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BODY IMAGE AND SELF CONCEPT IN  
MALE AND FEMALE ADOLESCENTS

By  
ALLISON BUTTS MAGNUSSON

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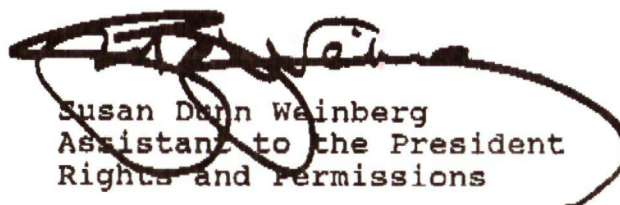
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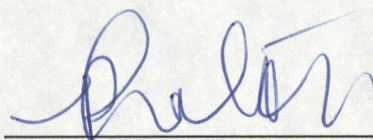
  
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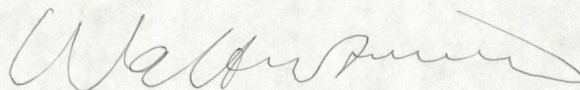


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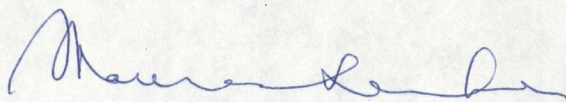
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## ABSTRACT

The present study assessed the differences between male and female adolescents on the following variables: body dissatisfaction, drive for thinness, self concept, desired weight change, and accuracy of weight perception. It also investigated the relationship between self concept and attitudes toward body weight and shape.

One hundred and fifty-two students from two secondary High Schools in the Calgary Catholic School System participated in the research. The sample was drawn from four Grade 10 Social Studies classes and four Grade 10 Physical Education classes. The subjects were comprised of 76 females and 76 males, the majority of whom were concentrated in the 15 to 16-year-old age range.

Three instruments were utilized: the Eating Disorders Inventory, the Tennessee Self Concept Scale and the Personal Data Questionnaire. The testing took place during regularly scheduled class periods and took approximately 50-55 minutes for each class.

A total of eleven hypotheses were developed and stated in null hypothesis form. The results of the study indicated that there were statistically significant differences between the male and female adolescents in this sample on measures of the following variables: Body Dissatisfaction, Drive for Thinness, Overall Eating Disorders Inventory Score and Self



Concept. The females scored in the more clinically disordered manner on the three measures obtained from the Eating Disorders Inventory, and the males were found to have a significantly higher self concept than the females. Gender differences were also found in desired weight change, with males wishing to gain an average of 5.28 pounds and females wishing to lose an average of 10.42 pounds.

There was found to be a statistically significant correlation between body dissatisfaction and self concept in males ( $p=.0001$ ) and a marginally significant correlation between these variables in females ( $p=.05$ ).

Both male and female adolescents were found to misjudge the weight category to which they belonged, with young women tending to overestimate their level of fatness. Young men tended to both over and underestimate the weight category to which they belonged.

In general, the results of this study confirmed the greater prevalence of predisposing factors to eating disorders in female adolescents as compared to their male counterparts, and provided evidence of the increased vulnerability of this group to difficulties with eating and weight. The clinical implications of the findings are discussed and recommendations are made for dealing with the problem of poor body image in an adolescent population.

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# TABLE OF CONTENTS

	Page
APPROVAL PAGE.....	ii
ABSTRACT.....	iii
ACKNOWLEDGMENTS.....	v
LIST OF TABLES.....	ix
CHAPTER ONE: INTRODUCTION.....	1
CHAPTER TWO: LITERATURE REVIEW.....	5
Early Studies.....	5
Risk Factors in the Development of Eating Disorders	10
Sociocultural Factors.....	11
Biological Factors and Developmental Aspects of Adolescence.....	22
Drive for Thinness and Body Dissatisfaction...	25
Problems Associated with Dieting and Dietary Restraint.....	29
Self Concept Studies.....	36
Gender Differences in College Students and Adolescents.....	43
CHAPTER THREE: METHODOLOGY.....	61
Aim of the Study and Statement of the Problem.....	61
Limitations of the Study.....	64
Definitions.....	66
Anorexia Nervosa.....	66
Bulimia Nervosa.....	67
Drive for Thinness.....	68
Body Dissatisfaction.....	68
Self Concept.....	68

Table of Contents (continued)

	Page
Subject Selection.....	69
Research Instruments.....	70
The Eating Disorders Inventory.....	72
The Tennessee Self Concept Scale.....	76
The Personal Data Questionnaire.....	79
Procedure.....	81
Data Analysis.....	84
Hypotheses.....	87
CHAPTER FOUR: RESULTS.....	91
Demographic Variables and Descriptive Statistics...	91
Hypothesis Testing.....	98
Summary of the Significant Findings.....	109
CHAPTER FIVE: DISCUSSION.....	111
Discussion of Hypotheses.....	112
Clinical Implications and Recommendations.....	137
Recommendations for Further Research.....	141

Table of Contents (continued)

	Page
REFERENCES.....	145
APPENDIX A.....	164
APPENDIX B.....	165
APPENDIX C.....	167
APPENDIX D.....	170

## LIST OF TABLES

Table		Page
1	Age and Gender: Descriptive Statistics.....	92
2	Body Dissatisfaction, Drive for Thinness, Overall EDI Score, and Self Concept: Descriptive Statistics for Males and Females.....	94
3	Actual and Perceived Weight Categories: Descriptive Statistics for Males and Females.....	95
4	Desired Weight Change: Descriptive Statistics for Males and Females.....	96
5	Sex Differences in Body Dissatisfaction, Drive for Thinness, the Overall EDI Score, Self Concept and Desired Weight Change.....	99
6	Summary of the Analysis of Variance: Scores on the Body Dissatisfaction Subscale as a Function of Weight Category.....	100
7	Scores on the Body Dissatisfaction Subscale as a Function of Weight Category Arranged in Clusters that are Significantly Different From Each Other.....	102
8	Two-sample t-tests Indicating the Significance of Difference Between the Weight Category Clusters..	104
9	Relationship of Perceived to Actual Weight Category in Male and Female Adolescents.....	108



## CHAPTER ONE

### INTRODUCTION

Adolescence is a period marked by rapid and dramatic physical changes which are accompanied by a corresponding increase in concern with the body (Cohn, Adler, Irwin Jr., Millstein, Kegeles & Stone, 1987; McCandless, 1970). Not surprisingly there is considerable variability in the adolescent form and in each adolescent's thoughts, feelings, and beliefs about his or her physical self, otherwise known as "Body Image" (Rosenbaum, 1979). It would seem that whether an adolescent learns to accept his/her bodily appearance as simply a variation on one of many acceptable body types will depend on various factors including the following: that individual's conception of what is "normal", the degree to which he/she internalizes and values current cultural standards of physical attractiveness and the extent to which he/she can incorporate the somatic changes which occur during puberty into a dynamic concept of self.

It has been suggested that the dramatic physical changes which adolescents are subjected to increase their sensitivity to narrowly defined standards of acceptable body weight and shape (Dwyer, Feldman, Seltzer & Mayer, 1969). Individuals comparing themselves to these standards may find that they fall short. Consequently they may define their normal variations in physical appearance as unacceptable, which in turn can create a tremendous amount of anxiety,

unhappiness and dissatisfaction (Dwyer et al., 1969). When taken to the extreme, poor body image coupled with low self-esteem can lead to the development of eating disorders and anorexic behavior (Grant & Fodor, 1986; Garner & Davis, 1986).

David Garner and his colleagues (Garfinkel & Garner, 1982; Garner & Davis, 1986) have developed a model of anorexia nervosa and bulimia which emphasizes the multidetermined and self-perpetuating nature of these disorders. In this model, eating disorders are the "final common pathway" (Garner & Davis, 1986, p. 6) of a variety of predisposing, precipitating and perpetuating factors.

This study will focus on predisposing factors, that is, those factors that might put a person at risk for the development of an eating disorder. Of the predisposing factors discussed in Garner's model, this project will examine self-esteem deficits, dissatisfaction with weight and shape, and drive for thinness. Specifically, I will compare male and female adolescents with respect to 1) their overall scores on the Eating Disorders Inventory (EDI), an instrument measuring psychological characteristics associated with eating disorders; 2) their Drive for Thinness and Body Dissatisfaction scores; 3) desired weight change; 4) the relationship between weight category and body dissatisfaction; 5) the relationship between body dissatisfaction and self concept; 6) the accuracy of their weight perception; and 7) the correlation between self

concept and desired weight change.

Several researchers have suggested that the cultural ideal of thinness in our society and the pressures placed on women to diet may play an important role in the increasing incidence of eating disorders in female adolescents (Garner and Garfinkel, 1980; Lundholm & Littrell, 1986; Boskind-Lodahl, 1976). Others also feel that dieting itself may be a risk factor for the development of eating disorders and other harmful weight-loss strategies (Polivy & Herman, 1985; Striegel-Moore, Silberstein & Rodin, 1986; Vandereycken & Meerman, 1984). Obviously, not all female adolescents will be drawn into a web of self-destructive dieting and weight-loss strategies just because they live in a culture that idealizes thinness. However, the cultural pressures to be slim and to diet can be instrumental in affecting vulnerable adolescents in this manner.

Consequently, it is important to determine whether, compared to male adolescents, females possess more negative attitudes toward their bodies, more inaccurate perceptions of their weight and self concept deficits more closely associated with body dissatisfaction. As will become evident from the literature review, these attitudes and perceptions often lead to dieting and can form the foundation for harmful dietary patterns, destructive weight-loss strategies, and occasionally eating disorders (Polivy & Herman, 1985; Lundholm & Littrell, 1986). Furthermore, if these patterns are established during

adolescence, they can persist into adulthood resulting in problems with weight and dieting (Rosen & Gross, 1987). Our society's glorification of the thin, lithe body and the pressures placed on women to achieve this idealized form may be undermining their self-esteem, sense of worth, and self-acceptance. It is this fact that makes this issue a major concern which warrants further investigation.



CHAPTER TWO  
LITERATURE REVIEW  
A Brief Review of Early Studies

The first section of this literature review will provide a brief overview of early studies carried out in the areas of adolescent dieting, attitudes toward weight and shape, and the relationship between body image and self-concept. What is perhaps most interesting about this body of research is that it was carried out at a time when eating disorders were extremely rare. In spite of this, many of the findings are relevant today and in retrospect, indicate that some of the seeds needed for the rising incidence of eating disorders over the next two to three decades had already been planted.

In 1953, Paul Secord and Sidney Jourard performed one of the first studies looking at the relationship between body-cathexis and self concept. Body-cathexis was defined as "the degree of feeling of satisfaction or dissatisfaction with the various parts or processes of the body" (p. 343). The researchers felt that what was missing from most theories of personality was an exploration of the individual's attitudes toward his/her body. In order to include body-cathexis in a comprehensive theory of personality, they felt it was first necessary to prove that this variable was in some way related to another significant personality variable, namely self concept. They

hypothesized that positive feelings about the body would be associated with self satisfaction while negative attitudes toward the body would be related to both anxiety and feelings of insecurity. Secord and Jourard did find moderate positive correlations between body-cathexis and self satisfaction ( $r=.58$  for males and  $r=.66$  for females), as well as negative correlations between these variables and measures of anxiety and insecurity. More important, they also discovered that regardless of the direction of the cathexis, women cathect their bodies to a greater degree than men, which is to say that they have stronger feelings of satisfaction and dissatisfaction than men. They speculated that this difference might be the result of the social importance of the female form

In 1966, Huenemann, Shapiro, Hampton and Mitchell published a study which was the culmination of a four year longitudinal investigation into the gross body composition, size and shape of teenagers and the relationship of these variables to physical activity and food intake. For the purposes of this study the particular areas of interest are adolescents' perceptions of their own figures and their efforts at weight control.

The popular notion that teenagers are quite concerned with the size and shape of their rapidly changing bodies was borne out by their answers on the questionnaires. Males and females differed remarkably in the difference between their self perception of fatness and their actual fatness. The

following methods were used to assess percentage of body fat: "Behnke's body envelope method, underwater weighing, helium displacement in Siri's chamber and K40 measurements in the whole body counter" (Huenemann et al., 1966, p. 325).

The number of girls describing themselves as fat increased with age and far exceeded the number of girls who actually were fat. 43%, 49% and 56% of girls in grades 9, 10 and 12 respectively described themselves as fat. In reality, only a fourth of them could actually be classified as "obese" or "somewhat obese", which for females meant having a percentage of body fat greater than approximately 22%. In contrast boys were very accurate in correctly describing themselves as fat. In fact, the percent of boys describing themselves as fat remained constant across grades 9, 10 and 12, (22%, 24% and 22% respectively), and slightly underestimated the 25% that actually were classified as "obese" or "somewhat obese". Boys were classified as at least somewhat obese when their percentage of body fat exceeded approximately 16%. Greater than 50% of girls stated that they were fairly or extremely worried about overweight, which is almost equivalent to the percentage of boys that expressed concern about being underweight.

Both male and female adolescents were also dissatisfied with body dimensions, but the focus of their concerns was different. Over half of the boys in the tenth and twelfth grades wanted bigger biceps, chests, wrists, shoulders, and/or forearms, all dimensions related to upper body

strength. Girls on the other hand expressed a desire for smaller hips, thighs and/or waists, all of which are places where fat is deposited during puberty.

When asked about their desires to gain or lose weight, the responses were in keeping with those discussed previously and seemed to reflect unrealistic self-images. About 65% of the girls wanted to lose weight even though far fewer numbers of them had described themselves as fat. They expressed worry about becoming overweight and about actually being overweight. Similarly about 55% of boys wanted to gain weight, a figure which also far surpassed the number who had described themselves as too thin, or who actually were below average in weight.

With regard to weight control efforts, it appears that girls used dieting much more frequently than boys even in 1966. In the ninth grade the ratio of girls to boys who limited food intake to control weight was 3:1. By twelfth grade this ratio had increased to 5:1. In the twelfth grade about equal numbers of boys used dieting as used exercise to control weight whereas two and a half as many girls used dieting as used exercise to control weight.

It is evident from these findings that concerns about weight and shape have been a problem for both young men and women for decades. However these concerns are reflected quite differently in females as opposed to males. Adolescent girls tend to perceive themselves as fat when they are not, want to lose weight, worry about being



overweight in the absence of evidence that they are, and use dieting more than exercise to control weight. As discussed earlier, these attitudes, perceptions and behaviors have the potential to be very self-destructive in certain individuals. Although adolescent boys may be just as dissatisfied with their bodies, it is not likely that the desire to gain weight will increase their vulnerability to eating disorders (Connor-Greene, 1988).

Dwyer, Feldman and Mayer (1967) carried out a similar study looking at the physical characteristics, attitudes and dieting practices of 446 senior high school girls, and then compared these girls to 145 of their male classmates (Dwyer et al., 1969). Their results were quite consistent with those derived from the Huenemann et al. study (1966) referred to previously. Dieting to lose weight was very common among the girls. About 60% of the girls had been on a diet at least once even though only 15% could be classified as medically needing to do so. Even more astonishing was the finding that, of the girls classified according to triceps measurements to be "below average" and "lean" in body fatness, 53% and 27% respectively had been on diets at some point in time. In the below average weight category the girls who were on diets were not fatter, but tended to have greater bone and muscle components. Thus it appears that many girls were using an incorrect cue for dieting and attempting to change aspects of their bodies that could not be altered in this manner. It was not

surprising to find that for these girls, dieting was a frustrating, unrewarding experience. The reasons for dieting were varied but it is interesting to note that dieters were much more likely than non-dieters to perceive themselves to be overweight.

These researchers asked both males and females to indicate their current weight, the weight they thought they should be for health reasons (proper weight), and the weight that they wanted to be (desired weight). Adolescent girls listed desired and proper weights which were lower than their current weights (with the exception of those in the lean category). A full 80% of the girls wanted to weigh less. In contrast, desired and proper weights were both greater than the reported weights for adolescent senior boys, indicating a desire to gain weight.

#### Risk Factors in the Development of Eating Disorders

It has been well documented in the literature that approximately 90-95% of the individuals suffering from eating disorders are female (Crisp, 1970; Bemis, 1978; Halmi, Falk & Schwartz, 1981; Leon, Carroll, Chernyk & Finn, 1985). Researchers have also consistently noted that eating disorders usually develop during adolescence and young adulthood (Halmi, Casper, Eckert, Goldberg & Davis, 1979; Halvorson & Neuman, 1983). In the following section the sociocultural factors, and the biological/developmental

aspects of adolescence which influence females' attitudes toward their bodies and their pursuit of thinness will be discussed.

The extent of body dissatisfaction and the drive for thinness in non-clinical populations, and the relationship of these variables to disordered eating and weight control will be explored next. Evidence suggesting that dietary restraint and dieting are strong precipitants of eating disorders will also be examined.

Following this discussion, the literature addressing the association between self-concept and variables such as body dissatisfaction, physical attractiveness, dieting and eating disorders will be reviewed.

Finally, those studies looking specifically at sex differences in concerns about weight and shape, body dissatisfaction, drive for thinness, accuracy of weight perception, and desire to change body weight will be examined. Those studies utilizing college age samples will be presented first, followed by the research employing adolescents.

### Sociocultural Factors

The fact that eating disorders are more prevalent within a particular age group (adolescence to young adulthood), are overwhelmingly distributed within a particular sex (female), and are quite unique to Western culture

suggests that sociocultural factors play a significant role in their development (Garfinkel & Garner, 1982; Striegel-Moore et al., 1986). Furthermore, epidemiological research points to a dramatic increase in both anorexia nervosa and bulimia in the last twenty to twenty-five years (Garfinkel & Garner, 1982; Striegel-Moore et al., 1986), an observation which has also been attributed by in large to sociocultural influences.

Eating disorders are predominantly a phenomenon of Western culture. Studies looking at the epidemiology of eating disorders in non-Western cultures have found them to be extremely rare or even non-existent. For example Carlos (1972) found anorexia nervosa to be absent in Latin America, while Buhrich (1981) could only find 0.05% cases per annum in Malaysia. In Egypt, only two cases of "anorexia nervosa" were found in girls who were reported to be suffering from hysterical personalities and sexual psychopathology (Okasha, Kamel, Sadek, Lotaif & Bishry, 1979).

Other research has revealed that exposure to Western values can affect attitudes toward body weight. For instance, Furnham and Alibhai (1983) compared Kenyan born women living in Asia (Kenyan Asians) to Kenyan born women living in Britain (Kenyan British) with regard to their preferences for various body types. The Kenyan Asians gave larger figures higher ratings and smaller figures lower ratings than the Kenyan British, suggesting that Western standards of physical beauty had influenced the Kenyan

British. Nasser (1986) discovered that the difference between Arab females attending university in Cairo as opposed to London went beyond negative attitudes toward body weight. In the London sample of 50 he identified six students with bulimia nervosa while he found no women who met the criteria for an eating disorder in the Cairo sample of 60. Nasser surmised that Westernization was partly to blame for the development of eating disorders in the Arab women studying in London.

One of the reasons often cited for why eating disorders are so much more prevalent in Western societies is the variation in how different cultures view obesity and the standards they uphold for feminine beauty (Nasser, 1988a). Ford and Beach (1952) point out that in most cultures, plumpness in women is admired not ridiculed, and in some societies it has actually been looked upon as a secondary sexual characteristic (Rudofsky, 1972). In the Arabic culture body fat is seen as a sign of fertility and sexuality, and it is thinness which is socially stigmatized (Hamadi, 1960). For the Chinese, fatness is linked with living a long and prosperous life, as evidenced by the preponderance of fat Gods. Thus body fat in most cultures symbolizes femininity, mothering, and nurturance (Meyer & Gallwitz, 1968; Orbach, 1978) and when food is limited, it represents wealth, success and security (Powers, 1980).

Western values and standards of feminine beauty have varied throughout history, but it would not be an

exaggeration to say that at present, ours is a culture obsessed with slenderness. In contrast to the cultures described above, it is thinness that has come to symbolize those things that our culture values such as self-control and belonging to a higher social class (Nasser, 1988b). Fatness on the other hand, has come to symbolize all that our society reviles. Clark, Levine and Kinney (1989) have suggested that "weightism" is the one form of prejudice that is still considered acceptable to many people. Studies have shown that overweight people, and especially women, are labelled ugly, lazy, messy, weak and incapable (Garner, Rockert, Olmsted, Johnson, & Coscina, 1985; Steiner-Adair, 1986; Wooley & Wooley, 1982). Children learn these attitudes at a very early age as evidenced by Staffieri's studies in the area (1967, 1972). When presented with silhouettes of endomorphic children, boys consistently attributed to these silhouettes negative traits such as dirty, lazy, stupid, mean and sloppy, and girls were even more harsh in their judgments of the endomorphic body build.

There is also evidence that prejudice against overweight people affects women more than men when it comes to college admission discrimination. In their study of high school graduates, Canning and Mayer (1966) found that 52% of the non-obese females went on to attend university as opposed to only 32% of the obese females. Obese and non-obese males did not differ significantly with 50% and 53% respectively going onto college after graduation. It is

important to note that the obese and non-obese samples did not differ on either standardized measures of intellectual ability or on the percentage who applied to get into university.

The apparent increase in women's obsession with weight and eating and in the frequency of eating disorders has paralleled the trend in Western cultures toward idealizing a standard of thinness that is unreasonable for the average woman (Garfinkel & Garner, 1982; Rodin, Silberstein & Striegel-Moore, 1984; Freedman, 1984). Garfinkel, Garner, Schwartz & Thompson (1980) charted the shift in our culture's preference for an average weight hourglass figure to a preference for a bony stick-like figure. Analysis of the statistical data on Miss America contestants and pageant winners from 1959 to 1978 revealed that for every contestant, the correlation between year and the percent of average weight for age, height and sex was  $-0.83$  ( $p=.0001$ ). The findings indicated that there was an average decrease in weight per year of .28 pounds for the contestants. The actual pageant winners exhibited a decline in weight of .37 pounds per year. In addition, before 1970 the winners weighed in at  $87.7\% \pm .7$  of average weight which is significantly greater than the mean weight of  $82.5\% \pm .7$  of average observed after 1970.

The researchers also gathered the heights, weights and measurements of all Playboy centerfolds over a 20 year period and found that the average weight for age and height

had decreased significantly ( $p < .0001$ ). Furthermore the bust measurements had decreased ( $p < .005$ ), the waist measurements had increased ( $p < .001$ ) and the hip sizes had decreased ( $p < .05$ ). So not only has there been an increased association of thinness with women who are considered to be the epitome of beautiful, but there has been a de-emphasis on the beauty of female curves. Our culture's ideal standard of feminine beauty is now a more androgynous, boyish form with a smaller bust and narrower hips (Garfinkel & Garner, 1982; Halvorson & Neuman, 1983).

Women are constantly bombarded with the message that in order to be beautiful one must be slim and that ultimately, this will lead to success, popularity, desirability and a sense of self-control. But where exactly does the emphasis on dieting, exercising and slimness come from? Garfinkel et al. (1980) charted the greater pressure placed on women to diet by tabulating the number of diet articles (not advertisements) appearing in five women's magazines over a 20-year period. In total there were 385 articles. Most important, the mean number of articles found in each magazine per year increased significantly from 15.6 in the first decade to 22.9 in the second decade ( $p < .01$ ). Of course television is another powerful source. The viewer is inundated with commercials advertising everything from weight-loss clinics to diet sodas to diet pills, and in each advertisement the person using the product is depicted as being happy, beautiful and thin (Halvorson & Neuman, 1983).



Tan (1979) carried out a study to try and determine the effect of exposing high school girls to television advertisements using sex appeal, beauty and/or youth as selling points. She found that compared to the girls who viewed neutral commercials, those exposed to beauty commercials saw beauty as being more important to both their own personalities and their popularity with men.

Hilde Bruch, one of the foremost experts in the field of eating disorders has referred to the increase in eating related disorders as a sociocultural epidemic (1978). She has suggested that fashion's emphasis on slimming may influence vulnerable adolescents who associate weight-loss with self-control and believe that their lives will change dramatically because of a change in weight or shape. It must be emphasized that no one is saying that sociocultural influences cause eating disorders. Rather, the overwhelming emphasis placed on maturing females to meet a standard of physical attractiveness which features thinness as a central feature, is thought to be contributing to dissatisfaction with body weight and shape, drive for thinness and occasionally eating disorders.

Freedman (1984) has stressed that girls need to be made aware that the emaciated bodies of models that grace the pages of fashion magazines are not representative of the healthy adult female form. The problem it appears is not only that weight, shape and diet are promoted as being central features of women's lives, but that young women do

not seem to realize that there is something wrong with a culture that promotes such narrow standards of physical beauty. Sandra and Daryl Bem (1970, p. 89), in alluding to problems such as this, have noted that "only a very unparochial fish is aware that his environment is wet".

Rodin et al. (1984, p. 267) refer to women's preoccupation with weight as a "normative discontent" to reflect the fact that so many women perceive themselves to be overweight and consequently are involved in chronic dieting. They feel that eating disorders are at the extreme end of a continuum on which weight preoccupation and stringent dieting also lie. This continuum hypothesis, first proposed by Fries in 1974, recognizes that there are many similarities between clinical and non-clinical populations with regard to body dissatisfaction and concerns about weight, and that what may start out as dieting for legitimate reasons may develop into an excessive preoccupation with weight.

Nylander (1971) carried out an extensive survey of Swedish students' concerns about weight and shape that provided evidence to support the continuum hypothesis. He discovered that the majority of girls felt fat and were dieting. The percentage who reported feeling fat increased from 50% of the 14 year old girls to 70% of the 18 year old females. In actual fact, 97% of the girls were of normal weight. Boys on the other hand only rarely admitted feeling fat or dieting. He also found that almost ten percent of

the female students reported anorexic-like behavior associated with weight loss and were suffering from a mild form of eating disorder.

In their study of 578 students attending a College of Technology, Button and Whitehouse (1981) found that a small but significant number of nonclinical females (approximately 5%) scored within the clinical range on the Eating Attitudes Test (Garner & Garfinkel, 1979), a measure of concern about weight and dieting, and had developed what the authors termed a subclinical form of anorexia nervosa. Of the 28 high-scoring students, 23 were classified as being either 1) abnormally preoccupied with weight and food intake or 2) vomiters and/or purgers. Thus a substantial proportion of young women displayed an obsession with weight in the absence of severe weight loss. Furthermore, many of the girls who developed an excessive preoccupation with weight had originally just wanted to lose weight for cosmetic reasons. From the interviews that followed testing, it was clear that some of these girls had approached a more severe state resembling anorexia nervosa in the past. It was the researchers' hope to draw attention to the serious health and psychological problems facing young women who, though not belonging to the small group of eating disordered individuals, had reached a point where concerns about weight control were inextricably tied to their feelings of self-worth and dignity.

Garner and Garfinkel (1980) took this idea one step further by examining the scores obtained on the Eating Attitudes Test (EAT) by modeling and dance students as compared to individuals with anorexia nervosa, normal controls and music students. They predicted that because models and dancers must be vigilant about maintaining a certain body weight and shape, they would be more sensitive to the cultural demands many women feel to diet. 34% of the modeling students and 38% of the dance students scored at or above the cut-off score on the EAT. As well, 7% of the total dance sample and 7% of the modeling sample met the Feighner et al. (1972) criteria for anorexia nervosa. In contrast, none of the music students or normal controls were identified as having anorexia nervosa. This study demonstrated that vulnerable subgroups of females who are under a great deal of pressure to maintain a low body weight are in greater danger of developing an eating disorder.

The above study supports the hypothesis that females who must concentrate a great deal of energy on their body weight and shape, because of their professions of modeling and dancing, are at greater risk for developing excessive preoccupations with weight and dieting. The central question of this thesis is, what about those individuals who, regardless of their professions, internalize the standards of thinness set by television, magazines and fashion? Are these "normal individuals" not also more vulnerable to developing problems associated with weight and

eating?

The phenomenon of cultural standards of physical beauty promoting unhealthy practices and affecting the way in which pathology is expressed is not new. There are several historical examples of society encouraging females to practically mutilate their bodies in the name of beauty. For example, women belonging to the higher social classes in pre-revolutionary China were subjected to footbinding, a process whereby their foot was wrapped tightly to prevent it from growing normally. The end result was a clubbed "lily foot" on which the woman could barely stand, much less walk. A woman with a lily foot was a source of pride to her husband by indicating that he could provide for her so well that she did not need to work. This symbol of the feminine ideal was abolished only recently in the early 1900's (Lyons & Petrucelli, 1978).

Corsetting is another practice that despite resulting in severe physical damage, was promoted by Western society to help women achieve a certain beauty ideal and was practised by most women in the nineteenth century. Some of the less severe problems associated with the tight-lacing were difficulty breathing, constipation, exhaustion, and indigestion. The more dangerous complications included injury due to breakage of the steel stays, bent or broken ribs, a displaced liver, and uterine prolapses (Ehrenreich & English, 1978). If corsets were an external, mechanical means of achieving a slim appearance, then dieting is an

internally motivated means of achieving the same look (Brownmiller, 1984).

### Biological Factors and Developmental Aspects of Adolescence

In order to fully appreciate the average female adolescent's difficulty in accepting her body, it is necessary to explore the impact of biological, psychological and cognitive changes ushered in at puberty.

Puberty brings with it a barrage of extensive physiological changes. In response to these changes, adolescents tend to become more self-aware as well as highly sensitive to their new physical selves (Striegel-Moore et al., 1986; Faust, 1983). As a result, perceptions of the body become central features of one's growing sense of self. It is important to remember that although the actual physical changes are important to self-definition, what most influences the individual's feelings about him or herself is whether these changes are evaluated positively or negatively.

Another related development is an increase in egocentricity, something which many feel is a by-product of heightened cognitive abilities. Specifically, Elkind (1978) believes that adolescent thinking is influenced by concepts such as the imaginary audience (that other people are always evaluating one's behavior and appearance), and the personal fable (that what one is experiencing is unique and beyond

the realm of ordinary reality). Thinking in this manner can make a young woman more vulnerable to unrealistic cultural standards of feminine beauty because what follows from this egocentrism is usually an increased concern with other people's feelings, opinions and standards.

The issue of body dissatisfaction and the pursuit of thinness in adolescent females is however much too complex to be attributed simply to heightened egocentricity. Several researchers have observed basic differences in male and female adolescents that may contribute significantly to this problem. It has been found that girls are on the whole more anxious, insecure, and self-conscious than boys (Bush, Simmons, Hutchinson & Blyth, 1978; Hill & Lynch, 1983). They also appear to care more about other people's opinions of them, worry more about being liked and try harder to avoid being negatively evaluated by others (Simmons & Rosenberg, 1975). In their quest to avoid negative evaluations, adolescent girls become finely tuned to societal norms and appropriate standards of feminine behavior. According to Hill and Lynch (1983), when pressures to conform to extremely rigid standards of thinness combine with insecurity, self-consciousness and increased sensitivity to sociocultural norms, the end result is a girl who not surprisingly, is very dissatisfied with the increase in fat accompanying adolescence.

There are several reasons why the biological changes that take place at puberty are often more problematic for

girls than for boys. Prior to puberty girls have 10 to 15% more fat than boys but after puberty they have twice as much fat as boys (Marino & King, 1980). This difference is due to the fact that estrogen binds fat and consequently girls experience a substantial increase in fat during puberty, especially on the breasts, thighs and hips (Freedman, 1984). Boys on the other hand gain their weight primarily in muscle and lean tissue, not in fat (Beller, 1977; Tanner, 1978). Given that the feminine beauty ideal demanded by Western society leans toward the thin prepubertal look, while the masculine ideal leans toward the strong, muscular look, it is only to be expected that adolescent girls would express more unhappiness and dissatisfaction with their weight and shape (Simmons & Rosenberg, 1975; Dornbusch et al., 1984). While the developmental milestone of adolescence helps bring boys closer to the male ideal, girls find themselves pulled farther away from what society deems to be beautiful. Furthermore, the ideal male body is closer to the physiological norm for men than the ideal female body, which is far thinner than the physiological norm for women (Unger, 1979). This discrepancy can again be attributed to the higher fat to lean ratio to which women are predisposed. When the percentage of body fat falls below a critical level, female hormones become disregulated (Striegel-Moore et al., 1986).

What is perhaps most difficult about this entire turn of events is the timing. The higher progesterone and estrogen



levels which signal puberty increase an adolescent girl's ability to produce and store fat right when she is becoming more worried about her physical appearance. One can easily see how this biological reality might be a factor in the wide-spread dieting among adolescent girls (Freedman, 1984).

Freedman (1984) has said that a healthy emergence from adolescence involves adapting one's body image to take into account the dramatic physical changes taking place while at the same time developing a strong body esteem. It is clear from the above literature that there are several forces working against adolescent girls who are trying to achieve these goals.

#### Drive for Thinness and Body Dissatisfaction

In the previously discussed studies, reference has been made repeatedly to the relative unhappiness many adolescent girls express with regards to their bodies and how this is translated into a relentless drive to achieve the unrealistically thin beauty ideal propagated by our culture. This section of the literature review will look in more detail at the studies addressing body dissatisfaction and the drive for thinness in non-clinical female populations.

Wadden, Foster, Stunkard and Linowitz (1989) compared obese adolescent girls with nonobese girls on measures of anxiety, depression, and satisfaction with weight and

shape. As was to be expected, very overweight girls expressed significantly more dissatisfaction with their weight than the rest of the subjects. It is interesting to note that the slightly overweight and average weight subjects did not differ significantly with regards to satisfaction with weight. Instead both groups were significantly more unhappy with their weight than the slightly underweight and very underweight women. Clearly many average weight girls feel that it is just not good enough to be normally proportioned. It appears that one has to achieve a very thin, emaciated look in order to feel satisfied. To back this up, the researchers found dissatisfaction with weight accompanied by attempts to lose weight in 77% of the normal weight girls and a full 32% of the very underweight girls. Another significant finding was that perceived degree of overweight correlated strongly with both anxiety ( $p < 0.02$ ) and depression ( $p < 0.02$ ) whereas these factors did not correlate with actual degree of overweight. In general the findings of Wadden et al., that many nonobese adolescent girls and especially normal weight girls, are dissatisfied with their weight supports the observation of Rodin and her colleagues that women's unhappiness with weight is a "normative discontent" (Wadden et al., 1989).

Lundholm and Littrell (1986) carried out a study which examined the desire to be thin among high school cheerleaders and its relationship to unhealthy eating habits and methods of controlling weight. It was the researchers'

concern that those girls who accept without question the cultural message that slimness will bring them happiness, success and social desirability are in danger of relentlessly pursuing the thin ideal. This pursuit may in turn lead many to fall into the trap of using disordered weight loss strategies such as rigid dieting and vomiting. In fact this is exactly what they found. The authors compared those girls who scored in the upper third on a measure of desire for thinness with those who scored in the lower third. They found that those with a greater desire for thinness were more likely to report the following: excessive worry over weight and dieting; restricting the number of calories taken in; body dissatisfaction; going off a diet because one "non-diet" food was eaten; and bingeing followed by the desire to engage in self-induced vomiting.

A study performed in England by Davies and Furnham (1986) examined overall body satisfaction with nine body parts in four age groups (12, 14, 16 and 18) of British adolescent girls. The researchers hypothesized that as they got older, girls would become more distressed over certain body features (breasts, hips, waist and legs) that are typically associated with femininity because of their growing awareness of the role of these features in interpersonal relations. They also hypothesized that satisfaction with one's weight would influence satisfaction with these body parts. Dissatisfaction with bust measurements increased from 28 to 38%, dissatisfaction with

waist measurements increased from 35 to 43%, and dissatisfaction with hip measurements increased significantly and dramatically from 22 to 62%. Furthermore, as the girls became proportionately heavier for their height, they became less satisfied with their waist measurements (at age 18) and hip measurements (at ages 16 and 18). Thus, decreasing satisfaction with waist and hip measurements was in part a function of decreasing satisfaction with one's weight. The author's also found, as Wadden and his colleagues had, that perceived weight was more directly associated with body dissatisfaction than an actual ratio of weight to height.

It was Davies and Furnham's belief that the girls' increasing dissatisfaction with their hips, weight and waist measurements represented an internalization of what Western society dictates to be beautiful. Ironically, our culture's conception of the ideal female body gravitates toward a weight so low that it prevents normal reproduction and is also almost impossible to achieve.

## Problems Associated with Dieting and Dietary Restraint

This literature review has already looked at the large body of work showing that women are under a tremendous amount of pressure to diet in order to live up to the standards for physical beauty espoused by Western culture. It has also reviewed some of the studies examining the resulting body dissatisfaction and desire for thinness in adolescent girls, and later on will explore the research comparing males and females which by and large shows that females are much more dissatisfied with their weight and shape. The question now becomes, what is the relevance of the results of this research to the psychological and physical health of adolescent girls? The answer lies in the fact that cultural standards of thinness for women, dissatisfaction with weight and shape, and the desire to be thin have resulted in a tremendous increase in dieting and dietary restraint in females (Gray, 1977; Garner & Garfinkel, 1980; Hesse-Biber, Clayton-Matthews & Downey, 1987; Hsu, 1989).

One of the main problems with females using caloric restriction to lose weight or to change their shape is that for a number of biological and physiological reasons that will be outlined, dieting in the absence of exercise just does not work and in fact can result in effects exactly opposite to those desired in the first place (Striegel-Moore

et al., 1986).

What many people do not realize is that chronic dieting slows down one's metabolic rate (Apfelbaum, 1975; Garrow, 1978; Coscina & Dixon, 1983). This biological adaptation is of course the result of thousands of years of human evolution and is designed to help people survive longer under conditions of famine or starvation. When fewer calories are ingested, the body simply becomes more efficient by lowering its resting metabolic rate. This action allows the body to get by on fewer calories and slows down the depletion of fat reserves (Rodin et al., 1984). Of course it also makes weight loss extremely difficult, much to the chagrin of dieters. Furthermore, caloric restriction appears to suppress metabolic rate the most in those people whose metabolic rate is lowest to begin with, namely, women (Wooley, Wooley & Dyrenforth, 1979). This sex difference in metabolic rate is partly due to the fact that females are predisposed to have a greater proportion of fat to lean tissue than men, and fat tissue does not metabolize as many calories as lean tissue.

So a woman starts out with a lower metabolic rate, which dieting just lowers even more, and with each successive attempt at dieting the metabolic suppression becomes even greater (Garrow, 1978). The greatest problems arise after she resumes normal eating habits. The metabolic rate does not rebound to normal immediately and the obvious result is of course weight gain under normal caloric intake,

frustration, a sense of failure, more dieting, and on and on (Striegel-Moore et al., 1986). To adolescent girls the pubertal changes taking place must seem uncontrollable, but they are taught as most people are that weight is under volitional control. It is clear from the above evidence that weight is not totally under volitional control and one can easily see how chronic dieting in adolescence can lead to problems with weight that last a lifetime. Of course a permanent change in eating habits in conjunction with exercise is an effective way to lose weight because exercise raises one's metabolism. Unfortunately, girls are much more likely to simply reduce their caloric intake. Boys on the other hand are more inclined to increase the amount of exercise they do (Freedman, 1984; Rosen & Gross, 1987).

The second problem with chronic dieting is that it not only is a poor way to achieve permanent weight loss, but it also is a major risk factor for the development of the eating disorder bulimia nervosa in which the individual binges and then purges (self-induced vomiting, laxative abuse etc.) in order to avoid weight gain. The general summary of the way in which this happens is as follows. The individual attempts to lose weight by severely restricting her caloric intake which in turn induces bingeing or the consumption of large amounts of high calorie foods in a short period of time (the reasons why dieting is usually eventually followed by bingeing will be outlined below). The fear of gaining weight and the guilt associated with bingeing

is temporarily relieved by self-induced vomiting (or some other form of purging) and of course more dieting. Guilt, shame and secrecy are associated with the bingeing and purging, and the individual often gets trapped into a vicious cycle of dieting, bingeing and purging (Halvorson & Neuman, 1983; Killen et al., 1986).

The forerunners in the research looking at the relationship between dieting and binge eating are Janet Polivy and Peter Herman. In their article "Dieting and bingeing: A causal analysis" (1985), the authors provide an extensive review of the evidence linking the two behaviors.

The first link in the chain between dieting and bingeing is the chronological evidence, and there is much research showing that dieting and bingeing occur together. For example, average weight people who binge eat often report that they are also on diets (Boskind-Lodahl & Sirlin, 1977; Pyle, Mitchell & Eckert, 1981). Conversely, individuals who attain high scores on the Restraint Scale (a measure of chronic dieting and dietary restraint) have been found to report significantly more bingeing than those who obtain low scores (Hawkins and Clement, 1980). However the studies that are of particular interest in this case are those indicating the temporal onset of bingeing with respect to dieting. Several studies looking at patients with bulimia nervosa have provided evidence that dieting precedes bingeing. For instance Garfinkel et al. (1980) found that only six of their sixty-eight bulimic anorexia nervosa



patients had begun bingeing at the same time or before the weight loss began. On the average the bingeing and purging began  $19.2 \pm 8$  months after the patients had begun stringent dieting. Russell (1979), in looking at 30 patients with bulimia nervosa found that for 22 of the 30 patients, the dieting and weight loss began some time in the calendar year prior to the onset of bulimia. Similar results were attained by Pyle et al. (1981) with 30 of their 34 bulimics and by Boskind-Lodahl (1976) with almost all of the 100 bulimia nervosa patients she examined.

However the most conclusive evidence that dieting precedes bingeing comes by way of serendipity from the famous starvation studies published by Keys and his colleagues just following World War II (Franklin, Schiele, Brozek & Keys, 1948; Keys, Brozek, Henschel, Mickelsen & Taylor, 1950). These researchers looked at the effects of starvation by having a group of volunteers severely restrict their caloric intake until they were down to 74% of their initial body weight. When the men were allowed to return to their pre-diet weight, food was made available to them in unlimited amounts. It was observed at mealtimes that the men gorged on food and continually stuffed themselves to the point where they were physically uncomfortable, a behavior that the men had not engaged in before dieting.

In their laboratories, Polivy and Herman have consistently observed chronic dietary restraint to increase one's susceptibility to binge episodes through a process

that they termed "counterregulation" (Herman & Mack, 1975; Polivy, 1976; Herman, Polivy & Silver, 1979). What this means is that when dieters or restrained eaters are allowed to eat as much as they want, after being forced to eat a small amount of food, they will eat little and find it easy to stop (thereby sticking to their diets). However after being forced to eat a large amount of high calorie food or what they believe to be a substance extremely high in calories, the dieters will eat a lot and find it difficult to stop eating. Non-dieters logically do not show this type of behavior. They regulate their food intake in a normal manner by eating much less after being forced to eat a large amount of food, than after being forced to eat a small amount.

Polivy and Herman believe that cognitive and not physiological factors are the most important determinants of binge eating. However this does not mean that they have dismissed the physiological defense theory altogether. The physiological defense theory states that intensive dieting leads to weight loss which in turn leads to a state of chronic deprivation and hunger if the weight achieved is below one's physiological set-point. The end result of this state of chronic deprivation is bingeing. Bingeing occurs when the brain signals the body to do something to bring weight up to a more healthy level in order to defend the set-point range (Nisbett, 1972).

Polivy and Herman believe that if the physiological defense of body weight is to be overridden, the dieter must learn to ignore normal body sensations signalling hunger and satiation (1985). In other words, successful dieting requires that the normal physiological controls that were put in place to help us regulate our weight with little effort (eat when hungry, stop when full) get replaced by cognitive controls (eating when your head tells you to rather than your stomach). These cognitive controls include features such as dichotomous thinking wherein foods are labelled as good and bad, and amounts are labelled as good and bad. The problem arises when individuals break their diets by eating more than what they perceive to be an adequate amount. Instead of just stopping and cutting their losses, as it were, dieters often find it difficult to stop eating. When dieters believe that their diets have been broken or that they are no longer in control of determining the amount or types of food they can eat, they will tend to binge or overeat. Once overeating has begun, it may be exaggerated by the previously discussed physiological pressures to eat which have been building up during dieting. This process is known as the disinhibition of restrained eating (Polivy and Herman, 1985). Other external factors which tend to easily dissolve cognitive controls are anxiety, stress, mood swings and alcohol consumption (Herman & Polivy, 1975; Polivy and Herman, 1976; Polivy and Herman,

1985; Polivy & Herman, 1987)

In summary, Polivy and Herman suggested, not completely in jest, that perhaps dieting is the disorder they should be trying to tackle, not bulimia.

### Self Concept Studies

In 1984, Wooley and Wooley surveyed approximately 33,000 readers of Glamour magazine regarding their attitudes toward weight, and shape. One of the questions put forward was "Does your weight affect how you feel about yourself?" 63% of the sample of women reported that weight often affected how they felt about themselves and a mere 4% stated that weight had no effect on them emotionally. Although there are numerous problems inherent in magazine surveys, this one does seem to indicate that weight can have a powerful influence on mood and self perception. Unfortunately the phrase "how you feel about yourself" is rather vague and cannot be equated with self concept, the factor that was studied for this thesis.

This section of the literature review will examine the research looking at the relationship between self concept and the three related variables of body dissatisfaction, physical attractiveness and desire to change one's weight. The number of studies examining the association between these factors and self concept/self-esteem is actually quite

small (Striegel-Moore et al., 1986) and the results are confusing at best, mainly because the researchers in question have almost all used dramatically different methods to study this topic.

Much of the early research done in this area was performed by Lerner, Karabenick, and their colleagues. Their interests lay in the relationship between physical attractiveness and self concept. The first major study (Lerner, Karabenick & Stuart, 1973) asked both male and female college students to rate 24 body characteristics with regards to a) the degree of satisfaction they felt towards each of these parts, b) the degree of importance each part played in determining their own physical attractiveness and c) how important that part was in determining attractiveness in the opposite sex. The students also filled out a brief self concept questionnaire.

The authors found that males and females rated selected body parts in remarkably similar ways when judging how important these parts were to both their own and opposite-sex physical attractiveness. When there were marked differences in how important certain body parts were rated for one sex's attractiveness as compared to the opposite sex's attractiveness, there was still agreement between the sexes on these differences. For instance, males deemed "shape of legs", "hips", and "thighs" to be more relevant to the attractiveness of females than males, a judgment which females seemed to agree with based on the

fact that they rated these parts of the body to be more important in determining their own attractiveness than the physical attractiveness of males. When the mean male and female ratings of body satisfaction with the 24 parts were correlated with the self concept scores, significant results were obtained for both females ( $r=.33$ ,  $df=116$ ,  $p<.01$ ) and males ( $r=.43$ ,  $df=188$ ,  $p<.01$ ), indicating that increasing satisfaction with one's body characteristics was associated with a more positive self concept. The difference between the correlations obtained by males and females was not significant.

Next Lerner and Karabenick (1974) conducted research which basically replicated the 1973 study except for one extremely important but subtle difference. They again asked college students to rate 24 body characteristics with regard to how important they felt each part was in determining their own physical attractiveness. However, instead of getting them to rate how satisfied they were with each of the 24 body parts, they asked them to rate how physically attractive they felt each of these parts to be on their own body. This time when the mean male and female ratings of the physical attractiveness of their body parts was correlated with self-concept, the correlation was significant for females ( $p<.01$ ), but not for males ( $p>.10$ ). Nevertheless it should be noted that the difference between these correlations barely achieved significance ( $p<.09$ , one-tailed). The researchers also found that when they

correlated the attractiveness ratings for specific body parts with self concept, a greater proportion ( $p < .05$ ) of individual body parts were significantly correlated with self-concept for females than for males (54% compared to 21%). It was the researchers belief that these results supported the notion that females are more interpersonally oriented and males more individually oriented. If this were the case, physical attractiveness would account for a greater portion of females' self-concept than males' and this is exactly what was found.

Lerner, Orlos and Knapp (1976) introduced a new variable into this same line of research which they called physical effectiveness. The concept of physical effectiveness was developed in part from McCandless' (1970) social learning theory of how personality/behavior develops as a result of socially determined rewards and punishments. According to McCandless, males in our society are rewarded for being independent, self sufficient, and competent. Girls on the other hand are rewarded for possessing traits that enable them to attract others to whom they can express warmth, from whom they can elicit security and whom they can be dependent upon. The more male and female adolescents perceive themselves as emitting the appropriate behaviors and possessing the appropriate attributes for their sex, the more positive their self concepts should be. Based on this theory, university students were asked to rate 24 body parts with regards to 1) how physically attractive they believed

these parts to be on their own body, and 2) how physically effective they thought these body characteristics were on them. Again a short test of self-concept was filled out.

The correlation between the males' mean attractiveness ratings and mean effectiveness ratings for each body part was quite high and positive ( $r=.80$ ,  $df=22$ ,  $p<.01$ ). The researchers took this as indicating that for males, what is perceived as effective is also generally perceived as attractive, and that in general, males may differentiate less in body attitudes relating to attractiveness and effectiveness. Even though the results for females also indicated a fairly high significant correlation between mean attractiveness and mean effectiveness ratings for the 24 body parts ( $r=.61$ ,  $df=22$ ,  $p<.01$ ) the correlation obtained by males was significantly larger ( $p<.01$ ).

In accordance with the above hypothesis about self concept, it was found that a greater proportion of the variance in the women's self-concepts could be attributed to their physical attractiveness ratings (27%) than to their physical effectiveness ratings (14%). The reverse pattern was obtained for males with physical effectiveness ratings accounting for 34% of the variance in their self concepts as opposed to the 25% accounted for by physical attractiveness ratings. As well, a greater number of individual attractiveness items were significantly related to self concept in females than were individual effectiveness items. Conversely, more individual effectiveness items were



significant predictors of self concept for males than individual attractiveness items. The researchers interpreted this data as suggesting that females have their self concepts grounded more in "interpersonal" physical attractiveness while males' self concepts are more a function of perceived physical effectiveness, fitness, and strength. However it should be remembered that because the correlation between mean physical attractiveness and mean self concept was quite positive for both males and females, the findings can not be interpreted to mean that males are unconcerned with attractiveness.

In a similar vein (1987), Stake and Lauer studied the relationship between weight, self-ratings of attractiveness, and performance self-esteem, which is a general measure of confidence in one's abilities. Nonsignificant results were obtained with regard to the association between weight class and performance self-esteem in that overweight subjects did not report lower self-ratings of competence than average weight subjects. However, when performance self-esteem was correlated with men's and women's self-ratings of overall attractiveness as well as with their self ratings of attractiveness of 19 body parts, significant results were found. Performance self-esteem was significantly and positively correlated with self-ratings of overall attractiveness in females ( $p < .05$ ) but not in males. In addition, women's performance self-esteem was positively related to the self-ratings of attractiveness of 17 of the

19 body parts, and 9 of these correlations were significant. Men's performance self-esteem only showed a positive relationship with self-ratings of attractiveness of five body parts and only 2, shoulders and arms, were significant. In this study then, attractiveness self-ratings appeared to be related to self-esteem to a greater degree in females than in males.

Of course not all research has provided support for the theory that self-concept and body image are differentially related in males and females. For example, in their study of adolescents in grades 6, 7, and 8, Kavrell and Jarcho (cited in Tobin-Richards, Boxer & Petersen, 1983) found strong significant correlations between self-image and body-esteem for both boys and girls (girls,  $r=.79$ ; boys,  $r=.71$ ;  $p<.0001$ ).

Franzoi and Shields (1984) obtained similar results in their study of 366 female and 257 male undergraduates. The authors first factor analyzed Secord and Jourard's (1953) Body Cathexis Scale to produce a Body Esteem Scale. In this new test, three factors were found to comprise body esteem in females, namely sexual attractiveness, weight control and general physical condition. The three corresponding variables found to make up body esteem in males were physical attractiveness, upper body strength and general physical condition. When the researchers correlated the three body esteem subscales for each sex with a general measure of self-esteem, they found moderate correlations

( $p < .05$ ) on all measures except the correlation between self-esteem and the females' weight concern factor. The authors speculated that the low correlation between the weight concern factor and self-esteem could reflect the pervasive dissatisfaction with body weight and shape which plagues many women in spite of other feelings of satisfaction and competence. It was interesting to note in looking at the data that the three correlations obtained for males were .50, .45 and .51, all of which are larger than the correlations of .32, .19, and .35 obtained between female self-esteem and the three body esteem factors. However, it was not reported in this study if the difference in the correlations obtained by males and females was significant.

#### Gender Differences in College Students and Adolescents

There are numerous studies examining sex differences in variables such as concern about weight and shape, body image, body dissatisfaction, drive for thinness, accuracy of weight perception and desire to change one's weight. To make the large body of literature more manageable, the research employing college studies will be explored first followed by the research on adolescents. The decision was made to include studies using college students in the literature review in order to evaluate whether the results of the present study more closely resembled those carried

out with adolescent subjects as compared to those carried out with somewhat older subjects. As well, the subjects in the college student studies were generally freshman psychology students and thus were most likely only three to four years older than the majority of the subjects who participated in the present research. Because the difference in ages was not that great it was felt that including these studies would still be worthwhile, especially since they could provide information on how attitudes toward body weight and shape might change subtly in the developmentally complex years between the beginning of High School and the beginning of University.

Most of the work done in this area has produced results indicating that there are significant sex differences in almost all of the variables listed above. For example, Connor-Greene (1988) carried out an extensive study of college students' perceptions of and happiness with body weight, desires to alter weight and use of various methods of weight-loss. Neither sex was completely accurate in their description of what weight category they belonged to. However the direction of their errors varied and in many cases females were significantly more inaccurate. Using height/weight tables, 2% of the females and 13% of males were found to be overweight, and 31% of females and 14% of males were found to be underweight. Yet 62% of females described themselves as overweight, which is significantly greater than the 33% of males who did so ( $p < .001$ ). 48% of

all of the women surveyed were in the ideal weight range but perceived themselves to be at least slightly overweight. Not surprisingly, no women in this normal weight category underestimated their weight. On the other hand, males in the ideal weight range were equally likely to underestimate their weight category as they were to overestimate it.

Neither males nor females appeared to be very satisfied with their weights, with only 16% of males and 6% of females indicating a desire to maintain their current weight. A full 88% of women wanted to lose weight, many of whom did not even perceive themselves to be overweight, as compared to 37% of males. Males by and large wanted to gain weight (47%). Females were significantly more likely than males to report dieting in the past year, weighing or measuring their bodies more than once a week, and to admit to using self-induced vomiting or laxatives to lose weight. Connor-Greene concluded that although both male and females indicate dissatisfaction with their bodies, women's overwhelming desire to lose weight means that they are in more danger of engaging in weight-loss strategies that may increase their chances of developing an eating disorder (1988).

A similar study carried out by Drewnowski and Yee (1987) looked at the desire for weight loss or weight gain among college freshmen. Almost identical results were obtained with a full 85% of women expressing a desire to lose weight as compared to men who were equally likely to

want to lose weight (40%) as gain weight (45%). Only 10 out of 98 men, and 8 out of 128 women expressed complete satisfaction with their present weights, backing up Connor-Greene's finding that men are not immune to the pressures to conform to a specific body ideal. With regard to self-perception of one's weight category, men again were quite evenly split between those who perceived themselves to be overweight (26%) versus underweight (20.9%), and the vast majority simply thought they were average weight. 48% of women saw themselves as overweight while only 3.1% described themselves as underweight. The difference between males and females in perception of self was statistically significant ( $p < .001$ ).

It was found that women were much less satisfied with their body shape than men ( $p < .001$ ), that they dieted more frequently ( $p < .001$ ) and that factors related to body image were more related to dieting in women than actual weight. That is, the frequency of dieting in women was more positively correlated with perceived overweight ( $r = .33$ ,  $p < .001$ ) and dissatisfaction with body shape ( $r = .42$ ,  $p < .001$ ) than with one's self-reported body weight ( $r = .19$ ,  $p < .05$ ). Normal weight women exhibited marked unhappiness with their present state in that 9 out of 10 wished to lose weight. Interestingly enough, more than half of normal weight men also wanted to lose weight. However, women who wanted to lose weight dieted more frequently than men ( $p < .01$ ) while men were more likely to exercise, although this difference

was only marginally significant.

In addition to looking at most of the aspects of body image already discussed, Mintz and Betz (1986) explored the extent to which one's sex affects the relationship between body image and several measures of psychological well-being. Overall women were significantly more dissatisfied with their bodies than were men ( $p < .001$ ). When men and women were grouped into weight categories (underweight, slightly underweight, normal, slightly overweight, overweight), the details of the sex differences in body dissatisfaction became more apparent. Specifically, it was found that the women who were most satisfied were those in the slightly underweight category followed by those in the underweight category, followed by the normal weight individuals. Almost a mirror opposite pattern was found among men, who were the most satisfied when their weights were in the slightly overweight range followed by the normal weight range.

Plotting perceived weight category against actual weight category showed that most women see themselves as heavier than they actually are, and in most cases a full weight category heavier. For instance the majority of normal weight women (73%) saw themselves as being at least slightly overweight. The women who were most likely to deem themselves to be of normal weight were in fact the slightly underweight. In contrast, underweight and normal weight men were quite accurate in estimating what weight category they

belonged to. Also instead of finding the pattern of overestimation characteristic of women, slightly overweight and overweight men tended to perceive themselves to be normal and slightly overweight respectively. Scores of greater dissatisfaction with one's body were significantly correlated with lower levels of social self-esteem and with greater proneness to future depression for both males and females. However, it is relevant that the relationship between body dissatisfaction and social self-esteem was significantly stronger among women than among men.

A related study looked at the interrelationships between weight, desired weight change, body image, social and psychological well-being, academic self-ratings and eating disturbances (Hesse-Biber et al., 1987). As expected, women were found to be much more dissatisfied with their weight, to have a poorer body image and to be more likely to indicate a desire to lose weight than men (84.1% vs. 45%). The researchers found that for both sexes there was a very strong relationship between wanting to lose weight and poor body image, and the greater an individual's desire to lose weight, the worse their body image. No significant relationship was obtained between wanting to gain weight and body image.

Regarding measures of well-being, poor body image was strongly associated with low self-ratings of physical attractiveness, self-acceptance, social self-confidence, popularity with the opposite sex, assertiveness, athletic



ability and self-understanding. For women but not for men, body image was also significantly associated with several other variables including low intellectual self-confidence, popularity, drive to achieve, public speaking ability, originality, emotional maturity and trustfulness.

The relationship between desired weight change and self-rankings on social and psychological traits is complicated, but there are a few pertinent findings. First, the more weight a woman wanted to lose, the less physically attractive she felt and the less popular she felt with the opposite sex. The more weight a woman felt she could gain, the more physically attractive she felt. In contrast, the more weight men wanted to lose the more emotionally mature they felt and the more popular they felt with the opposite sex. The researchers concluded that this data provided a good look at the strong association between weight, body image, and social and psychological well-being.

Fallon and Rozin (1985) took a completely different approach in their attempt to study male and female perceptions of what constitutes a desirable body. They presented college students with nine drawings of human figures ranging from very thin to very obese. There were two sets of drawings, one of nine female figures and one of nine male figures. The students' task was to indicate on the scales where they would put 1) their current figure, 2) their idea of the ideal figure, 3) the figure that they thought was most attractive to the opposite sex, and 4) the

opposite sex figure that they would be most attracted to. The means of the ratings for each of the above figures were then obtained for both sexes. For women, their current figure was heavier than both their ideal figure ( $p < .001$ ) and the figure they believed to be most attractive to the opposite sex ( $p < .001$ ). Furthermore, the figure that they thought was most attractive to the opposite sex was heavier than their picture of the ideal figure, indicating that factors other than male preference are at work in producing women's radically thin beauty ideals. For men, their current, ideal and most attractive to the opposite sex figures were almost identical and there were no significant differences between these three mean ratings.

Both men and women made mistakes when judging what figure the opposite sex would find most attractive. Females thought men liked a figure that was thinner than what men actually reported liking and men thought women preferred a figure that was larger than what women actually reported liking. Phrased another way, men distort the preferences of women to bring them more in line with their self-reported current figures, whereas women distort the preferences of men to bring them more in line with their idea of the ideal female body (Fallon & Rozin, 1985). Taken together, women's perceptions may put them under undue pressure to diet since their ideal and most attractive to the opposite sex figures are thinner than their current figures. Men's perceptions keep them happy with the form they currently have (Fallon &

Rozin, 1985).

As a follow-up to the above study, Rozin and Fallon replicated the study with male and female college students and their biological parents (1988). In addition, attitudes toward eating and weight, and descriptions of eating behaviors were gathered from all participants. Daughters, mothers and fathers all rated their current form to be heavier than their ideal figure. In contrast sons' current and ideal figures were identical, indicating a high level of body satisfaction in this sample of young men. Both mothers and daughters thought that men of their own generation liked thinner females than these men actually preferred. Both sets of women also showed similar amounts of concern about weight, guilt about eating, holding back at meals, and dieting. Furthermore, these weight-related concerns and behaviors were found at much higher levels in mothers and daughters compared to fathers and sons. The most interesting finding was that even though fathers perceived their current figures to be much heavier than their ideal, and even though the form they thought was most attractive to the opposite sex was much smaller than their current form, they reported very few concerns about eating and weight. The researchers concluded that weight related concerns and behaviors are more determined by sex than by either generation or even a disparity between current and ideal, implying that the importance of weight to the individual is a major factor in understanding weight-related attitudes.

(Rozin and Fallon, 1988).

As relevant as the data on college students may be, it cannot simply be generalized to adolescents. However the research involving teenagers by and large supports the findings obtained with college students in that there are gender differences in body image, body dissatisfaction, drive for thinness, and weight-related concerns and behaviors.

Kelly and Patten (1985) carried out a large and very thorough study which explored the degree to which male and female adolescents are involved in the cult of slenderness promoted by our society, and whether differences in involvement are reflected in behaviors related to food and eating, and attitudes toward one's appearance. Their underlying interest was to see if they could get any closer to understanding the factors that might make adolescents more vulnerable to eating disorders.

2,276 students took part in the study, the majority of whom were concentrated in the 15-to-16 year age group. There were however students as young as 13 and as old as 18 in the sample. Research into concerns about weight was conducted on the 85.2% of the sample whose weights fell between 85 and 114 percent of their ideal body weight for age and height. All subjects were then placed into one of three weight categories, .85-94%, 95-104% and 105-114%. In general, there was a high degree of body dissatisfaction among both male and female adolescents in that only 29% of

the subjects indicated that they were satisfied with their current weight. However the magnitude of most female adolescents' preoccupation with weight was reflected in the fact that 69.3% of females reported being frequently or always concerned about overweight as compared to only 20.7% of males. Furthermore when posed the question "Do you feel more attractive than most other people?", no adolescent girls who fell above the category of 85 to 94% of ideal weight answered affirmatively. The only females who answered "yes" to the above question came from the lowest weight category or below. In contrast, males who answered positively were found to be spread fairly evenly between 95 and 114% of ideal body weight. Clearly female subjects in this sample associated slenderness with attractiveness.

Significant gender differences were found with regards to changing food intake in order to alter one's body weight. Adolescent girls were more likely than boys to be altering their food intake in order to lose weight (48.1% vs. 8.4%,  $p < .0000$ ) whereas boys were more likely to be altering their food intake in order to gain weight (30.4% vs. 3.0%,  $p < .0000$ ).

Females were also more inclined than males to use cognitive behavioral strategies such as those discussed in Polivy and Herman's article (1985) to assess their progress. For example 72% of females were found to weigh themselves at least once a week, as compared to only 22.8% of the males subjects. Significantly more females than

males kept count of their daily caloric intake and mentally reviewed what they had eaten at the end of the day ( $p < .0000$ ). With regards to attitudes toward eating and weight loss, more adolescent girls than boys admitted that they enjoyed losing weight (67.8% vs. 26.1%), that they had a strong desire to be thin (59.2% vs. 15%), and that they tended to become very angry with themselves for eating too much (68.9% vs. 21.4%).

What is perhaps most disconcerting is that in the three developmental areas of intellectual achievement, interpersonal relationships, and gender relationships, those girls in lower weight categories had better experiences than those in higher weight categories. There was, for example, a significant association in females between weighing less for one's age and height, and attaining more A's and B's in school as opposed to lower grades ( $p < .0025$ ). Those females with lower weights for their height and age were also more likely to have a greater number of friends ( $p < .0000$ ) and to be more interested in dating ( $p < .0438$ ). No relationship was found for males between weight category and any of these factors. Thus the typical adolescent girl's greater concerns about dieting, eating and weight loss may be a function of her daily experiences, as there may be a selective prejudice (conscious and unconscious) against heavier female adolescents.

A similar study in London, England, determined that sex differences in body image, dieting and attitudes toward food

are not unique to North America (Wardle & Beales, 1986). This study differed from the one discussed previously in that it looked at a wider age range, with the children divided evenly into three age groups (12-13, 14-15, and 16-17 years).

Using height/weight ratios expressed as a percentage of standard weight, only 10% of the girls and 14% of the boys were found to be overweight, defined in this study as greater than 20% over normal weight. In spite of this fact, a measure of perceived overweight (ratio of preferred to actual weight) indicated that girls were much more likely than boys to perceive themselves as overweight ( $p < .001$ ). Not one of the girls indicated wanting to weigh more than 10% above their current weight, but some boys wanted to weigh as much as 40% above their current weight. As was found in some of the research with adults, girls were not very accurate in judging what weight category they belonged to. For instance 34% of the boys saw themselves as thin or slightly underweight, 22% as slightly overweight and 5% as fat. Within the group of girls tested, only 10% perceived themselves to be thin or slightly underweight, 40% thought they were overweight and 12% felt that they were fat, which means that over half of the girls tested saw themselves as at least slightly overweight. Although boys were not completely accurate in their perceptions either, their perceptions were more realistic than the females. Furthermore, the majority of girls expressed the desire to

weigh less even though their actual weight placed them in the normal or thin categories.

On the Dutch Eating Behavior Questionnaire (DEBQ), a test of restrained eating, females obtained significantly higher scores than males, even in the 12 year old group ( $p < .001$ ). In fact the scores achieved by these youngsters were comparable to those achieved both by the older girls and by the female adults in the original standardization sample (Van Strien, Frijters, Bergers & Defares, 1985). It is abundantly clear that even young girls are affected by the enormous premium Western culture places on slenderness.

A survey of the eating behaviors and attitudes of high school students ranging in age from 13 to 19 (mean age 15.7 years) revealed similar concerns with weight, body image, and dieting among both males and females, although these worries were significantly more pronounced among adolescent girls (Greenfeld, Quinlan, Harding, Glass & Bliss, 1987). Significantly more females than males expressed concern that they might have an eating disorder, reported often feeling fat, described themselves as overweight, used crash diets, diet pills and fasting to lose weight, had lost 10 or more pounds in the past year and counted calories one or more times daily ( $p < .001$ ). 13.5% of the females had also stopped menstruating due to excessive weight loss.

Out of all the female subjects 46% described themselves as overweight as compared to only 17% of the males. Not surprisingly, males had underestimated and females had



overestimated with only 12.3% of women having a weight that was more than 10% above their ideal weight, as compared to 23.8% of males.

Sex differences were also apparent with regard to the more serious aspects of weight loss such as bulimic symptomatology. Significantly more females than males (44.6% vs. 16.4%) acknowledged serious symptoms of bulimia, reported self-induced vomiting after overeating (11.6% vs. 1.2%) and used laxatives to control weight (5.2% vs. 1.5%) ( $p < .001$ ). In total, 4% of adolescent girls and 0.8% of adolescent males met the DSM-III criteria for bulimia nervosa. The researchers also found that eating attitudes and disturbed eating patterns and behaviors were more highly correlated with one's own feelings about weight and appearance than with one's actual degree of over or underweight. Furthermore, the relationship was stronger for females than for males. Overall this study supported the findings of other studies that adolescents, especially female adolescents, are quite emotionally involved in issues related to weight and eating.

On examining weight reducing and weight gaining in high school students, Rosen and Gross (1987) found that girls were almost four times more likely than boys to be trying to lose weight and boys were three times more likely than girls to be trying to gain weight. Boys were clearly more satisfied than females with their weights in that 55% of them were doing nothing to alter their weight as compared to

only 25% of the females.

With regards to the relationship of weight modification to weight class, almost all of the overweight girls, two-thirds of the average weight girls, and even 18% of the underweight girls were trying to lose weight. Only 50% of the boys described as overweight were trying to lose weight and in fact 25% of the normal weight boys were actively seeking to gain weight. According to Rosen and Gross (1987), what the typical girl who wishes to lose weight and the typical boy who wishes to gain weight have in common is the fact that they are usually both of normal weight.

In both sexes, exercising and moderately reducing one's caloric intake were the most frequently used methods of weight modification. Nevertheless, a small number of students did employ more drastic measures including fasting, vomiting, laxative abuse and appetite suppressants. The percentage of adolescent girls engaging regularly in these potentially dangerous methods of weight loss were as follows: fasting, 10.1%; appetite suppressants, 8.1%; vomiting, 2.3% and laxatives, 2.1%. Very few boys reported using fasting or appetite suppressants and none used vomiting or laxatives as major ways to lose weight, suggesting that weight loss is not an important enough goal to them to warrant employing these methods. The researchers suggested that the fact that drastic methods of weight loss are more common in females implies that females are both more desperate to lose weight and more accepting of such

means (Rosen & Gross, 1987).

In conclusion, the replication of Fallon and Rozin's study of body figure preferences using adolescents instead of college students will be discussed (Cohn et al., 1987). A little over 500 subjects participated in this study, ranging in age from 10.5 to 15 years. Adolescents resembled college students in the extent to which they misjudged what the opposite sex prefers. Girls chose a figure that was significantly thinner than what males actually indicated preferring ( $p < .001$ ) and boys chose a figure that was significantly heavier than what girls actually liked the best ( $p < .001$ ). In fact almost twice as many girls as boys chose the thinnest female form as most appealing, while twice as many boys as girls chose the heaviest male figure as most desirable.

However the results were not identical to those obtained by Fallon and Rozin, and suggest that perhaps body dissatisfaction becomes more acute with age for females. For example, although girls rated their current figure as heavier than their ideal, the difference did not reach statistical significance as it did in the original study. Only 38% of the girls exhibited this discrepancy as compared to 70% of the female college students. Nevertheless, girls did choose an ideal figure that was significantly thinner than the form they considered to be most appealing to the opposite sex ( $p < .007$ ).

It will be recalled that college males were quite satisfied with their current figures as revealed by the fact that current, ideal and most attractive to the opposite sex figures were almost identical. In contrast, male adolescents chose an ideal figure that was significantly heavier than the form they thought was most appealing to the opposite sex ( $p < .001$ ) and that was marginally heavier than their current figure ( $p < .05$ ). Thus both male and female adolescents exhibited dissatisfaction with their current figures relative to their idea of what constitutes an ideal figure. However, neither sex found their own figures to be significantly different from the forms they thought were most desirable to the opposite sex.

The authors speculated that the increased body dissatisfaction observed in the college age females may be a result of the fact that the definition of an ideal female body gets thinner as one gets older, creating a growing discrepancy as one ages between what one is and what one is supposed to be.

## CHAPTER THREE

### Methodology

The aim of this chapter is to establish the nature of the problem being studied and to describe in detail the methodology utilized in this investigation. Following a brief statement of the problem and a summary of the goals of the study, operational definitions will be provided for the terminology used. The main body of this section will describe the test instruments employed, the process of selecting subjects, and the manner in which data was collected and analyzed. Finally, the hypotheses to be tested will be stated in null hypothesis form.

#### Aim of the Study and Statement of the Problem

In the previously discussed model of eating disorders proposed by Garner and his colleagues, anorexia nervosa and bulimia nervosa are the culmination of a number of predisposing, precipitating and perpetuating factors. Predisposing factors increase an individual's vulnerability to eating disorders and encompass a wide range of attitudes, beliefs and personality attributes including self-esteem deficits, perfectionism, body dissatisfaction, fear of weight gain, maturity fears and a general feeling of personal ineffectiveness (Garner & Davis, 1986). Precipitants are any adverse external events which threaten

one's self-esteem or sense of control. The particular event is less important than the way in which the individual perceives that event. What happens is that the person interprets the event in such a manner that she experiences a loss of self worth, develops an intense preoccupation with her looks and becomes convinced that she will feel more happy and secure if she loses weight (Garfinkel & Garner, 1982).

One of the main goals of this study is to explore gender differences in the prevalence of predisposing factors such as self concept deficits, body dissatisfaction, drive for thinness and desire to change weight. Since females are far more likely than males to eventually develop eating disorders, it might be expected that adolescent girls would score significantly higher than boys on measures of these predisposing factors. Nevertheless, some researchers like Petersen (1979) feel that adolescence is a period marked by worry over and dissatisfaction with the body for both boys and girls. However when boys and young men express discontent with their bodies it is usually because of a desire to be heavier and more muscular (Simmons & Rosenberg, 1975; George & Krondl, 1983; Tobin-Richards et al., 1983). It is hoped that this research will help to clarify whether body dissatisfaction, the drive for thinness and the desire to change weight are uniquely female characteristics, or whether male adolescents experience analogous pressures to

conform to masculine physical ideals.

Studies looking at accuracy of weight perception have tended to report fairly similar results. Some researchers have found that the difference between actual and perceived degree of over or underweight is much greater for women than for men, indicating that women are more inaccurate in their self-perceptions of fatness (Huenemann et al., 1966; Connor-Greene, 1988; Drewnowski & Yee, 1987, Wardle & Beales, 1986). However, other studies emphasize that both sexes are inaccurate in their self-perceptions with the only difference being that females tend to overestimate their weight while males underestimate it (Hesse-Biber et al., 1987, Mintz & Betz, 1986). Accuracy of weight perception is an important concept because factors such as anxiety, depression, dissatisfaction with weight and shape and frequency of dieting have all been found in women to be more strongly related to perceived degree of overweight than actual degree of overweight (Drewnowski & Yee, 1987; Wadden et al., 1989; Davies & Furnham, 1986). Thus another aim of the present study is to assess the accuracy of weight perception in males and females.

Opinions are mixed on the relationship between self concept and various aspects of body image. Some studies looking specifically at gender differences have concluded that there is a stronger link between self concept and self-ratings of physical attractiveness in females than in males (Lerner & Karabenick, 1974; Stake & Lauer, 1987). Yet

other researchers have found moderate positive correlations between body esteem and self concept/self-image in both females and males (Franzoi & Shields, 1984). In fact Franzoi and Shields found the relationship to be stronger in men than in women. It is hoped that this study will shed some light on the relationships (if there are any relationships) between sex, self concept, body dissatisfaction and desire to change one's weight.

#### Limitations of the Study

The following are some limitations of the present study:

1. The sample of adolescents was chosen from two Catholic High Schools. Although no specific notation was made of the race of the participants, it was clear simply from observation that almost all of the participants were Caucasian. Furthermore, certain groups (including Jewish individuals and Indians of the Muslim faith) were obviously not represented in a Catholic school. Therefore, generalization of the findings to all adolescent males and females simply cannot be made because the findings are culture and race specific.
2. Another factor limiting generalization is the socioeconomic status of the participants as the lower socioeconomic levels are not well represented in the two schools chosen. St. Mary's and Bishop Grandin are both located in the Southwest, a geographic area known for its



relative affluence in comparison to the Northeast and Southeast regions of the city.

3. The research instruments used were self-report measures and there are several drawbacks associated with their use. Self-report measures rely not only on the complete honesty of the subjects, but require that the individuals are able to accurately identify and describe their feeling and behaviors. In addition, it is difficult for the typical self report measure to detect lying or the tendency to answer in a socially desirable manner. Of course these problems always bring into question the validity of findings obtained using self-report measures.

4. Although efforts were made to prevent communication of the subjects during testing, just the close proximity of the students to one another (they were sitting in their usual desks) may have prevented some students from answering in a completely honest manner.

The following research questions will be studied:

1. Is there a significant difference between male and female adolescents in drive for thinness, body dissatisfaction, self concept, and their overall scores on a test measuring psychological and behavioral characteristics associated with eating disorders?
2. Is there a significant relationship between body dissatisfaction and self-concept in male and female adolescents and is this relationship stronger for one of the

sexes?

3. Is there a significant difference between male and female adolescents in the amount and direction of weight change they desire?

4. How much discrepancy is there between perceived and actual weight categories in adolescent males and females?

5. Is there a significant relationship between desired weight change and self concept in male and female adolescents?

6. How does the weight category to which male and female adolescents belong affect their body dissatisfaction?

### Definitions

#### Anorexia Nervosa

According to DSM III-R (1987), there are four main diagnostic criteria associated with anorexia nervosa:

A. "Refusal to maintain body weight over a minimal normal weight for age and height, e.g., weight loss leading to maintenance of body weight 15% below that expected; or failure to make expected weight gain during period of growth, leading to body weight 15% below that expected.

B. Intense fear of gaining weight or becoming fat, even though underweight.

C. Disturbance in the way in which one's body weight, size or shape is experienced, e.g., the person claims to

"feel fat" even when emaciated, believes that one area of the body is "too fat" even when obviously underweight.

D. In females, absence of at least three consecutive menstrual cycles when otherwise expected to occur (primary or secondary amenorrhea). (A woman is considered to have amenorrhea if her periods occur only following hormone, eg., estrogen, administration)." (p. 67).

#### Bulimia Nervosa

The diagnostic criteria for bulimia nervosa as provided by DSM III-R (1987) are as follows:

A. "Recurrent episodes of binge eating (rapid consumption of a large amount of food in a discrete period of time).

B. A feeling of lack of control over eating behavior during the eating binges.

C. The person regularly engages in either self-induced vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise in order to prevent weight gain.

D. A minimum average of two binge eating episodes a week for at least three months.

E. Persistent overconcern with body shape and weight." (p. 68 - 69).

### Drive For Thinness

The term "drive for thinness" refers to an extreme concern with dieting, and an intense preoccupation with weight and involvement in an excessive pursuit of slenderness. The questions on this subscale of the Eating Disorders Inventory reflect both a strong desire to lose weight in addition to a fear of gaining weight (Garner, Olmsted & Polivy, 1983, p. 17).

### Body Dissatisfaction

The term "body dissatisfaction" refers to the thought that certain body parts, especially those linked with shape change or the development of fat at puberty, are too big (eg. hips, thighs, buttocks) (Garner et al., 1983, p. 18).

### Self Concept

"Self concept", as defined in the Tennessee Self Concept Scale, reflects the way in which individuals perceive themselves, their self-satisfaction with the selves they perceive, and their evaluation of their own behavior or general functioning (Fitts, 1965).

## Subject Selection

Subjects were selected from two secondary schools in the Calgary Catholic School System, namely: Bishop Grandin Senior High School and St. Mary's Senior High School. High school students were chosen because this is the age at which tendencies toward anorexic and bulimic behaviors seem to first emerge (Grant and Fodor, 1986; Steele, 1980). However it should be emphasized again that the goal of this study was to assess the extent to which male and female adolescents from a non-pathological sample exhibited feelings and perceptions resembling those observed in clinical eating disordered populations, and whether sex differences exist in these feelings and perceptions. If significant gender differences were found, with females reporting more pathological beliefs and perceptions, the increased vulnerability of this population to problems with weight and eating would be confirmed.

Eight Grade 10 classrooms participated in the study. In order to ensure that there would be approximately equal numbers of males and females, the researcher requested that she be assigned mandatory classes, that is, classes that all Grade 10 students are required to take. Permission to study adolescents enrolled in four physical education classes from St. Mary's and four social studies classes from Bishop Grandin was given to the investigator.

Consent forms (see Appendix A) were handed out to a total of 193 students at the beginning of their regular class periods. The number of students who agreed to participate and who also returned their consent forms was 157 (81%). However four of the forms handed in by males had to be discarded because they forgot to fill in the Eating Disorders Inventory, and one filled in by a girl had to be discarded because she read almost no English and thus could not answer the questions. The rejected questionnaires brought the total down to 152. The final sample consisted of 76 adolescent girls and 76 adolescent boys. It was not a requirement that there be exactly equal numbers of males and females, it simply turned out that way.

The participants were concentrated in the 15 to 16 year age range, but there was one subject as young as 14 and some as old as 17.

#### Research Instruments

In the present study, three instruments were utilized to measure the constructs under investigation: The Eating Disorders Inventory (EDI) (Garner et al., 1983), the Tennessee Self Concept Scale (Fitts, 1965), and a questionnaire (the Personal Data Questionnaire) developed specifically for the purposes of this study to obtain demographic information (eg. age, height, sex etc.),

perceived weight category, and desired weight change.

The Eating Disorders Inventory was chosen over the Eating Attitudes Test (Garner & Garfinkel, 1979), because the EAT is designed to measure a broad range of symptoms common to anorexia nervosa only, not bulimia nervosa, and because this test only explores the behavioral parameters of this form of eating disorder. The Binge Eating Scale created by Hawkins and Clement (1980) suffers from a similar problem in that it only examines the symptomatology of bulimia nervosa, not anorexia nervosa. A test developed by Goldberg et al. (1980) again only addresses attitudes and behaviors associated with anorexia nervosa. Furthermore, this instrument is only supposed to be used with an inpatient population. The Eating Disorders Inventory surmounts all of these problems by looking at some of the psychological, cognitive and behavioral characteristics relevant to both anorexia nervosa and bulimia nervosa in individuals aged 12 years and older. In addition, the EDI was developed for use with both non-clinical and clinical populations.

The Tennessee Self Concept Scale was selected because it is one of the most frequently used tests of self concept in clinical and counselling settings, and because it has been utilized in a wide range of research projects (Walsh, 1984). It provides an overall measure of self concept for individuals 12 years and older and is based on several aspects of self concept including moral-ethical, social,

personal, physical and family. This was the type of measure considered to be relevant to the present study.

Individuals were placed into one of five weight categories based on a calculation of their weight as a percentage of their ideal body weight. Ideal body weight was derived from height/weight tables (from the National Center for Health Statistics in the United States) that listed weight percentiles for 12 to 17-year-olds based on age, gender and height (cited in Hergenroeder & Klish, 1990). Ideal body weight was defined as "the 50th percentile weight for the subject's age, height and gender" (Hergenroeder & Klish, 1990, p. 1058). This method of putting subjects into weight categories was chosen on the advice of a nutritionist at Calgary Health Services. According to the nutritionist, this is the best method to use for research when the participants are under the age of 18 because it takes into account the fact that individuals in this age range are still growing. Methods such as the Body Mass Index (Thomas, McKay & Cutlip, 1976) which incorporate Quetelet's Index ( $W/H^2$ ) are accurate in adults but inaccurate in adolescents and children.

1. The Eating Disorders Inventory (EDI) is comprised of 64 self-report statements measuring a broad range of psychological attitudes and behavioral characteristics related to anorexia nervosa and bulimia nervosa (see Appendix B). It is quite a recent test, having been



published in 1983 (Garner et al., 1983). The final questions used in the test were selected from a bank of items put together by clinicians who were not only well versed in the literature on eating disorders, but who had treated such patients as well. The resulting eight subscales are Drive for Thinness, Body Dissatisfaction, Ineffectiveness, Perfectionism, Bulimia, Interpersonal Distrust, Interoceptive Awareness and Maturity Fears.

Subjects must read each item and determine whether the statement applies to them "always", "usually", "often", "sometimes", "rarely", or "never", and they are only allowed to choose one of the six options. Scoring is such that answering the item in the most extreme and clinically disordered manner earns a score of 3, the second most extreme earns a score of 2, and the third most extreme earns a score of 1. The other three response categories receive a score of 0.

A pool of items was developed and an item was retained in the final version of the EDI if it 1) significantly differentiated between anorexia nervosa patients and female controls, and 2) correlated more highly with the subscale which it was intended for than with any of the other seven subscales.

The internal consistency of each subscale as established by Cronbach's alpha coefficient was required to be above .80 for the sample of anorexia nervosa patients. As well, the item-total correlation coefficients were

required to be above .40 in order to retain an item in the test. However an exception was made for three items with item-total correlations below this cut-off point because they were considered to be "conceptually important" (Garner et al., 1983, p. 20). The average correlation between each item and the total was .63 (SD=.13) suggesting that among the items there was fairly good within-scale common variance. The reliability coefficients for the scales relevant to this study are as follows (with the first number pertaining to an anorexic sample and the second to a female control group): Drive for Thinness (.85, .85) and Body Dissatisfaction (.90, .91) (Garner et al., 1983).

The eight subscales were cross validated by showing that they significantly differentiated between patients with anorexia nervosa (half were the restricter type and half were suffering from the symptom of bulimia) and a female comparison group comprised of university students. The researchers have determined that three of the subscales (Drive for Thinness, Body Dissatisfaction and Bulimia) measure disturbances in beliefs/behaviors associated with eating and body weight which, though features of eating disorders, are also found in non-clinical dieting populations. This finding made the study of drive for thinness and body dissatisfaction particularly appropriate for the current study. The other five subscales purport to assess personality characteristics which are considered vital in understanding the psychopathology of eating

disorders.

One of the methods used by the authors to establish criterion related validity was to compare some of the EDI patient profiles with the clinical assessments of clinicians familiar with the patient's psychological adjustment. They were given information on the content of the subscales and then asked to rate how important that trait was to understanding that particular patient as compared to other anorexic clients they had treated. Using this method, all correlations were found to be significant ( $p < .001$ ) (Garner et al., 1983).

Criterion related validity was also established by showing that comparison groups scored the way in which they were expected to based on theories of eating disorders. For example, the bulimic anorexics, as compared to the restricting anorexics scored significantly higher on the bulimia and body dissatisfaction subscales ( $p < .01$ ). A group of obese women scored significantly higher on the body dissatisfaction subscale than the anorexia nervosa group, the female control group and a group of formerly obese women. The female controls scored significantly higher ( $p < .003$ ) than a group of male controls on the subscales related to eating and weight (drive for thinness, bulimia, and body dissatisfaction). Anorexic subjects obtained significantly higher scores compared to the male and female controls on every single subscale ( $p < .001$ ). Furthermore, a group of recovered anorexics had scores that were

significantly closer to the scores of the female controls than to the current anorexic patients.

Convergent and discriminant validity was examined by correlating the scores obtained by subsamples of anorexia nervosa patients on the EDI subscales with their scores on various other tests. A strict alpha level of  $p < .001$  was established to minimize type I errors. EDI subscales measuring concerns about weight and shape were found to be strongly associated with other tests of these dimensions and poorly correlated with personality characteristics. Similarly subscales measuring personality traits had logical correlations with certain measures of psychopathology, but poor correlations with measures of concern about weight and eating. For example, the drive for thinness scale was highly correlated with the EAT and the restraint scale. The bulimia subscale was found to be strongly associated with overall body dissatisfaction, a lack of self control and restraint. The ineffectiveness subscale was significantly related to low self-esteem, depression, and external locus of control and the perfectionism subscale was found to be strongly associated with interpersonal sensitivity.

2. The Tennessee Self Concept Scale (TSCS) was employed to measure self concept (see Appendix C). This test is designed to assess a person's feelings of self-worth, the degree to which the image an individual holds of him/herself

is realistic, and whether this concept of self is deviant. The original version of the TSCS was published in 1956 and the version used for the purposes of this study was released in 1965.

The TSCS is comprised of 100 self-descriptive items which the subjects use to describe what they are, how they feel about themselves and what they do. In addition to providing a global measure of self concept, the test is also divided into those subscales that assess self concept from an external frame of reference (moral-ethical, social, personal, physical and family), and those that assess it from an internal frame of reference (identity, behavior and self-satisfaction). However, for the purposes of this study the most relevant measure is the Total P score from the counselling form which reflects a person's overall level of self concept. High scores identify people that like themselves and who perceive themselves to be persons of value. Low scores are indicative of persons who feel they are undesirable and worthless, and who do not have confidence in themselves (Fitts, 1965).

For each item, subjects must indicate on a 5 point Likert scale whether that statement if applied to them is (1) completely false, (2) somewhat false, (3) neither true nor false, (4) somewhat true or (5) completely true. Half of the items are positive and half are negative. However on the scoring sheet the numbers listed above are reversed for the negative items, so that when a person answers completely

false (1) to a negative item they receive a high score (5), just as they do when they respond completely true (5) to a positive item.

The test-retest reliability coefficients of the TSCS are based on a period of two weeks and range from .60 to .90. The test-retest reliability of the Total P score is .92 (Fitts, 1965).

In order to ensure content validity, the original large pool of items was presented to seven clinical psychologists who had to unanimously agree on how to classify the items into the 3 (internal) X 5 (external) framework described previously (Fitts, 1965). Six items which the judges completely agreed upon were kept for each facet in the 3 X 5 framework. This accounts for 90 items. The other ten items come from the MMPI lie scale and are included to assess test-taking defensiveness or the tendency to give socially desirable but unlikely responses.

In terms of discriminant validity, the manual claims highly significant (mostly at the  $p < .001$  level) differences obtained between psychiatric patients ( $n=369$ ) and non-patients ( $n=626$ ) for most scales employed in the TSCS (Fitts, 1965). Other studies (Havener, 1961; Wayne, 1963) have found parallel differences between clinical and non-clinical groups (cited in Fitts, 1965).

Concurrent validity was determined in part by correlating the TSCS with scores on the Minnesota Multiphasic Personality Inventory for 102 psychiatric

patients. Scores on the TSCS correlated with various scales on the MMPI in directions and magnitudes that one would anticipate (Fitts, 1965). For instance, a high Total P score (indicating a strong positive self concept) was associated with low scores on the Depression, Psychopathic Deviation, Psychasthenia and Schizophrenia subscales (indicating better psychological adjustment in all of these areas) with Pearson Product Moment Correlations of  $-.52$ ,  $-.45$ ,  $-.62$  and  $-.58$  respectively.

3. The final instrument that was administered was a Personal Data Questionnaire comprised of seven questions designed to 1) elicit each individual's age, sex, height and weight, and 2) provide information that could be used to establish each subjects actual and perceived weight categories (see Appendix D). The students' current weights were determined by having them step on a digital scale when they came in to hand in their package of completed test materials. This weight was recorded by the researcher in the space marked current weight on the questionnaire.

Subjects were put into an actual weight category by determining what each student's weight was as a percentage of their ideal body weight for age, height and gender using the following formula:

subject's weight/ideal body weight X 100 = percentage of  
 ideal body weight  
 (Hergenroeder & Klish, 1990, p. 1059).

As was explained earlier, ideal body weight was obtained from height/weight tables that listed weight percentiles for 12 to 17-year-olds and was defined as "the 50th percentile weight for the subject's age, height and gender" (Hergenroeder & Klish, 1990, p. 1058).

Hergenroeder & Klish consider the normal weight range to be 90% to 110% of ideal body weight. They regard individuals as obese if their weight is greater than 120% of ideal body weight and as malnourished if their weight is less than 80% of ideal body weight.

These upper, lower and middle boundaries were compared to the five weight categories defined in Mintz and Betz (1986), and Miller et al. (1980). Although these two groups of researchers labeled their weight categories differently to Hergenroeder & Klish, they actually were found to be referring to the same weight categories. They define "underweight" as more than 10 percent below the desirable weight range. This weight category is equivalent to Hergenroeder & Klish's definition of "malnourished" (ie. less than 80% of ideal body weight or in other words, more than 10% below the lower boundary of the normal weight range which is 90% of ideal body weight). They define "slightly underweight" as 1 to 10 percent below the desirable weight range, "normal" as within the desirable weight range,



"slightly overweight" as 1 to 10 percent above the desirable weight range and "overweight" as greater than 10 percent above the desirable weight range. Combining the information from these three articles, the five weight categories in the present study were defined as follows:

- a) underweight: less than 80% of ideal body weight.
- b) slightly underweight: between 80 and 89% of ideal body weight.
- c) normal: between 90 and 110% of ideal body weight.
- d) slightly overweight: between 111 and 120% of ideal body weight.
- e) overweight: greater than 120% of ideal body weight.

Desired weight change was measured by the number of pounds the individual wanted to lose or gain. The desired losses were represented by negative amounts, desired gains by positive amounts and maintenance of current weight was recorded as zero.

### Procedure

After permission to conduct the study was obtained from the participating principals and teachers, each classroom was visited by the investigator (myself) who talked briefly with the students about the research. She explained that she was a graduate student in Clinical Psychology at the University of Calgary and that she was conducting a study looking at body image and self concept in adolescents. A

consent form was sent home with the students to be filled out by their parents/guardians. In order to participate in the study a student had to return a signed consent form within the three week period between sending out the letter and the actual testing date. The consent form described the study and explained that all data collected would be identified only with an identification number and would be kept completely confidential. It was also made clear to all students that their participation was strictly voluntary and that they could withdraw from the study without penalty.

On the testing dates, the researcher went into the classrooms and handed out to each participating student an envelope containing an EDI test booklet, a TSCS manual, a TSCS answer sheet and a copy of the Personal Data Questionnaire. The students who did not take part in the study were either moved to another part of the classroom where they read or worked on homework, or were sent to the library depending on the individual wishes of the teacher. The students were asked to take out their test materials. All three instruments were explained to the students, including how they were to record their answers on each form. The students' attention was drawn to the fact that the method of filling out the TSCS was somewhat different from that used with traditional answer sheets. Specifically, it was pointed out that 1) the first column the students were to fill out was on the right side of the page rather than on the left, and 2) in each column the

students respond to every other item on the answer sheet following the numbering system in the test booklet.

It was made clear to the students that although parental consent forms had been received from all of those participating, they were free to withdraw from the study if they wished. They were informed that all information obtained was strictly confidential, and that they were not to put their names on any of the papers to ensure confidentiality. It was also explained that only group results would be reported in the final study.

Finally, the students were informed that because the tests were self-report measures, it was extremely important that they answer all questions honestly. They were also discouraged from comparing answers with one another and were advised to respect the privacy of their fellow students by not talking to each other during testing and not looking around at each other's papers. The actual testing took approximately 50 - 55 minutes from start to finish in each classroom.

The subjects were told to fill out the Personal Data Questionnaire first, then the Tennessee Self Concept Scale, and finally the EDI. It was thought that the EDI's questions pertaining to eating, weight concerns and body dissatisfaction might make some individuals acutely aware of and sensitive to their weight and shape. This response set might have affected their answers to the questions regarding perceived weight category and desired weight change on the

Personal Data Questionnaire. For this reason the Personal Data Questionnaire was filled out first and the EDI last. It was also felt that it would be best to separate the two instruments pertaining to weight and eating by administering the Tennessee Self Concept Scale in between the other two instruments. It was assumed that this order would help to minimize the chances that a response set established on the Personal Data Questionnaire about weight would carry over onto the EDI.

Subject selection and testing took place over a 2 month period beginning in mid March, 1991 and ending in mid May, 1991.

#### Data Analysis

In order to determine if the sexes differed significantly from each other with regards to body dissatisfaction, drive for thinness, and psychological and behavioral characteristics associated with eating disorders, means and standard deviations of these scores were calculated separately for males and females. Sex differences in the means were determined using two sample t-tests (two-tailed). The two-tailed two sample t-statistic was employed because the goal was to draw inferences about the mean difference between two samples (male and female adolescents), and because no directional differences were predicated. The assumption of normality, that the

distribution of sample means for both samples was normal, could have been satisfied if either "1) the two populations were normal or 2) both samples were relatively large ( $n$  around 30 or more)" (Gravetter & Wallnau, 1985, p. 347). The latter requirement was met since both samples had an  $n$  equal to 76. The second assumption, that the two populations from which the samples were selected had similar variances, was tested using an F-test statistic.

The mean scores on the body dissatisfaction subscale of the EDI were determined separately for each sex as a function of actual weight category. For each sex, the weight categories were arranged from "most satisfied" to "least satisfied" and were grouped into two clusters. Subjects were grouped into two clusters based on those weight categories with mean body dissatisfaction scores below the average body dissatisfaction score for that sex (Cluster 1), and those weight categories with mean body dissatisfaction scores above the average (Cluster 2). The categories were grouped such that the clusters were found to be significantly different from each other using two sample t-tests (two-tailed). This representation of the data clarified which weight categories within each sex were similarly satisfied or dissatisfied with their bodies. The test used to determine whether the weight categories were significantly different from each other was a one-way analysis of variance.

The descriptive statistics (means and standard deviations) describing the self concepts (as measured by the TSCS) of males and females were obtained. Again sex differences in the means were calculated using two sample t-tests (two-tailed).

The Pearson Product Moment Correlation coefficient between body dissatisfaction (as measured by the EDI) and self concept (as measured by the TSCS) was calculated separately for males and females. Fisher's Z transformation was employed to test whether the correlations obtained by the two groups were significantly different from each other. Fisher's Z test was used because the information being sought was the significance of the difference between two correlation coefficients for independent samples.

Descriptive statistics (means and standard deviations) of desired weight gain, desired weight loss and overall desired weight change were calculated separately for males and females. For those individuals who indicated a desire to lose or gain weight, desired weight change was correlated with self concept to determine if there was a relationship between self concept and wanting to lose or gain weight. These Pearson Product Moment Correlation Coefficients were calculated separately for males who wished to gain or lose weight, and for females who wished to gain or lose weight.

For actual and perceived weight, descriptive statistics were used to describe the number of men and women in each of the five different weight categories (overweight, slightly

overweight, normal, slightly underweight and underweight). Next, the amount of agreement between actual and perceived weight categories was explored using a table which plotted actual weight category against perceived weight category separately for males and females.

### Hypotheses

A total of number of eleven experimental hypotheses were formulated in the present study. These hypotheses were stated in null hypothesis form. The null hypothesis predicts that the mean difference between two populations is zero. In order to reject the null hypothesis, the data must have demonstrated that there was a significant difference between the two populations. Alpha is the risk of committing a type I error or of rejecting a null hypothesis that is actually true. The alpha level that is chosen determines the significance level associated with the hypothesis tested, or the level at which the null hypothesis is rejected (Gravetter & Wallnau, 1985). For the purposes of the current study an alpha level of .05 was set to determine significance.

This thesis uses various tests as indicators of the distance between samples, not between populations. The results of this thesis are exploratory only and will lead to suggestions for further studies and research.

Hypothesis 1. There will be no statistically significant differences between the male and female adolescents in this sample as measured by:

a) the scores they obtain on the Body Dissatisfaction subscale of the EDI,

b) the scores they obtain on the Drive for Thinness subscale of the EDI, and

c) the overall scores they obtain on the EDI (the sum of all subscales).

Hypothesis 2. For the female adolescents in this sample, no statistically significant differences will be found between weight category (overweight, slightly overweight, normal, slightly underweight, underweight) and the subjects' body dissatisfaction scores (as measured by the EDI).

Hypothesis 3. For the male adolescents in this sample, no statistically significant differences will be found between weight category (overweight, slightly overweight, normal, slightly underweight, underweight) and the subjects' body dissatisfaction scores (as measured by the EDI).

Hypothesis 4. No statistically significant difference will be found between the male and female adolescents in this sample with respect to the total P scores they obtain on the self concept measure (the TSCS).



Hypothesis 5. For the female adolescents in this sample, no statistically significant correlation will be found between body dissatisfaction (as measured by the EDI) and self concept (as measured by the TSCS).

Hypothesis 6. For the male adolescents in this sample, no statistically significant correlation will be found between body dissatisfaction (as measured by the EDI) and self concept (as measured by the TSCS).

Hypothesis 7. No statistically significant difference will be found between the male and female adolescents in this sample in the correlations they obtained between body dissatisfaction (as measured by the EDI) and self concept (as measured by the TSCS).

Hypothesis 8. No statistically significant difference will be found between the male and female adolescents in this sample in the amount or direction of weight change desired (as measured in pounds).

Hypothesis 9. For the female adolescents in this sample, no statistically significant correlation will be found between self concept (as measured by the TSCS) and desired weight change (desired weight loss in pounds or desired weight gain in pounds).

Hypothesis 10. For the male adolescents in this sample, no statistically significant correlation will be found between self concept (as measured by the TSCS) and desired weight change (desired weight loss in pounds or desired weight gain in pounds).

Hypothesis 11. There will be no differences between actual weight categories and perceived weight categories in this sample of male and female adolescents.

## CHAPTER FOUR

### RESULTS

In this chapter, the data gathered in the current study will be presented and analyzed. First, the demographic variables (age, gender) will be reviewed briefly. This same section will also include the descriptive statistics (means, standards deviations, percentages) that were used to summarize the subjects responses to items on the EDI, the TSCS and the Personal Data Questionnaire. Next the results will be presented in terms of their relationship to the null hypotheses. Using the various statistical methods discussed in the previous section, it will be determined whether the data provides sufficient evidence to reject any of the null hypotheses.

#### Demographic Variables and Descriptive Statistics

A total number of 152 Grade 10 students participated in the study, 76 female and 76 male. The breakdown of the students by age and gender is contained in Table 1 which also contains the descriptive statistics (means, medians, standard deviations, frequencies and percentages) pertaining to age and gender for the group of males, for the group of females and for the two groups combined.

Table 1

Age and Gender: Descriptive Statistics

Females			Males			Males and Females Combined		
Age	n	Percent	Age	n	Percent	Age	n	Percent
14	1	1.3%				14	1	0.7%
15	43	56.6%	15	37	48.7%	15	80	52.6%
16	27	35.5%	16	27	35.5%	16	54	35.5%
17	5	6.6%	17	12	15.8%	17	17	11.2%
N = 76			N = 76			N = 152		
Mean = 15.47			Mean = 15.67			Mean = 15.57		
SD = 0.64			SD = 0.74			SD = 0.70		
Median = 15			Median = 16			Median = 15		

Table 2 presents the descriptive statistics separately for the male and female adolescents in this sample on the following variables: 1) Body Dissatisfaction (as measured by the EDI with higher scores indicating more body dissatisfaction), 2) Drive for Thinness (as measured by the EDI with higher scores indicating a greater concern with slimming and slenderness), 3) Overall EDI score (with higher scores indicating more disturbed beliefs, behaviors and psychological characteristics related to eating problems) and 4) Self Concept (as measured by the TSCS with higher scores indicating a more positive self concept).

Table 3 details the descriptive statistics pertaining to the five weight categories (underweight, slightly underweight, normal, slightly overweight and overweight) for the male and female adolescents in this sample. This table lists the number of individuals who occupy a particular weight category (actual weight category), and the number who perceive themselves to be in a particular weight category (perceived weight category). The percentages corresponding to these frequencies are also presented.

Finally, Table 4 summarizes the data obtained from the Personal Data Questionnaire pertaining to desired weight change. Based on their responses, the male and female adolescents in this sample were divided separately into those indicating a desire to lose weight, those indicating a desire to gain weight and those wishing simply to maintain

Table 2

Body Dissatisfaction, Drive for Thinness, Overall EDI Score, and Self Concept - Descriptive Statistics for Males and Females

Variable	Mean		Median		Standard Deviation	
	Male	Female	Male	Female	Male	Female
Body Dissat.	3.68	10.92	3.00	11.00	3.74	7.22
Drive for Thinness	1.42	7.05	.00	6.00	2.59	6.38
Overall EDI Score	23.97	42.93	21.00	38.50	14.13	24.62
Self Concept	328.09	313.13	324.50	312.50	32.77	30.24

Table 3

Actual and Perceived Weight Categories: Descriptive  
Statistics for Males and Females

Weight Category	Actual		Perceived	
	<u>Weight Category</u>		<u>Weight Category</u>	
	n	Percent	n	Percent
Underweight				
Female	3	3.9%	2	2.6%
Male	4	5.3%	2	2.6%
Slightly Underweight				
Female	16	21.1%	5	6.6%
Male	12	15.8%	13	17.1%
Normal				
Female	41	53.9%	26	34.2%
Male	41	53.9%	45	59.2%
Slightly Overweight				
Female	8	10.5%	29	38.2%
Male	11	14.5%	13	17.1%
Overweight				
Female	8	10.5%	14	18.4%
Male	8	10.5%	3	3.9%

Table 4

Desired Weight Change: Descriptive Statistics for Males and Females

<u>Desired Weight Change</u>	<u>n</u>	<u>Percent</u>	<u>Mean (lbs)</u>	<u>Standard Deviation</u>
Lose Weight				
Female	53	69.7%	- 15.98	11.87
Male	17	22.4%	- 17.35	9.78
Gain Weight				
Female	5	6.6%	+ 6.60	13.40
Male	35	41.6%	+ 19.89	11.27
Maintain Current Weight				
Female	18	23.7%	0	0
Male	24	31.6%	0	0



their current weight. This table details the number of individuals in each category, the corresponding percentages, the mean desired weight change and the standard deviation. The relationship of these seven variables (body dissatisfaction, drive for thinness, overall EDI score, self concept, actual weight category, perceived weight category and desired weight change) to each other, and to the differences that exist between male and female adolescents will be reported under the section on hypothesis testing.

### Hypothesis Testing

#### Hypothesis 1

With regards to gender and the subjects' Body Dissatisfaction, Drive for Thinness and Overall EDI scores (all assessed by the EDI), the results suggested that there were statistically significant differences between the male and female adolescents in this sample on all three of these measures: Body Dissatisfaction ( $t=7.6$ ,  $df=112.61$ ,  $p=.000$ ); Drive for Thinness ( $t=7.13$ ,  $df=99.02$ ,  $p=.0001$ ) and Overall EDI score ( $t=5.82$ ,  $df=119.55$ ,  $p=.0001$ ), (see Table 5). Therefore all three parts of Hypothesis 1 were rejected.

#### Hypothesis 2

Within the group of female adolescents analysis of variance indicated that there were statistically significant differences between the five weight categories (underweight, slightly underweight, normal, slightly overweight and overweight) with regards to the mean body dissatisfaction score associated with each of these weight categories ( $F=3.58$ ,  $df=4,71$ ,  $p=.01$ ), (see Table 6). Therefore Hypothesis 2 was rejected and it was concluded that in the female sample, the weight category to which a young woman belonged did affect her level of body dissatisfaction.

Table 5

Sex differences in Body Dissatisfaction, Drive for Thinness, the Overall EDI Score, Self Concept and Desired Weight Change

					Pooled Variance		Separate Variance	
Variable	n	Mean	SD	F	t	DF	t	DF
Body Dissatisfaction								
Females	76	10.92	7.2	3.7***	7.76	150	7.76***	112.6
Males	76	3.68	3.7					
Drive for Thinness								
Females	76	7.05	6.3	6.1***	7.13	150	7.13***	99.0
Males	76	1.42	2.6					
Overall EDI Score								
Females	76	42.93	24.6	3.0***	5.82	150	5.82***	119.6
Males	76	23.97	14.1					
Self Concept								
Females	76	313.13	30.2	1.2	-2.93**	150	-2.93	149.0
Males	76	328.09	32.8					
Desired Weight Change								
Females	76	-10.42	13.4	1.7*	-6.24	150	-6.24***	140.6
Males	76	5.28	17.4					

\*p<.05, two-tailed

\*\*p<.005, two-tailed

\*\*\*p<.001, two-tailed

Table 6

Summary of the Analysis of Variance: Scores on the Body  
Dissatisfaction Subscale as a Function of Weight Category

<u>Weight Category</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>
Underweight			
Female	3	3.33	.58
Male	4	5.00	2.71
Slightly Underweight			
Female	16	7.56	6.43
Male	12	2.42	2.39
Normal			
Female	41	11.10	7.20
Male	41	2.29	2.63
Slightly Overweight			
Female	8	15.63	5.55
Male	11	6.18	4.00
Overweight			
Female	8	14.88	6.96
Male	8	8.63	4.78
Total			
Female	76	10.92	7.23
Male	76	3.68	3.74

## ANALYSIS OF VARIANCE

<u>Source of Variance</u>	<u>DF</u>	<u>Sum of Squares</u>	<u>Mean Squares</u>	<u>F-ratio</u>	<u>F-prob</u>
Between Groups					
Females	4	656.56	164.14	3.58	.01
Males	4	369.51	92.38	9.63	.0001
Within Groups					
Females	71	3250.96	45.79		
Males	71	680.92	9.59		
Total					
Females	75	3907.53			
Males	75	1050.42			

### Hypothesis 3

Within the group of male adolescents an analysis of variance revealed that there were also statistically significant differences between the weight categories (underweight, slightly underweight, normal, slightly overweight and overweight) with regards to the mean body dissatisfaction scores associated with each of these weight categories ( $F=9.63$ ,  $df=4,71$ ,  $p=.0001$ ), (see Table 6). Therefore Hypothesis 3 was rejected and it was concluded that in the male sample, the weight category to which a young man belonged did affect his level of body dissatisfaction.

The line of research in Hypotheses 2 and 3 was taken one step further by trying to specify exactly where the differences between the weight categories in mean body dissatisfaction lay for each sex, (see Table 7). It was found that for each sex mean scores on the body dissatisfaction subscale, as a function of weight category, could be arranged into two clusters: those weight categories with mean body dissatisfaction scores below the overall mean body dissatisfaction score for that sex (Cluster 1), and those weight categories with mean body dissatisfaction scores above the overall mean (Cluster 2). When two sample t-tests were performed between these two newly formed

Table 7

Scores on the Body Dissatisfaction Subscale as a Function of Weight Category Arranged in Clusters that are Significantly Different From Each Other

<u>Group</u>		<u>Mean Body Dissatisfaction</u>	
Female			
Underweight	3.33		
Slightly Underweight	7.56	Cluster 1	
<u>Mean Female Body Dissatisfaction Score:</u>		10.92	
Normal Weight	11.10		
Overweight	14.88	Cluster 2	
Slightly Overweight	15.63		
Male			
Normal Weight	2.29		
Slightly Underweight	2.42	Cluster 1	
<u>Mean Male Body Dissatisfaction Score:</u>		3.68	
Underweight	5.00		
Slightly Overweight	6.18	Cluster 2	
Overweight	8.63		

clusters of female adolescents, it was found that these clusters were significantly different from each other ( $t=-2.95$ ,  $df=74$ ,  $p=.004$ ) (see Table 8). These findings indicated that as a group the underweight and slightly underweight female adolescents were significantly more satisfied with their bodies than the group of normal weight, overweight and slightly overweight females adolescents.

Similarly, when t-tests were performed between the two newly formed clusters of male adolescents, it was found that these clusters were significantly different from each other ( $t=-4.79$ ,  $df=29.37$ ,  $p=.0001$ ), (see Table 8). These results suggested that, as a group, the normal weight and slightly underweight male adolescents were significantly more satisfied with their bodies than the group of underweight, slightly overweight and overweight males adolescents.

#### Hypothesis 4

With respect to gender and the subjects' self concept scores (as measured by the TSCS), the results suggested that there was a statistically significant difference between the overall self concept scores of the male and female adolescents in this sample ( $t=-2.93$ ,  $df=150$ ,  $p=.004$ ), (see Table 5). Therefore Hypothesis 4 was rejected suggesting that the male adolescents in this sample had a significantly higher self concept than the female adolescents.

Table 8

Two-sample t-tests Indicating the Significance of the  
Difference Between the Weight Category Clusters

Females

Cluster 1: Underweight and Slightly Underweight

Cluster 2: Normal, Overweight and Slightly Overweight

	n	Mean	SD	F	Pooled Variance		Separate Variance	
					t	DF	t	DF
Cluster 1	19	6.89	6.08	1.37	-2.95**	74	-3.19	35.75
Cluster 2	57	12.26	7.11					

\*\*p<.005

Males

Cluster 1: Normal and Slightly Underweight

Cluster 2: Underweight, Slightly Overweight and Overweight

	n	Mean	SD	F	Pooled Variance		Separate Variance	
					t	DF	t	DF
Cluster 1	53	2.32	2.55	2.68**	-5.77	74	-4.79***	35.75
Cluster 2	23	6.83	4.19					

\*\*p<.005

\*\*\*p<.001



### Hypothesis 5

The correlation between self concept and body dissatisfaction in this sample of adolescent girls was significant, but only marginally so ( $r=-.22$ ,  $df=76$ ,  $p=.05$ ). Consequently, there was evidence to reject Hypothesis 5 for the females. The fact that the correlation was negative indicates that a more positive self concept was associated with a lower level of body dissatisfaction.

### Hypothesis 6

The correlation between self concept and body dissatisfaction in this sample of adolescent boys was statistically significant ( $r=-.43$ ,  $df=76$ ,  $p=.0001$ ), and thus there was evidence to reject the null hypothesis. The fact that the correlation was negative indicates that a more positive self concept was associated with a lower level of body dissatisfaction.

### Hypothesis 7

Using Fisher's Z transformation no statistically significant difference was found between the samples of male and female adolescents with respect to the correlations they obtained between self concept and body dissatisfaction ( $z=1.45$ ,  $p=.07$ ). Consequently the null hypothesis could not be rejected. Therefore it could not be concluded that the

correlation between self concept and body dissatisfaction was significantly greater for the male adolescents than for the female adolescents.

#### Hypothesis 8

With respect to the amount and direction of weight change desired by the male and female adolescents in this sample, the results suggested that there was a statistically significant difference between the sexes, with the women indicating a desire to lose an average of 10.42 pounds and the men indicating a desire to gain an average of 5.28 pounds ( $t=-6.24$ ,  $df=140.60$ ,  $p=.0001$ ), (see Table 5). Therefore Hypothesis 8 was rejected.

#### Hypothesis 9

As no statistically significant correlation was found between self concept and the desire to lose weight in the sample of female adolescents ( $r=.09$ ,  $df=53$ ,  $p=.52$ ), the null hypothesis could not be rejected. As no statistically significant correlation was found between self concept and the desire to gain weight in the sample of female adolescents ( $r=-.52$ ,  $df=5$ ,  $p=.37$ ), the null hypothesis again could not be rejected.

#### Hypothesis 10

Since no statistically significant correlation was found between self concept and the desire to lose weight in the sample of male adolescents ( $r=.07$ ,  $df=17$ ,  $p=.79$ ), the null hypothesis could not be rejected. As no statistically significant correlation was found between self concept and the desire to gain weight in the sample of male adolescents ( $r=.02$ ,  $df=35$ ,  $p=.90$ ), the null hypothesis again could not be rejected.

#### Hypothesis 11

Table 9 shows the relationship between perceived weight category and actual weight category. If there had been no differences between actual and perceived weight categories, there would have only been entries in the middle diagonal. These percentages reflect the correspondence between perceived and actual weight categories and would have been equal to 100% if all of the subjects had been completely accurate. As can be seen from Table 9, this is not the case in the present study. Thus there was evidence to reject Hypothesis 11, suggesting that both the male and the female adolescents in this sample made errors in judging the weight category to which they belonged.

Table 9

Relationship of Perceived to Actual Weight Category in Male and Female Adolescents

Actual Wt. Category	Perceived Weight Category									
	Underwt.		Slightly Underwt.		Normal		Slightly Overwt.		Overwt.	
	n	%	n	%	n	%	n	%	n	%
Underweight										
Female(3)	1	33.3%	2	66.7%						
Male(4)	1	25.0%	3	75.0%						
Slightly Underweight										
Female(16)	1	6.3%	3	18.8%	8	50.0%	4	25.0%		
Male(12)			2	16.7%	9	75.0%	1	8.3%		
Normal										
Female(41)					18	43.9%	15	36.6%	8	19.5%
Male(41)	1	2.4%	8	19.5%	28	68.3%	4	9.8%		
Slightly Overweight										
Female(8)							7	87.5%	1	12.5%
Male(11)					7	63.6%	4	36.6%		
Overweight										
Female(8)							3	37.5%	5	62.5%
Male(8)					1	12.5%	4	50.0%	3	37.5%

Note. Overall n's are indicated in parentheses. As well, percentages are within-in row percentages.

Summary of the statistically significant findings:

1. Statistically significant differences were found between the male and female adolescents in this sample on measures of Body Dissatisfaction, Drive for Thinness and on the overall score of the EDI which measures some of the psychological and behavioral characteristics associated with eating disorders, (Hypothesis 1).

2. Within both the male and female adolescent groups, statistically significant differences were found between the five weight categories with regards to the mean body dissatisfaction scores associated with each weight category. Thus weight category did affect level of body dissatisfaction in both sexes, (Hypotheses 2 and 3).

The underweight and slightly underweight female adolescents as a group were found to be significantly more satisfied with their bodies than the group of normal weight, overweight and slightly overweight female adolescents. In addition, the normal weight and slightly underweight male adolescents as a group were found to be significantly more satisfied with their bodies than the group of underweight, slightly overweight and overweight male adolescents.

3. A statistically significant difference was found between the self concept scores of the male and female adolescents in this sample, with the male adolescents

reporting, on average, more positive levels of self concept, (Hypothesis 4).

4. A statistically significant negative correlation was found between self concept and body dissatisfaction in this sample of young men (Hypothesis 6), and a less significant negative correlation was found between self concept and body dissatisfaction in this sample of young women, (Hypothesis 5).

5. A statistically significant difference was found between the male and female adolescents in this sample in the amount and direction of weight change they desired, (Hypothesis 8).

6. Significant differences were found between the subjects' actual and perceived weight categories, with both the male and the female adolescents in this sample often misjudging the weight category to which they belonged, (Hypothesis 11).

## CHAPTER FIVE

## DISCUSSION

Given the greater prevalence of eating disorders in females versus males and the fact that adolescence is a high risk period for the development of serious disturbances in eating, it was the researcher's goal to determine whether male and female adolescents would differ on measures related to body weight and shape. According to the literature one would expect to find that, compared to young men, young women would score higher on measures of body dissatisfaction, drive for thinness and on a general measure of the psychopathology associated with eating disorders. It could also be predicted that they might overestimate the weight category to which they belonged more often and be more likely to indicate a desire to lose weight. Together these factors, if found to be more prevalent in women, would seem to confirm the increased vulnerability of this population to eating disorders. A measure of self concept was introduced because low self concept is also considered to be one of the predisposing factors in the development of eating disorders.

Not only were sex differences examined with regards to the following five variables (body dissatisfaction, drive for thinness, overall EDI score, self concept and desired weight change), but so were the relationships between several of these variables. Specifically, the present study

looked at the relationship between body dissatisfaction and self concept, between body dissatisfaction and actual weight category, between desired weight change and self concept, and between actual weight category and perceived weight category for adolescent girls and boys.

It was hoped that this research would serve three purposes. The first aim was simply to gain a better understanding of whether male and female adolescents differ significantly on variables related to body weight and shape, and if they did, to outline the clinical implications of these findings. The second purpose was to provide some recommendations with regards to preventing the development of serious problems with weight and eating. The final purpose was to shed some light on the relationship between body image and self concept, and through these findings determine what further research could be pursued in order to clarify the nature of this relationship.

### Discussion of Hypotheses

The results of this study indicated that there were statistically significant differences between the male and female adolescents in this sample with regards to their body dissatisfaction, drive for thinness and overall EDI scores (Hypothesis 1) as the females scored significantly higher than the males on all of these variables.



As mentioned previously, the body dissatisfaction subscale of the EDI addresses the belief that one's stomach, hips, thighs and buttocks are too large. Thus the findings of this study support those of Davies and Furnham (1986) who, though using a different method of measurement, obtained similar results. In their study of adolescent girls, dissatisfaction with bust, waist and hip measurements increased from age 12 to 18, as did the amount of distress caused by the items "stomach" and "upper thigh". It is clear that during adolescence, females become increasingly unhappy with body parts associated with fat deposition. As Davies and Furnham did not include males in their sample, the findings of the present study only partially support the findings of these investigators.

In their study of adolescents' opinions of their figures, Huenemann et al. (1966) found that both females and males experience a great deal of dissatisfaction with their body dimensions. The discrepancy between the findings of the present research and those of Huenemann and his colleagues can be explained by looking at which body parts males expressed dissatisfaction with in the Huenemann et al. study. Over half of these young men indicated a desire for larger biceps, chests, wrists, shoulders and/or forearms; all features associated with upper body strength. The body dissatisfaction subscale of the EDI does not assess these dimensions and this difference could explain why this study's male sample did not express more body

dissatisfaction. In agreement with the findings of the current study and those of Davies and Furnham (1986), Huenemann et al. (1966) found that at least half of the sample of girls wished for smaller hips, thighs and/or waists.

In the process of developing and validating the Eating Disorders Inventory, Garner et al. (1983) compared a female control group to a male control group on all eight subscales of the test. This group's findings support those of the present research in that females scored significantly higher than males on the Body Dissatisfaction and Drive for Thinness subscales. In fact their results are almost identical to those derived from the current study on the body dissatisfaction subscale. Garner's male control group obtained a mean score of 3.9, and the males in this study obtained a score of 3.68. Their female control group had a mean score of 10.2 which is very close to the 10.92 obtained by females in the present study. It is interesting to note that in comparing this study's sample scores with the normative data supplied by Garner et al. (1983), that 29% (ie. 22 out of 76) of the females in the present study scored above the mean Body Dissatisfaction score obtained by the anorexia nervosa group in the Garner et al. study (1983). This comparison provides an idea of the magnitude of body dissatisfaction experienced by many young women.

It will be recalled that the drive for thinness subscale measures overconcern with dieting and the quest for

slenderness. The current findings support those of Kelly and Patten (1985) who found that significantly more girls than boys indicated that they enjoyed losing weight, had a desire to be thin, were dieting to lose weight and were concerned about overweight. The research of Wadden and his colleagues (1989) also supports the general finding that women have a strong drive for thinness in that 77% of the normal weight girls and 32% of the very underweight girls reported dieting in the past year. Similarly, Rosen and Gross (1987) found that two-thirds of the average weight girls and 18% of the underweight girls were trying to lose weight. The girls in these two studies clearly did not just wish to achieve their ideal weight since they were already of normal weight or were underweight. Rather, these girls had a strong drive for thinness in that their goal was to achieve a weight which was below their ideal weight range.

There are several reasons which may account for the gender difference in drive for thinness found in the current study. Girls may believe that slenderness equals attractiveness, or that thinness will be accompanied by benefits that cannot be attained if one is of normal weight or is overweight. Research tends to favor this belief in that girls who weigh less for their height and age have been found to receive higher grades in school and to have more friends (Kelly and Patten, 1985). In addition, high school boys list good looks and a good body as the two most important factors in selecting a date, while girls list

intelligence as the key factor used in choosing a boyfriend (Berscheid, Dion, Walster & Walster, 1971). Consequently, the girls' awareness of what young men find attractive may influence their pursuit of slenderness.

These sex differences in drive for thinness could also be attributed to the fact that being overweight has more negative consequences for women than for men (Stake & Lauer, 1987). These researchers reported that as compared to their average weight counterparts, overweight female undergraduates dated significantly less, were not as likely to be currently dating and reported more criticism and rejection from parents and peers. In contrast overweight and average weight men did not differ significantly in these measures of social consequence.

Research findings pertaining to body dissatisfaction and drive for thinness seem to support the notion that adolescent girls are highly sensitive to standards of feminine beauty and slenderness, perhaps as a means of avoiding negative evaluations (Hill & Lynch, 1983).

The fact that girls obtained significantly higher overall EDI scores than boys indicates that adolescent girls may possess beliefs and characteristics which promote eating disorders to a greater extent than male adolescents. These results are consistent with Hilde Bruch's early observation that the pressure placed on maturing girls to stay slim is contributing to dissatisfaction with body weight and shape, a preoccupation with slenderness and more rarely, eating

disorders (1978).

Within both the female and male groups, the weight category to which the subjects belonged was found to have a statistically significant effect on body dissatisfaction (Hypotheses 2 and 3).

In the present study underweight and slightly underweight females as a group were found to be significantly less dissatisfied than the normal, overweight and slightly overweight groups. These results are very similar to those obtained by Mintz and Betz (1986) except that, in their study, the normal weight females were in the more satisfied cluster which included the slightly underweight and underweight groups. This discrepancy could be due to the fact that Mintz and Betz used a different test (the Body-Cathexis Scale) to measure body dissatisfaction, with this test measuring satisfaction with a wider range of body parts than the Body Dissatisfaction subscale. Specifically, the Body-Cathexis Scale samples satisfaction with body parts or characteristics ranging from height, ankles and nose length to hips, thighs and shoulder width. In contrast the Body Dissatisfaction subscale of the EDI focuses only on satisfaction with stomach, thighs, hips, buttocks and general body shape. However the difference could also be due to the fact that these days, girls may feel even more pressure to conform to our culture's rigid standards of feminine beauty than they did five years ago. Today's normal weight girls may pay more attention to

societal standards of extreme thinness than did girls five years ago, and body dissatisfaction may be the result of constantly comparing themselves to these unrealistic ideals.

The findings associated with this study more closely resemble those of Wadden et al. (1989) who found that their slightly overweight and average weight female subjects did not differ significantly with regards to satisfaction with weight. In their study, both of these groups were significantly more unhappy with their weight than the slightly underweight and underweight girls.

In the present study, males occupying the normal and slightly underweight categories formed a cluster of individuals who were significantly more satisfied with their bodies than the underweight, slightly overweight and overweight groups. These results are quite different to those reported by Mintz and Betz (1986). In their study, slightly overweight and normal weight males were significantly more satisfied than the overweight, underweight and slightly underweight males. Again, the discrepancy between this research and the findings of Mintz and Betz could be attributed to the fact that the Body Cathexis Scale measures a more diverse range of body aspects and parts. However, the differences might be due to a more basic change in the attitudes of males. Striegel-Moore and her colleagues (1986) have pointed out that our culture's growing fitness movement is directed at men as much as it is at women. Consequently, as men become more body conscious,

fashion conscious and weight conscious, it would only be natural that they would diet more. The fact that light beers, sugar free soft drinks, powdered meal replacements designed to speed weight loss (Slimfast) and numerous other diet products are being marketed by and directed towards men could be influencing men's attitudes toward their bodies as well. Young men may not be immune to the fear of overweight and may, in fact, feel that being slightly underweight, especially if one is muscular and lean, is better than being even slightly overweight in today's society.

Nevertheless, it is important to put these findings pertaining to young men into perspective. The mean body dissatisfaction score associated with the significantly more dissatisfied cluster of males (ie. Cluster 2, the underweight, slightly overweight and overweight males) was only 6.83. This score is even lower than the mean body dissatisfaction score obtained by one of the most satisfied female groups, the slightly underweight females. Thus even the males most dissatisfied with their bodies were not that dissatisfied in comparison to the females.

A statistically significant difference was found between the male and female adolescents in this sample with regards to self concept, with the males obtaining a significantly higher mean score than the females (Hypothesis 4). Rosen et al. (1987) obtained similar results in their study of the psychological adjustment of adolescents trying to gain or lose weight. This basic difference in self

concept between the sexes may be related to the previously discussed psychological differences found between boys and girls, as girls have been found to be more self conscious, insecure and anxious (Bush et al., 1978; Hill & Lynch, 1983). Compared to boys they also appear to worry more about being liked, care more about other people's opinions and try harder to avoid being negatively evaluated (Simmons and Rosenberg, 1975). Others have suggested that females define themselves mainly in relation to other people and are therefore more interpersonally oriented (Chodorow, 1978; Gilligan, 1982). It may be that this interpersonal orientation makes it more difficult for a girl to feel secure and happy with herself because reinforcement and confirmation of the person she is does not come from within, but from other people.

It is important to remember that the TSCS is divided into five subscales which tap different aspects of self concept: Physical Self, Moral-Ethical Self, Personal Self, Family Self and Social Self. Given the finding that females were less satisfied with their bodies than males (as measured by higher Body Dissatisfaction scores on the EDI), there was a chance that the males' higher self concept scores were simply due to much higher scores on the questions pertaining to Physical Self. When this notion was tested, it was found that the males' mean Physical Self score was 68.36 and the females' mean Physical Self score was 62.34, a difference of 6.02. Given that the difference



between the males' overall self concept score and the females' overall self concept score was 14.96, it was clear that the males' higher scores on the Physical Self subscale could not alone account for the differences found between the sexes. Furthermore, a careful examination of the types of questions asked in the Physical Self subscale revealed that there was little overlap between these questions and those posed by the Body Dissatisfaction subscale of the EDI.

According to Fitts, the Physical Self section addresses the individual's "... view of his body, his state of health, his physical appearance, skills, and sexuality" (Fitts, 1965, p. 3). This definition is a much more general concept than the measure of body dissatisfaction that is derived from the EDI. Out of the 18 statements pertaining to Physical Self from the TSCS, only three even closely resemble the statements put forward by the Body Dissatisfaction subscales and these are as follows: I am neither too fat nor too thin; I would like to change some parts of my body; and I like my looks just the way they are. Most of the Physical Self items are in no way related to those from the EDI's Body Dissatisfaction subscale and include the following: I like to look nice and neat all the time; I am full of aches and pains; I am a sick person; I have a healthy body; I consider myself a sloppy person; I am neither too tall nor too short; I don't feel as well as I should; I should have more sex appeal; I often act like I am "all thumbs"; I take good care of myself physically; I feel

good most of the time; I do poorly in sports and games; and I am a poor sleeper.

Given the lack of overlap between the Physical Self subscale of the TSCS and the Body Dissatisfaction subscale of the EDI, the difference found between males and females in overall self concept scores cannot simply be attributed to the fact that males are more satisfied with their bodies than females, and it cannot be concluded that the difference obtained between the sexes was an artifact of two tests measuring identical variables.

A statistically significant correlation was obtained between self concept and body dissatisfaction in the sample of male adolescents (Hypothesis 6). However, only a marginally significant correlation was found between self concept and body dissatisfaction in the sample of female adolescents (Hypothesis 5). The results of the present study however indicate that the difference between these two correlations was not statistically significant (Hypothesis 7).

The present findings most closely resemble those obtained by Lerner and his colleagues in one of their initial studies (Lerner et al., 1973). In this study, self ratings of satisfaction with 24 body parts was correlated with self concept. Significant correlations were obtained for both males and females, with the relation being stronger, but not significantly so, for females. However the results of the present study do not resemble those

obtained by Lerner and Karabenick in their next study (1974). This time the students were asked to rate how physically attractive they felt each of the 24 body parts were on their body. These self ratings of physical attractiveness were then correlated with self concept. Significant results were obtained for females but not for males. The discrepancy between the findings of the present study and those of Lerner and Karabenick could be attributed to the fact that slightly different variables were correlated with self concept. In the present study, dissatisfaction with various body parts was assessed whereas Lerner and Karabenick's second study looked at self ratings of physical attractiveness. It could be that satisfaction with body parts is an equally important factor in the self concepts of both males and females. In contrast, the belief that one's body parts are not just satisfactory but physically attractive as well may account for a greater proportion of the variance of females's self concepts. The greater similarity of the present findings to the first study conducted by Lerner and his colleagues could be explained by the fact that satisfaction with body parts was the criterion variable under consideration in Lerner's first study, and this variable more closely resembles the Body Dissatisfaction variable from the EDI.

The results of the this research do not agree with those of Stake and Lauer either (1987). Stake and Lauer found that the correlation between a self rating of overall

attractiveness and performance self esteem was positive and significant for females but not for males. But again, this difference may be due to the fact that slightly different variables were being studied. They looked at a self rating of overall attractiveness and self-ratings of attractiveness of 19 body parts whereas the present study examined satisfaction with a more limited number of body parts. Furthermore, self concept, as defined in the present study, is a much more general concept than performance self esteem, which refers specifically to an individual's self-ratings of general competence.

It is interesting to note that even though the difference was not significant, the correlation between self concept and body dissatisfaction was greater for the male adolescents than for the female adolescents in this sample (Hypothesis 7). A possible explanation for this difference could be that, although the Body Dissatisfaction subscale did ask the subjects to indicate whether certain body parts were too big or just the right size, it did not ask them to rate how important these beliefs were to them. It will be recalled that Rozin and Fallon (1988) speculated that the disparity between current and ideal figures might be less relevant than the importance of this disparity to the individual. It might be that if "importance" had been introduced as variable into this study, quite different results might have been obtained. In other words, the amount of importance that is assigned to being satisfied

with one's body may be a moderator variable in the relationship between self concept and body dissatisfaction. For example a woman may know that she is overweight but may not feel that this is important. In this case, self concept and body dissatisfaction would probably not be found to be correlated. Yet another women who is equally overweight might care deeply about her condition, worry about it, and therefore it would be expected that her self concept would be strongly related to her body dissatisfaction.

Another explanation, suggested by Franzoi and Shields (1984), is that the small correlation obtained between self concept and body dissatisfaction in females could reflect the pervasive dissatisfaction with body weight and shape which affects many women, regardless of other feelings of satisfaction and competence.

In the present study, the results suggested that there was a statistically significant difference between the sexes with respect to the amount and direction of weight change desired, and those differences were in the expected direction (Hypothesis 8).

The adolescent girls expressed a desire to lose an average of 10.42 pounds whereas the adolescent boys wanted to gain an average of 5.28 pounds. Both sexes were quite dissatisfied with their weight, given that only 18 of the females (23.7%) and 24 of the males (31.6%) indicated a desire to maintain their current weight. In fact, 72.4% of the total sample wanted to achieve a weight that was

different from their present weight. In this sample of young men and women, females were three times more likely than males to indicate a wish to lose weight (69.7% vs. 22.4%), and males were six times more likely than females to express a desire to gain weight (41.6% vs. 6.6%). Based on the actual weights taken by the investigator, exactly equal numbers of males were underweight as females were overweight ( $n=16$  for each sex or 21.1%). Thus, the number of males who wished to gain weight and the number of females who wished to lose weight far exceeded the number who actually needed to do so according to norms placing them in the underweight and overweight categories respectively.

Connor-Greene (1988), Drewnowski and Yee (1987), Hesse-Biber et al. (1987) and Rosen and Gross (1987) all found levels of dissatisfaction with weight similar to those in the present study, with very few males or females wanting to simply maintain their current weight. In general they discovered that the percentage of females wanting to lose weight far exceeded the percentage of males wishing to do so and vice versa for males wanting to gain weight. However the results of the first three studies do differ somewhat from the findings of this study and those of Rosen and Gross. The authors of these three investigations all found greater percentages of men wanting to lose weight (between 37% and 45%) than were found in this study (22%) or that of Rosen and Gross (16%). They also found that approximately equal numbers of males wanted to lose weight as wanted to

gain weight, whereas the findings of Rosen and Gross and the present study indicated that males were much more likely to want to gain weight as opposed to lose weight. This difference could be attributed to the fact that in the former three studies the subjects were college age, whereas in the present study and that of Rosen and Gross, the subjects were adolescents. It is well known that boys tend to start maturing later than females and stop later (Faust, 1983). The adolescent boys tested had not finished growing and developing and therefore were probably less concerned about being overweight or about losing weight. However, by the time they are of college age, greater numbers of males may either have a weight problem or be more susceptible to the previously discussed fitness movement which places pressure on men to not only be well proportioned and muscular, but lean as well.

A possible explanation for the large numbers of males wanting to gain weight and the large number of females wanting to lose weight is that both sexes are quite sensitive to Western culture's stereotypes of male and female physical ideals. The young women in this sample wished to bring their bodies closer in line to the small, thin, lithe, cultural ideal for women, whereas the young men wished to bring their bodies closer in line to the muscular, hard, lean ideal for men. These findings also support the notion that for females, concern about overweight is a

"normative discontent" (Rodin et al., 1984, p. 267).

The findings of the present study indicated that for the sample of female adolescents, there was not a statistically significant correlation between self concept and the variables desired weight loss and desired weight gain (Hypothesis 9). This was also the case for the sample of male adolescents (Hypothesis 10).

These findings do not entirely support those of Rosen, Gross and Vara (1987) who found that both weight-losing attempts and weight-gaining attempts were associated with low self-esteem in adolescent girls, but not adolescent boys. These authors point out that this gender difference is consistent with the belief that girls' feelings of self-satisfaction are dependent upon physical appearance to a greater extent than are boys', and that the social consequences of deviating from the ideal are more negative for females. There are several possible reasons for the differences found between the present study and that of Rosen and his colleagues. To begin with, the aforementioned study used the Rosenberg Self Esteem Scale to measure self concept, not the TSCS, and it could be that the two tests were tapping different aspects of self-esteem. Secondly, the present study asked subjects to report the absolute number of pounds they wanted to lose or gain and correlated this value with self concept. In contrast Rosen et al. (1987) only asked subjects if they were currently trying to lose weight, gain weight or maintain their current weight,



and then they calculated whether these three groups differed in their mean self-esteem scores. Consequently, the methods of analysis were markedly different. Furthermore, the authors indicated that on the measure of self-esteem, all three female groups obtained mean scores close to the standardization norm of 31. Thus, even though the females who wanted to lose or gain weight may have had a lower self-esteem relative to females maintainers, they would still have been considered psychologically well adjusted with respect to the norm.

Perhaps one reason why a higher correlation was not found in women between self concept and variables related to weight concern/body dissatisfaction is because there might be a temporal relationship between dieting and lowered self esteem. Several researches have suggested that a decrease in self esteem follows from repeated failures in dieting and the resultant feeling that one does not have control over one's body (McCarthy, 1990; Heilbrun & Hausman, 1990). The present research only looked at the relationship between self concept and the variables desired weight change and body dissatisfaction. It did not look at whether these desires and feelings had been translated into repeated dieting attempts, or how successful these attempts had been. Thus perhaps research correlating self concept with a measure of chronic dieting would produce more significant results.

The results of the present study indicated that the male and female adolescents in this sample were about equally inaccurate with regards to correctly judging which weight category they occupied (Hypothesis 11). Only 50% of the males and 45% of the females perceived themselves to be in the weight category to which they actually belonged. However differences were obtained between the sexes in the direction of their errors.

Females in the underweight, slightly underweight and normal weight categories were most likely to overestimate the weight category to which they belonged. The majority of underweight girls (66%) perceived themselves to be only slightly underweight, the majority of slightly underweight girls (75%) perceived themselves to be either of normal weight or slightly overweight, and a full 56% of the normal weight girls perceived themselves to be either slightly overweight or overweight. Only the slightly overweight and overweight females accurately reported their weight categories. In summary, subjects tended to overestimate level of fatness, especially in the lower weight categories.

The pattern found in the group of adolescent boys in this study was quite different to that found in the group of girls. The majority of the underweight boys (75%) perceived themselves to be only slightly underweight and the majority of slightly underweight boys (75%) thought they were of normal weight. Although the vast majority of normal weight

boys were accurate in their perceptions (68.3%), 21.9% thought they were either underweight or slightly underweight. Slightly overweight boys were most likely to underestimate and perceive themselves to be in the normal weight category. A similar pattern was found with the overweight males, the majority of whom (62.5%) perceived themselves to be either only slightly overweight or normal weight. In summary, there was a tendency for the males in the two lower weight categories to overestimate the weight category to which they belonged. Males in the two upper weight categories tended to underestimate the weight category to which they belonged, and males in the normal weight category proved to be very accurate in their estimation of weight category.

In general the perceptions of the male subjects seemed to serve to keep them fairly satisfied with their current weights, with underweight subjects overestimating their weight and overweight subjects underestimating their weight. These perceptions brought them closer in line with the normal weight category. In fact 58% of the male subjects thought they were of normal weight. This is in sharp contrast to the 34% of female subjects who thought they were of normal weight. However the finding that some normal weight young men underestimated their weight category could reflect the fact that they judge their current figures against our culture's stereotype of the ideal man who is

large, strong and muscular.

In general the self-perceptions of the females placed a great deal of pressure on them to lose weight. The overweight groups of girls accurately perceived their degree of fatness and most of the girls in the other groups perceived themselves to be fatter than they actually were. 57% of the girls perceived themselves to be slightly overweight or overweight, although only 21% actually were. Although both males and females in the two lower weight categories tended to overestimate their weight category, the implications are vastly different for the sexes. For females, these perceptions took them farther away from the idealized feminine form whereas these perceptions brought males closer to the masculine physical ideal.

A large volume of research supports these general findings. Mintz and Betz (1986) and Connor-Greene (1988) both found similar tendencies for females to overestimate their level of fatness and for males to be equally likely to underestimate their weight as they were to overestimate it, depending on the weight category to which they belonged. The findings of Drewnowski and Yee (1987) also support those of the present study in that the vast majority of males were found to perceive themselves to be of normal weight. Wardle and Beales (1986), Huenemann et al. (1966) and Miller et al. (1980) all found that while females tend to significantly overestimate their degree of fatness, males, though not completely accurate, had much more realistic perceptions of

their weight than females. In this sense the findings of these three studies are slightly different to those of the present one.

The foregoing discussion deals almost exclusively with external explanations to account for the differences found between the sexes in desire to lose or gain weight, and perception of weight category. Psychological explanations focusing on internal processes will now be discussed briefly.

One possible reason that could account for the females' desire to lose weight and their drive for thinness is that for women, the pursuit of slenderness is a way of competing with and achieving status over each other (Rodin et al., 1984). For example, it is not uncommon for a female to use weight as a quick and easy gauge for measuring her success "as a woman" (Rodin et al., 1984, p. 290). Because it is so difficult to become very thin, the attainment of this physical ideal is prized in much the same way that a very expensive car or a valuable piece of jewelry might be. Several authors have suggested that the domains of weight and beauty are some of the few areas in which women are openly and without reservation encouraged to compete amongst themselves (Boskind-White & White, 1983; Brownmiller, 1984). Brownmiller (1984) also feels that the pursuit of slenderness plays a major role in the competition between women to attract men.

Another theory looking at women's desire to lose weight deals with the fact that this drive for thinness has not disappeared as women have broken out of culturally defined roles for women and moved into traditionally male oriented fields (Rodin et al., 1984). Rather, many women now feel the need to attain both an attractive, slim body as well as a successful career. For those women who become successful in occupations originally dominated by males, the desire to be slim may be driven by a need to both downplay their femininity while still retaining it in some form (Rodin et al., 1984). In fact, Rodin and Striegel-Moore (1984) have found that compared to women who are not achievement-oriented, women characterized by perfectionism and high personal standards for achievement tend to experience more body dissatisfaction and inaccurate perceptions of being overweight. These researchers posit that body dissatisfaction and a strong achievement orientation may be positively correlated, with women who wish to be successful in their careers also wishing to achieve the same level of success in controlling their weight.

Finally, the tendency of young men in this study to perceive themselves to be closer to normal weight than they actually were will be explored within the theory of cognitive dissonance. Dissonance is an uncomfortable state that occurs when there is inconsistency between our various attitudes or between our attitudes and our behavior. As a

way of dealing with and diminishing this dissonance, many people change the attitudes or cognitive elements producing the dissonance (Baron & Byrne, 1984). A cognitive element is defined as "anything we know or hold to be true about ourselves, the world around us, or our own behavior." (Baron & Byrne, 1984, p. 151). In the case of the young men in this study, they may have been fully aware that they were not within the normal weight range (either underweight or overweight), but were not doing anything to change this situation (perhaps because they did not consider being under or overweight to be very important). A state of dissonance may have occurred because of the inconsistency between what they knew to be true and what they were doing about it (attitudes vs. behavior). When, during testing, they were asked to indicate what weight category they thought they were in, they altered what they knew to be true (that they were overweight or underweight) and answered in a way that was more in line with their behavior. In other words, they indicated that they were closer to normal weight than they actually were.

In summary, one of the most relevant findings to come out of the present study is that the male and female adolescents in this sample did differ significantly with regards to body dissatisfaction, drive for thinness and an overall measure of beliefs and psychological characteristics associated with eating disorders. As was expected, the females scored significantly higher than the males (in the

more clinically disordered direction) on all of these measures. Also, as to be expected, was the fact that the underweight and slightly underweight young women as a group were found to experience significantly less body dissatisfaction than the normal, slightly overweight and overweight females. In general the adolescent girls in this sample were found to want to lose weight even when they did not need to do so (according to norms appropriate for their age, sex and height), and to perceive themselves to be overweight when they were not.

However the adolescent girls were not the only ones to report body dissatisfaction. It is clear from the present findings that men are not totally unconcerned with societal standards of physical fitness or our Western culture's masculine ideal. Only 31.6% of the young men in this sample wanted to maintain their current weight, significant numbers wanted to gain weight even though this was not warranted according to height/weight tables, and they had a tendency to both overestimate and underestimate the weight category to which they actually belonged.

The results of the present study revealed a statistically significant relationship between self concept and body dissatisfaction for the male adolescents in this sample, but only a marginally significant relationship for the female adolescents. These young men were also found to report a significantly higher level of self concept than



their female counterparts.

### Clinical Implications and Recommendations

The findings of the present study illustrated that a high proportion of the adolescent girls tested were dissatisfied with their bodies, had a strong drive for thinness, were characterized by attitudes and characteristics resembling those held by individuals with eating disorders (as measured by the EDI), had unrealistic perceptions of the degree to which they were overweight and exhibited a desire to lose weight that was unnecessary in the majority of cases.

It would be easy to simply dismiss these observations as nothing to be concerned about, given that concerns about one's developing body are quite natural during adolescence (Leon et al., 1989). However, several researchers and clinicians feel that the clinical implications of holding these attitudes and perceptions are far more serious. For example, Bruch (1978) has stated that all eating disorders originate from the perception, whether accurate or inaccurate, that one is overweight. It is clear from the present study that a large proportion of adolescent girls feel this way. In a similar vein, Crisp (1970) has put forward the idea that increasing worries over body weight and shape (as reflected in this study by drive for thinness, body dissatisfaction and the desire to lose weight) can

interact with psychopathology (as reflected in this study by the girls' lower self concept scores and higher overall EDI scores) to create a situation wherein vulnerable adolescents are driven over the line between "normal" weight concerns and the development of clinical eating disorders.

Researchers such as Lundholm and Littrell (1986) have found that those girls exhibiting a greater drive for thinness on the EDI were more likely to report disturbed eating patterns, and to employ strategies for controlling weight associated with bulimia. Likewise, Hesse-Biber et al. (1987) discovered that the worse a woman's body image was, the greater the likelihood she would have disordered eating habits. Button and Whitehouse (1981) observed that many of the women in their sample had originally tried losing weight merely for cosmetic reasons, but somewhere along the way things had gone awry. They had developed an excessive preoccupation with weight and a few had even developed anorexia nervosa.

Another reason to be concerned about the strong drive for thinness, body dissatisfaction and desire to lose weight found in the present sample of young women is that these attitudes and perceptions often culminate in weight loss attempts though dieting. Although trying to lose a few pounds by dieting is not necessarily dangerous, chronic dieting can become a risk factor in the development of both life long problems with food and the more pathological eating disorders of bulimia and anorexia nervosa (Polivy &

Herman, 1985).

Finally a theory put forward by McCarthy (1990) suggests that body dissatisfaction can have serious psychological consequences. She has speculated that a negative body image combined with the belief that slenderness is an important factor in determining one's present and future happiness can be a route to depression. McCarthy also believes that the constant process of losing and gaining weight that many dieters go through can instill profound feelings of failure, helplessness, hopelessness and occasionally, depression.

One way of dealing with the problems discussed above is to try and teach adolescents (health or physical education classes probably being the most appropriate settings) about what constitutes "normal" weight and to encourage healthy ways of achieving this weight. Adolescent girls especially need to be exposed to more realistic norms for body weight. They need an alternative to the narrow standards they are subjected to in magazines, fashion advertisements and television. It might also be useful to engage the girls in discussions about the multitude of acceptable body shapes, reasons why they may feel that certain body types are unattractive, and what social forces they see as influencing their attitudes towards their bodies. A class in the dangers of dieting or a lecture on why they should learn to be more accepting of alternate physical ideals is by no means being advocated. For one thing, this method probably

would not work and probably would not be well received by adolescents. What is being suggesting is that perhaps adolescents are so caught up in and so emotionally close to issues such as the importance of weight, body shape and appearance that they never take the time to step back and carefully examine or question the ideas they hold. Providing a forum for discussion where students could feel comfortable discussing the myriad of topics associated with this issue would be a means of increasing their awareness and encouraging them to challenge previously held ideas.

Another recommendation is that in health or physical education classes, the desire to lose or gain weight could be downplayed and the emphasis placed on developing strong, able and healthy bodies: something more akin to Lerner's concept of physical effectiveness (Lerner et al., 1976). Physical health rather than losing or gaining weight would be the focus of these discussions.

In a related vein, it would be useful to present recent research which questions the long held beliefs that slenderness is a sign of healthiness and overweight a recipe for a shorter life. Keys (1980), who carried out a review of 13 studies on obesity and death, found that only the conditions of being very underweight or very overweight were associated with shorter life spans. Weight did not influence the health of women in the middle 80% of the weight distribution. In fact one study found that being underweight was more deleterious to one's health than being

overweight (Sorlie, Gordon & Kannel, 1980). It is also generally agreed that the never ending cycle of gaining weight, losing weight and then regaining it again can be more dangerous to one's health than obesity (Garner et al., 1985; Wooley & Wooley, 1979).

The last recommendation to come out of this study is that school coaches of athletic events such as dancing, skating, gymnastics and wrestling be made aware of the telltale signs of eating disorders. Because they view students from a somewhat more objective vantage point than, for example, parents, and because of their frequent exposure to the students, observant teachers can be the first to notice suspicious signs. Vandereycken and Meerman (1984) have pointed out that early detection is one of the most important factors in preventing an eating problem from developing into a chronic life-threatening disorder. Teachers and coaches could therefore play an important part in prevention. As well, coaches could be made aware of the dangers of pushing their athletes to achieve unrealistically low body weights.

#### Recommendations for Further Research

The present study yielded a great deal of information on the differences between male and female adolescents with regards to concerns about weight and shape, and self

concept. However the drawback of that data is that it is all quantitative. For example, the results indicated that girls overwhelmingly indicated a desire to lose weight. Yet we can only speculate based on past research the reasons for this discontent. A future research project addressing issues similar to those examined in this study, but in a qualitative interview-style manner would help to determine the reasons why adolescents feel the way they do. Examples of follow-up questions that could potentially be asked in such a study are "What are the reasons that you want to lose weight?", "What do you hope to achieve by losing weight?", "What factors (family, peers, social forces, media, comparison with other women etc.) do you think influence your perception of yourself as overweight?", and "Do you believe that your feelings about yourself would change if you lost weight?" Such a study, looking at attitudes toward body weight and shape, would provide a starting point for discussion from which to proceed in health education classes such as those discussed in the previous section.

Of course it would also be interesting to carry out a similar study with male adolescents because a large percentage (almost 70%) indicated a desire to change their weight, yet they are much less likely to develop eating disorders. Is this because males generally do not want to lose weight or are the reasons more complex? What protective mechanisms keep most young men from getting caught up in the self-deprecation of their bodies and the

problems with weight and eating that characterize young women? One possible line of research would be to interview students and see if women's reasons for wanting to change their body weight and shape are more externally motivated (eg. approval from peers, to attract the attention of the opposite sex) and if men's are more internally motivated (to improve feelings of physical strength and competence). The students could also be administered a test such as Levenson's Multidimensional Locus of Control (1972) to assess the extent to which they feel they have control over their lives. It would be expected that if a woman's drive to lose weight is motivated by external approval, it is unlikely that she will ever reach a state of contentment with herself and her body. This is because without the internal conviction that she is a worthwhile person, she will always have to rely on outside reinforcement to feel good about herself. In contrast, if a male's desire to change body weight or shape is motivated by his own conviction that he will feel more physically alert and able, the reinforcement comes from within and will always be forthcoming.

A final idea for further research is to test the hypothesis that one of the causes of low self-esteem is repeated failure in dieting and the attendant feelings of being unable to control one's fate in an area of life that many perceive as being under voluntary control. It would be necessary to gather from the subjects information on their

dieting history as well as administer a test such as the Restraint Scale to assess current attitudes toward food and dieting.



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APPENDIX A  
PARENTAL CONSENT FORM

Dear Parent/Guardian,

Your son/daughter's class, along with seven other classes, has been chosen to participate in a University research project. The topics under study are body image and self concept in adolescents.

Participation is completely voluntary and a student may withdraw from the study at any point in time. Testing will take the form of three paper and pencil tests and participants' names will not be on any of the data collected. Each student's package of test material will be identified with a number for the purposes of data collection, and only group statistics will be reported in the study. All information collected is strictly confidential and will be kept in a locked filing cabinet.

Testing will likely take no more than 50 minutes or one class period. If you have any questions please feel free to call me at 245-0302 or 220-3356.

Yours sincerely,

Allison Butts Magnusson, Graduate Student in Ed. Psych.  
Supervised by Dr. Phillip Eaton, Ph.D.

- 1) (Name)\_\_\_\_\_ may participate in this study.
- 2) (Name)\_\_\_\_\_ may not participate in this study.

Parent/Guardian's Signature\_\_\_\_\_  
\*\*Students should return forms to their teachers within 2 weeks\*\*

## APPENDIX B

## EATING DISORDERS INVENTORY

This is a scale which measures a variety of attitudes, feelings and behaviors. Some of the items relate to food and eating. Others ask you about your feelings about yourself. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. RESULTS ARE COMPLETELY CONFIDENTIAL. Read each question and fill in the circle under the column which applies best to you. Please answer each question very carefully. Thank you.

[The subjects had the following six answers to choose from:  
ALWAYS    USUALLY    OFTEN    SOMETIMES    RARELY    NEVER.]

1. I eat sweets and carbohydrates without feeling nervous.
2. I think that my stomach is too big.
3. I wish that I could return to the security of childhood.
4. I eat when I am upset.
5. I stuff myself with food.
6. I wish that I could be younger.
7. I think about dieting.
8. I get frightened when my feelings are too strong.
9. I think that my thighs are too large.
10. I feel ineffective as a person.
11. I feel extremely guilty after overeating.
12. I think that my stomach is just the right size.
13. Only outstanding performance is good enough in my family.
14. The happiest time in life is when you are a child.
15. I am open about my feelings.
16. I am terrified of gaining weight.
17. I trust others.
18. I feel alone in the world.
19. I feel satisfied with the shape of my body.
20. I feel generally in control of things in my life.
21. I get confused about what emotion I am feeling.
22. I would rather be an adult than a child.
23. I can communicate with others easily.
24. I wish I were someone else.
25. I exaggerate or magnify the importance of weight.
26. I can clearly identify what emotion I am feeling.
27. I feel inadequate.
28. I have gone on eating binges where I have felt that I could not stop.
29. As a child, I tried very hard to avoid disappointing my parents and teachers.
30. I have close relationships.
31. I like the shape of my buttocks.
32. I am preoccupied with the desire to be thinner.
33. I don't know what's going on inside of me.
34. I have trouble expressing my emotions to others.
35. The demands of adulthood are too great.

36. I hate being less than best at things.
37. I feel secure about myself.
38. I think about bingeing (over-eating).
39. I feel happy that I am not a child any more.
40. I get confused as to whether or not I am hungry.
41. I have a low opinion of myself.
42. I feel that I can achieve my standards.
43. My parents have expected excellence of me.
44. I worry that my feelings will get out of control.
45. I think that my hips are too big.
46. I eat moderately in front of others and stuff myself when they're gone.
47. I feel bloated after eating a normal meal.
48. I feel that people are happiest when they are children.
49. If I gain a pound, I worry that I will keep gaining.
50. I feel that I am a worthwhile person.
51. When I am upset, I don't know if I am sad, frightened, or angry.
52. I feel that I must do things perfectly, or not do them at all.
53. I have the thought of trying to vomit in order to lose weight.
54. I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close).
55. I think that my thighs are just the right size.
56. I feel empty inside (emotionally).
57. I can talk about personal thoughts or feelings.
58. The best years of your life are when you become an adult.
59. I think that my buttocks are too large.
60. I have feelings that I can't quite identify.
61. I eat or drink in secrecy.
62. I think that my hips are just the right size.
63. I have extremely high goals.
64. When I am upset, I worry that I will start eating.

[Body Dissatisfaction Subscale: Questions 2, 9, 12, 19, 31, 45, 55, 59 and 62].

[Drive for Thinness Subscale: Questions 1, 7, 11, 16, 25, 32 and 49].

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## APPENDIX C

## TENNESSEE SELF-CONCEPT SCALE

The statements in this booklet are to help you describe yourself as you see yourself. Please respond to them as if you were describing yourself to yourself. Do not omit any item. Read each statement carefully, then select one of the five responses listed below. On your answer sheet, put a circle around the response you chose. If you want to change an answer after you have circled it, do not erase it but put an X mark through the response and then circle the response you want.

As you start, be sure that your answer sheet and this booklet are lined up evenly so that the item numbers match each other.

Remember, put a circle around the response number you have chosen for each statement.

Completely False	Mostly False	Partly False and Partly True	Mostly True	Completely True
1	2	3	4	5

You will find these response numbers repeated at the top of each page to help you remember them.

1. I have a healthy body.
3. I am an attractive person.
5. I consider myself a sloppy person.
19. I am a decent sort of person.
21. I am an honest person.
23. I am a bad person.
37. I am a cheerful person.
39. I am a calm and easygoing person.
41. I am a nobody.
55. I have a family that would always help me in any kind of trouble.
57. I am a member of a happy family.
59. My friends have no confidence in me.
73. I am a friendly person.
75. I am popular with men.
77. I am not interested in what other people do.
91. I do not always tell the truth.
93. I get angry sometimes.
2. I like to look nice and neat all the time.
4. I am full of aches and pains.
6. I am a sick person.
20. I am a religious person.
22. I am a moral failure.

24. I am a morally weak person.
38. I have a lot of self-control.
40. I am a hateful person.
42. I am losing my mind.
56. I am an important person to my friends and family.
58. I am not loved by my family.
60. I feel that my family doesn't trust me.
74. I am popular with women.
76. I am mad at the whole world.
78. I am hard to be friendly with.
92. Once in a while I think of things too bad to talk about.
94. Sometimes, when I am not feeling well, I am cross.
7. I am neither too fat nor too thin.
9. I like my looks just the way they are.
11. I would like to change some parts of my body.
25. I am satisfied with my moral behavior.
27. I am satisfied with my relationship with God.
29. I ought to go to church more.
43. I am satisfied to be just what I am.
45. I am just as nice as I should be.
47. I despise myself.
61. I am satisfied with my family relationships.
63. I understand my family as well as I should.
65. I should trust my family more.
79. I am as sociable as I want to be.
81. I try to please others, but don't overdo it.
83. I am no good at all from a social standpoint.
95. I do not like everyone I know.
97. Once in a while, I laugh at a dirty joke.
8. I am neither too tall nor too short.
10. I don't feel as well as I should.
12. I should have more sex appeal.
26. I am as religious as I want to be.
28. I wish I could be more trustworthy.
30. I shouldn't tell so many lies.
44. I am as smart as I want to be.
46. I am not the person I would like to be.
48. I wish I didn't give up as easily as I do.
62. I treat my parents as well as I should (Use past tense if parents are not living).
64. I am too sensitive to things my family says.
66. I should love my family more.
80. I am satisfied with the way I treat other people.
82. I should be more polite to others.
84. I ought to get along better with other people.
96. I gossip a little at times.
98. At times I feel like swearing.
13. I take good care of myself physically.
15. I try to be careful about my appearance.
17. I often act like I am "all thumbs".
31. I am true to my religion in my everyday life.
33. I try to change when I know I'm doing things that are wrong.
35. I sometimes do very bad things.



- 49. I can always take care of myself in any situation.
- 51. I take the blame for things without getting mad.
- 53. I do things without thinking about them first.
- 67. I try to play fair with my friends and family.
- 69. I take a real interest in my family.
- 71. I give into my parents (Use past tense if parents are not living).
- 85. I try to understand the other fellow's point of view.
- 87. I get along well with other people.
- 89. I do not forgive others easily.
- 99. I would rather win than lose in a game.
- 14. I feel good most of the time.
- 16. I do poorly in sports and games.
- 18. I am a poor sleeper.
- 32. I do what is right most of the time.
- 34. I sometimes use unfair means to get ahead.
- 36. I have trouble doing the things that are right.
- 50. I solve my problems quite easily.
- 52. I change my mind a lot.
- 54. I try to run away from my problems.
- 68. I do my share of work at home.
- 70. I quarrel with my family.
- 72. I do not act like my family thinks I should.
- 86. I see good points in all the people I meet.
- 88. I do not feel at ease with other people.
- 90. I find it hard to talk with strangers.
- 100. Once in a while I put off until tomorrow what I ought to do today.

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APPENDIX D  
PERSONAL DATA QUESTIONNAIRE

- 1) What is your date of birth? \_\_\_\_\_
- 2) Sex:   M                   F
- 3) Current weight? (To be filled in by researcher) \_\_\_\_\_
- 4) What is your current height? \_\_\_\_\_
- 5) Do you perceive yourself to be: (circle one)
  - a) overweight
  - b) slightly overweight
  - c) normal weight
  - d) slightly underweight
  - e) underweight
- 6) Do you want to: (circle one)
  - a) maintain your current weight
  - b) lose weight
  - c) gain weight
- 7) If you wish to gain weight, how much: \_\_\_\_\_(lbs or kg)  
If you wish to lose weight, how much: \_\_\_\_\_(lbs or kg)