, 1987; Cash & Pruzinsky, 1990; Fisher, 1986; Shontz, 1969; Slade, 1985). Many writers have expressed the view that there is no widely accepted definition of this construct (Bruch, 1973; Garner & Garfinkel, 1981; Shontz, 1974). However, it has been broadly defined as the mental picture of and/or attitude toward the physical appearance of one's body (Bruch, 1962; Hsu, 1982). This suggests that body image can be conceptualized in terms of two components: (a) body schema, the "diagrammatic representation of the body in one's consciousness" (Hsu & Sobkiewicz, 1991); and (b) body esteem, one's feelings about and attitudes towards one's body. These two components can be related in much the same way as self-concept and self-esteem. In other words, just as self-esteem is reflective of how one feels about one's self-concept, body esteem can be viewed as reflective of how one feels about one's body schema.

Despite the confusion over exactly how to define this psychological experience, there does seem to be consensus that the physical appearance-related body image construct is

multidimensional in nature. Thompson (1990) distinguishes between the following three components of this construct: (a) a perceptual component, often referred to as size perception accuracy, which focuses on the accuracy of one's perceptions about body size; (b) a subjective component, which involves affects and attitudes towards one's body and thus deals with one's satisfaction with or anxiety/concern about one's own physical appearance; and (c) a behavioral component, which deals with one's avoidance of situations that lead to discomfort about one's body. Most body image research has focused on the perceptual and subjective components of physical appearance-related body image disturbance.

My conceptualization of the body image construct encompasses the perceptual, subjective, and behavioral components discussed above. However, practical constraints (i.e., time constraints, financial limitations, and practical issues regarding level of clothing) proscribed effectively studying the perceptual and behavioral components within the current research. Thus, only the subjective component of body image was examined. Within the subjective component, I focused exclusively on body size and shape satisfaction. This is broadly defined as "the degree to which one's percept of current body size and shape

differs from the individual's perceived ideal body size and shape" (Williamson, Davis, Bennett, Goreczny, & Gleaves, 1989, p. 434).

Measurement of body size/shape satisfaction. Because the current study was limited to assessing body size/shape satisfaction for reasons already discussed, only measurement techniques that assess this aspect of body image will be described in this section.

Several instruments have been used to examine body size/shape satisfaction. These instruments are often self-report, paper-and-pencil questionnaires that "focus on feelings about or satisfaction with the appearance of specific body parts or their gestalt" (Brown, Cash, & Mikulka, 1990, p. 136). Subjects are typically asked to rate their overall body size and/or specific body sites on a scale of satisfaction. Included among these questionnaires are: (a) the Body Cathexis Scale (Secord & Jourard, 1953); (b) the Body Dissatisfaction Scale on the Eating Disorder Inventory-2 (Garner, 1991; Garner, Olmsted, & Polivy, 1983); (c) the Body Parts Satisfaction Scale (Berscheid, Walster, & Bohrnstedt, 1973); (d) the Body Esteem Scale (Franzoi & Shields, 1984); and (e) the Body-Areas Satisfaction Scale and Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire (Cash, Winstead, & Janda,

1986). The latter two instruments will be discussed in further detail later in the report.

In addition to questionnaires, figure rating scales have also been widely used to measure body size/shape satisfaction. Using this methodology, subjects are shown a series of silhouettes representing various whole body sizes that range from very thin to very heavy. Subjects are then typically asked to select the figure that best depicts their current figure, their ideal figure, and the figure they feel is most attractive to the opposite sex. Level of body size/shape dissatisfaction is indicated by the discrepancy between current and ideal figures, as well as between current and attractive figures. Current-ideal discrepancy is considered to measure body size/shape dissatisfaction because unless there is a match between what an individual nominates as his/her current figure and ideal figure, it can be assumed that he/she is unhappy with her current body shape/size and would instead like to look like the figure chosen as his/her ideal. Similarly, current-attractive discrepancy is considered to measure body size/shape dissatisfaction because unless there is a match between current and attractive figures, it can be assumed that the individual feels he/she is less attractive to the opposite sex than if he/she looked like the attractive figure.

Included among the figural rating instruments are: (a) the Figure Rating Scale (Fallon & Rozin, 1985); (b) the Body Image Assessment (Williamson et al., 1989); (c) the Body Image Silhouette Scale (Powers & Erickson, 1986); and (d) the Contour Drawing Rating Scale (Thompson & Gray, 1995). The latter instrument will be discussed in further detail later in the report.

Researchers have also used the discrepancy (positive or negative) between current and ideal weight as well as subjects' perception of their own weight (ranging from very underweight to very overweight) to measure body size satisfaction (Cohn & Adler, 1992; Cohn et al., 1987; Fisher, Schneider, Pegler, & Napolitano, 1991; Paxton et al., 1991; Rozin & Fallon, 1988; Toro, Castro, Garcia, Perez, & Cuesta, 1989; Wardle & Beales, 1986).

The Connection Between Self-Esteem and Body Size/Shape Satisfaction

As was briefly noted earlier, self-concept is closely related to and derived from many sources, "one of the most salient of [which] is the body itself" (Hammond & O'Rourke, 1984, p. 603). According to Hammond and O'Rourke:

> In addition to the purely kinesthetic information gleaned from the body, much of the self-concept is dependent upon cultural attitudes to the physical

> attributes it possesses. Consequently, a negative self-concept would be expected of an individual who perceives his or her body as falling short of culturally-determined ideals. (p. 603)

The feelings an individual has about his/her body (i.e., body size/shape satisfaction) reflect his/her self-esteem about the body in his/her self-concept. In this way, body size/shape satisfaction is "believed to be integrally related to the self-concept, although identifiable as a separate aspect thereof" (Secord & Jourard, 1953, p. 343). Thus, feelings about the body are strongly associated with feelings about the self (Secord & Jourard, 1953). In contemporary society, weight, body size, and body shape are of particular psychological salience for women (Rodin, Silberstein, & Striegel-Moore, 1985). A woman's dissatisfaction with her body, a domain of great importance to her self-concept, will likely be more damaging to how she feels about her self than inadequacy in a domain of lesser importance (Harter, 1985).

Supportive of the connection between self-esteem and body size/shape satisfaction is substantial evidence demonstrating a strong relationship between these two constructs (Berscheid & Walster, 1974; Berscheid et al., 1973; Gunderson & Johnson, 1965; Johnson, 1956; Lerner,

Karabenick, & Stuart, 1973; Lerner, Orlos, & Knapp, 1976; Rosen & Ross, 1968; Weinberg, 1960). This relationship has been found with different measures of self-esteem in both males and females, in young children (Mendelson & White, 1982), and in different cultures (Arkoff & Weaver, 1966; Lerner, Iwawaki, Chihara, & Sorell, 1980; Marsella, Shizuru, Brennan, & Kameoka, 1981).

Sociocultural Theories of Body Size/Shape Dissatisfaction

Although other theories exist to explain the development of body size/shape dissatisfaction, the vast majority of the research supports the assertion that sociocultural factors play the most significant role in contributing to the development of body image disturbance in our society (Thompson, 1990). The sociocultural perspective suggests that the development of body image disturbance is directly related to current societal ideals that emphasize the importance of being thin and beautiful and that negatively value obesity (Thompson, 1990). The sociocultural perspective is probably best articulated by Striegel-Moore, Silberstein, and Rodin (1986) who stated that "the more a woman believes that 'what is fat is bad, what is thin is beautiful, and what is beautiful is good,' the more she will work toward thinness and be distressed

about fatness" (p. 247). The stereotypes of "fat is bad" and "what is beautiful is good" develop early in life. As Silberstein and colleagues (1987) point out: "From birth, females are indoctrinated with the message that they should be pretty - which in this sociohistorical moment means being thin" (p. 92).

Supportive of the sociocultural approach is correlational research that demonstrates that there has been a recent trend in society towards an increasingly thin beauty ideal for women. Changes in body measurements (weight, bust, waist, hips) over time toward a thinner standard have been reported in Playboy centerfolds, Miss America Pageant contestants, and female models in magazines (Agras & Kirkley, 1986; Garner, Garfinkel, Schwartz, & Thompson, 1980; Silverstein, Peterson, & Perdue, 1986). Over the same time period, however, there was an increase in the weight norms of young women (Metropolitan Life Foundation, 1983; Society of Actuaries, 1959, 1979) and an increase in the number of magazine articles and advertisements related to dietary issues (Agras & Kirkley, 1986; Garner et al., 1980; Silverstein, Perdue, Peterson, & Kelly, 1986; Wiseman, Gray, Mosimann, & Ahrens, 1992). Despite the ever widening gap between the thin body-ideal and the average woman's figure, many women continue to

aspire towards the current societal standard for thinness and alter themselves in order to reach this often unattainable goal (Heinberg, 1996; Mazur, 1986). Perhaps it is little wonder that the aforementioned societal trends have coincided with a two to three fold increase in incidence rates of anorexia nervosa and bulimia nervosa in recent years (Nagel & Jones, 1992).

Also supportive of the sociocultural view is research on gender differences. Studies in this area have demonstrated that the pressure to attain the thin ideal is stronger for females than males in our society. For instance, an analysis of popular female and male magazines revealed that the female magazines contained approximately 10.5 times as many diet- and weight-related advertisements and articles as did the male magazines (Andersen & DiDomenico, 1992). Along the same lines, other research (Silverstein et al., 1986) has demonstrated that the current standard of attractiveness shown on television and in magazines is thinner for women than for men. This greater pressure on females to meet the societal standard of thinness corresponds with a greater prevalence of body image disturbance in the general female population. In their national body image survey, Cash and colleagues (1986) found that although both men and women were dissatisfied with

their overall looks (approximately two out of every five women and about one out of three men), women indicated greater dissatisfaction than men with all body areas except for their height and face. Not surprisingly, the greater prevalence of body image disturbance in females corresponds with higher prevalence rates for eating disorders in females as compared to males, with females accounting for approximately 90% of known cases.

Additional support for the sociocultural perspective comes from cross-cultural studies that "evaluate whether diverse populations, with diverse ideals for appearance, differ in the prevalence of body image disturbance or eating disorders" (Altabe, 1996, p. 130). In her extensive review of the cross-cultural research, Altabe (1996) categorizes the studies in this area as follows: (a) studies that explore body image comparisons between ethnically diverse groups living in Western countries (i.e., Caucasians compared with non-Caucasians living in English-speaking countries and Europe); (b) studies that explore comparisons among different Western countries; and (c) studies that explore comparisons between Western countries and non-Western countries.

With regards to research comparing diverse groups in Western countries, the majority of published studies have

found that non-Caucasians living in Western countries have less body image disturbance (i.e., less body and weight dissatisfaction), less eating disturbance, and heavier body ideals than their Caucasian counterparts (e.g., Abrams, Allen, & Gray, 1993; Furnham & Alibhai, 1983; Nevo, 1985; Rosen et al., 1991; Rucker & Cash, 1992; Wardle & Marsland, 1990). A minority of studies, however, indicate no differences in body image disturbance and eating disturbance between these ethnic groups (e.g., Dolan, Lacey, & Evans, 1990; Verkuyten, 1990). With regards to research comparing different Western countries, the findings suggest that Americans have greater body image problems than other Western nations, such as Scotland and Australia (Hamilton & Chowdhary, 1989; Tiggemann & Rothblum, 1988). With regards to research comparing Western countries with non-Western-countries, the findings have been mixed: Some studies have found that those in non-Western countries have heavier beauty ideals than those in Western countries (e.g., Ford, Dolan, & Evans, 1990; Furnham & Baguma, 1994), whereas others have found no differences in body image attitudes (e.g., Gustavson et al., 1993). Some preliminary research has suggested that emigrating from a non-Western county to a Western country may put one at greater risk for the

development of body image disturbance and eating disturbance (Furnham & Alibhai, 1983; Nasser, 1986).

Role of the Mass Media

Proponents of the sociocultural theory argue that the mass media play an influential role in communicating and promoting the cultural ideal of thinness for women (Mazur, 1986). "In many ways, the media have fostered the view that 'thinness equals beauty.'" (Thompson, 1990, p. 42). Freedman (1986) points out that although ideals of beauty have been portrayed throughout history (e.g., in art), the "impact of today's visual media is different from the effect of Botticelli's *Venus*" (p. 14). Freedman explains that in the past, artistic figures were perceived as unachievable romantic ideals, whereas today's modern media obscures the boundaries between idealistic and realistic depictions of the human form. As a result, Lakoff and Scherr (1984) suggest that the general population often views models on television and in magazines as realistic representations of what people look like. The viewer may think that a model's appearance in pictures and on screen is what she actually looks like, failing to realize that the model has undergone hours of preparation (including professional makeup, hairstyling, and rigorous exercise routines) to achieve "the

look". In addition, the finished image is often graphically altered through techniques such as airbrushing.

It has been hypothesized that the mass media not only show women what the ideal body looks like, but also send messages regarding how to achieve this ideal standard (Striegel-Moore et al., 1986). Thus, by showing women how to diet, purge, and engage in other compensatory behaviors, the mass media make available "what one might call manuals for 'how to develop an eating disorder'" (Striegel-Moore et al., 1986, p. 256). As a result, to attain the idealized standard of beauty, an increasing number of young women have turned to diets or other ways of keeping their weight down (Dwyer & Mayer, 1969; Kilbourne, 1994; Striegel-Moore et al., 1986).

Several proponents of the sociocultural theory have hypothesized that increasing pressures for women to attain the thin ideal promoted by the mass media, along with the increase in dieting, may partially account for the increased prevalence of eating disorders among women (Boskind-Lodahl, 1976; Bruch, 1973, 1978; Garner et al., 1983; Hsu, 1989; Palazzoli, 1974; Polivy & Herman, 1987; Polivy et al., 1986; Schwartz et al., 1982; Silverstein, Perdue, Peterson, & Kelly, 1986; Silverstein, Perdue, Peterson, Vogel, & Fantini, 1986; Striegel-Moore et al., 1986). An important

way in which exposure to the thin ideal may produce eating pathology is via body dissatisfaction (Stice & Shaw, 1994). Although the societal pressures on women to attain the thin ideal are so pervasive that a moderate degree of body dissatisfaction is considered "normative" among women in our society (Rodin et al., 1985), "some women may respond to this extreme pressure toward slimness by becoming dissatisfied with their bodies; as a result, they become chronic dieters, developing anorexia, or using laxatives or vomiting, to purge themselves of excess food" (Silverstein, Perdue, Peterson, & Kelly, 1986, p. 51). In this way, individuals with eating disorders simply fall at the extreme end of the continuum of concerns with weight and eating (Rodin et al., 1985). Thus, an eating disorder can be considered "an over-adaptation to a cultural norm, rather than a discrete psychopathology" (Stice & Shaw, 1994, p. 289).

It is far too simplistic to attribute the prevalence of eating disorders solely to sociocultural factors. Although the sociocultural perspective does explain how eating disorders may be partially attributed to societal pressures on women to attain the thin ideal, it does not explain why some women are particularly vulnerable to these pressures and why others are not. In other words, it has difficulty

accounting for how "two young girls can grow up in the same household with the same parents and the same cultural influences, [yet] one becomes anorexic or bulimic while the other maintains a normal relationship with food and weight throughout her lifetime" (Costin, 1997, p. 49). Clearly, there must be additional factors at work, such as "individual differences [that] account for differing levels of dissatisfaction within cultures that endorse thinness and attractiveness" (Heinberg, 1996).

Research Examining Media Effects on Body Image and Self-Esteem

In this section, studies that have investigated the effects of media on body image and self-esteem will be discussed. The major research findings in this area will be synthesized, and a brief analysis will be provided to address the gaps and shortcomings of this research. The ways in which the current study tried to improve on the previous research will then be outlined. The research questions will follow from this.

Research Findings in Correlational Studies

One study (Abramson & Valene, 1991) investigated the relationship between mass media usage and dietary restraint, bulimic behaviors, and attitudes towards obesity. Male and female college students were asked to report the number of

hours per week they spent with various types of mass media (i.e., newspapers, magazines, television, radio, and movies). They were also asked to complete measures to assess dietary restraint, bulimic behaviors, and feelings, beliefs, and behavioral intentions associated with obesity. The findings showed that higher levels of media use were significantly associated with increased eating restraint and higher frequency of bulimic behaviors. The authors concluded that these "findings are consistent with the widely held belief that the media contribute to the development of eating disorders, but additional research will be necessary to show a useful link" (Abramson & Valene, 1991, p. 75).

A similar study (Stice, Schupak-Neuberg, Shaw, & Stein, 1994) investigated the relationship between media exposure and symptoms of eating disorders, and examined whether body satisfaction, eating pathology, ideal-body stereotype internalization, and gender-role endorsement mediated this relationship. Female undergraduates were asked to complete a media exposure scale designed to assess the number of magazines (related to health/fitness, beauty/fashion, entertainment, arts, and gossip) they had read and the hours of television programming (i.e., comedy, drama, and game shows) they had watched during the month prior to

participating in the study. They were also asked to complete questionnaires that measured body satisfaction, eating disorder symptomatology, ideal-body stereotype internalization, and gender-role endorsement. The findings from this study revealed that media exposure was significantly associated with eating disorder symptomatology and gender-role endorsement. Gender-role endorsement was significantly related to heightened ideal-body stereotype internalization, which in turn predicted increased body dissatisfaction, which was significantly related to heightened eating disorder symptoms.

One limitation of this study is that its correlational design "precludes strong causal inferences and may not adequately reflect the temporal relations among these variables" (Stice et al., 1994, p. 839). Another limitation is that the measure of media exposure used "may not have been precise enough to optimally capture the effects of exposure to the thin ideal" (Stice et al., 1994, p. 839).

Research Findings in Experimental Studies

Exposure to print images. Hamilton and Waller (1993) conducted an experimental study to investigate the influences of media portrayal of idealized female bodies upon body size estimation. Both eating disordered and non-eating disordered female subjects were shown 20 photographs

of slim women from women's fashion magazines (Affective images) and 20 photographs of rooms from a magazine dedicated to beautiful homes (Neutral images). Subjects were asked to estimate the sizes of specific sites on their bodies after viewing each set of photographs. The eating disordered subjects overestimated their body size more after they viewed the photographs of the women than after they viewed the neutral photographs. The non-eating disordered subjects, however, were unaffected by the nature of the photographs they viewed.

Providing an extension to the Hamilton and Waller's (1993) study, Waller, Hamilton, and Shaw (1992) examined whether the effects of viewing affective and neutral magazine images were related to the degree of abnormal eating attitudes in eating disordered and non-eating disordered women. Consistent with the findings of the previous study, the results from this study indicated that the eating disordered subjects overestimated their body size more when shown the affective images than when shown the neutral images. However, the extent of this overestimation was surprisingly unrelated to the extent of their abnormal eating attitudes. In contrast, the non-eating disordered subjects were unaffected by the nature of the photographs they viewed. However, within this group, those with more

pathological eating attitudes showed a greater responsiveness to the photographs of the women. Thus, these findings demonstrate that the idealized images in mass-circulation fashion magazines affect eating disordered women as well as non-eating disordered women with less healthy eating attitudes. The authors suggested that "it is likely that these images do not play a directly causal role. Rather, they probably maintain and worsen the abnormal body size perception of women with existing problems - anorexics, bulimics and normal women with poor eating attitudes" (p. 86).

Another experimental study (Irving, 1990) examined the impact of exposure to slides of thin, average, and oversize fashion models on the state self-esteem and body size/shape satisfaction of women exhibiting varying levels of bulimic symptomatology. Equal numbers of high, moderate, and low level bulimic subjects were assigned to one of four groups: (a) an experimental group exposed to slides of thin fashion models; (b) an experimental group exposed to slides of models of average weight; (c) an experimental group exposed to slides of oversize fashion models; and (d) a no-exposure control group. Subjects in the experimental groups viewed their respective slides and then completed measures of state self-esteem and body size/shape satisfaction. They also

answered three questions that were used to assess the amount of pressure to be thin that subjects experienced from family, peers, and the media. Subjects in the control group also completed the measures, but were not exposed to any slides. The results indicated that subjects exposed to slides of thin models reported lower levels of state self-esteem than did subjects exposed to slides of either average or oversize models. These results held true regardless of level of bulimic symptomatology. In addition, subjects exposed to slides of thin models reported greater weight dissatisfaction than subjects exposed to slides of models of average weight, who in turn reported greater weight dissatisfaction than subjects exposed to slides of oversize models. It was also reported that as level of bulimic symptomatology increased, body size/shape satisfaction decreased. Also interesting was the finding that all subjects reported that the greatest amount of pressure to be thin came from the media, followed by peers, and then family. Subjects with higher levels of bulimic symptomatology reported greater amounts of pressure to be thin coming from these sources than did subjects with lower levels of bulimic symptomatology.

A similar experimental study (Stice & Shaw, 1994) investigated the effects of exposure to the thin ideal on

women's affect, body size/shape satisfaction, and endorsement of the thin-ideal stereotype. Female undergraduates were randomly assigned to one of three experimental conditions: (a) an experimental group exposed to magazine pictures of ultra-thin female models; (b) an experimental group exposed to magazine pictures of average-weight female models; and (c) a control group exposed to magazine pictures containing no people. After viewing the pictures, subjects were asked to complete questionnaires that assessed affective state, subscription to the ideal-body stereotype, body size/shape satisfaction, and bulimic symptomatology. This study found that exposure to the thin ideal (i.e., pictures of thin models) produced increased feelings of depression, unhappiness, shame, guilt, and stress, and led to decreased levels of confidence and body size/shape satisfaction. However, exposure to the thin ideal did not result in heightened feelings of anxiety or endorsement of the thin-ideal stereotype. The results also indicated that negative affect, body size/shape dissatisfaction, and endorsement of the thin ideal predicted bulimic symptomatology.

Martin and Kennedy (1993) investigated the effects of physical attractiveness of advertising models on self-esteem, self-perception of physical attractiveness, and

comparison standards for physical attractiveness among female students in Grades 4, 8, and 12. Three versions of magazine advertisements, including ones with highly attractive models, ones with moderately attractive models, and ones with no models, were shown in separate sessions within each grade level, with each subject seeing only one version of the advertisements. Subjects assessed the advertisements, rated the model's attractiveness, and completed measures of trait self-esteem, self-perception of physical attractiveness, and the tendency to compare oneself to advertising models. This study demonstrated that exposure to highly attractive advertising models raises comparison standards for physical attractiveness, but does not have an effect on self-perceptions for physical attractiveness. The results also suggested that the tendency for female preadolescents and adolescents to compare themselves to advertising models increases with age. Furthermore, this tendency is greater for females with lower self-esteem and those with lower self-perceptions of physical attractiveness.

Exposure to television advertisements. In addition to studies that have examined the effects of print images, there have also been studies that have investigated the effects of television advertising. One such study (Lintott,

1993) investigated the impact of exposure to weight-related messages in television advertising on the body image and trait self-esteem of men and women. Male and female undergraduates were exposed to one of four different researcher-produced commercials (diet versus control product, crossed by male versus female spokesperson). Body size/shape satisfaction, body image avoidance, and trait self-esteem were then assessed using questionnaire measures. The results showed that subjects who were exposed to a diet commercial with a male spokesperson indicated more dissatisfaction with their bodies than subjects who were exposed to a diet commercial with a female spokesperson. In general, when the gender of the viewer was taken into account, same-sex spokespersons had negligible effects on viewers' body image and self-esteem. The presence of a female spokesperson as knowledgeable and articulate seemed to override the self-disparaging message of diet commercials for female subjects. Nevertheless, the message of dieting, if modelled by a spokesperson of one's own sex, did seem to have greater salience for females than for males. Female subjects who viewed a diet commercial with a female spokesperson showed greater body image disparagement than male subjects who viewed a diet commercial with a male spokesperson.

A similar study (Kaltenbach, 1991) investigated the effects of television advertisements for thinness on body size/shape satisfaction, drive for thinness, and mood among women at high risk and at low risk for eating disorders. Subjects in each of the risk categories were randomly assigned to one of the three videotape conditions: (a) diet food advertisements; (b) food advertisements, or (c) non-food advertisements. Unlike the previous study that used researcher-produced advertisements, this study used advertisements found during regular television programming. Subjects were pretested and posttested using measures to assess body satisfaction, drive for thinness, and mood. After viewing the advertisements, they were also asked to list their thoughts, which were analyzed for both positive and negative appearance statements and self-referencing statements. Contrary to the hypotheses, viewing the diet food advertisements did not change subjects' levels of depression, anxiety, or positive affect. Furthermore, the diet food advertisements did not have a greater effect on the body satisfaction, drive for thinness, depression, anxiety, or positive affect for high risk subjects as compared to low risk subjects. These findings contradict those reported in a similar study, which compared bingers to non-bingers (Raupp, Aubrey, Rimmer, Sunde, & Davis, 1988).

These researchers found that bingeing subjects experienced significantly more negative affect following the viewing of television advertisements than non-bingeing subjects. Their findings suggest that certain women are vulnerable to the messages portrayed in diet advertisements and react to these advertisements differently based on whether they are categorized as bingers or non-bingers.

One significant finding that did emerge from Kaltenbach's (1991) study was that high risk subjects who watched the diet food advertisements indicated more negative appearance statements than positive ones. The findings also revealed that low risk subjects who watched the diet food advertisements indicated more positive appearance statements than high risk subjects.

Heinberg and Thompson (1995) examined the effects of television advertisements depicting the societal ideal of thinness and attractiveness on levels of depression, anger, and appearance dissatisfaction of women. College-aged females viewed 10 minutes of television commercials that either contained stimuli that emphasized societal ideals of thinness and attractiveness (such as those found in cosmetics advertisements) or contained neutral stimuli that were not appearance-oriented (such as those found in insurance advertisements). Subjects were pretested and

posttested on the dependent measures. The researchers found that subjects who viewed the experimental videotape (i.e., the videotape containing the advertisements that emphasized the societal ideals) reported higher levels of depression, anger, and appearance dissatisfaction than subjects who viewed the control videotape (i.e., the videotape containing the neutral advertisements). In addition, those subjects with high dispositional levels of body image disturbance exhibited increases in appearance dissatisfaction following exposure to the experimental videotape. On the other hand, those subjects with low dispositional levels of body image disturbance exhibited decreases in appearance dissatisfaction following the experimental videotape. All subjects exposed to the control videotape showed a decrease in appearance dissatisfaction. This suggests that the societal ideals of thinness and attractiveness presented by the media may have a negative effect on appearance satisfaction only for those individuals already possessing high levels of body image disturbance.

Cattarin (1996) extended Heinberg and Thompson's (1995) research in order to determine whether exposure to media-presented images of the sociocultural ideal of thinness and attractiveness has a negative effect on mood and body image satisfaction via the process of social comparison. In her

study, female undergraduates viewed either: (a) an experimental videotape of advertisements containing female models considered to be representative of the sociocultural ideal of thinness and attractiveness; or (b) a control videotape of advertisements containing models considered to be less representative of this ideal. Within each videotape condition, subjects were given either: (a) a neutral instructional set (i.e., subjects were told to simply watch the videotape as if they were watching television in their own homes); (b) a high comparison instructional set (i.e., subjects were told to compare themselves to the people in the video); or (c) a low comparison (distraction) instructional set (i.e., subjects were told to closely attend to the products being advertised). Subjects were pretested and posttested on the dependent measures. Cattarin found that regardless of which instructional set was provided, the experimental subjects demonstrated significant increases in depression, anxiety, and anger, whereas the control subjects demonstrated significant decreases in depression, anxiety, anger, and body dissatisfaction. Among the experimental subjects, those who received the high comparison instructional set demonstrated significant increases in body dissatisfaction, whereas those who received the low comparison and neutral instructional

sets showed only nonsignificant increases in body dissatisfaction. Dispositional level of body satisfaction was found to moderate the effect that viewing the experimental videotape had on depression because only those experimental subjects with low dispositional levels of body satisfaction showed a significant increase in body satisfaction following exposure to the experimental videotape. Dispositional level of tendency to internalize sociocultural attitudes towards attractiveness was shown to moderate the effect that viewing the videotapes had on anger and body dissatisfaction because only those subjects with high dispositional levels of tendency to internalize sociocultural attitudes demonstrated increases in anger and body dissatisfaction after exposure to the experimental videotape. Cattarin's study provides further evidence that exposure to media-presented images has an effect on mood and body image satisfaction. It also provides at least some evidence to support that exposure to the sociocultural ideal has a negative effect on mood and body image satisfaction via the process of social comparison.

Shortcomings of the Previous Research

Research examining the effects of media exposure on body image and self-esteem has been minimal. Some of the major studies that have been conducted have employed

correlational designs, thus making it difficult to assess any definitive cause-and-effect relationships. Of the experimental studies that have been done, some (e.g., Hamilton & Waller, 1993; Waller et al., 1992) have only examined the effects of media exposure on the perceptual component of body image (i.e., body size estimation), and thus provide no information about the attitudinal component (i.e., body size/shape satisfaction). Those experimental studies that have examined the effects of media exposure on body size satisfaction have used exposure to magazine images and television advertisements as their treatments. No studies to date have examined the impact of exposure to television programming that portrays the cultural ideal of female beauty/thinness on the body image and self-esteem of the viewer.

The few studies to date that have assessed the effects of media exposure on self-esteem have typically employed trait measures of self-esteem, with the exception of the study conducted by Irving (1990). Thus, as a result, investigators may not have been able to effectively measure short-lived (i.e., state) changes in self-esteem.

How the Current Study Improved on the Previous Research

To address many of the gaps and shortcomings discussed in the previous section, the current study: (a) employed an

experimental design rather than a correlational design; (b) examined the effects of media exposure on the attitudinal component of body image; (c) examined the effects of media exposure on self-esteem by employing a state self-esteem measure; and (d) used exposure to an actual television program (*Baywatch*; Berk, Bonann, Schwartz, & Hasselhoff, 1996) as the experimental treatment. *Baywatch* is a popular one-hour action/adventure television series. This program was chosen for the study because: (a) it is a popularly viewed program among adults 18-34 years of age; and (b) its female characters portray the cultural ideal of beauty and thinness. Thus, *Baywatch* represents a particular type of television programming, one that portrays the cultural ideal of female beauty and thinness.

Research Questions

The purpose of the current study was to initiate our understanding of the impact that exposure to television programming that portrays the cultural ideal of female beauty and thinness has on the body size/shape satisfaction and state self-esteem of non-eating disordered women. Following from this purpose, two major research questions were investigated in this research. The first major research question was: Among females between the ages of 18 and 30, would those who watched an episode of *Baywatch* (Berk

et al., 1996) indicate greater body size/shape dissatisfaction than those who watched an episode of a control program (i.e., *The X-Files*; Carter, 1993)? The second major research question was: Among females between the ages of 18 and 30, would those who watched an episode of *Baywatch* have lower overall and specific levels of state self-esteem than those who watched an episode of a control program (i.e., *The X-Files*)?

CHAPTER III

METHODS

This chapter provides a description of the sample, research design, data collection procedures, and measurement instruments used in this study.

Sample

The population of interest in this study was non-eating disordered females between the ages of 18 and 30. Females were chosen because research has demonstrated that although feelings regarding weight are related to overall body satisfaction for both men and women, weight is particularly psychologically salient for women (Berscheid et al., 1973; Cash, 1985; Fallon & Rozin, 1985; Gray, 1977).

Sampling Procedure

Volunteer sampling was used to select a sample from the female population aged 18-30. Subjects were recruited through newspaper advertisements, flyers, e-mail messages to University of Alberta students, and announcements made during classes at the University of Alberta. Advertisements and announcements requested females aged 18-30 to participate in "two studies" being conducted simultaneously by two graduate students in the Department of Educational Psychology. (This constituted the use of deception because subjects were intentionally misled about the true nature and

purpose of the study. This was done so as to guard against arousing interest in, or sensitizing subjects to, the real issues being studied. Therefore, subjects were misinformed that this study was actually two studies examining different issues, thus reducing the likelihood of aroused sensitivity to the real issues of body size/shape satisfaction and self-esteem being investigated. I will discuss the rationale for the deception procedure in more detail later in this chapter.) The "first study" was described as an investigation into the perceived quality of television programs as well as their entertainment and enjoyment properties. The "second study" was described as an investigation into the reliability and validity of several self-report questionnaires about self and health attitudes to be used in a future study. The advertisements and announcements also informed potential subjects that an incentive to participate in the two studies would be offered in the form of a raffle: Individuals who participated in the studies would have a chance to win one of two cash prizes of 50 dollars at the experimental session.

Anyone wishing to participate in the "two studies" was requested to telephone an answering machine to find out the dates of the scheduled experimental sessions. Those individuals who were able to attend one of the sessions were

asked to leave their names and telephone numbers on an answering machine so that I could contact them to provide additional information about the studies. In the case of announcements made during university classes, sign up sheets for the experimental sessions were distributed and individuals were asked to leave their telephone numbers so that I could relay additional information to them. In the case of recruiting through the internet, subjects interested in participating in one of the scheduled experimental sessions were asked to send an e-mail reply requesting additional information be forwarded to them.

In total, 88 female subjects attended the experimental sessions. Of these, 9 subjects were excluded from the main data analyses because their scores exceeded the cutoff point of the tool used to screen for eating disorder symptomatology (i.e., they were classified as being "at risk" for having or developing an eating disorder). Their data was explored separately from the non-eating disordered group data. An additional subject was excluded because she arrived too late to participate in the "first study". The remaining 78 subjects met the inclusion criteria.

I had originally intended to recruit a group of eating disordered subjects in addition to the group of non-eating disordered subjects for this study, but several months of

recruitment for the eating disordered group did not yield sufficient numbers of subjects to conduct that part of the study.

Sample Characteristics

The sample consisted of 78 female subjects who were within the prescribed age range (ages 18-30). Average subject age was 23.3 years. The majority of subjects could be described as follows: Caucasian (76%); never married (74%); having no children (95%); university or college educated (73%); employed (58%); and having parents with a mean educational level of greater than 12 years (82%).

With respect to the subjects' health characteristics, average height was 1.7 metres and average weight was 63.0 kilograms, yielding a mean body mass index of 21.8. (For the operational definition of body mass index, refer to the instrumentation section on demographic variables in which the Health Questionnaire is discussed.) The majority of subjects (77%) were classified in the healthy weight category, whereas 13% and 9% were classified as underweight and overweight, respectively. Note that the sum of the percentages does not equal 100% because one subject did not report her height and weight. The average weight range (i.e., the difference between highest and lowest weight) since reaching present height was 10.9 kilograms. Subjects

indicated that they considered both the average weight and the healthiest weight for their height to be a mean body mass index of 21.4.

In terms of exercise and dieting behavior, the majority of subjects (59%) stated that they exercised between 1-3 times per week, and 50% of subjects indicated that they had been on a self-imposed weight loss diet. A small minority of 13% were on a self-imposed weight loss diet at the time of the study along with another 8% who were trying to lose weight via some other means. As a group, these subjects indicated that they were trying to lose an average of 7 kilograms and most (63%) of them considered this to be "somewhat important".

Comparability of the Experimental and Control Groups

Demographic variables. Table 1 compares the demographic profiles of the experimental and control groups. Chi-square analyses determined that the groups were not significantly different with respect to the following demographic variables: ethnicity, χ^2 (1, N = 78) = 0.02, p = .89; marital status, χ^2 (1, N = 78) = 0.43, p = .52; parental status, χ^2 (1, N = 78) = 0.00, p = .96; educational level, χ^2 (2, N = 78) = 3.38, p = .19; employment status,

Table 1

Distribution of the Ethnicity, Marital Status, Parental Status, Educational Level, Employment Status, and Religion of the Experimental and Control Groups

Demographic variable	Group	
	Experimental[a]	Control[b]
Ethnicity		
Caucasian	30 (75%)	29 (76%)
Other racial groups	10 (25%)	9 (24%)
Marital status		
Never married	31 (78%)	27 (71%)
Married (or common law)	9 (23%)	11 (29%)
Parental status		
Have children	2 (5%)	2 (5%)
Have no children	38 (95%)	36 (95%)
Educational level		
Grade/high school[c]	1 (3%)	5 (13%)
University/college[d]	30 (75%)	27 (71%)
Graduate school[e]	9 (23%)	6 (16%)
Employment status		
Presently employed	26 (65%)	19 (50%)
Not presently employed	14 (35%)	19 (50%)
Religion		
Catholic	5 (13%)	9 (24%)
Protestant	12 (30%)	12 (32%)
No religion	15 (38%)	11 (29%)
Other	8 (20%)	6 (16%)

Note. For some variables, the percentages may be slightly greater than 100% due to rounding to the nearest percentage. [a]$n = 40$. [b]$n = 38$. [c]This category is defined as having completed grade school only or possessing a high school diploma. [d]This category is defined as having taken some university/college courses, or possessing an undergraduate degree or college diploma. [e]This category is defined as having taken some courses in graduate school, or possessing a graduate degree.

χ^2 (1, N = 78) = 1.80, p = .18; and religion, χ^2 (3, N = 78) = 1.99, p = .57.

The average age of the experimental group was 24.3 years, whereas the average age of the control group was 22.3 years. An independent-samples t-test revealed that the difference between these means was significant, $t(76)$ = 2.74, $p < .008$.

The average of the mean parental educational level was 14.5 years for the experimental group and 14.6 years for the control group. An independent-samples t-test indicated that the difference between the groups was not significant, $t(70)$ = -0.11, p = .909. Note that 2 experimental subjects and 4 control subjects did not provide information regarding their parents' educational levels.

Descriptive health variables. Table 2 compares the experimental and control groups in terms of the mean body mass index of subjects' self-reported weight, their perceived average weight, and their perceived healthiest weight. As shown in the table, the two groups had similar means on these variables. Analyses using independent-samples t-test revealed that the differences between the group means were not significant for self-reported weight, $t(75)$ = 0.24, p = .82, perceived average weight, $t(75)$ = 0.17, p = .87, or perceived healthiest weight, $t(75)$ = 0.11,

Table 2

Mean Body Mass Index[a] of Self-Reported Weight, Perceived Average Weight, and Perceived Healthiest Weight by the Experimental and Control Groups

Group	Weight variable		
	Self-reported weight	Average weight	Healthiest weight
Experimental[b]			
M	22.98	21.39	21.37
SD	3.71	1.47	1.59
Control[c]			
M	22.80	21.33	21.33
SD	2.95	1.68	1.96

[a]Body mass index is defined as weight divided by height squared (kg/m^2). [b]$n = 40$. [c]$n = 37$ because one control subject did not provide weight-related information.

p = .91. Note that one control subject did not provide weight-related information.

The average weight range (i.e., the difference between highest and lowest weight) since reaching present height was 10.6 kilograms for the experimental group and 11.1 kilograms for the control group. An independent-samples t-test revealed that the difference between the group means was not significant, $t(75) = -0.29$, $p = .77$. Note that one control subject did not provide weight-related information.

Table 3 compares the experimental and control groups in terms of exercise frequency. As displayed in the table, the experimental and control groups had fairly similar proportions of subjects in each category. A chi-square analysis revealed that the groups were not significantly different with respect to this variable, χ^2 (3, N = 78) = 1.32, p = .73.

With respect to previous dieting behavior, 63% of control subjects versus 38% of experimental subjects indicated having been on a self-imposed weight loss diet. A chi-square analysis indicated that the groups were significantly different (at the .05 level) on this variable, χ^2 (1, N = 77) = 5.76, p = .02. With respect to current dieting behavior, 82% of control subjects and 90% of

Table 3

Frequency of Exercise by the Experimental and Control Groups

Group	Exercise frequency per week			
	Less than once	Once	2-3 times	4 or more times
Experimental[a]	11 (28%)	11 (28%)	13 (33%)	5 (13%)
Control[b]	8 (21%)	9 (24%)	13 (34%)	8 (21%)

Note. For the experimental group, the percentages total slightly greater than 100% due to rounding to the nearest percentage.

[a]$n = 40$. [b]$n = 38$.

experimental subjects indicated they were not on a self-imposed weight loss diet at the time of the study. A chi-square analysis revealed no significant differences between groups on this variable, χ^2 (1, N = 77) = 0.66, p = .42. Note that one control subject did not provide information about her past or present dieting behavior.

In summary, the statistical analyses revealed that the experimental and control groups had quite comparable demographic profiles and health characteristics. The only exceptions to this were the significant differences found between the groups in terms of average age (i.e., the experimental group had an average age that was approximately 2 years older than the control group) and previous experience with a self-imposed weight loss diet (i.e., the experimental group had less previous dieting experience than the control group).

Design

This study had one independent variable: treatment condition (i.e., experimental group versus control group), a manipulated independent variable. This study was designed as a true experimental study in that: (a) the research was motivated by a causal question (i.e., a causal inquiry into the relationship between exposure to television programming of a particular type and body satisfaction, and the

relationship between exposure to television programming of a particular type and self-esteem); (b) the treatment condition independent variable was manipulated; and (c) the subjects were randomly assigned to groups. Specifically, a randomized subjects, posttest-only control group design was employed in this study. In accordance with this design, the experimental group was exposed to the experimental treatment and then received a posttest. The control group was also posttested, but was not exposed to the experimental treatment. So as to reduce reactive effects, a Hawthorne control group was employed instead of a no-treatment control group.

Rationale for Choosing this Design

The randomized subjects, post-test only control group design was chosen over other designs for the following reasons:

1. The randomized subjects, post-test only control group design, a true experimental design, was chosen over pre-experimental designs because its use of a control group allowed for better control over the major threats to internal validity.

2. The randomized subjects, post-test only control group design was chosen over quasi-experimental designs that do not utilize randomization because "the randomization

controls for all possible extraneous variables and assures that any initial differences between the groups are attributable only to chance" (Ary, Jacobs, & Razavieh, 1990, p. 324).

3. The randomized subjects, post-test only control group design was chosen over the randomized, pretest-posttest control group design because pretest sensitization was of concern in this study. Because no pretests were used in this study's post-test only control group design, pretest sensitization could be ruled out as a threat to external validity.

4. The randomized subjects, post-test only control group design was chosen over the randomized matched subjects, post-test only control group design because of the large sample size and time restrictions. Although the randomized subjects, post-test only control group design would have been stronger if subjects were first matched on some relevant characteristic (i.e., a variable that was substantially correlated with the dependent variables) and then randomly assigned to groups, the matching process itself would have involved pretesting subjects on the relevant variable. This could have sensitized the subjects to the purpose of the study. In addition, the matching

process was not feasible given the practical constraints of this study.

Experimental Condition

The experimental treatment in this study was a videotaped presentation of an episode of *Baywatch* (Berk et al., 1996), a popular action/adventure series. One hour in length, its story lines revolve around its main characters who are lifeguards on the beaches of California. The episode used was entitled "Beauty and the Beast" and was considered to be a representative episode of the series. *Baywatch* was selected as the experimental treatment because the cultural ideal of female beauty/thinness seemed to be portrayed on this program.

Although commercials appearing during this episode were taped, they were fast-forwarded during the study. Based on personal observation, this seemed to be typical of how most individuals tend to view a videotaped television program. Thus, the commercials were not eliminated altogether so as to preserve some realism; however, they were fast-forwarded in order to ensure that it was still possible to examine the effects of viewing the television program without the potential additional effects of viewing the commercials in the same way.

Hawthorne Control Condition

The Hawthorne control condition in this study was a videotaped presentation of a representative episode of *The X-Files* (Carter, 1993), a popular drama series. One hour in length, its story lines follow "the exploits of two FBI agents . . . as they investigate cases that deal with paranormal phenomena" (Lowry, 1995, p. 1). This program was chosen as a control program for a number of reasons: (a) it did not seem to portray the idealized image of female beauty and thinness that the experimental program portrayed; (b) it was also a popular American television series; and (c) it was the same length as the experimental program. Again, the commercials were taped but fast-forwarded during the study.

Procedures

The following outlines the procedures of the study.

Procedures Prior to the Experimental Session

Individuals interested in participating in the study were requested to telephone an answering machine to find out the dates of the upcoming experimental sessions. A total of six sessions were scheduled over the course of 5 months. If the individuals were able to attend one of the scheduled sessions, they were invited to leave their name and telephone number so that I would be able to contact them to inform them of the location of the session. In the case of

individuals who had signed up for the experimental sessions during class, I phoned them to inform them of the location of the session. During the initial telephone contact, I first confirmed that the individual was a female between the ages of 18 and 30. Then, individuals were informed that two graduate students in the Department of Educational Psychology were conducting two studies at the same time. The first study was described as an investigation into the perceived quality of television programs as well as their entertainment and enjoyment properties. Individuals were told that their participation in this study involved (a) watching a videotaped presentation of an episode of a television program, and (b) completing a questionnaire related to the episode viewed. The second study was described as an investigation into the reliability and validity of several self-report questionnaires about self and health attitudes to be used in a future study. Individuals were informed that their participation in this study involved answering a series of questionnaires about themselves and their health. During this telephone conversation, individuals also were informed that both studies would be conducted in a group setting at the University of Alberta, and that the studies would take no longer than 2.5 hours in total to complete. Individuals

were told that at the conclusion of their participation, a raffle for two cash prizes of 50 dollars would ensue. After providing the above information, I asked whether the individual was still interested in participating in the studies. Individuals interested in participating were asked to report to a specific classroom at the University of Alberta on the scheduled date and time of the experimental session.

Prior to the date of the first experimental session, one female colleague was trained to pose as the researcher for "Study 1" and another female colleague was trained to pose as her research assistant. From this point onward, these colleagues will be referred to as "Confederate 1" and "Confederate 2", respectively. Both confederates were given a script and guidelines to follow in conducting "Study 1".

Procedures During the Experimental Session

Testing was conducted in classrooms at the University of Alberta. Meeting all of the subjects in the designated classroom, Confederate 1 and I introduced ourselves as the researchers for the two studies. Confederate 1 also introduced Confederate 2 as her research assistant. Confederate 1 and I then broadly described our respective studies. The first study was described as an investigation into the perceived quality of television programs and their

entertainment and enjoyment properties, whereas the second study was described as an investigation into the reliability and validity of several self-report questionnaires about self and health attitudes to be used in a future study. Subjects were reminded at this time that a raffle for two cash prizes of 50 dollars would ensue at the completion of the second study. The procedures followed for each of the "two studies" will now be explained in detail.

"Study 1". Confederate 1 explained that for her study, the larger group would be divided into two smaller groups so that subjects could be assigned to one of two television program conditions. At this time, the subjects were randomly assigned to either the experimental group (*Baywatch* condition) or the control group (*The X-Files* condition). The random assignment process involved Confederate 1 asking each subject in turn to blindly choose one ticket from a hat containing 20 white tickets. Half of the tickets had "Group 1" printed on them, whereas the other half had "Group 2" printed on them. Subjects were asked to look at the ticket they chose and remember the group number printed on it. They were then asked to return the ticket to the hat so that the next subject would have the same chance of drawing a 1 or a 2. A coin flip then determined which of the two groups was assigned to the experimental condition and which was

assigned to the control condition. Another coin flip that was done just prior to the experimental session determined which of the two confederates was assigned to the experimental condition and which was assigned to the control condition. The confederate assigned to the experimental condition requested that the group also assigned to this condition follow her to one classroom, whereas the confederate assigned to the control condition requested that the group assigned to the control condition follow her to a second classroom. At no point during this randomization process were the subjects informed that they had been assigned to either the experimental condition or the control condition. The groups were simply referred to by number alone.

The following procedures were then followed by Confederate 1 and Confederate 2 in their respective classrooms. They informed the subjects that their participation in the study would involve (a) watching a videotape of a one-hour episode of a television program (with commercials fast-forwarded), and (b) completing a questionnaire about the episode they viewed. Then subjects were asked to read an information sheet (see Appendix A) and sign a consent form (see Appendix B). The subjects were told that their informed consent would be indicated only if

they had signed the consent form and completed all parts of the study. The confederates informed all participants that their anonymity and confidentiality would be protected in that the surveys would not request them to identify themselves, and would only be available to Confederate 1, the main researcher conducting the study. The subjects were clearly informed of their right to decline to enter the study and their right to withdraw from the study at any time without penalty and without losing their guarantee of anonymity. The subjects also were specifically told that if for any reason they did not wish to view the particular program (i.e., *Baywatch* or *The X-Files*) or could not afford the time commitment, they were free to decline to enter the study. No one withdrew or declined to enter the study.

After receiving the informed consent of the subjects, the confederates asked the subjects to view the videotaped television program. The subjects were requested to relax and simply watch the program as they might watch television at home. However, they were asked to refrain from talking during the program. The experimental subjects viewed an episode of *Baywatch* (Berk et al., 1996); the control subjects viewed an episode of *The X-Files* (Carter, 1993). This portion of the study took approximately 45 minutes because commercials were fast-forwarded by the confederates.

Immediately following the videotaped presentation, the confederates distributed the Multidimensional Television Episode Questionnaire (see Appendix C) to all subjects, and asked them to follow the instructions written on the questionnaires. The confederates were available to answer any questions that arose. It took approximately 10-15 minutes for subjects to complete the questionnaires. Subjects were requested to submit their completed questionnaires to an envelope at the front of the classroom, and then remain in the room until everyone in the room had finished.

Subjects interested in receiving a summary of the study's results were asked to write their name and complete address on a mailing card that was provided, and return it to an envelope at the front of the room. These mailing cards were not linked to the questionnaire packets. By having subjects fill out a mailing card, it was hoped that "Study 1" would be further legitimized as an actual self-contained study.

When everyone in the group had completed the tasks required for this study, the subjects were informed that at the conclusion of the next study, one person from each of the two television conditions would win a cash prize of 50 dollars. To facilitate the raffle process, the confederates

distributed a two-part colored raffle ticket to each subject. Subjects in the experimental group received red tickets; subjects in the control group received yellow tickets. No identifying information (e.g., numbers) was placed on these tickets at this time. The subjects were asked to bring their two-part tickets into the next study where further information would be provided. Subjects from both groups were then brought back together in the initial classroom for "Study 2".

Once subjects from both groups returned to the initial classroom, Confederate 1 thanked the subjects for their participation in her study. She and Confederate 2 then left the room.

"Study 2". I informed the subjects that their participation in my study would involve completing a series of questionnaires regarding how they felt about themselves and their health. Subjects were then asked to read an information sheet (see Appendix D) and sign a consent form (see Appendix E). The subjects were told that I would consider that they had given their informed consent only if they had signed the consent form and completed all parts of the study. I informed all participants that their anonymity and confidentiality would be protected in that the surveys would not request them to identify themselves, and would

only be available to me. It was explained that survey identification numbers had been arbitrarily assigned to each survey packet and were not linked in any way to the identity of the subjects. The subjects were clearly informed of their right to decline to enter the study and their right to withdraw from the study at any time without penalty and without losing their guarantee of anonymity. No one withdrew or declined to enter the study.

After receiving the informed consent of the subjects, I distributed the packets of questionnaires consisting of the following posttest instruments: (a) the Multidimensional Body-Self Relations Questionnaire (Cash et al., 1986) (see Appendix F); (b) the Body Esteem Scale (Franzoi & Shields, 1984) (see Appendix G); (c) the Contour Drawing Rating Scale (Thompson & Gray, 1995) (see Appendix H); (d) the Health Questionnaire (see Appendix I); and (e) the State Self-Esteem Scale (Heatherton & Polivy, 1991) (see Appendix J). In addition to completing these posttest measures, subjects were also asked to complete the Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1979) (see Appendix K) to screen for eating disorder symptomatology, and a demographic questionnaire (see Appendix L) to gather descriptive information about the sample. Attached to the front of the questionnaire packets was a mailing card. Subjects

interested in receiving a summary of the study's results were asked to write their name and complete address on the card, and return it to an envelope at the front of the room. To ensure that these index cards were not linked to the questionnaires, the following precautions were taken: (a) the index cards did not include the survey identification numbers; and (b) the index cards were collected separately from the questionnaire packets.

Before beginning to answer the questionnaires, the subjects were asked to write the survey identification number from their questionnaire packets on both halves of their colored raffle tickets in order to be eligible to win a cash prize of 50 dollars at the end of the session. I collected one half of the ticket from each subject. (Each subject kept the other half of the ticket in order to claim the prize if her ticket number was called.) The raffle tickets were collected separately from the consent forms and questionnaires, and therefore were not linked to the identity of the subjects in any way. The color coding of the raffle tickets (i.e., experimental group = red; control group = yellow) along with the survey identification number simply enabled me to later determine whether a questionnaire packet was completed by an individual in the experimental (*Baywatch*) condition or an individual in the control (*The X-*

Files) condition. Thus, this information helped link the "two studies" without jeopardizing the subjects' anonymity.

The subjects were asked to follow the directions listed for each questionnaire, and to complete the questionnaires in the order in which they were presented. This portion of the study took approximately 20-30 minutes to complete. I was available during this time to answer any questions that arose. Subjects were asked to submit their completed questionnaires to an envelope at the front of the classroom, and then remain seated until everyone in the room had finished.

When all of the subjects had submitted their questionnaires, I distributed a sheet (see Appendix M) on which the subjects were asked to write what they saw as the purpose of each of the "two studies" in which they participated. This served as a validity check on the two-study deception procedure used. No subjects indicated being aware that the "two studies" were actually two components of the same study.

The raffle then ensued. One cash prize of 50 dollars was drawn from the red tickets (i.e., subjects in the experimental group); the other cash prize of 50 dollars was drawn from the yellow tickets (i.e., subjects in the control group). To claim her prize, a subject was required to

present the other half of the ticket with the same identification number on it.

Debriefing procedure. At the end of the experiment, all subjects were completely debriefed as to the true nature and purpose of the study, and all uncertainties about the study were removed. Thus, subjects were informed that the "two studies" were actually two components of the same study being conducted by Crystal Coolican, and that the "Study 1" researcher (Confederate 1) and her assistant (Confederate 2) were confederates. The true purpose of the study was revealed as an investigation into the relationship between specific types of television programming (i.e., programming that portrayed the cultural ideal of female beauty and thinness versus programming that did not) and the body size/shape satisfaction and self-esteem of women between the ages of 18 and 30. I explained that the true nature and purpose of the study was concealed at the beginning of the study so that subjects would not become interested in or sensitized to the issues being studied. It was explained that such interest or sensitization could potentially invalidate the results. In addition, I explained that because the body image and self-esteem questionnaires were fairly obvious measures of these constructs, deception was necessary so that subjects would not be able to figure out

exactly what was being studied, which could also invalidate the results. I explained that by misinforming subjects that the study was actually two studies, it was hoped that they would not easily make the connection that the study was actually an investigation into the relationship between specific television programming, body size/shape satisfaction, and self-esteem.

Subjects were informed that "Study 1" involved the exposure to the experimental and control treatments. Subjects were told that those who viewed the episode of *Baywatch* comprised the experimental group, whereas those who viewed the episode of *The X-Files* comprised the control group. They were further informed that the Multidimensional Television Episode Questionnaire they completed as part of "Study 1" was administered to conceal the true nature and purpose of the study and to legitimize "Study 1" as an actual self-contained study. Subjects were told that this questionnaire was peripheral to the study.

I explained that I was specifically interested in knowing whether those individuals who watched *Baywatch* would indicate greater body size/shape dissatisfaction and lower levels of self-esteem than those individuals who watched *The X-Files*. Subjects were told that their responses on questionnaires from "Study 2" would be used to make these

group comparisons. I explained that the color coded raffle tickets on which they wrote their survey identification numbers would enable me to determine which questionnaire packets were completed by individuals in the experimental condition (i.e., red ticket = experimental condition) and individuals in the control condition (i.e., yellow ticket = control condition). Subjects were assured that the survey identification numbers were not linked in any way to their identity, and that their anonymity would be guaranteed.

Subjects were informed that the EAT-26 that they completed as part of "Study 2" would be used to measure eating behaviors. It was explained that this would enable me to relate eating behaviors to body size/shape satisfaction and self-esteem. Subjects were also told that the Demographic Questionnaire that they completed as part of "Study 2" would be used to gather information about their age, ethnicity, marital status, parental status, educational level, employment status, religion, and parental educational level.

After the above information had been relayed, I answered any questions that the subjects had. Then the subjects were asked in light of the debriefing information to consider whether they still wished to allow the data obtained through their participation to be used in the data analysis

procedures. Subjects were told that if they did not want their data analyzed, they should inform me of their survey identification number so that I could omit analyzing the data from their survey packets. No one asked for their data to be excluded from the data analyses. Subjects were given a debriefing sheet outlining the above debriefing information (see Appendix N).

Subjects were then thanked for their participation and told they were free to leave. I remained available to respond to any other questions or concerns that the subjects had.

Ethical Issues Raised by the Procedures

Use of Deception

Rationale for using deception. The use of deception in this study could be justified on the following grounds:

1. Deception was warranted in this study because full disclosure about the true nature and objectives of the study would have likely biased and invalidated the results. For instance, if I had stated at the beginning of the study that the true nature and purpose of the study was to investigate the effects of viewing particular types of television programming on body size/shape satisfaction and self-esteem, this could have aroused interest in, or sensitized subjects to, the issues being studied. (This would almost be

analogous to pretest sensitization.) Given the demand characteristics (i.e., cues in the study that communicate how the participants should respond so as to confirm the hypotheses) that would likely be operating as a result of this disclosure, subjects might have attended differently to the experimental television program than if they did not know the true nature and purpose of the study. It then would become difficult to determine whether any differences between the experimental and control groups on the dependent variables could be attributed to the treatment itself, aroused sensitivity to the issues being studied, or the interaction between the experimental treatment and their aroused sensitivity to the issues. The question thus would become: Would the effect of the treatment on the experimental subjects be the same if they were not sensitized to the issues being studied? So as to guard against this problem, the true nature and purpose of the study was concealed. Therefore, subjects were misinformed that this study was actually two studies examining different issues, thus reducing the likelihood of aroused sensitivity to the real issues of body size/shape satisfaction and self-esteem being investigated.

2. Deception was warranted in this study because alternative procedures could not adequately conceal the true

nature and purpose of the study, which increased the likelihood that subjects would become sensitized to the issues being studied. In a pilot study conducted using an alternative design that did not utilize deception procedures, subjects were told that the study was an examination of how women's attitudes, opinions, and behaviors affect how women respond to television programming. Thus, the true nature and purpose of the study were partially concealed so that subjects would not become sensitized to the issues being studied. However, when subjects were asked to indicate the purpose of the study before being debriefed, 7 of the 16 subjects were able to correctly figure it out. This suggested a need for greater measures to be taken in order to disguise the true nature and purpose of the study in order to prevent sensitization to the issues being studied. Therefore, subjects were misinformed that this study was actually two studies examining different issues, thus reducing the likelihood of aroused sensitivity to the real issues of body size/shape satisfaction and self-esteem being investigated.

3. Deception was warranted in this study because alternative procedures that might attempt to conceal what was being studied by adding superfluous questionnaires about other issues to the questionnaire packets would not

adequately disguise the fact that body size/shape satisfaction and self-esteem were still being examined in this study. In the pilot study, superfluous questionnaires were added to the body image and self-esteem measures to help disguise what was being studied; however, 7 of the 16 subjects were still able to recognize that the study was an examination of how television programming affects body image and the attitudes women have about themselves. This suggested a need for a procedure that could more adequately conceal what is being studied. The 'two study" procedure was better able to accomplish this.

4. Deception was warranted in this study because the instruments used to measure body size/shape satisfaction and self-esteem in this study had a great deal of "face validity", and thus would likely sensitize subjects (particularly those in the experimental group) to what exactly was being studied. The high face validity of the instruments might help explain why so many subjects in the pilot study were able to recognize the true purpose of the study even when superfluous questionnaires were added. Because of the high face validity of these instruments, the current study did not attempt to disguise that these instruments were measuring health and self attitudes; however, subjects were misinformed as to why they were

completing these instruments. Subjects were told that they were completing these instruments in order to help me determine whether the instruments were valid and reliable measures so that they might be used in future research.

5. Deception was warranted in this study because there was no anticipated risk of harm to the subjects as a result of being intentionally misled about the nature and purpose of the study. In addition, the superfluous questionnaire used in "Study 1" to conceal the true nature and purpose of the study and to legitimize it as an actual study was not emotionally charged in content, and thus would not be expected to affect subjects in harmful ways.

6. Deception was warranted in this study because it was possible immediately following the study to advise subjects as to the reasons why the deception was required and to fully inform them about the true nature and purpose of the study. I provided this debriefing information to the subjects both in verbal and written form.

In summary, based on the above rationale, deception was warranted because: (a) significant scientific advance could be achieved through its use because deception would reduce the likelihood that the results would be invalidated; (b) alternative procedures that did not use deception would not suffice; (c) no risk of harm to subjects was anticipated as

a result of the deception; and (d) subjects were completely debriefed immediately following the study.

Ethical issues raised by the use of deception. This section will address the ethical issues raised by the use of deception in this study and discuss how the interests of the subjects were protected.

One ethical issue involved whether subjects would be fully informed as soon as possible about the true nature and purpose of the research and the reasons why deception was used. In this study, subjects were completely debriefed by me both in verbal and written form soon after the data had been collected. For a complete detailed description of the debriefing procedures, refer to the procedures section.

A second ethical issue involved whether the deception might cause risk of harm to the subjects. There was no anticipated risk of harm to the subjects as a result of being intentionally misled about the nature and purpose of the study. In addition, the superfluous questionnaire used in "Study 1" to conceal the true nature and purpose of the study and to legitimize it as an actual study was not emotionally charged in content, and thus was not expected to affect subjects in harmful ways.

A third ethical issue involved whether subjects were given the opportunity to disallow the use of data obtained

through their participation once they had been debriefed. Subjects were asked to consider whether they still wished to allow their data to be used in the data analysis procedures. Had any subjects declined, their data would not have been analyzed.

Informed Consent

Although subjects were operating without fully informed consent in that they were intentionally misled about the nature and purpose of the research, certain aspects of informed consent were still maintained. For instance, the written information sheets and consent forms used in the current research provided accurate information about: (a) the tasks to be performed in the "two studies"; (b) the rights of the subject (e.g., the right to confidentiality of responses, the right to have one's anonymity protected, the right to withdraw at any time without penalty or risk of any kind); and (c) any risks that were anticipated in the subjects' involvement in the study.

Protecting the Anonymity of Subjects

The information and consent forms (see Appendices A, B, D, and E) outlined how I planned to protect the anonymity of subjects. Identifying data (such as on the signed consent forms and the mailing cards requesting the results of the study) were collected separately from the questionnaires,

and thus a subject's identity was never linked with her questionnaire packet. The subjects were asked not to write their names on any of the questionnaires, so as to protect the subjects' anonymity. Subjects were assured that the arbitrarily assigned identification numbers on the questionnaire pages were simply used to link survey pages in the event that they became separated. Subjects were also informed that the color coded raffle tickets on which they were asked to indicate their survey identification numbers were not linked in any way with information that might identify them.

Protecting the Confidentiality of Responses

No one except me viewed the signed consent forms, the completed questionnaires, or the index cards requesting the results of the study. In "Study 1" where confederates were involved with conducting the experiment, subjects were asked to submit their signed consent forms and questionnaires to envelopes at the front of the room. The confederates were not permitted to view the contents of these envelopes. These envelopes were submitted to me at the beginning of "Study 2" (without the subjects' knowledge). I was solely responsible for scoring the questionnaires and inputting/analyzing the data. In addition, only I had access to the names and addresses of the subjects in order

to send out the results of the study when they became available.

Instruments

The major constructs that were measured in this study included: (a) body size/shape satisfaction; and (b) overall and specific state self-esteem. Body size/shape satisfaction was measured using the following posttest instruments: (a) the Multidimensional Body-Self Relations Questionnaire; (b) the Body Esteem Scale; (c) the Contour Drawing Rating Scale; and (d) the Health Questionnaire. Overall and specific state self-esteem was measured using the State Self-Esteem Scale. In addition to completing these posttest measures, subjects were also asked to complete the EAT-26 to screen for eating disorder symptomatology, and a demographic questionnaire to gather descriptive information about the sample. A superfluous questionnaire, the Multidimensional Television Episode Questionnaire, was used to help conceal the true nature and purpose of the study. Each instrument will now be discussed in detail.

Measurement of Demographic Variables

Demographic Questionnaire. A demographic questionnaire (see Appendix L) that I constructed was used to gather descriptive information (i.e., age, ethnicity, marital

status, parental status, educational level, employment status, religion, and parental educational level) about the sample. Parental educational level provided a rough indicator of the background of the subjects.

Health Questionnaire: Descriptive variables. A questionnaire (see Appendix I) that I constructed was used to gather the following descriptive information: (a) a subject's highest weight and lowest weight (i.e., weight range) since reaching her present height; (b) what a subject considered to be the average weight for her height; (c) what a subject considered to be the healthiest weight for her height; (d) whether a subject had ever been on a self-imposed weight loss diet; (e) whether a subject was currently on a self-imposed weight loss diet (as well as how much weight she was trying to lose and how important it was to lose this amount of weight); (f) the frequency that a subject engaged in physical activity; (g) a subject's weight status (the operational definition for this variable is provided below); (h) whether a subject was currently pregnant; and (i) whether a subject was currently on a medically-prescribed therapeutic diet. Had any subjects indicated that they were currently pregnant or on a medically-prescribed therapeutic diet that might have affected their scores on the EAT-26, they would have been

excluded from the data analyses. In addition to measuring the aforementioned variables, the Health Questionnaire was also used to measure self-reported weight satisfaction. This variable will be discussed in the section addressing measurement of body size/shape satisfaction. The Health Questionnaire also included other health-related items that were irrelevant to the study so as to conceal the true nature of the study.

The weight status variable was measured in the following way. Each subject was asked to report her present height and weight on this questionnaire. (Self-report was relied on rather than taking actual weight and height measurements so as not to cause anxiety or discomfort for subjects, particularly those with disordered eating patterns.) From this information, an individual was considered of healthy weight if her body mass index, defined as weight divided by height squared, was between 20 and 27 and thus within the "generally acceptable range of weight for health" (Minister of National Health and Welfare, 1988). An individual was considered underweight if her body mass index fell below this range, and overweight if it fell above this range.

The body mass index was used instead of the widely used Metropolitan Life Foundation's height and weight tables (1983) for the following two reasons:

1. The body mass index depends only upon the measures of weight and height. The 1983 Metropolitan height and weight tables require not only height and weight information, but also an approximation of body frame (determined by measuring an individual's elbow breadth). Thus, for purposes of simplicity and accessibility, the body mass index was employed.

2. The 1983 Metropolitan height and weight tables provide standards for adults between the ages of 25 and 59. Because the age range of this study is 18-30, norms for younger adults were required. The body mass index met this need as norms for ages 15-69 were provided for it.

Measurement of the Classification Variable

EAT-26. The EAT-26 (see Appendix K) is a self-report questionnaire that was used as a screening tool to separate those individuals who reported symptoms of eating disorders from those who did not. A psychometrically refined version of the original Eating Disorder Test-40 (EAT-40) (Garner & Garfinkel, 1979), the EAT-26 lists 26 eating-related behaviors to which individuals respond on a 6-point scale ("Always," "Usually," "Often," "Sometimes," "Rarely," or

"Never") to indicate how frequently each item applies to them. Rather than using a 1-6 scoring system, the EAT-26 uses a 0-3 scoring system. Responses for each item are weighted from zero to three as follows:

1. A score of three assigned to the most symptomatic response ("Always" or "Never" depending on whether the item is keyed in the positive or negative direction).

2. A score of two is assigned to the immediately adjacent response.

3. A score of one is assigned to the next adjacent response.

4. A score of zero is assigned to the remaining three choices, which are farthest in the "asymptomatic" direction.

Thus, positively scored items are weighted as follows: Always = 3, Usually = 2, Often = 1, Sometimes = 0, Rarely = 0, and Never = 0. The only negatively keyed item is weighted in the opposite manner: Never = 3, Rarely = 2, Sometimes = 1, Often = 0, Usually = 0, and Always = 0. The EAT-26 is thus a continuous measure of disordered eating with total EAT-26 scores ranging from 0 to 78. Higher scores are associated with more disordered eating. Garner, Olmsted, Bohr, and Garfinkel (1982) suggest using a cutoff score of 20 on the EAT-26 to discriminate between eating disordered and non-eating disordered individuals.

The EAT-26 was selected on the basis of its reported reliability and validity. This instrument demonstrates a high degree of internal consistency reliability with a Cronbach's alpha level of .90 for a sample of eating disordered subjects and a Cronbach's alpha level of .83 for a comparison group of college females (Garner et al., 1982).

Construct-related validity evidence has been gathered for the EAT-26 in a convergent validity study by Garner and colleagues (1982) that examined the relationship between EAT-26 scores and rater judgments based on Feighner and colleagues' (1972) diagnostic criteria. The researchers reported that 84% of cases were correctly classified based on the total EAT-26 score. Thus, the EAT-26 appears to be a good predictor of group membership.

In a discriminant validity study, Garner and colleagues (1982) reported that scores on the overall scale of the EAT-26 were not significantly related to age of onset of the disorder, frequency of bulimic episodes, the percentage of average weight at testing, previous minimum and maximum adult weights, and the duration of the disorder.

Adequate criterion-related validity evidence has been gathered for the EAT-26. In a concurrent validity study, Garner and colleagues (1982) reported that the EAT-26 was significantly related to psychometric measures and clinical

features within a sample of eating disordered subjects. Specifically, scores on the overall scale of the EAT-26 correlated with a composite body-image score (r = .57), a measure of body dissatisfaction (r = .44), and estimates of current body size (r = .42) and ideal body size (r = -.38).

Measurement of Superfluous Variables

Multidimensional Television Episode Questionnaire.

This questionnaire (see Appendix C) that I constructed was used to conceal the true purpose of the study. This questionnaire also helped to legitimize "Study 1" as an actual study. The data from this questionnaire were peripheral to the study.

Measures of Body Size/Shape Satisfaction

Multidimensional Body-Self Relations Questionnaire.

This instrument (see Appendix F) is a self-report inventory that was used to assess the attitudinal aspects of body image and weight-related variables. Cash (1990) described that this instrument is based on the conceptualization of body image as "one's attitudinal dispositions toward the physical self" (p. 1). These "dispositions include affective/evaluative, cognitive/attentional, and behavioral components. Moreover, the physical self encompasses not only the aesthetics of one's physical size/appearance but

also its competence or 'fitness' and its biological integrity or 'health/illness'" (Cash, 1990, p. 1).

The Multidimensional Body-Self Relations Questionnaire was derived from a longer earlier version entitled the Body-Self Relations Questionnaire (BSRQ) (Winstead & Cash, 1984). Cash and colleagues (1986) used the Multidimensional Body-Self Relations Questionnaire in a national body image survey from which its general population norms were developed. The instrument's 69 items are scored on a 5-point Likert scale and comprise three groups of subscales: (a) the revised BSRQ (short form) subscales (54 items); (b) the Body-Areas Satisfaction Scale (9 items); and (c) the weight attitude scales (6 items). Each group of subscales will now be discussed.

The 54-item revised BSRQ subscales were generated from a 3 x 2 conceptual matrix of three somatic domains (physical appearance, physical fitness, and health) crossed with two attitudinal dimensions: (a) Evaluation (i.e., the extent of liking, attainment, and satisfaction), and (b) Orientation (i.e., the degree of cognitive importance of, and attention to, the somatic domain and the behaviors associated with maintaining or improving aspects of the domain). This conceptual matrix thus yields six factor subscales. Of these six subscales, only the 7-item Appearance Evaluation

subscale was examined in the current study. Illustrative examples of items in this subscale include: (a) "My body is sexually appealing"; (b) "Most people would consider me good-looking"; and (c) "I like the way I look without my clothes on." High scorers on this subscale indicate feeling mostly positive and satisfied with their physical appearance, whereas low scorers feel generally unhappy with their appearance.

The 8-item Body-Areas Satisfaction Scale evaluates an individual's self-reported satisfaction or dissatisfaction with discrete body features (e.g., face, hair, lower torso, mid torso, upper torso, muscle tone, weight, height, and overall appearance), and thus bears resemblance to the Body Esteem Scale, which will be discussed in the next section. High scorers on this scale of the Multidimensional Body-Self Relations Questionnaire are generally satisfied with most areas of their bodies, whereas low scorers are dissatisfied with the size or appearance of many areas of their bodies.

Of the questionnaire's two weight attitude scales, only the Self-Classified Weight Scale was examined in the current research. The two items comprising this scale assess how one perceives and labels one's weight. Given a rating scale that ranges from very underweight to very overweight, subjects are asked to rate their own weight and to rate how

most other people would rate their weight. High scorers on this scale perceive and label themselves as more overweight than low scorers.

The Multidimensional Body-Self Relations Questionnaire was selected for use in this study because: (a) it is considered one of the most comprehensive instruments for the measurement of the subjective aspects of body image, and (b) it has demonstrated adequate reliability and validity. Cash (1990) reported that the Multidimensional Body-Self Relations Questionnaire demonstrated satisfactory internal consistency reliability with subscale Cronbach's alpha values ranging from .73 to .90 for females, and from .70 to .91 for males. One month test-retest reliability coefficients of its subscales ranged from .74 to .94 for females, and from .71 to .89 for males (Cash, 1990).

Numerous studies provide adequate criterion-related validity evidence for the original BSRQ from which the Multidimensional Body-Self Relations Questionnaire was derived. In a concurrent study, Cash & Green (1986) found a significant correlation (r = -.42) between the BSRQ Appearance Evaluation subscale and the subjective rating index of the Body Image Detection Device (Ruff & Barrios, 1986). In other words, subjects who expressed satisfaction with their physical appearance were more likely to appraise

their bodies as thinner than their peers' bodies. Keeton and colleagues (1990) also reported that the BSRQ Appearance Evaluation subscale was significantly correlated with the following measures: (a) the mean of the level of overall body satisfaction on the Body Parts Satisfaction Scale (Berscheid et al., 1973) (r = .61 and .66 for women and men, respectively); (b) the specific Weight Satisfaction factor of the Body Parts Satisfaction Scale (r = .61 and .54 for women and men, respectively); (c) the degree of discomfort indicated during a mirror focus procedure (r = -.46 for women); (d) the subjective rating index of the Body Image Detection Device (r = -.32 for women); (e) the global severity index of the Symptom Checklist 90-R (Derogatis, 1977) (r = -.32 and -.47 for women and men, respectively); (f) the overall score on the Bulimia Test (Smith & Thelen, 1984) (r = -.49 and -.29 for women and men, respectively); (g) the discrepancy index (computed as self-estimate/ideal estimate) of the Body Image Detection Device (r = -.40 for women); and (h) the self-ideal discrepancy score of the Body Image Assessment Procedure-Revised (Williamson, Kelley, Davis, Ruggerio, & Blouin, 1985) (r = -.36 for women).

Adequate construct-related evidence has been gathered for the Multidimensional Body-Self Relations Questionnaire. Cash and Green (1986) found that overweight subjects scored

significantly lower (i.e., expressed a general unhappiness with their physical appearance) on the Appearance Evaluation subscale of the BSRQ than did normal or underweight subjects, whose scores did not significantly differ. Keeton and colleagues (1990) provided evidence to support the discriminant validity of the BSRQ. They found that the BSRQ was not significantly related to perceptual distortion of body size as measured by the Body Image Detection Device and the Body Image Assessment Procedure-Revised.

Body Esteem Scale. The Body Esteem Scale (see Appendix G) is a self-report inventory that was used in this study to measure dimensions related to female body esteem. It is a psychometrically refined version of the Body Cathexis Scale developed by Secord and Jourard in 1953. Unlike the unidimensional Body Cathexis Scale, the Body Esteem Scale is a multidimensional instrument that yields three gender-specific factors comprising body esteem. For females, body esteem is associated with attitudes toward: (a) Sexual Attractiveness (i.e., body parts whose appearance can be altered by cosmetics but not exercise); (b) Weight Concern (i.e., body parts that can be altered through exercise or control of food intake); and (c) Physical Condition (i.e., items related to stamina, strength, and agility).

The Body Esteem Scale lists 35 body parts and functions to which individuals respond on a 5-point Likert scale ranging from 1 (have strong negative feelings) to 5 (have strong positive feelings). Likert scores are summed across the items comprising each subscale to yield subscale scores. The subscale score ranges are as follows: (a) Sexual Attractiveness subscale: 13 to 65; (b) Weight Concern subscale: 10 to 50; and (c) Physical Condition subscale: 9 to 45. Higher subscale scores reflect more positive subjective appraisals of body parts and functions related to the particular factor being examined.

The Body Esteem Scale was selected on the basis of its reported reliability and validity. This instrument has demonstrated adequate internal reliability with subscale Cronbach's alpha values ranging from .78 to .87 (Franzoi & Shields, 1984), suggesting that each subscale's responses are reasonably internally consistent. The test-retest reliability of the Body Esteem Scale was demonstrated by Franzoi (1994) within a 3-month interval. The following reliability coefficients for the three female subscales were fairly high: (a) Sexual Attractiveness, r = .81; (b) Weight Concern, r = .87; and (c) Physical Condition, r = .75.

There have been several reports of the Body Esteem Scale's relationship with established measures of self-

esteem, providing adequate criterion-related evidence for the instrument. In a concurrent validity study, Franzoi and Shields (1984) found moderate positive correlations between the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and the female Sexual Attractiveness subscale (r = .32), and between the Rosenberg Self-Esteem Scale and the female Physical Condition subscale (r = .35). In a similar study, Franzoi and Herzog (1986) found significant correlations between the female subscales of the Body Esteem Scale and the Rosenberg Self-Esteem Scale, with coefficients ranging between .21 and .39. Consistent with these results was Thomas and Freeman's (1990) report of moderate positive correlations between the Body Esteem Scale female subscales and the total score on the Tennessee Self-Concept Scale (Fitts, 1965), in which coefficients ranged from .24 to .34. These results suggest that the Body Esteem Scale measures a particular type of self-esteem.

Franzoi and Herzog (1986) assessed the concurrent validity of the Body Esteem Scale by determining the relationship between its subscales and other self-report measures. These researchers found that: (a) the female subscales (with the exception of the female Physical Condition factor) correlated with attractiveness (r = .21-.22); (b) the female subscales were moderately to highly

correlated with body competence, that is, the assessment of one's agility and overall body strength (r = .20-.63); (c) the female Weight Concern subscale was moderately associated with the percentage of time spent thinking of food as adding weight to one's body (r = -.35); and (d) the female Physical Condition subscale was most highly related to the amount of aerobic exercise engaged in per week (r = .46), and modestly related to the amount of anaerobic exercise engaged in per week (r = .25) and the percentage of time spent thinking of food as energy (r = .24).

Thomas and Freeman (1990) provided further criterion-related validity evidence for the Body Esteem Scale. In a concurrent study, they examined the female subscales as they related to other body-image measures, weight variables, and self-report variables. These researchers found that all of the female subscales were positively associated with the Physical Self-Concept subscale of the Tennessee Self-Concept Scale with correlation coefficients ranging between .22 and .55. In addition, the researchers reported the following findings for each of the Body Esteem Scale female subscales:

1. Positive self-appraisals on the Sexual Attractiveness subscale were associated with moderately high self-rated attractiveness scores (r = .30) and decreased social anxiety scores (r = -.30).

2. Positive self-appraisals on the Weight Concern subscale were associated with increased self-rated weight satisfaction (r = .68), increased self-rated attractiveness (r = .37), decreased public self-consciousness (r = -.24), and lower current body weight (r = -.52). Scores on the Weight Concern subscale were strongly negatively correlated with scores on the Pursuit of Thinness subscale (r = -.51), the Bulimia subscale (r = -.40), and the Body Dissatisfaction subscale (r = -.81) of the Eating Disorder Inventory (Garner et al., 1983). In other words, self-reported overconcern with dieting and weight gain, episodic food bingeing/purging, and the perception of specific body parts as too large were highly related to less positive Weight Concern scores. The Weight Concern subscale was also correlated with the Figure Rating Scale (Fallon & Rozin, 1985). Specifically, negative self-appraisals on the Weight Concern subscale were related to the selection of heavier figure silhouettes to represent current body shape (r = -.62). Decreased body esteem on the Weight Concern subscale was also associated with larger discrepancies between self-selected current and ideal body shapes (r = -.66) and between current and attractive body shapes (r = -.63).

3. Positive self-appraisals on the Physical Condition subscale were weakly although significantly associated with

lower current weight (r = -.20), decreased social anxiety (r = -.25), and lower scores on the Bulimia and Body Dissatisfaction subscales of the Eating Disorder Inventory (r = -.22 and -.31, respectively). The Physical Condition subscale was also weakly correlated with the Figure Rating Scale. Specifically, scores on the Physical Condition subscale were weakly associated with the selection of thinner figure silhouettes to represent current body shape (r = -.27), and smaller discrepancies between current and ideal body shapes (r = -.23) and between current and attractive body shapes (r = -.24).

Adequate construct-related evidence has been gathered for the Body Esteem Scale. Supportive of the convergent validity of the Body Esteem Scale was Thomas and Freeman's (1990) finding that low scores on the Weight Concern subscale of the Body Esteem Scale were moderately associated with greater frontal body dissatisfaction (r = -.48) and profile body dissatisfaction (r = -.55) as measured by the Video Camera Assessment procedure, a phototechnical body-size estimation procedure developed by Freeman, Thomas, Solyom, and Hunter (1984). Thomas and Freeman (1990) also reported that scores on the Physical Condition subscale were weakly associated with greater frontal body dissatisfaction

(r = -.21) and profile body dissatisfaction (r = -.24) as measured by the Video Camera Assessment procedure.

Franzoi and Shields (1984) provided evidence supporting construct-related validity among the Body Esteem Scale's female subscales. The researchers compared the subscale scores of anorexic and non-anorexic females, and found that only scores on the Weight Concern subscale discriminated anorexic females from non-anorexic females.

Discriminant validity studies have examined the Body Esteem Scale subscales in relation to other variables. Franzoi and Herzog (1986) reported that the Body Esteem Scale subscales only weakly correlated with the private and public body consciousness scales of the Body Consciousness Questionnaire (Miller, Murphy, & Buss, 1981) with significant correlation coefficients ranging from .16 to .28. Franzoi and Herzog (1986) remarked that "this finding indicates that body esteem, as measured by the Body Esteem Scale, is not substantially related to how attentive people are to their bodies" (p. 28).

Contour Drawing Rating Scale. The Contour Drawing Rating Scale (see Appendix H) was used to assess overall body satisfaction. An improvement over similar body image assessment tools, the Contour Drawing Rating Scale consists of a set of drawings with precisely graduated increments

between adjacent sizes, which appear to be realistic representations of the human form. The scale contains nine adult-like drawings of each sex ordered from very thin to very heavy. Each figure corresponds to a number from 10 to 90 (10 = thinnest; 90 = heaviest). This enables subjects to choose a figure not represented on the drawing by reporting any number between those represented. (In this study, only the female drawings were used.) Subjects are asked to select: (a) the figure that most accurately depicts what they perceive to be their current body size ("current figure"); (b) the figure that most accurately depicts the body size that they would most prefer ("ideal figure"); and (c) the figure that most accurately depicts what they think the opposite sex finds most attractive ("attractive figure"). If a discrepancy (positive or negative) is found between current figure and ideal figure, it indicates that the subject is dissatisfied with her body. The discrepancy (positive or negative) between current figure and attractive figure provides another measure of body dissatisfaction. A positive discrepancy between ratings indicates a desire to be thinner, whereas a negative discrepancy indicates a desire to be heavier. Where no discrepancy exists between ratings, the subject is considered to be satisfied with her body.

Unlike many other figure rating instruments, the Contour Drawing Rating Scale has been demonstrated to be a reliable and valid measure. Thompson and Gray (1995) reported adequate test-retest reliability of the instrument within a 1-week interval (r = .78). Estimates of internal consistency are not applicable to an instrument such as the Contour Drawing Rating Scale.

In the validation of this instrument, Thompson and Gray (1995) presented the contour drawings of each sex in random order to a group of subjects, and asked them to rank order the drawings from thinnest to heaviest. Virtually all of the drawings were rank-ordered correctly (95% and 96% for the female set and male set of drawings, respectively). Thus, based on these results, it would appear that subjects could easily identify the subtle differences between successive drawings.

Subjects were also asked to indicate which drawings they believed to be anorexic or obese. Subjects indicated that female anorexics ranged from Drawings 1 to 4, and that male anorexics ranged from Drawings 1 to 3. Thus, only thin figures were rated as anorexic. Correspondingly, only drawings from the larger end of the body-size continuum (Drawings 7 to 9 of each sex) were rated as obese by subjects.

Criterion-related validity evidence has been gathered for the Contour Drawing Rating Scale using concurrent studies. Thompson and Gray (1995) found that drawings chosen by subjects to depict their current figure were significantly related to self-reported weight (r = .71) and body mass index (r = .59) in a female sample. Thompson (1993) also reported a significant association between current figure rating and body mass index for females (r = .76). (For an explanation of the body mass index, refer to the section on demographic variables in which the Health Questionnaire is discussed.) Thus, the results from these concurrent studies indicate significant associations between perceived body size and actual body size.

Health Questionnaire: Self-reported weight satisfaction variable. In addition to providing descriptive information about the sample (see section on demographic variables), the Health Questionnaire (see Appendix I) was used to determine subjects' self-reported weight satisfaction. (The operational definition for this variable is provided below.) This questionnaire also required subjects to answer other health-related items that were irrelevant to the study so as to conceal the true nature of the study.

Self-reported weight satisfaction was operationalized by the discrepancy between a subject's current weight and

her perceived ideal weight. For individuals who wished to weigh less than their current weight, the discrepancy was a positive number. These individuals were considered to be dissatisfied with their bodies, and wished to be thinner. For individuals who aspired to weigh more than they currently weighed, the discrepancy was a negative number. These individuals were also considered to be dissatisfied with their bodies, but these individuals wished to be heavier. For individuals who currently weighed what they aspire to weigh, the discrepancy was equal to zero. These individuals were considered to be satisfied with their bodies, wishing neither to be thinner or heavier than what they currently weighed.

Measures of State Self-Esteem

State Self-Esteem Scale. The State Self-Esteem Scale (see questionnaire entitled Current Thoughts in Appendix J) is a self-report questionnaire that was used in this study to measure momentary fluctuations in state self-esteem. Although the State Self-Esteem Scale consists of an overall scale and three subscales, only the overall scale and the Appearance subscale were examined in the current study, and therefore discussed in this section. The six-item Appearance subscale measures the extent to which one feels satisfied with his/her physical appearance. Illustrative

examples of items in this subscale include: (a) "I feel satisfied with the way my body looks right now"; (b) "I am pleased with my appearance right now"; and (c) "I am dissatisfied with my weight." The Appearance factor has been found to be sensitive to changes in appearance-related aspects of self-esteem.

The State Self-Esteem Scale lists 20 statements to which individuals indicate the degree to which each item applies to them by responding on a 5-point Likert scale ranging from 1 (Not at All) to 5 (Extremely). Total scores range from 20 to 100, with larger numbers indicating higher self-esteem. Scores on the six-item Appearance subscale range from 6 to 30.

The State Self-Esteem Scale was selected on the basis of its reported reliability and validity. Analysis with Cronbach's coefficient alpha indicated an impressive estimate of internal consistency (*alpha* = .92) within the scale (Heatherton & Polivy, 1991). Moderate test-retest reliability coefficients for the State Self-Esteem Scale overall scale and the Appearance subscale within a 1-month interval were reported (r = .70 and r = .74, respectively) (Heatherton & Polivy, 1991). These researchers also reported the following test-retest reliability coefficients within a 2-month interval: (a) overall scale, r = .72; and

(b) Appearance subscale, r = .65. Heatherton and Polivy (1991) explained the relative stability of the State Self-Esteem Scale as follows:

> Although the notion of states implies instability in response, the State Self-Esteem Scale and its factors were shown to be relatively stable over the course of this study. This supports our contention that there is a baseline of self-esteem around which there are minor temporary fluctuations (which can be measured, however). (p. 904)

The State Self-Esteem Scale appears to be a valid measure of naturally occurring, laboratory, and clinical changes in self-esteem. For instance, Heatherton and Polivy (1991) found that the Appearance subscale was dramatically affected by a therapeutic treatment designed to improve overall self-esteem.

Providing criterion-related validity evidence for the State Self-Esteem Scale was Heatherton and Polivy's (1991) report that many self-report measures significantly correlated with the overall scale and Appearance subscale of the State Self-Esteem Scale in a concurrent validity study. Specifically, the researchers found the following:

1. Individuals who scored high overall on the State Self-Esteem Scale were likely to score high on measures of

global and trait self-esteem, social desirability, satisfaction with height and current figure. Low overall scores on the State Self-Esteem Scale were related to depression (state and trait), state hostility, trait anxiety, public self-consciousness, and dietary restraint.

2. The Appearance subscale was most highly associated with satisfaction with current figure (r = .72), global self-esteem (r = .68), trait social self-esteem (r = .56), trait depression (r = -.54), and dieting restraint (r = -.45).

Heatherton and Polivy (1991) also provided construct-related validity evidence for the State Self-Esteem Scale. In a discriminant validity study, the State Self-Esteem Scale overall scale and the Appearance subscale were not significantly correlated with private self-consciousness. In addition, the Appearance subscale was not significantly related to public self-consciousness or social desirability.

CHAPTER IV

RESULTS

This chapter provides a summary of the results of the study in the following format: In the first section, the data will be analyzed to determine whether the experimental treatment had the expected effects on body image. In the second section, the data will be analyzed to determine whether the experimental treatment affected self-esteem in the expected manner. In the third section, treatment condition will be ignored, and the pooled data for the non-eating disordered group will be compared to the pooled data for 9 subjects classified by the EAT-26 as at risk for having or developing an eating disorder to assess whether the two groups differed on the dependent variables in a manner consistent with eating disorder characteristics.

Did the Experimental Treatment Affect Body Image?

My first major research question was: Among females between the ages of 18 and 30, would those who watched the episode of *Baywatch* indicate greater body size/shape dissatisfaction than those who watched the episode of the control program (i.e., *The X-Files*)? To investigate this question, inferential analyses were conducted on the body image data from the non-eating disordered group. The first section will describe these findings. In the second

section, the data from the 9 subjects classified as at risk for having or developing an eating disorder will be examined. Because of the small numbers of at risk subjects, inferential analyses were not possible; however, effect sizes were calculated as an alternative means of expressing the difference between at risk experimental and control groups on the body image variables. Thus, the second section will describe the direction and magnitude of effects for the at risk group.

Inferential Analyses

To investigate my first research question using the non-eating disordered data, a one-way multivariate analysis of variance (MANOVA) with the variable of Group (experimental vs. control) a between-subjects factor was performed on the following dependent variables: (a) scores on the Appearance Evaluation subscale and the Body-Areas Satisfaction Scale of the Multidimensional Body-Self Relations Questionnaire; (b) scores on the Weight Concern subscale, Sexual Attractiveness subscale, and Physical Condition subscale of the Body Esteem Scale; (c) scores indicating the discrepancy between the perceived current and ideal figure ratings and between the perceived current and attractive figure ratings of the Contour Drawing Rating

Scale; and (d) scores indicating the discrepancy between current and ideal weights on the Health Questionnaire.

The total *N* of 78 was reduced to 77 with the deletion of a control case missing scores on the Body Esteem Scale subscales and the current-ideal weight discrepancy. Results of evaluation of assumptions of normality, linearity, and homogeneity of variance-covariance matrices were satisfactory. Using Wilks' Lambda, the MANOVA revealed no significant differences between the groups on the aforementioned dependent variables, $F(8, 68) = 1.64$, $p = .13$.

A corresponding series of univariate analyses of variance procedures were completed, one for each of the separate dependent variables. As shown in Table 4, the non-eating disordered experimental and control groups had very similar mean scores on the body image variables. No significant differences were found between the groups. The statistical values for the univariate analyses of variance are reported in Table 5.

One dependent body image variable was excluded from the MANOVA procedures. Scores on the Self-Classified Weight Scale of the Multidimensional Body-Self Relations Questionnaire violated the assumption of normality, which is a prerequisite for a MANOVA. The violation was created by

Table 4

Mean Body Image Scores for the Experimental (E) and Control (C) Groups of the Non-Eating Disordered and At Risk Groups

Body image variable	Non-eating disordered group		At risk group	
	E[a]	C[b]	E[c]	C[d]
Multidimensional Body-Self Relations Questionnaire				
Appearance evaluation subscale				
M	3.59	3.35	2.77	2.75
SD	0.65	0.85	1.02	1.17
Body-areas satisfaction subscale				
M	3.24	3.25	3.18	2.79
SD	0.70	0.77	0.67	0.73
Self-classified weight scale				
M	3.26	3.30	3.20	4.00
SD	0.59	0.64	0.76	0.91
Body Esteem Scale				
Weight concern subscale				
M	30.05	29.32	25.00	22.00
SD	7.14	9.37	7.65	12.11
Sexual attractiveness subscale				
M	45.90	47.95	43.20	42.50
SD	5.82	7.92	6.30	4.93

table continues

Body image variable	Non-eating disordered group		At risk group	
	E[a]	C[b]	E[c]	C[d]
Body Esteem Scale				
Physical condition subscale				
M	29.23	30.38	29.60	24.75
SD	6.59	7.06	8.02	5.68
Contour Drawing Rating Scale				
Current-ideal figure discrepancy				
M	10.20	10.65	21.00	25.25
SD	10.23	10.26	15.17	19.41
Current-attractive figure discrepancy				
M	13.27	16.00	19.00	36.00
SD	15.64	13.25	16.36	22.52
Health Questionnaire				
Current-ideal weight discrepancy[e]				
M	1.94	1.64	2.36	7.90
SD	2.29	1.49	2.41	6.51

[a] $n = 40$. [b] $n = 37$; The MANOVA was based on 37 rather than 38 control subjects for all body image variables because one control case missed scores on the Body Esteem Scale subscales and the current-ideal weight discrepancy. $n = 38$ control subjects for the Self-Classified Weight Scale variable, which was excluded from the MANOVA. [c] $n = 5$. [d] $n = 9$. [e] This variable is expressed in terms of body mass index units (kg/m^2).

Table 5

Univariate Analyses of Variance of Body Image Dependent Variables

Source of variance	Dependent variable	df	*F*	Significance level of *F*
	Multidimensional Body-Self Relations Questionnaire			
Group status[a]	Appearance evaluation subscale score	1, 75	1.90	.17
Group status	Body-areas satisfaction scale score	1, 75	0.01	.93
	Body Esteem Scale			
Group status	Weight concern subscale score	1, 75	0.15	.70
Group status	Sexual attractiveness subscale score	1, 75	1.69	.20
Group status	Physical condition subscale score	1, 75	0.55	.46
	Contour Drawing Rating Scale			
Group status	Current-ideal figure discrepancy score	1, 75	0.04	.85
Group status	Current-attractive figure discrepancy score	1, 75	0.68	.41
	Health Questionnaire			
Group status	Current-ideal weight discrepancy score	1, 75	0.44	.51

[a]The group status variable consists of the experimental group (n = 40) and the control group (n = 37).

right skewness for the experimental group on this variable. The assumption of normality was unable to be satisfied by performing a data transformation. As a result, the Mann-Whitney test was employed as a nonparametric alternative. This test indicated that the differences between groups on this variable were not significantly significant, U = 708.00, p = .59. Table 4 supports the finding that the groups had similar mean scores on this variable.

The mean figure ratings on the Contour Drawing Rating Scale of the non-eating disordered experimental and control groups are reported in Table 6 and illustrated in Figure 1. In order to test (a) whether the group means differed from each other and (b) whether the mean figure ratings differed from each other, I conducted a 2 x 3 repeated measures analysis of variance (ANOVA) with the variable of Group (experimental vs. control) a between-subjects factor, and Figure (current vs. ideal vs. attractive) a within-subjects factor with repeated measures. No significant main effect for Group was found, $F(1, 76) = 0.85$, $p = .36$. The table and the figure support that the non-eating disordered experimental and control groups had similar mean figure ratings of (a) current figure, (b) ideal figure, and (c) attractive figure. A significant main effect for Figure was found, $F(2, 76) = 65.02$, $p < .001$. The table and the figure

Table 6

Mean Contour Drawing Rating Scale Ratings for the Non-Eating Disordered Experimental and Control Groups and the At Risk Experimental and Control Groups

Group	Rating		
	Current figure	Ideal figure	Attractive figure
Non-eating disordered			
Experimental[a]			
M	52.68	42.48	39.40
SD	15.39	9.57	9.13
Control[b]			
M	55.92	44.89	39.16
SD	12.22	9.42	9.10
At risk			
Experimental[c]			
M	58.00	37.00	39.00
SD	15.25	5.70	2.24
Control[d]			
M	71.00	45.75	35.00
SD	24.91	8.50	5.77

[a]$n = 40$. [b]$n = 38$. [c]$n = 5$. [d]$n = 4$.

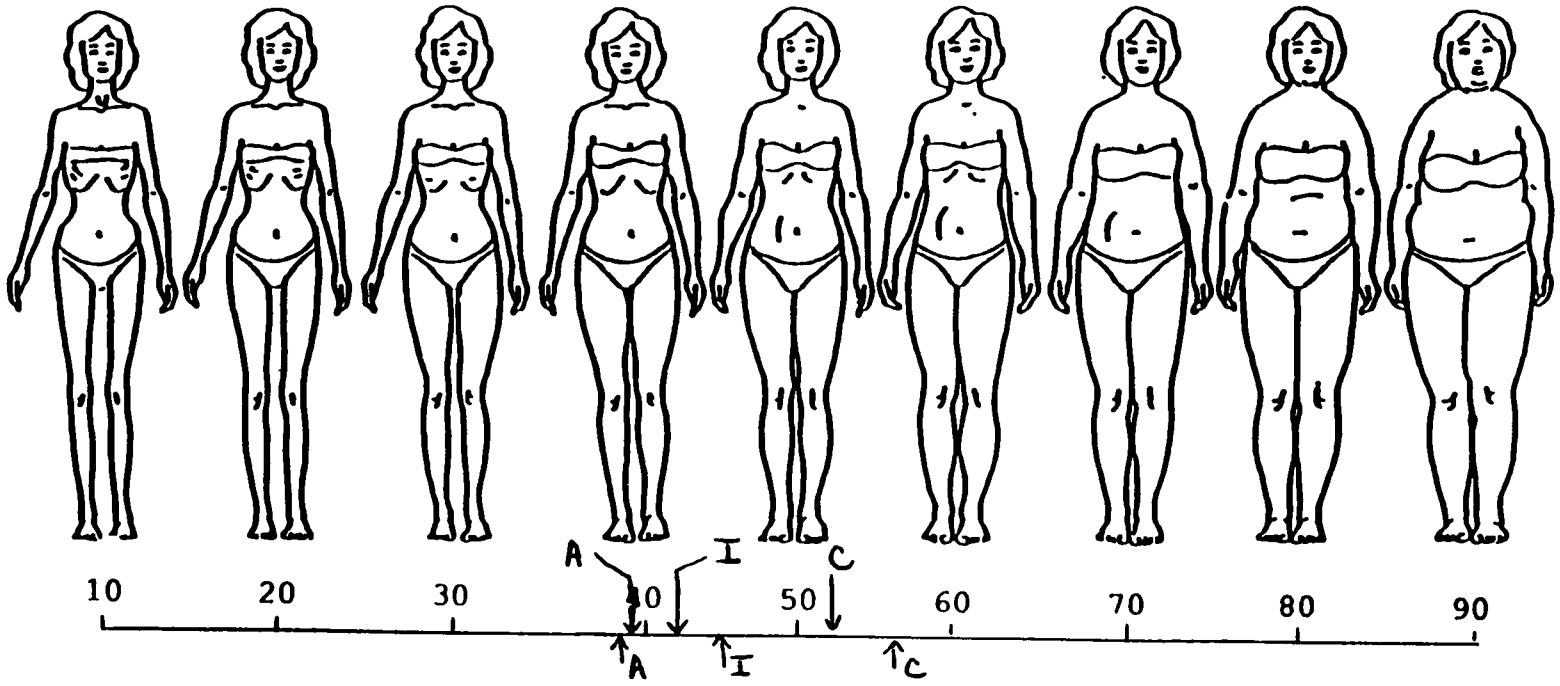

Figure 1. **Mean Contour Drawing Rating Scale ratings by the experimental group (top) and the control group (bottom) of current figure (C), ideal figure (I), and figure most attractive to the opposite sex (A).**

support that the mean figure ratings were fairly dissimilar from one another. No significant interaction between Group and Figure was found, $F(2, 76) = 0.91$, $p = .41$.

As shown by Table 6 and Figure 1, both non-eating disordered groups chose a figure to represent their current body size that was larger than the figure chosen to represent their ideal body size, which, in turn, was larger than the figure chosen to represent the body size they thought would be most attractive to the opposite sex. Post hoc pairwise multiple comparison procedures were performed to evaluate the difference between each pair of means. The difference between the mean current figure and the mean ideal figure was 10.61, which was significant at the .01 level ($p < .001$). The difference between the mean current figure and the mean attractive figure was 15.02, which was also significant at the .01 level ($p < .001$). The difference between the mean ideal figure and the mean attractive figure was 4.41, which was significant at the .01 level ($p < .001$).

The mean weight ratings on the Health Questionnaire of the non-eating disordered experimental and control groups are reported in Table 7. In order to test (a) whether the group means differed from each other and (b) whether the

Table 7

Mean Weight Ratings on the Health Questionnaire for the Non-Eating Disordered Experimental and Control Groups and the At Risk Experimental and Control Groups

Group	Rating	
	Self-reported current weight[a]	Ideal weight[b]
Non-eating disordered		
Experimental[c]		
M	22.98	21.04
SD	3.71	2.22
Control[d]		
M	22.80	21.16
SD	2.95	2.17
At risk		
Experimental[e]		
M	24.30	21.94
SD	7.35	4.96
Control[f]		
M	28.86	20.96
SD	10.98	4.83

[a]Self-reported current weight is expressed in terms of body mass index units (kg/m^2). [b]Ideal weight is expressed in terms of body mass index units (kg/m^2). [c]$n = 40$. [d]$n = 37$. [e]$n = 5$. [f]$n = 4$.

mean weight ratings differed from each other, I conducted a 2 x 2 repeated measures ANOVA with the variable of Group (experimental vs. control) a between-subjects factor, and Weight (current weight vs. ideal weight) a within-subjects factor with repeated measures. No significant main effect for Group was found, $F(1, 75) = 0.003$, $p = .96$. The table supports that the non-eating disordered experimental and control groups had very similar mean ratings of (a) current weight and (b) ideal weight. A significant main effect for Weight was found, $F(1, 75) = 65.01$, $p < .001$. The table supports that both groups indicated a mean current weight that was higher than their mean ideal weight. No significant interaction between Group and Weight was found, $F(1, 75) = 0.44$, $p = .51$.

Direction and Magnitude of Effects

The 9 at risk group subjects were divided approximately evenly between the experimental group (5 subjects) and the control group (4 subjects), which allowed for some comparisons to be made between groups on the body image variables. Given the small number of subjects, however, inferential statistical analyses were not conducted. Effect sizes were considered instead to describe the direction and magnitude of the difference between the means of the experimental and control groups. Effect size is defined as

the difference between control and experimental means divided by the standard deviation of the control group. This ratio is expressed in standard deviation units. Following the recommendation of Fraenkel and Wallen (1996), a 0.5 or larger standard deviation unit difference between the control and experimental group will be interpreted as a substantial difference.

To investigate whether the experimental treatment had an effect on the body image variables of the at risk group, I first examined the means of the at risk experimental and control groups on the body image variables. These means are reported in Table 4. With only a couple of exceptions, the at risk experimental and control groups had relatively less similar mean body image scores than those of the non-eating disordered experimental and control groups. In order to assess whether the differences between the at risk group means were substantial and in the expected direction, effect sizes were calculated. These are reported in Table 8. Substantial effect sizes (i.e., those 0.5 or greater) were found for the following dependent variables: (a) scores on the Body-Areas Satisfaction subscale and the Self-Classified Weight Scale of the Multidimensional Body-Self Relations Questionnaire; (b) the Physical Condition subscale score of

Table 8

Estimated Effect Sizes of Body Image Dependent Variables for the Non-Eating Disordered and At Risk Groups

Dependent variable	Group	
	Non-eating disordered[a]	At risk[b]
Multidimensional Body-Self Relations Questionnaire		
Appearance evaluation subscale score	+0.28	+0.02
Body-areas satisfaction subscale score	-0.01^	+0.53
Self-classified weight scale score	-0.06	-0.88
Body Esteem Scale		
Weight concern subscale score	+0.08	+0.25
Sexual attractiveness subscale score	-0.26^	+0.14
Physical condition subscale score	-0.16^	+0.85
Contour Drawing Rating Scale		
Current-ideal figure discrepancy score	-0.04	-0.22
Current-attractive figure discrepancy score	-0.21	-0.75
Health Questionnaire		
Current-ideal weight discrepancy score	+0.20^	-0.85

Note. The symbol ^ represents an effect size that was in the expected direction.
[a]n = 77 for all variables except Self-Classified Weight Scale in which n = 78. [b]n = 9.

the Body Esteem Scale; (c) the current-attractive figure discrepancy score of the Contour Drawing Rating Scale; and (d) the current-ideal weight discrepancy score of the Health Questionnaire. This suggested the treatment seemed to have an effect on these dependent variables. However, the effect sizes for these as well as the other body image variables were in the opposite direction to what was expected. In contrast, approximately half of the effect sizes calculated for the non-eating disordered group were in the expected direction, but all effect sizes were less than 0.5 standard deviation units, which is consistent with the finding of no significant differences reported in the previous section.

The mean figure ratings on the Contour Drawing Rating Scale of the at risk experimental and control groups are reported in Table 6 and depicted in Figure 2. As shown in the table and the figure, the at risk group means were quite dissimilar from each other on each of the figure ratings. The means of the non-eating disordered experimental and control groups were much more similar on each of the figure ratings. Effect sizes were calculated in order to assess whether the differences between the at risk group means were substantial and in the expected direction. These are reported in Table 9. Effect sizes exceeding 0.5 standard deviation units were found for all of the figure ratings.

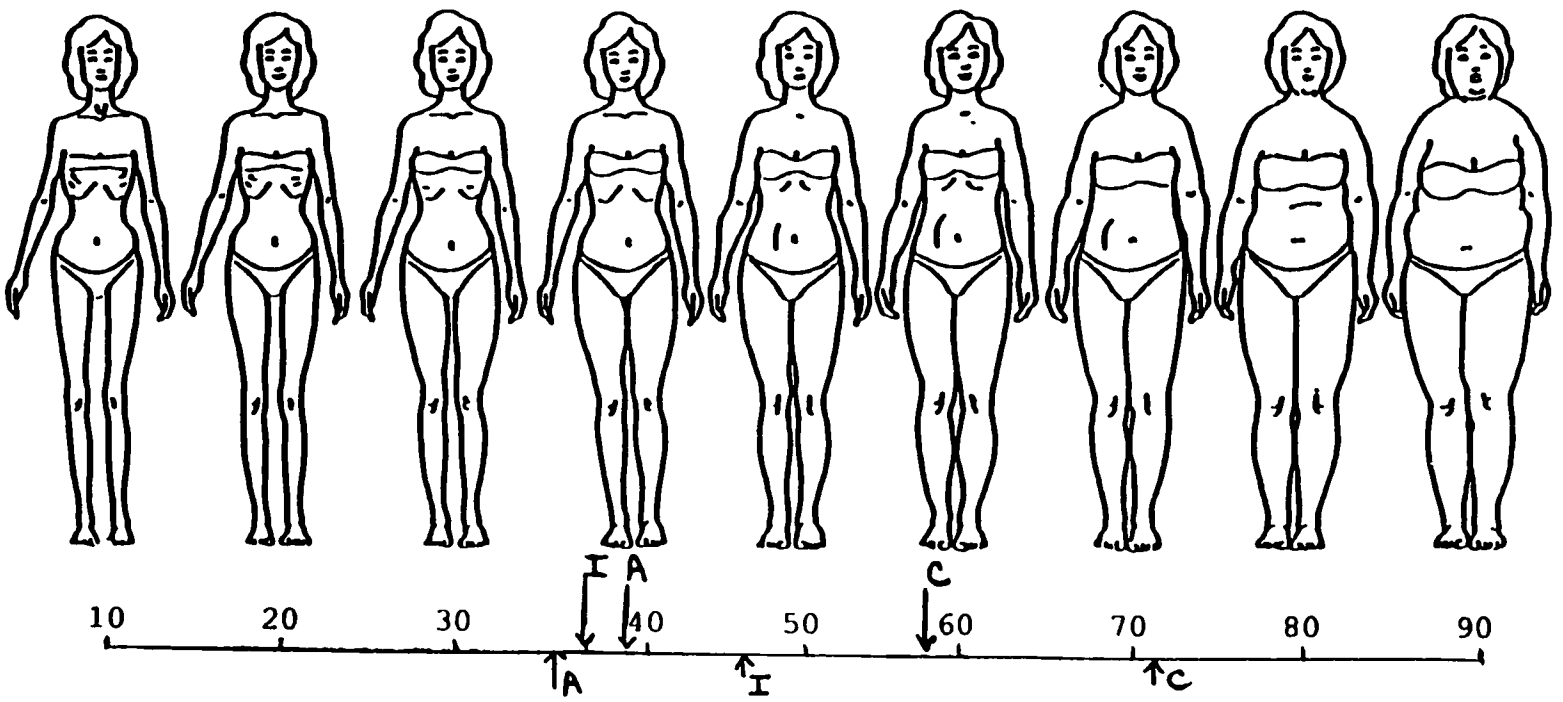

Figure 2. Mean Contour Drawing Rating Scale ratings by the at risk experimental group (top) and the at risk control group (bottom) of current figure (C), ideal figure (I), and figure most attractive to the opposite sex (A).

Table 9

Estimated Effect Sizes of Figure and Weight Ratings for the Non-Eating Disordered and At Risk Groups

Rating	Group	
	Non-eating disordered[a]	At risk[b]
	Contour Drawing Rating Scale	
Current figure	-0.27	-0.52
Ideal figure	-0.26^	-1.03^
Attractive figure	+0.03	+0.69
	Health Questionnaire	
Self-reported weight	+0.06^	-0.42
Ideal weight	-0.06^	+0.20

Note. The symbol ^ represents an effect size that was in the expected direction.
[a]*n* = 78 for Contour Drawing Rating Scale ratings; n = 77 for Health Questionnaire ratings. [b]*n* = 9.

However, only the effect size for the ideal figure rating was in the expected direction. This finding was paralleled in the non-eating disordered group. In contrast to the at risk data, however, all effect sizes calculated for the non-eating disordered group were less than 0.5, which was expected given the nonsignificant findings reported in the previous section.

Table 6 and Figure 2 also show that both at risk groups chose a figure to represent their current body size that was larger than the figure chosen to represent their ideal body size and the body size they thought would be most attractive to the opposite sex. The at risk control group chose an ideal figure that was larger than their attractive figure, whereas the at risk experimental group chose an ideal figure that was smaller than their attractive figure. This differed from the non-eating disordered data in which both the experimental and control groups chose an ideal figure that was larger than their attractive figure.

The mean weight ratings on the Health Questionnaire of the at risk experimental and control groups are shown in Table 7. The at risk group means appeared somewhat different from each other on each of the weight ratings, particularly on the self-reported weight rating. As shown in Table 7, the means of the non-eating disordered

experimental and control groups were more similar on each of the weight ratings. In order to ascertain whether the differences between the at risk group means were substantial and in the expected direction, effect sizes were calculated. These are reported in Table 9. No effect sizes of 0.5 or greater standard deviation units were found for either of the weight ratings. The effect sizes were in the opposite direction to what was expected. In contrast, the effect sizes calculated for the non-eating disordered group were in the expected direction. Similar to the at risk data, however, neither effect size was substantial, which was expected given the nonsignificant findings reported in the previous section.

Did the Experimental Treatment Affect Self-Esteem?

My second major research question was: Among females between the ages of 18 and 30, would those who watched the episode of *Baywatch* have lower overall and specific levels of state self-esteem than those who watched the episode of the control program (i.e., *The X-Files*)? To investigate this question, inferential analyses were conducted on the self-esteem data from the non-eating disordered group. The first section will describe these findings. In the second section, the at risk data will be examined. Because inferential analyses on the at risk data were not possible

for reasons already discussed, effect sizes were calculated to express the differences between experimental and control groups on the self-esteem variables. Thus, the second section will describe the magnitude and direction of effects for the at risk group.

Inferential Analyses

To investigate my second research question using the non-eating disordered data, a one-way MANOVA with the variable of Group (experimental vs. control) a between-subjects factor was considered for the following dependent variables: (a) scores on the overall scale of the State Self-Esteem Scale; and (b) scores on the Appearance subscale of the State Self-Esteem Scale. Although the assumptions of normality and linearity were satisfied, the assumption of homogeneity of variance-covariance matrices was violated for the overall scale scores. As a result, *t*-tests for independent samples were employed instead of a MANOVA. The independent samples *t*-tests revealed no significant differences between the groups on the overall scale, $t(60) = 0.53$, $p = .60$ (equal variances not assumed), or the Appearance subscale $t(76) = 0.62$, $p = .54$ (equal variances assumed). Table 10 supports this finding by showing that the non-eating disordered experimental and control groups

Table 10

Mean Self-Esteem Dependent Variable Scores for the Experimental and Control Groups of the Non-Eating Disordered and At Risk Groups

	Scale or subscale	
Group	Overall scale	Appearance subscale
Non-eating disordered		
Experimental[a]		
M	74.30	20.70
SD	9.51	3.61
Control[b]		
M	72.74	20.08
SD	15.72	5.17
At risk		
Experimental[c]		
M	61.40	17.20
SD	21.69	6.30
Control[d]		
M	58.75	14.25
SD	13.35	6.65

[a] $n = 40$. [b] $n = 38$. [c] $n = 5$. [d] $n = 4$.

had very similar mean scale/subscale scores on the State Self-Esteem Scale.

Direction and Magnitude of Effects

To investigate my second research question using the at risk data, I first compared the mean self-esteem variable scores of the at risk experimental and control groups. As shown in Table 10, the at risk experimental and control groups had fairly similar mean scores on (a) the overall scale and (b) the Appearance subscale of the State Self-Esteem Scale. However, as seen in the table, the at risk experimental and control group means were less similar than those of the non-eating disordered experimental and control groups. Effect sizes were calculated so as to assess whether the differences between the at risk group means were substantial and in the expected direction. As shown in Table 11, the effect sizes for the at risk group were smaller than 0.5 standard deviation units and were in the opposite direction to what was expected. Similarly, the effect sizes calculated for the non-eating disordered data also were in the opposite direction to what was expected and were not substantial in magnitude, which was consistent with the nonsignificant findings reported in the previous section.

Table 11

Estimated Effect Sizes of Self-Esteem Dependent Variables for the Non-Eating Disordered and At Risk Groups

Group	Scale or subscale	
	Overall scale	Appearance subscale
Non-eating disordered[a]	+0.10	+0.12
At risk[b]	+0.20	+0.44

Note. All above effect sizes were in the opposite direction to what was expected.

[a] $n = 78$. [b] $n = 9$.

Comparisons Between the Non-Eating Disordered and At Risk Groups

At this point, treatment condition will be ignored and the pooled at risk group will be compared to the pooled non-eating disordered group. The purpose of these comparisons is to determine whether differences existed between the groups on the dependent measures that would be expected in light of the body image disturbance that often characterizes those at risk for having or developing an eating disorder. Given the small number of at risk subjects, inferential statistical analyses were not performed. Therefore, the following discussion is based on a description of the data only.

Body Image

In this section, the pooled at risk group will be compared to the pooled non-eating disordered group in terms of body image variables. The data described in this section are shown in Table 12.

With respect to the Multidimensional Body-Self Relations Questionnaire, the mean scale/subscale scores for the pooled at risk group were compared to those for the pooled non-eating disordered group. As shown in Table 12, the following trends were found for the at risk group as compared to the non-eating disordered group: (a) a lower

Table 12

Total Mean Body Image Scores for the At Risk Group as Compared to the Non-Eating Disordered Group

Body image variable	Group	
	At risk[a]	Non-eating disordered[b]
Multidimensional Body-Self Relations Questionnaire		
Appearance evaluation subscale		
M	2.76	3.47
SD	1.02	0.76
Body-areas satisfaction subscale		
M	3.00	3.24
SD	0.68	0.73
Self-classified weight scale		
M	3.56	3.27
SD	0.88	0.61
Body Esteem Scale		
Weight concern subscale		
M	23.67	29.70
SD	9.31	8.24
Sexual attractiveness subscale		
M	42.89	46.88
SD	5.40	6.94
Physical condition subscale		
M	27.44	29.78
SD	7.13	6.80
Contour Drawing Rating Scale		
Current-ideal figure discrepancy		
M	22.89	10.60
SD	16.17	10.25

table continues

Body image variable	Group	
	At risk[a]	Non-eating disordered[b]
Contour Drawing Rating Scale		
Current-attractive figure discrepancy		
M	26.56	14.97
SD	20.11	14.82
Current figure rating		
M	63.78	54.26
SD	19.90	13.94
Ideal figure rating		
M	40.89	43.65
SD	8.04	9.51
Attractive figure rating		
M	37.22	39.28
SD	4.41	9.06
Health Questionnaire[c]		
Current-ideal weight discrepancy		
M	4.82	1.79
SD	5.22	1.94
Self-reported weight rating		
M	26.33	22.89
SD	8.83	3.35
Ideal weight rating		
M	21.50	21.10
SD	4.62	2.18

[a] $n = 9$. [b] $n = 78$ for scores on the Multidimensional Body-Self Relations Questionnaire and the Contour Drawing Rating Scale; $n = 77$ for scores on the Body Esteem Scale and the Health Questionnaire. [c] The Health Questionnaire variables are expressed in terms of body mass index units (kg/m^2).

mean score on the Appearance Evaluation subscale, suggesting the at risk group was less satisfied with their physical appearance; (b) a lower mean score on the Body-Areas Satisfaction Scale, suggesting the at risk group was less satisfied with discrete aspects of their appearance; and (c) a higher mean score on the Self-Classified Weight Scale, suggesting the at risk group perceived and labeled their weight as more overweight. These findings were expected given the body image dissatisfaction that often characterizes those at risk for having or developing an eating disorder.

With respect to the Body Esteem Scale, the mean subscale scores for the pooled at risk group were compared to those for the pooled non-eating disordered group. As displayed in Table 12, the following trends were found for the at risk group as compared to the non-eating disordered group: (a) a lower mean score on the Weight Concern, suggesting that the at risk group was less satisfied with their physical appearance; (b) a lower mean score on the Sexual Attractiveness subscale, suggesting that the at risk group had more negative feelings about their body parts whose appearance could be altered by cosmetics; and (c) a lower mean score on the Physical Condition subscale, suggesting that the at risk control group had more negative

feelings about their stamina, strength, and agility. These findings were in the expected direction.

With respect to the Contour Drawing Rating Scale, Table 12 shows that the pooled at risk group had higher mean scores on the current-ideal figure discrepancy and the current-attractive figure discrepancy than the pooled non-eating disordered group. This suggested that the at risk group was less satisfied with their body size/shape (i.e., their mean current figure rating was further from their mean ideal figure rating and their mean attractive figure rating) than the non-eating disordered group. These findings were in the expected direction.

Table 12 also presents the mean figure ratings for the pooled at risk group as compared to those for the pooled non-eating disordered group. The at risk group indicated a larger mean current figure than the non-eating disordered group. This was expected given the body image distortion often characteristic of those at risk for eating disorders. (However, it is difficult to know whether the at risk group in fact had a distorted view of their body size because the accuracy of their perception of body size was not measured.) The at risk group indicated smaller mean ideal and attractive figures than the non-eating disordered group. These findings were also in the expected direction.

With respect to the Health Questionnaire, the mean current-ideal weight discrepancy score for the pooled at risk group was compared to that reported for the pooled non-eating disordered group. As shown in Table 12, the at risk group had a higher mean current-ideal weight discrepancy score than the non-eating disordered group, which indicated that the at risk group was less satisfied with their body weight than the non-eating disordered control group. This finding was in the expected direction.

Table 12 also shows the weight ratings for the pooled at risk group as compared to those for the pooled non-eating disordered group. The at risk group indicated a larger mean current weight than the non-eating disordered group. This finding was in the expected direction given that body image distortion is often characteristic of those at risk for eating disorders. (However, it is difficult to know whether the at risk group in fact had a distorted view of their weight because the accuracy of their perception of weight was not measured.) The at risk group indicated a slightly larger mean ideal weight than the non-eating disordered group, which was in the opposite direction to what was expected.

In summary, the above comparisons revealed that the pooled at risk group indicated greater body image

dissatisfaction than the pooled non-eating disordered group. With only one exception, the findings were in the direction one would expect in light of the body image disturbance that characterizes those at risk for having or developing an eating disorder.

Self-Esteem

The pooled at risk group was compared to the pooled non-eating disordered group in terms of the self-esteem variables on the State Self-Esteem Scale. As shown in Table 13, the at risk group had lower mean overall scale scores and Appearance subscale scores than the non-eating disordered group, which indicated that the at risk group had lower overall and appearance self-esteem. These findings were expected given that lower levels of self-esteem may predispose one to developing an eating disorder and typically characterize those with eating disorders.

Table 13

Total Mean Self-Esteem Dependent Variable Scores for the At Risk Group as Compared to the Non-Eating Disordered Group

	Scale or subscale	
Group	Overall	Appearance
At risk[a]		
M	60.22	15.89
SD	17.43	6.23
Non-eating disordered[b]		
M	73.54	20.40
SD	12.85	4.42

[a]$n = 9$. [b]$n = 78$.

CHAPTER V

DISCUSSION AND CONCLUSIONS

This chapter provides an interpretation and evaluation of the results, along with a discussion of the limitations, implications, and applications of this research.

Interpretation and Evaluation of Findings

In this section, the findings for the research questions will be summarized, and the surprising nature of the results will be discussed. Possible reasons for the results will also be offered. Note that the results are considered to be unbiased and valid given that the deception procedure was successful. That is, no subjects indicated being aware that the "two studies" were actually two components of the same study.

Summary of Findings

Did the experimental treatment affect body image? With respect to the first research question, the data did not support that non-eating disordered females who watched the episode of *Baywatch* would indicate greater body size/shape dissatisfaction than those who watched the episode of *The X-Files*. Inferential analyses revealed that there were no statistically significant differences between the non-eating disordered experimental and control groups on any of the body image variables. An examination of the direction of

effect sizes for the non-eating disordered data revealed that approximately half of the nonsignificant differences between the groups on these variables were in the expected direction whereas the other half were in the opposite direction to what was expected.

An investigation into the first research question using the body image data from a small number of at risk subjects revealed substantial effect sizes for approximately half of the body image variables. This suggests that if there had been more at risk subjects, these findings could have been statistically significant. All effect sizes calculated for the at risk group were in the opposite direction to what was expected.

Did the experimental treatment affect self-esteem?

With respect to the second research question regarding whether the experimental treatment affected self-esteem, the data did not support that those non-eating disordered females who watched the episode of *Baywatch* would have lower overall and specific levels of state self-esteem than those who watched the episode of *The X-Files*. There were no statistically significant differences between the non-eating disordered experimental and control groups on either of the self-esteem variables. The direction of effect sizes for

the non-eating disordered data were in the opposite direction to what was expected.

The second research question was also investigated using a small number of at risk subjects. An examination of effect sizes indicated no substantial differences between the groups on the self-esteem variables. The effect sizes calculated for the at risk data were in the opposite direction to what was expected.

Comparisons between the non-eating disordered and at risk groups. When treatment condition was ignored, the data from the Multidimensional Body-Self Relations Questionnaire indicated the following general trends among the pooled non-eating disordered group: (a) that these participants were neither particularly satisfied nor dissatisfied with their physical appearance as demonstrated by their mid-range mean score on the Appearance Evaluation subscale; (b) that these participants were neither particularly satisfied nor dissatisfied with discrete aspects or areas of their bodies as demonstrated by their mid-range mean score on the Body-Areas Satisfaction Scale; and (c) that these participants generally considered themselves to be of normal weight as demonstrated by their mid-range mean score on the Self-Classified Weight Scale. These data from the non-eating disordered group were similar to the extensive female

population norms reported for this instrument (Cash, 1990; Cash et al., 1986). The data for the pooled at risk group indicated relatively greater body size/shape dissatisfaction than the non-eating disordered group, but were still in the mid-range. Because of the small numbers of at risk participants, it is difficult to know whether the at risk data were significantly different than the non-eating disordered data.

The data from the Body Esteem Scale revealed the following general trends among the pooled non-eating disordered group: (a) that these participants had no particularly positive or negative feelings about the parts of their body that comprised the Weight Concern subscale (e.g., waist, thighs, hips) as demonstrated by their mid-range mean scores on this subscale; (b) that these participants had fairly moderate positive feelings about their sexual attractiveness as demonstrated by their moderately high mean score on this subscale; and (c) that these participants had fairly moderate positive feelings about their physical condition as demonstrated by their moderately high mean score on this subscale. The data from the non-eating disordered group were consistent with norms derived from 633 college females (Franzoi & Shields, 1984). The data for the pooled at risk group were relatively lower

than those of the pooled non-eating disordered group, suggesting the possibility of more negative feelings towards body parts. However, given the small numbers, it is difficult to know with any certainty whether the at risk data were significantly different than the non-eating disordered data.

The data from the Contour Drawing Rating Scale indicated that the pooled non-eating disordered group was dissatisfied with their current body size as suggested by their choice of a figure to represent their current body size that was significantly larger than the figure chosen to represent their ideal body size, which, in turn, was significantly larger than the figure chosen to represent the body size they thought would be most attractive to the opposite sex. Interestingly, this finding was somewhat different than that reported by Fallon and Rozin (1985) in their seminal examination of body image disturbance in which they used a similar figure rating scale. These researchers found that their participants chose a larger attractive figure than ideal figure. As compared to the pooled non-eating disordered group, the data for the pooled at risk group indicated a larger current figure and thinner ideal and attractive figures.

The data from the Health Questionnaire also pointed to body size/shape dissatisfaction in the pooled non-eating disordered group as suggested by a mean current weight that was heavier than the mean ideal weight. The pooled at risk group also followed this trend, but indicated a larger current weight and a marginally larger ideal weight than the pooled non-eating disordered group. Because of the small numbers of at risk participants, it is difficult to know whether their scores were significantly different than those of the non-eating disordered group.

The data from the State Self-Esteem Scale suggested that the pooled non-eating disordered group had moderately high levels of overall and appearance state self-esteem. The scores were similar to those derived from a sample of 72 women (Heatherton and Polivy, 1991). The scores for the pooled at risk group were relatively lower but were still in the mid-range. Again, given the small numbers of at risk participants, it is difficult to know whether their scores were significantly lower than those of the non-eating disordered group.

The Surprising Nature of the Results

The findings of no significant difference in this study were rather surprising given the results of other research that has investigated the effects of media (print images and

television advertisements) on body image and self-esteem. This study also seemed to contradict what I believed to be a commonly held notion in the general public, that is, that television programming that depicts the thin ideal has a negative impact on body image and self-esteem.

To examine whether or not my research predictions were consistent with the beliefs held by the general population, I decided to poll a small sample of people from the general public. In total, 12 males (age range: 23-47 years) and 25 females (age range: 21-62 years) from diverse educational backgrounds and walks of life participated in the poll. The participants were informed that I was planning a study and wished assistance in making predictions about the results. The procedures for the study were explained to the participants, and they were asked to predict the results of the two major research questions.

With regards to the first research question, the vast majority of participants (92% of males; 100% of females) predicted that those women who watched the episode of *Baywatch* would feel less satisfied about their body size and shape than those who watched the episode of *The X-Files*, which was consistent with my prediction. Only one male participant predicted that there would be no difference in

body size/shape satisfaction between the groups, which corresponded with the actual statistical findings.

With regards to the second research question, the majority of participants (75% of males; 92% of females) predicted that those women who watched the episode of *Baywatch* would feel worse about themselves (i.e., their self-esteem) than those who watched the episode of *The X-Files*, which also corresponded with my prediction. Again, only one male participant predicted that there would be no difference in self-esteem between the groups, which was consistent with the actual findings. Interestingly, the remaining participants (17% of males; 8% of females) predicted that those women who watched the watched the episode of *Baywatch* would feel better about themselves (i.e., their self-esteem) than those who watched the episode of *The X-Files*, which ran contrary to my prediction, but was consistent with the directional patterns observed in the data. One participant explained his rationale as follows: Although *Baywatch* may negatively affect a person's body image because that person feels his or her body is inferior to the actors' bodies, it may improve that person's self-esteem because he or she feels his or her intellectual and verbal abilities are superior to those of the actors.

Possible Reasons for the Results

Interpreting findings of no significant difference can be challenging as they may have arisen for a variety of reasons. One possible reason for the results is that there may in fact be no effect of television programming that portrays the cultural ideal of beauty/thinness on body size/shape satisfaction and state self-esteem in non-eating disordered women. Thus, perhaps television programming of this type is not as influential as sociocultural theorists, members of the general public, and I perceive it to be. Or perhaps it is influential but there was not enough statistical power to detect the differences between the groups. Another possibility is that television programming has a negative impact, but not in non-eating disordered women who may have developed some resistance to the idealized images presented on this type of television programming. This is all speculation at this point. Because this was a preliminary investigation into this issue, further research will need to be conducted before a conclusion of no effect can truly be made.

Another possible reason for the results is that there may have been a mismatch between the experimental treatment (i.e., the television program, *Baywatch*) and the age group and/or educational level of the participants. A more age-

appropriate television program at the participants' intellectual level that still portrayed the cultural ideal of beauty/thinness would have been preferable to use as the experimental treatment. One can only speculate as to whether the results would have been different had there been a better match between the experimental treatment and the participants' age group and/or educational level. Again, future research will need to explore this issue.

An additional reason for the results is that perhaps there is a relationship between television programming of this particular type and body size/shape satisfaction and state self-esteem but a one-time exposure to the program may not negatively influence one's body image and self-esteem enough to be detected. Again, this is only conjecture at this point. Further research will need to be conducted to see whether a one-time exposure has any impact on body image and self-esteem or whether it is repeated or cumulative exposure that has an impact.

The findings for the at risk group are puzzling to interpret because the substantial effect sizes reported were in the opposite direction to what was expected. It seems counterintuitive to argue that *Baywatch* actually had a more positive effect on some aspects of body image than *The X-Files*. However, this is what the findings seem to suggest.

Of course, given the small numbers of at risk subjects and the curious way in which they entered the study, it is difficult to say with any certainty as to whether these findings can be generalized to the at risk population. Additional research will need to clarify the effects of television programming on the body image of those at risk for having or developing eating disorders.

Limitations of the Research

One limitation of this study is its limited generalizability. Because only females were assessed, the generalizability of the results are affected to a certain degree. That is, the findings say nothing about males. In addition, because the majority of the sample was Caucasian, it is difficult to generalize the results to individuals of different ethnicities. Given the age range of 18-30 years, the generalizability of the results to older and younger age groups is also affected. Similarly, because only non-eating disordered females were assessed, it is questionable as to whether the results generalize to eating disordered females. It is nearly impossible to extrapolate the data from the 9 females in the non-eating disordered group who were classified as at risk for having or developing eating disorders because of their small numbers and the way in which they entered the study.

A second limitation is that there may be a possible bias in nonresponse. Because the subjects in this study were recruited on a strictly voluntary basis, this may be a source of bias in this study. Subjects who chose not to participate may somehow be different from those who did participate, and this nonresponse may have distorted the findings.

A third limitation is that this study only assessed the subjective component of body image and therefore does not indicate whether or not specific types of television programming affect the perceptual or behavioral components of body image. In other words, this study only assessed body size/shape satisfaction, and not body size estimation or behavioral avoidance.

A fourth limitation of this study is that it only examined the effects of two television programs. Further research will need to be conducted to determine whether similar effects will be found using different programs of differing lengths.

A fifth limitation is that this study only examined the short-term effects of television exposure. Thus, the findings do not indicate whether television programming produces long-term effects on body image and self-esteem.

A sixth limitation is that this study involved viewing the television programs and answering questionnaires in a group setting. Thus, it is difficult to know whether similar results would have been found if the subjects had been asked to view the television programs and answer the questionnaires in an individual setting.

Implications

This research helped to initiate our understanding about the effects of exposure to television programming that portrays the cultural ideal of female beauty and thinness on body satisfaction and self-esteem. Because research examining the effects of television exposure on body image has been minimal, this study has implications for future research. One extension of this study may be to investigate whether the results of this study hold true for other populations (e.g., eating disordered individuals, at risk individuals, males, adolescents, older individuals, diverse ethnic groups). In addition, it would be interesting to see whether having male confederates viewing the television programs along with the female subjects would have changed any of the findings. Another extension of this study may be to examine the effects of television programming that portrays the cultural ideal of female beauty and thinness on body size estimation (i.e., the perceptual component of body

image) and behavioral avoidance (i.e., the behavioral component of body image). Future research may also investigate whether exposure to different programs produces similar findings with respect to body size/shape satisfaction and state self-esteem. It would also be interesting to explore whether the results of this study hold true when subjects are tested in an individual setting. Still other research may focus on the long-term effects of exposure to television programming.

Applications

Applications for Prevention

This research did not demonstrate that exposure to television programming that portrays the cultural ideal of female beauty and thinness has a detrimental impact on body size/shape satisfaction and self-esteem for women ages 18-30. However, for reasons already discussed, this does not necessarily mean that television programming of this type has no negative effect on individuals. Future research is needed to more thoroughly examine this relationship before a conclusion such as this can be made with confidence.

Should future research determine that this type of television programming does have a detrimental effect on how individuals see themselves and their bodies, this may imply the need for a preventive type of educational program to

help inoculate against the influence of the mass media. This type of program would teach children at an early age (i.e., during elementary school) to critically evaluate the messages and images shown on television as well as in other types of media already known to have these effects (e.g., women's magazines). As suggested by Salmons, Lewis, Rogers, Gatherer, and Booth (1988), schools should take an active role in helping children "to resist cultural pressures for a very thin shape and to accept the biologically normal range of sizes and shapes" (p. 30). School lessons should alert students to the dangers of dieting and attack general misconceptions about dieting and other weight-related behaviors.

In addition to the above, Smolak and Levine (1994) have suggested that prevention programs focus on proper nutrition, the benefits of moderate exercise (and conversely the negative effects of overexercise), and strategies to help children deal with teasing, diet pressures, and advertising propaganda. Although it is important to intervene early, Nagel and Jones (1992) have also suggested that professionals "need to help adolescents resist societal pressure to conform to unrealistic appearance standards. In doing so, they need to offer guidance on nutrition, realistic body ideals, and achievement of self-esteem, self-

efficacy, interpersonal relations and coping skills" (p. 111). These efforts aimed at prevention may help to reduce young people's vulnerability to societal messages about beauty and thinness, thus making their body image and self-esteem less affected by what they see on television and in magazines. These preventive efforts may in turn help to minimize the risk for developing an eating disorder or other psychological problems.

Another preventive strategy, which has been suggested by proponents of the sociocultural perspective, is to target the fashion and diet industries and critically evaluate their claims and standards. However, as noted by Fairburn (1995):

> Although there has been some progress in this regard in that the claims of the weight loss industry are now being more carefully scrutinized than before, it is doubtful whether the idealization of thinness can be so easily modified given the vested interests that support it. (p. 290)

Applications for Counselling

Given that this research revealed that the majority of the non-eating disordered group wished to be thinner than their current body size despite being of average weight and without having clinical eating disorders, this may imply the

need for counselling interventions or programs. Several outcome studies have been conducted with average weight, non-eating disordered but body-dissatisfied women to determine the efficacy of cognitive-behavioral therapy of body image dissatisfaction as compared to control or alternative treatment conditions (e.g., Butters & Cash, 1987; Fisher & Thompson, 1994; Grant & Cash, 1995; Rosen, Saltzberg, & Srebnik, 1989;). These studies have demonstrated the effectiveness of cognitive-behavioral therapy in improving a negative body image. An empirically based cognitive behavioral approach for the treatment of body image disturbance in non-eating disordered individuals has been offered by Cash (1995). His step-by-step program involves the following components: a comprehensive body image assessment; body image education; exposure and desensitization procedures; identifying and challenging dysfunctional assumptions and cognitive errors; modifying self-defeating body image behaviors; implementing body image enhancement activities; and developing strategies for relapse prevention and post-treatment maintenance of changes.

If future research finds that exposure to television programming has a detrimental effect on the body satisfaction and self-esteem of eating disordered

individuals, this will also imply the need for counselling interventions. Hamilton and Waller (1993) suggest that clinical application can take two forms: "Firstly, at a 'crude' level, clinicians might advise female anorexics and bulimics to avoid publications that portray women in this [idealized] way. Secondly, at a more 'refined' level, women's responsiveness to such images might be addressed through cognitive-behavioral therapy" (p. 839). Although minimal research regarding the efficacy of cognitive behavioral body image therapy of eating disordered individuals has been done, "there is little reason to doubt that the positive findings [from research with non-eating disordered individuals] will generalize to eating-disordered patients" (Thompson, Heinberg, & Clarke, 1996, p. 314).

A different type of treatment approach that may be used involves psychoeducation. This approach can be used to relay information about sociocultural factors and body image issues to individuals with eating disorders. For instance, Olmsted and Kaplan (1995) suggest the following psychoeducational strategies:

> A slide show that illustrates the pressures on women to be thin and the changing nature of the ideal female body over the years can help link patients' drive for thinness with its sociocultural context. . . . A

discussion of the way the female body is used in advertising and in the media can serve to arouse righteous indignation about the objectification of women's bodies, which can serve as a balance for patients' feelings of powerlessness to resist the current cultural ideal. . . . It is important to describe how body image disparagement can be amplified by displaced feelings of unhappiness in other domains. Since patients have already tried the "weight control method of improving self-esteem," they should be encouraged to try a different approach for a period of time. This effort involves focusing on themselves as agents or "doers" rather than as passive objects valued mainly for their appearance. (p. 301)

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APPENDICES

Appendix A

Information Sheet for "Study 1"

Television Programming Study - Information Sheet

Welcome to my study! I am a doctoral student in the Department of Educational Psychology at the University of Alberta working under the supervision of Dr. Robert Frender. My study is an investigation into the perceived quality of television programs as well as their entertainment and enjoyment properties.

If you decide to take part in this study, you will be asked to (a) view a one-hour videotaped episode of a television program, and (b) complete a questionnaire pertaining to the episode you viewed.

Participation in this study is strictly voluntary. If, for any reason, you wish to decline participation altogether, you are completely free to do so. If you choose to participate, you have the right to withdraw from the study *at any time* without penalty and without losing the guarantee of anonymity. This means that you may withdraw your consent even after signing the consent form. Remember that if at any time you wish to withdraw from participating in the study, you are perfectly free to do so.

If you decide to take part in this study, **your anonymity and confidentiality will be protected**. You will not be asked to identify yourself in any way on the questionnaires. If you wish to receive the results of the study by mail, you will be asked to write your name and address on a mailing card. This card will be returned separately from your questionnaire packets to ensure that your name is not linked to your questionnaires. Only the researcher conducting the study will have access to your signed consent form, your completed questionnaires, and your mailing card.

Please remember that the questionnaires you complete are anonymous, and all of the information that you provide will be kept in strictest confidence. There are no right or wrong answers to the questions so try to be completely honest in your responses.

There are no anticipated risks involved in participating in this research project. The questionnaires are all quite straightforward.

This research is being conducted under the supervision of Dr. Robert Frender, professor in the Department of Educational Psychology at the University of Alberta. If you have any concerns about this research and/or your rights as a research participant, please contact Dr. Frender at xxx-xxxx.

In order to make certain that the researcher is conducting the study with your understanding and informed consent, your cooperation in completing the consent form on the following page would be appreciated.

Sincerely yours,

Anabel XXXXX
Doctoral Student Researcher
Department of Educational Psychology

Appendix B

Consent Form for "Study 1"

CONSENT FORM

I acknowledge that the researcher has described the nature of the study to me and has adequately answered any questions I may have had about the study. I acknowledge that the researcher has provided me with an information sheet which I have read and understood.

I understand that as a participant in this study, I will be asked to do the following tasks: (a) watch a one-hour videotaped presentation; and (b) complete a questionnaire about the television episode I viewed.

I understand that my participation in this study is strictly voluntary. I also understand that I have the right to withdraw my consent at any time during the study without penalty and without jeopardizing my anonymity.

I have been assured that my anonymity and confidentiality will be protected by the researcher conducting the study. I understand that my identity will never be disclosed, and that my responses on the questionnaires will be kept completely confidential and will only be accessible to the researcher conducting the study.

Having read and understood the above information, I, _____ (please print your name), freely consent to participate in this research study.

_____ _____

Signature of Participant Date

Appendix C

Multidimensional Television Episode Questionnaire

Instructions: Please answer the following questions about the television episode you just viewed.

1. Which television program did you view? _____

2. Had you seen the episode of this program before today? (circle one) Yes No

For the Questions 3-19, please **circle** your response using the rating scale provided below each question.

3. How *entertaining* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all entertaining			Moderately entertaining			Very entertaining

4. How *exciting* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all exciting			Moderately exciting			Very exciting

5. How *humorous* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all humorous			Moderately humorous			Very humorous

6. How *enjoyable* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all enjoyable			Moderately enjoyable			Very enjoyable

7. How *challenging to follow* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all challenging			Moderately challenging			Very challenging

8. How *interesting* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all interesting			Moderately interesting			Very interesting

9. How *thought-provoking* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all thought-provoking			Moderately thought-provoking			Very thought-provoking

10. How much *concentration* did the episode require? (circle your response)

0	1	2	3	4	5	6
No concentration			A moderate amount of concentration			A great deal of concentration

11. How *stimulating* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all stimulating			Moderately stimulating			Very stimulating

12. How *immersed* were you in the episode? (circle your response)

0	1	2	3	4	5	6
Not at all immersed			Moderately immersed			Very immersed

13. How *suspenseful* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all suspenseful			Moderately suspenseful			Very suspenseful

14. How *boring* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all boring			Moderately boring			Very boring

15. How much of an *impact* did the episode have on you? (circle your response)

0	1	2	3	4	5	6
No impact			A moderate impact			A great deal of impact

16. How *absorbing* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all absorbing			Moderately absorbing			Very absorbing

17. How *attention-grabbing* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all attention-grabbing			Moderately attention-grabbing			Very attention-grabbing

18. How *worth remembering* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all worth remembering			Somewhat worth remembering			Very worth remembering

19. How *realistic* was the episode? (circle your response)

0	1	2	3	4	5	6
Not at all realistic			Moderately realistic			Very realistic

Characters:

20. In general, how complex were the major *male* characters in the episode? (check one)

_____ Very complex
_____ Moderately complex
_____ Neutral or undecided
_____ Moderately shallow
_____ Very shallow

21. In general, how complex were the major *female* characters in the episode? (check one)

_____ Very complex
_____ Moderately complex
_____ Neutral or undecided
_____ Moderately shallow
_____ Very shallow

22. Overall, how likable were the major *male* characters in the episode? (check one)

_____ Very likable
_____ Somewhat likable
_____ Neutral or undecided
_____ Somewhat unlikable
_____ Very unlikable

Specifically, what made the major male characters likable or unlikable?

_____

_____

_____

23. Overall, how likable were the major *female* characters in the episode? (check one)

_____ Very likable
_____ Somewhat likable
_____ Neutral or undecided
_____ Somewhat unlikable
_____ Very unlikable

Specifically, what made the major female characters likable or unlikable?

_____

_____

_____

24. Generally speaking, how similar were the major *male* characters to the average male? (check one)

_____ Very similar
_____ Moderately similar
_____ Neutral or undecided
_____ Moderately dissimilar
_____ Very dissimilar

25. Generally speaking, how similar were the major *female* characters to the average woman? (check one)

_____ Very similar
_____ Moderately similar
_____ Neutral or undecided
_____ Moderately dissimilar
_____ Very dissimilar

Acting:

26. Overall, how well cast were the actors for the characters they portrayed? (check one)

_____ Very well cast
_____ Moderately well cast
_____ Neutral or undecided
_____ Moderately miscast
_____ Very miscast

27. Overall, how would you rate the acting in this episode? (check one)

_____ Outstanding
_____ Excellent
_____ Very Good
_____ Good
_____ Satisfactory
_____ Fair
_____ Poor
_____ Undecided

Additional Questions:

28. How well-written was the episode? (check one)

_____ Very well-written
_____ Somewhat well-written
_____ Neutral or undecided
_____ Somewhat poorly written
_____ Very poorly written

29. How much violence was depicted in the episode? (circle your response)

0	1	2	3	4	5	6
No violence			A moderate amount of violence			A great deal of violence

30. Overall, how would you rate the quality of the episode? (check one)

_____ Outstanding
_____ Excellent
_____ Very Good
_____ Good
_____ Satisfactory
_____ Fair
_____ Poor
_____ Undecided

Appendix D

Information Sheet for "Study 2"

RESEARCH STUDY: INFORMATION SHEET

You are invited to participate in a university study being conducted by Crystal Coolican, a doctoral student in the Department of Educational Psychology at the University of Alberta, under the supervision of Dr. Robert Frender. We want to evaluate several self-report questionnaires to determine whether they will be reliable and valid measures for a future study we are planning.

If you decide to take part in this study, you will be asked to answer a series of questionnaires regarding how you feel about yourself and your health.

Your participation in this study is on a completely voluntary basis. You have the right to decline participation altogether if you wish. If you decide to participate, you have the right to withdraw from the study *at any time* without penalty and without losing your right to anonymity. You are entitled to withdraw your consent at any time, even after signing the consent form.

If you decide to take part in this study, your anonymity and confidentiality will be protected. The surveys will not request you to identify yourself in any way. The questionnaires have been arbitrarily assigned survey identification numbers that are not linked in any way with your identity. These assigned identification numbers will simply help the researcher to identify your questionnaire pages in the event that they become separated. If you wish to receive the results of the study by mail, you will be asked to write your name and address on a mailing card, which will be returned separately from your questionnaires. This will ensure that your name is not linked to your questionnaires. No one except the researcher conducting the study will have access to the signed consent form, the completed questionnaires, or the mailing card.

You may find that some of the questions seem rather personal in nature. You have the right to leave out any questions that you feel too uncomfortable to answer. However, remember that the surveys are anonymous, and all of the information that you provide will be kept in strictest confidence. There are no right or wrong answers to the questions so try to be completely honest in your responses.

There are no anticipated risks involved in participating in this research project. The questionnaires are all quite straightforward.

This research is being supervised by Dr. Robert Frender, professor in the Department of Educational Psychology at the University of Alberta. If you have any concerns about this research and/or your rights as a research participant, please contact Dr. Frender at xxx-xxxx.

In order to make certain that the researcher is conducting the study with your understanding and informed consent, your cooperation in completing the consent form on the following page would be appreciated.

Sincerely yours,

_____

Crystal R. Coolican, M.Ed.
Doctoral Student Researcher
Department of Educational Psychology

Appendix E

Consent Form for "Study 2"

CONSENT FORM

I acknowledge that the researcher has described the nature of the study to me and has adequately answered any questions I may have had about the study. I acknowledge that the researcher has provided me with an information sheet which I have read and understood.

I understand that as a participant in this study, I will be asked to answer several questionnaires about myself and my health.

I understand that my participation in this study is completely voluntary. I am aware that I may choose not to answer any questions that seem too personal to me. I also understand that I have the right to withdraw my consent at any time during the study without penalty.

I have been assured that my anonymity and confidentiality will be protected by the researcher conducting the study. I understand that my identity will never be disclosed, and that my responses on the questionnaires will be kept completely confidential and will only be accessible to the researcher conducting the study.

Having read and understood the above information, I, _____ (please print your name), freely consent to participate in this research study.

_____

Participant's Signature

_____

Date

Appendix F

THE MBSRQ

INSTRUCTIONS--PLEASE READ CAREFULLY

The following pages contain a series of statements about how people might think, feel, or behave. You are asked to indicate the extent to which each statement pertains to you personally.

Your answers to the items in the questionnaire are anonymous, so please do not write your name on any of the materials. In order to complete the questionnaire, read each statement carefully and decide how much it pertains to you personally. Using a scale like the one below, indicate your answer by entering it to the left of the number of the statement.

1	2	3	4	5
Definitely Disagree	**Mostly Disagree**	**Neither Agree Nor Disagree**	**Mostly Agree**	**Definitely Agree**

EXAMPLE:

_____ I am usually in a good mood.

In the blank space, enter a 1 if you definitely disagree with the statement; a 2 if you mostly disagree; a 3 if you neither agree nor disagree; a 4 if you mostly agree; or enter a 5 if you definitely agree with the statement.

There are no right or wrong answers. Just give the answer that is most accurate for you. Remember, your responses are anonymous, so please be completely honest and answer all items.

1	2	3	4	5
Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree

_____ 1. Before going out in public, I always notice how I look.

_____ 2. I am careful to buy clothes that will make me look my best.

_____ 3. I would pass most physical-fitness tests.

_____ 4. It is important that I have superior physical strength.

_____ 5. My body is sexually appealing.

_____ 6. I am not involved in a regular exercise program.

_____ 7. I am in control of my health.

_____ 8. I know a lot about things that affect my physical health.

_____ 9. I have deliberately developed a healthy life-style.

_____ 10. I constantly worry about being or becoming fat.

_____ 11. I like my looks just the way they are.

_____ 12. I check my appearance in a mirror whenever I can.

_____ 13. Before going out, I usually spend a lot of time getting ready.

_____ 14. My physical endurance is good.

_____ 15. Participating in sports is unimportant to me.

_____ 16. I do not actively do things to keep physically fit.

_____ 17. My health is a matter of unexpected ups and downs.

_____ 18. Good health is one of the most important things in my life.

_____ 19. I don't do anything that I know might threaten my health.

_____ 20. I am very conscious of even small changes in my weight.

1	2	3	4	5
Definitely Disagree	Mostly Disagree	Neither Agree Nor Disagree	Mostly Agree	Definitely Agree

_____ 21. Most people would consider me good-looking.

_____ 22. It is important that I always look good.

_____ 23. I use very few grooming products.

_____ 24. I easily learn physical skills.

_____ 25. Being physically fit is not a strong priority in my life.

_____ 26. I do things to increase my physical strength.

_____ 27. I am seldom physically ill.

_____ 28. I take my health for granted.

_____ 29. I often read books and magazines that pertain to health.

_____ 30. I like the way I look without my clothes on.

_____ 31. I am self-conscious if my grooming isn't right.

_____ 32. I usually wear whatever is handy without caring how it looks.

_____ 33. I do poorly in physical sports or games.

_____ 34. I seldom think about my athletic skills.

_____ 35. I work to improve my physical stamina.

_____ 36. From day to day, I never know how my body will feel.

_____ 37. If I am sick, I don't pay much attention to my symptoms.

_____ 38. I make no special effort to eat a balanced and nutritious diet.

_____ 39. I like the way my clothes fit me.

_____ 40. I don't care what people think about my appearance.

1	2	3	4	5
Definitely Disagree	**Mostly Disagree**	**Neither Agree Nor Disagree**	**Mostly Agree**	**Definitely Agree**

_____ 41. I take special care with my hair grooming.

_____ 42. I dislike my physique.

_____ 43. I don't care to improve my abilities in physical activities.

_____ 44. I try to be physically active.

_____ 45. I often feel vulnerable to sickness.

_____ 46. I pay close attention to my body for any signs of illness.

_____ 47. If I'm coming down with a cold or flu, I just ignore it and go on as usual.

_____ 48. I am physically unattractive.

_____ 49. I never think about my appearance.

_____ 50. I am always trying to improve my physical appearance.

_____ 51. I am very well coordinated.

_____ 52. I know a lot about physical fitness.

_____ 53. I play a sport regularly throughout the year.

_____ 54. I am a physically healthy person.

_____ 55. I am very aware of small changes in my physical health.

_____ 56. At the first sign of illness, I seek medical advice.

_____ 57. I am on a weight-loss diet.

For the remainder of the items use the response scale given with the item, and enter your answer in the space beside the item.

(continued on the next page)

_____ 58. I have tried to lose weight by fasting or going on crash diets.

1. Never
2. Rarely
3. Sometimes
4. Often
5. Very Often

_____ 59. I think I am:

1. Very Underweight
2. Somewhat Underweight
3. Normal Weight
4. Somewhat Overweight
5. Very Overweight

_____ 60. From looking at me, most other people would think I am:

1. Very Underweight
2. Somewhat Underweight
3. Normal Weight
4. Somewhat Overweight
5. Very Overweight

61-69. Use this 1 to 5 scale to indicate <u>how satisfied you are</u> with each of the following areas or aspects of your body:

1	2	3	4	5
Very Dissatisfied	**Mostly Dissatisfied**	**Neither Satisfied Nor Dissatisfied**	**Mostly Satisfied**	**Very Satisfied**

_____ 61. Face (facial features, complexion)

_____ 62. Hair (color, thickness, texture)

_____ 63. Lower torso (buttocks, hips, thighs, legs)

_____ 64. Mid torso (waist, stomach)

_____ 65. Upper torso (chest or breasts, shoulders, arms)

_____ 66. Muscle tone

_____ 67. Weight

_____ 68. Height

_____ 69. Overall appearance

Appendix G

BES

Instructions: On this page are listed a number of body parts and functions. Please read each item and indicate how you feel about this part or function of *your own body* using the following scale:

1 = Have strong negative feelings
2 = Have moderate negative feelings
3 = Have no feeling one way or the other
4 = Have moderate positive feelings
5 = Have strong positive feelings

---

1. body scent ___
2. appetite ___
3. nose ___
4. physical stamina ___
5. reflexes ___

6. lips ___
7. muscular strength ___
8. waist ___
9. energy level ___
10. thighs ___

11. ears ___
12. biceps ___
13. chin ___
14. body build ___
15. physical coordination ___

16. buttocks ___
17. agility ___
18. width of shoulders ___
19. arms ___
20. chest or breasts ___

21. appearance of eyes ___
22. cheeks/cheekbones ___
23. hips ___
24. legs ___
25. figure or physique ___

26. sex drive ___
27. feet ___
28. sex organs ___
29. appearance of stomach ___
30. health ___

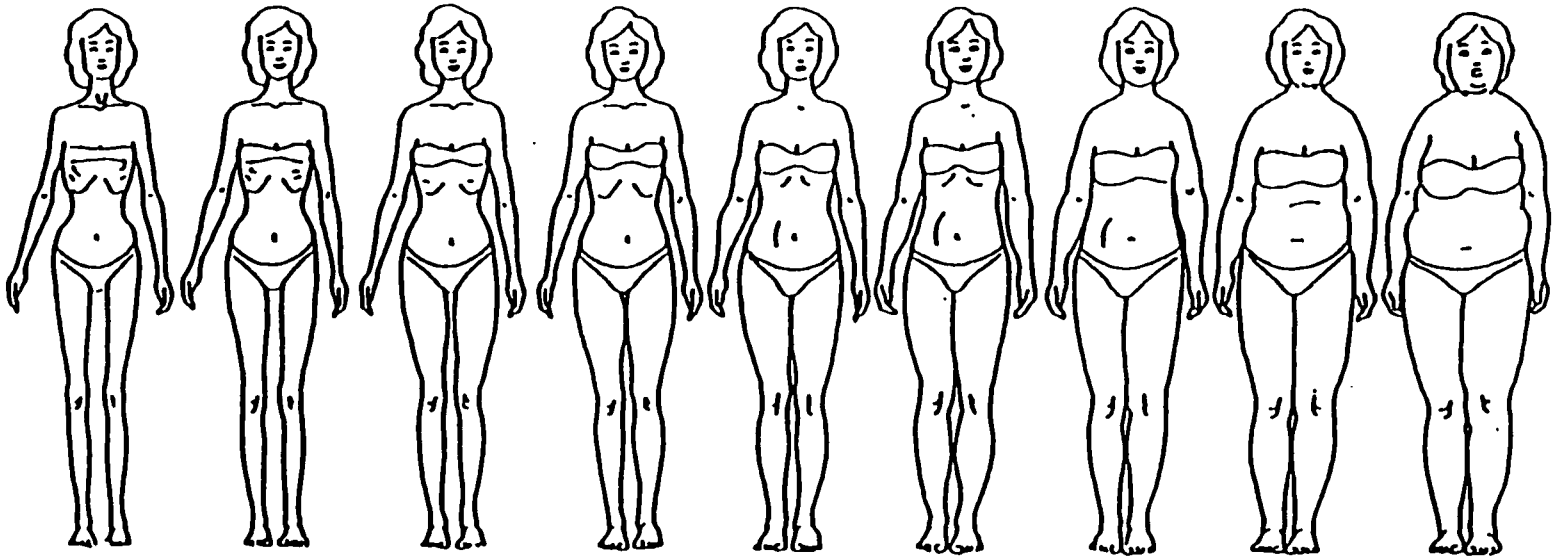
31. sex activities ___
32. body hair ___
33. physical condition ___
34. face ___
35. weight ___

Appendix H

Contour Drawing Rating Scale

Instructions: In each question, you will be asked to choose the number of a figure that best represents your response. Each figure corresponds to a number from 10 to 90. You can choose a figure not represented on the drawing by reporting any number between those represented. For instance, the number 46 would indicate a figure between 40 and 50. Please be as honest as possible in your ratings.

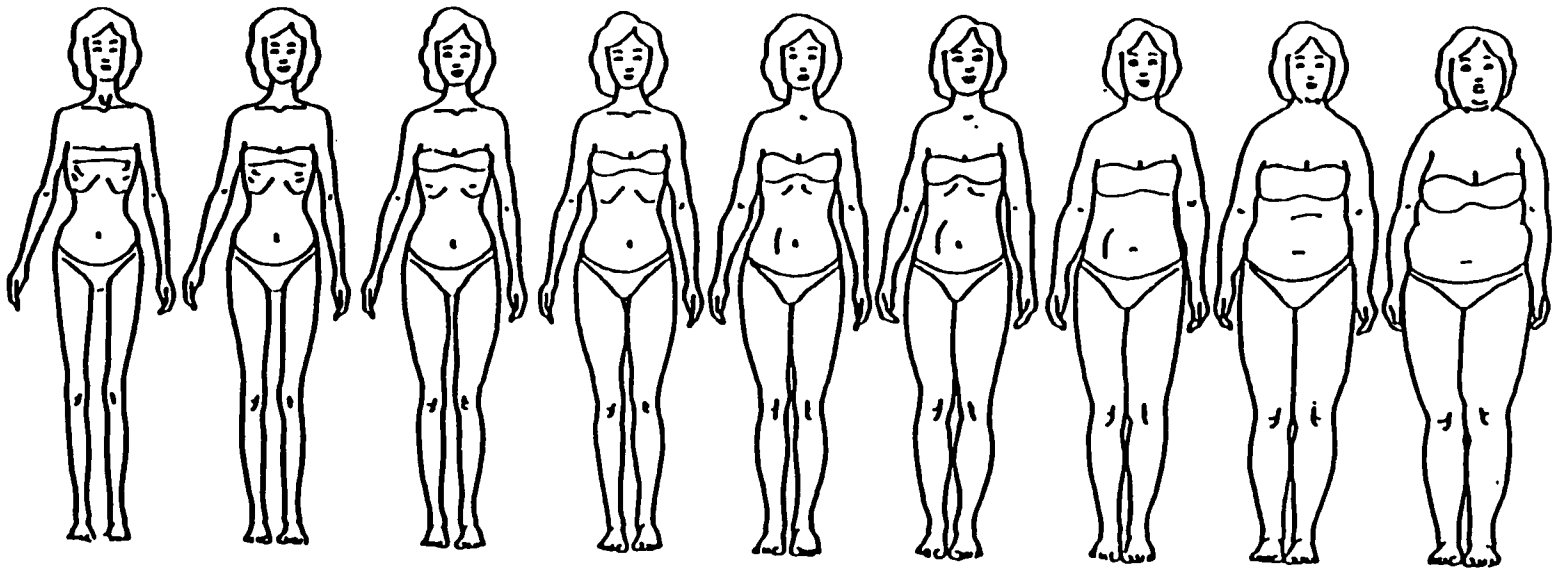
1. Please indicate the number of the drawing that most accurately depicts your current body size, as you perceive it to be.



10 20 30 40 50 60 70 80 90

Number _____

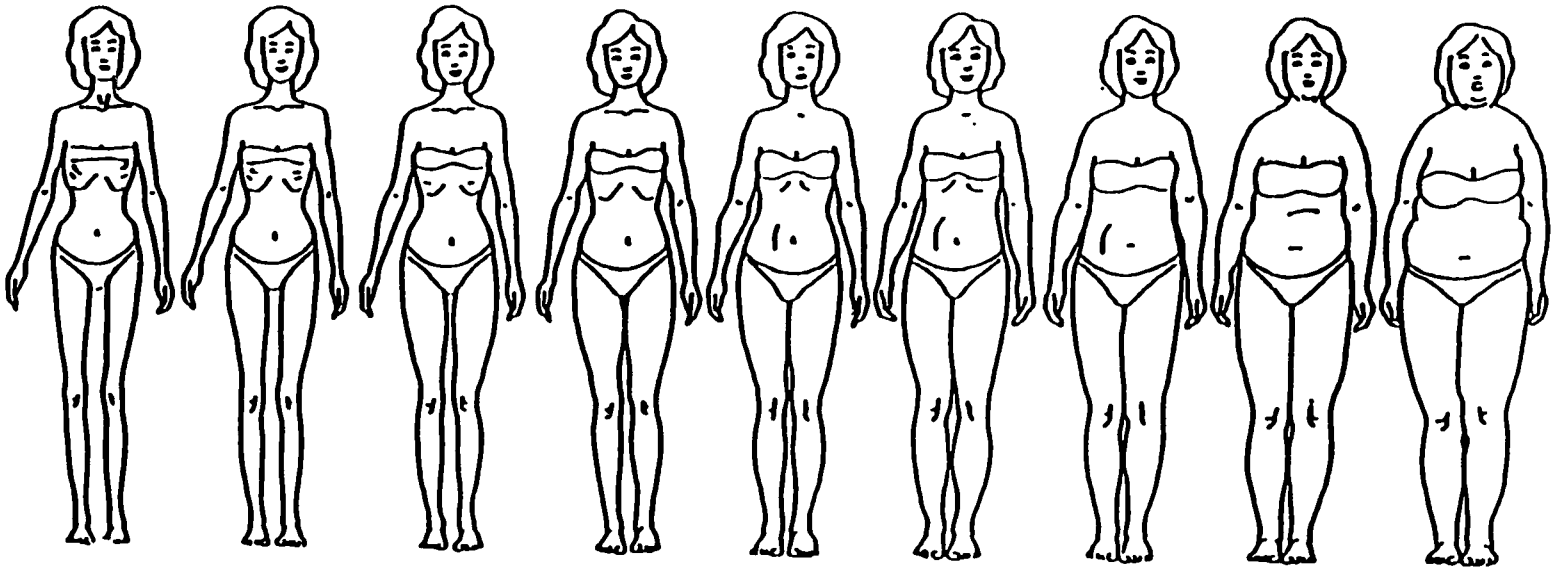
2. Please indicate the number of the drawing that most accurately depicts the body size that you would most prefer.



10 20 30 40 50 60 70 80 90

Number _____

3. Please indicate the number of the drawing that most accurately depicts the body size that you think the opposite sex would find most attractive.



Number _____

Appendix I

Health Questionnaire

Instructions: Please answer the following questions about various aspects of your health.

1. Over the past 12 months, how many times have you visited a medical doctor? _____

2. Have you ever been diagnosed by a doctor as having any of these conditions? (check all that apply)
   _____Anemia
   _____Diabetes
   _____High Blood Pressure
   _____High Blood Cholesterol

3. Have you ever smoked cigarettes? (circle one) Yes No

   If Yes: Do you currently smoke cigarettes? (circle one) Yes No

4. How often do you consume alcoholic beverages? (check one)
   _____Never
   _____Once a Year
   _____Several Times A Year
   _____Monthly
   _____Weekly
   _____Daily

5. On average, how often do you perform a breast self-examination? (check one)
   _____Never
   _____Daily
   _____Once a Week
   _____Once Every Two Weeks
   _____Once a Month
   _____Other: Please specify: ___

6. Have you ever been pregnant? (circle one) Yes No

   If Yes: Are you currently pregnant? (circle one) Yes No

7. What is your present height? _____ feet _____ inches (or _____ centimeters)

8. What is your present weight to the nearest pound (or kilogram)? _____lbs (or _____ kg)

9. What is the MOST you have weighed since reaching your present height (excluding pregnancy)? _____ lbs (or _____ kg)

10. What is the LEAST you have weighed since reaching your present height? _____ lbs (or _____ kg)

11. What do you consider to be your *ideal* weight? _____ lbs (or _____ kg)

12. What do you consider to be the *average* weight for your height? _____ lbs (or _____ kg)

13. What do you consider to be the *healthiest* weight for your height? _____ lbs (or _____ kg)

14. Are you currently on a *special therapeutic diet* that has been *medically prescribed* (e.g., diabetic diet, salt restriction diet)? (circle one) Yes No

If Yes: Please specify the type of diet you are following: _____

15. Have you ever been on a *self-imposed diet to lose weight*? (circle one) Yes No

If Yes: Are you currently on a self-imposed weight loss diet? (circle one) Yes No

How much weight are you trying to lose? _____ lbs (or _____ kg)

How important is it for you to lose this amount of weight? (check one)

_____Very Important
_____Somewhat Important
_____Neutral
_____Somewhat Unimportant
_____Very Unimportant

16. How many times *per week* do you engage in physical activity long enough to perspire heavily? (check one)

_____Less than once per week
_____Once per week
_____2-3 times per week
_____4-6 times per week
_____7 or more times per week

17. Do you take vitamins on a regular basis? (circle one) Yes No

18. Are you currently taking any prescription medication? (circle one) Yes No

19. Do you seem to be sick more frequently than others? (circle one) Yes No

20. Do you experience frequent headaches? (circle one) Yes No

If Yes: Have you ever seen a doctor because of your headaches? (circle one) Yes No

21. How many hours of sleep do you usually get each night? _____ hours per night

Do you awaken feeling rested? (circle one) Yes No

Appendix J

Current Thoughts

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you **RIGHT NOW.**

1 = Not at All
2 = A Little Bit
3 = Somewhat
4 = Very Much
5 = Extremely

1.	I feel confident about my abilities.	1	2	3	4	5
2.	I am worried about whether I am regarded as a success or failure.	1	2	3	4	5
3.	I feel satisfied with the way my body looks right now.	1	2	3	4	5
4.	I feel frustrated or rattled about my performance.	1	2	3	4	5
5.	I feel that I am having trouble understanding things that I read.	1	2	3	4	5
6.	I feel that others respect and admire me.	1	2	3	4	5
7.	I am dissatisfied with my weight.	1	2	3	4	5
8.	I feel self-conscious.	1	2	3	4	5
9.	I feel as smart as others.	1	2	3	4	5
10.	I feel displeased with myself.	1	2	3	4	5
11.	I feel good about myself.	1	2	3	4	5
12.	I am pleased with my appearance right now.	1	2	3	4	5
13.	I am worried about what other people think of me.	1	2	3	4	5
14.	I feel confident that I understand things.	1	2	3	4	5
15.	I feel inferior to others at this moment.	1	2	3	4	5
16.	I feel unattractive.	1	2	3	4	5
17.	I feel concerned about the impression I am making.	1	2	3	4	5
18.	I feel that I have less scholastic ability right now than others.	1	2	3	4	5
19.	I feel like I'm not doing well.	1	2	3	4	5
20.	I am worried about looking foolish.	1	2	3	4	5

Appendix K

EATING ATTITUDES TEST (EAT-26)

● Please check a response for each of the following questions ●	Always	Usually	Often	Sometimes	Rarely	Never
1. Am terrified about being overweight.	☐	☐	☐	☐	☐	☐
2. Avoid eating when I am hungry.	☐	☐	☐	☐	☐	☐
3. Find myself preoccupied with food.	☐	☐	☐	☐	☐	☐
4. Have gone on eating binges where I feel that I may not be able to stop.	☐	☐	☐	☐	☐	☐
5 Cut my food into small pieces.	☐	☐	☐	☐	☐	☐
6. Aware of the calorie content of foods that I eat.	☐	☐	☐	☐	☐	☐
7. Particularly avoid food with a high carbohydrate content (i.e.bread, rice, potatoes,etc)	☐	☐	☐	☐	☐	☐
8. Feel that others would prefer if I ate more.	☐	☐	☐	☐	☐	☐
9. Vomit after I have eaten.	☐	☐	☐	☐	☐	☐
10. Feel extremely guilty after eating.	☐	☐	☐	☐	☐	☐
11. Am preoccupied with a desire to be thinner.	☐	☐	☐	☐	☐	☐
12. Think about burning up calories when I exercise.	☐	☐	☐	☐	☐	☐
13 Other people think that I am too thin.	☐	☐	☐	☐	☐	☐
14 Am preoccupied with the thought of having fat on my body.	☐	☐	☐	☐	☐	☐
15. Take longer than others to eat my meals.	☐	☐	☐	☐	☐	☐
16. Avoid foods with sugar in them.	☐	☐	☐	☐	☐	☐
17. Eat diet foods.	☐	☐	☐	☐	☐	☐
18. Feel that food controls my life.	☐	☐	☐	☐	☐	☐
19. Display self-control around food.	☐	☐	☐	☐	☐	☐
20. Feel that others pressure me to eat.	☐	☐	☐	☐	☐	☐
21 Give too much time and thought to food.	☐	☐	☐	☐	☐	☐
22. Feel uncomfortable after eating sweets.	☐	☐	☐	☐	☐	☐
23. Engage in dieting behavior.	☐	☐	☐	☐	☐	☐
24. Like my stomach to be empty.	☐	☐	☐	☐	☐	☐
25. Enjoy trying new rich foods.	☐	☐	☐	☐	☐	☐
26. Have the impulse to vomit after meals.	☐	☐	☐	☐	☐	☐

Appendix L

Demographic Questionnaire

Instructions: Please answer each of the following questions as carefully and honestly as possible.

Some of the questions may seem rather personal in nature. However, remember that the questionnaires are anonymous and the information that you provide will be kept in strictest confidence and will only be accessible to this researcher.

1. What is your present age? ____ years

2. Which racial group do you belong to? (circle one)

   Asian Black Caucasian Hispanic Native Other: _____

3. What is your current marital status? (check one)
   - ____ Never Married
   - ____ Married (or Common Law)
   - ____ Divorced
   - ____ Separated
   - ____ Widowed

4. Do you have any children? (circle one) Yes No

   If Yes: How many children do you have? _____

5. What is the highest level of education that you have completed? (check one)
   - ____ Grade School
   - ____ Some High School
   - ____ Completed High School
   - ____ Some University/College
   - ____ Completed University/College
   - ____ Some Graduate Work
   - ____ A Graduate Degree

6. Are you presently employed? (circle one) Yes No

   If Yes: What is your job title? _____

7. What is your religion? (check one)
   ____ Catholic
   ____ Protestant
   ____ Jewish
   ____ No religion
   ____ Other: Please specify: _____

8. What is the highest level of education that your father completed? _____

   What is the highest level of education that your mother completed? _____

9. Please feel free to write any additional comments in the space provided after completing all questionnaires in this packet.

_____

_____

_____

_____

_____

_____

****

Thank you for your participation in this study!

If you would like to receive a summary of this study's results, please write your name and complete address (including postal code) on the index card attached to your survey packet and return it to the researcher.

Appendix M

Purpose of the Studies

What was the purpose of the first study?

_____

_____

_____

_____

What was the purpose of the second study?

_____

_____

_____

_____

Appendix N

Debriefing Statement

The two studies that you just participated in were actually two components of the *same* study being conducted by Crystal Coolican, a doctoral student in the Department of Educational Psychology at the University of Alberta, working under the supervision of Dr. Robert Frender. This study was an investigation into the relationship between specific types of television programming and the body image and self-esteem of women between the ages of 18 and 30.

The true nature and purpose of the study was concealed at the beginning of the study so that you as a participant would not become interested in or sensitized to the issues being studied. Such interest or sensitization could potentially invalidate the results. In addition, because the body image and self-esteem questionnaires are fairly obvious and straightforward measures of body image and self-esteem, deception was deemed necessary so that you as a participant would not be able to figure out exactly what was being studied, which could also invalidate the results. By misinforming you that the study was actually two studies, it was hoped that you would not easily recognize that the study was actually an investigation into the relationship between specific television programming, body image, and self-esteem.

"Study 1" involved the exposure to the experimental and control treatments. Those participants who viewed the episode of *Baywatch* comprised the experimental group, whereas those participants who viewed the episode of *The X-Files* comprised the control group. The Multidimensional Television Episode Questionnaire you completed as part of "Study 1" was administered to conceal the true nature and purpose of the study and to legitimize "Study 1" as an actual self-contained study. This questionnaire is considered peripheral to the study.

This research is specifically focused on determining whether participants in the experimental group who watched the episode of *Baywatch* will indicate greater body size and shape dissatisfaction and lower levels of self-esteem than participants in the control group who watched the episode of *The X-Files*. Your responses on questionnaires from "Study 2" will be analyzed in order to make these group comparisons. The color coded raffle tickets on which you wrote your survey identification numbers will enable me to determine which questionnaire packets were completed by individuals in the experimental condition (i.e., red ticket = experimental condition) and individuals in the control condition (i.e., yellow ticket = control condition). Please be assured that the survey identification numbers are not linked in any way to your identity. Your anonymity is of utmost importance, and will be protected.

The Eating Attitudes Test-26 (EAT-26) that you completed as part of "Study 2" will be used to measure the eating behaviors of participants. The data from this questionnaire will enable me to relate eating behaviors to body image and self-esteem. The Demographic Questionnaire that you completed as part of "Study 2" will be used to gather information about the age, ethnicity, marital status, parental status, educational level, employment status, religion, and parental educational level of participants in the study.

In light of the above information, you have the right to decide whether you still wish to allow the data obtained through your participation to be used in the data analysis procedures. Should you decide to decline, please tell me your survey identification number so that the data from your questionnaires can be omitted from the analyses.

Thank you for your valuable participation in this study. If you have any additional questions or concerns about this research, please feel free to contact the researcher, Crystal Coolican at xxx-xxxx.