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LONGITUDINAL COURSE OF BODY DISSATISFACTION IN UNDERGRADUATE
FEMALES AT BRIGHAM YOUNG UNIVERSITY

by

Joy Wiechmann

A thesis submitted to the faculty of

Brigham Young University

in partial fulfillment of the requirements for the degree of

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Department of Counseling Psychology and Special Education

Brigham Young University

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BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

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As chair of the candidate's graduate committee, I have read the thesis of Joy Wiechmann in its final form and have found that (1) its format, citations, and bibliographical style are consistent and acceptable and fulfill university and department style requirements; (2) its illustrative material including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to graduate committee and is ready for submission to the university library.

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ABSTRACT

LONGITUDINAL COURSE OF BODY DISSATISFACTION IN UNDERGRADUATE FEMALES AT BRIGHAM YOUNG UNIVERSITY

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Educational Specialist

This research project examined the longitudinal course of body dissatisfaction among undergraduate females at Brigham Young University (BYU) using the Body Satisfaction Questionnaire (BSQ). The research also examined what percentage of undergraduate females have BSQ ratings in the clinically significant range and whether body dissatisfaction ratings varied based on the environment in which the student lived. Results indicate that no significant change in body dissatisfaction occurred over time, nor did living environment appear to play a role in BSQ scores. Results also showed that at any given time over 34% of women on BYU campus have BSQ scores in the clinically significant range.

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INTRODUCTION

The prevalence of eating disorders increases dramatically with the onset of puberty and continues to remain prevalent throughout adolescence and through early adulthood. Although there are many causal factors in the development of an eating disorder, risk factors such as competition and significant life changes contribute to the development of disordered eating. For this reason, the first years of the transition to college may be a critical time where many risk factors combine and lead to an increase risk for the development of an eating disorder. As eating disorders are so destructive to the lives of those participating in disordered eating as well as their loved ones, it is imperative that research help determine what factors might contribute to the development of eating disorders during college and discover what factors serve to protect women from being vulnerable (National Institute of Mental Health [NIMH], 2001).

There are three main diagnoses given to those suffering from disordered eating: *Anorexia Nervosa*, *Bulimia Nervosa*, and *Eating Disorder Not Otherwise Specified* (NOS). The main diagnostic criterion, among these conditions, is a preoccupation with body image or shape, weight, and food. Many people who suffer from eating disorders also report feeling a lack of control over their lives and their eating. Those suffering from *Bulimia Nervosa* often report feeling out of control in terms of the food intake (NIMH, 2001).

Anorexia Nervosa is characterized by a significant loss of weight or refusal to make developmental weight gains. *Bulimia Nervosa* is characterized by a cycle of binge eating followed by some compensatory behavior in an attempt to rid their bodies of unwanted calories or fat. The diagnosis of *Eating Disorder NOS* is often given to those

individuals who meet most of the criteria for either anorexia or bulimia but not all. For this research, we will focus primarily on the diagnosis of anorexia and bulimia.

Eating disorders are much more prevalent among females than males, with a ratio of 10 to 1 respectively. In 2000, researchers suggested that the prevalence rates among female Americans who had a clinically relevant eating disorder reached over 2 million people (Mussell, Binford, & Fulkerson, 2000). The American Psychiatric Association (APA) reports that the lifetime prevalence rate for eating disorders in adolescents and young adult females is approximately four percent of the population (APA, 1994). The onset of anorexia is most commonly seen as adolescents reach their mid-teens, whereas the development of bulimia is often seen as individuals reach late adolescence or enter their early twenties.

Regardless of the age of onset, eating disorders are very costly not only for the individual with the disorder but also for their friends, family members, and society as a whole. Eating disorders can cause physical damage to the body and its internal organ systems, in some cases causing the death of the individual. In addition, eating disorders can cause mental anguish for both the individual suffering from the disorder and for their families, social alienation from friends and family, and decreases in the individual's academic success and rate of productivity. Many of the physical effects of eating disorders occur fairly quickly into the progression of the disease; other effects do not manifest themselves until later in life. The development of successful intervention programs that help women who are vulnerable to developing an eating disorder and to educate the public about how they can help their friends and family are needed.

Research studies on the prevalence of eating disorders on college campuses vary significantly depending on how stringently the Diagnostic and Statistical Manual of Mental Disorders (DSM III or DSM IV) criterion has been followed. In research that used more stringent adherence to diagnostic criteria, the prevalence rates more closely matched those of the DSM-IV, with a prevalence rate of 1-3%. However, in studies where researchers used a broader criterion, prevalence rates among college women were between 14 and 20% (APA, 2000a). Relatively few longitudinal studies have focused on the development of eating disorders over the years women are in college, although many aspects of college life may increase the risk of developing an eating disorder. College is a time of transition, high stress, and pressure to achieve academically and socially. This is also a time where young adults experience significant identity changes, as many are away from home for the first time.

Body dissatisfaction is a significant risk factor in the development of an eating disorder, as evidenced by the diagnostic criteria that individuals with anorexia and bulimia share an intense preoccupation with body image or shape, weight, and food. Body dissatisfaction is influenced by a number of factors, including the media and messages from peers and family members. Some research suggests that if the way a woman perceives her body is changed it will affect the subsequent development of eating disordered behavior. According to a study by Mintz and Betz (1988), although the percentages of women who meet criteria for bona fide clinical eating disorder are rather small, the majority of college women (61%) revealed the use of some weight control method. The single strongest predictor in the development of an eating disorder has been shown to be the degree of body dissatisfaction. However, as the number of women who

report significantly high body dissatisfaction ratings is higher than those manifesting clinical disorders, additional variables are hypothesized to influence body dissatisfaction in relation to the development of an eating disorder.

Statement of Problem

The data in the current study was collected at Brigham Young University (BYU), a large private institution located in Provo, Utah with a student body of over 30,000 full-time students. Students come from all 50 states, the District of Columbia, and more than 120 countries. Fifty-one percent of the student body is male, 49% is female. Of the female students on campus, 22% are married. Ninety-one percent of the students considered themselves to be Caucasian and the remaining 9% considered themselves to be multi-cultural. BYU is owned by The Church of Jesus Christ of Latter-day Saints (LDS) and over 98% of the students that attend the university are members of the LDS faith. Admission to BYU is highly competitive as entering freshman must have an average ACT score of 27 and a high school grade point average of 3.71 or higher on a 4.0 scale to be considered for admission into the school.

Research has suggested that a number of risk factors may affect the development and maintenance of an eating disorder among college age women, including being Caucasian, highly religious, achievement-oriented, living with other students in close contact, and making the transition from living at home to living independently. As these risk factors are prevalent among BYU students, research is needed to determine the prevalence rates of the eating disorders among BYU students.

Statement of Purpose

Relatively little research has been done following the progression of body dissatisfaction over time or how women perceive their bodies over time. The purpose of this study is to examine how body image changes throughout the years while women are attending college, as body image is correlated with the development of an eating disorder. Information gathered in this study, along with the information gathered from a number of related studies, will be used to help professionals develop effective treatment for the prevention of eating disorders. This study will look at the longitudinal course of body dissatisfaction as measured by the Body Satisfaction Questionnaire (BSQ) in three cohorts of college-age women in a staggered baseline design. We hypothesize that as women progress through their university education, their perception of their bodies will become more positive.

REVIEW OF LITERATURE

Types of Eating Disorders

Eating disorders are characterized by severe disturbances in eating patterns and behavior. The primary two types of eating disorder, Anorexia Nervosa and Bulimia Nervosa, are the most well known of the classifications of eating disorders. Therefore, the DSM-IV focuses on the diagnosis of those two classifications. Anorexia Nervosa is defined as the refusal to maintain a body weight that is within normal range. Bulimia Nervosa, on the other hand, is a behavior pattern in which the individual frequently engages in binge eating and then in some sort of compensatory behavior such as purging or exercising excessively to make up for their binging episode. In addition, eating disorders that do not meet the criteria for either anorexia or bulimia but are deemed to be serious in nature are often diagnosed as Eating Disorder Not Otherwise Specified (NOS) (Mussell et al., 2000).

Anorexia nervosa. Anorexia Nervosa is characterized by the individual's refusal to gain weight or maintain a minimally normal body weight. Early warning signs that a woman may be struggling with anorexia include withdrawal from friends and family, a sudden increased interest in exercise and physical activity, anxiety and depression-related symptoms, and an increased sensitivity to criticism. In order for an individual to have a DSM diagnosis of anorexia, the individual must weigh less than 85% of the weight considered normal for a person of the same age and height (APA, 2000a). In younger children and adolescents, not meeting expected weight gains may be more of a symptom than weight loss. In addition, individuals with anorexia demonstrate an intense fear of

gaining weight, a distorted view of their actual shape and the size of their body, and in post-menarcheal females, experience amenorrhea or loss of their menstrual cycle.

There are two subtypes of Anorexia Nervosa, namely, the *restricting type* and the *binge-eating/purging type* (APA, 1994). In the restricting subtype, weight loss is maintained through a reduction in the total food consumed each day, such as thorough dieting, fasting, or by exercising excessively. In the binge-eating/purging type, the individual is prone to binge eating and using some compensatory method of expelling the food from their body. Often women in the bingeing/purging subtype are individuals who eat relatively small amounts of food but also use some sort of purging method as a control over their weight. Although anorexia typically begins during adolescence and the prevalence rate decreases dramatically in the mid-twenties, the course of the disease varies greatly among patients. Some patients recover after a single episode, while others exhibit a life-long pattern of weight fluctuation. A number of women with anorexia appear to gradually deteriorate over the course of their lives and die from the effects of the disease. For others, within the first five years of developing anorexia, a significant number of patients develop binge-eating patterns that qualify them for a diagnosis of bulimia (APA, 2000).

Bulimia nervosa. Bulimia Nervosa is characterized by binge eating followed by inappropriate compensatory behavior that prevents weight gain. In addition, to meet the criteria for bulimia, these behaviors must occur over a period of three months at the rate of at least twice a week. A binge is defined as eating more in a discrete period of time, usually between 2 to 3 hours, than an average person would eat under similar circumstances (APA, 2000a). Binge eating usually occurs in secret, as individuals with

Bulimia Nervosa are usually ashamed of their eating problems. Binges are often triggered by the presence of stress, extreme hunger due to dietary restraints and by negative feelings related to body shape, weight, or food. Often an episode of binge eating is accompanied by a lack of sense of control.

Many individuals with Bulimia Nervosa use a combination of compensatory behaviors after a period of binge eating. The use of compensatory behaviors helps the individual to gain relief from physical discomfort associated with over-eating, and reduce their fear of gaining weight. The most common method, used by 80–90% of individuals who seek treatment at eating disordered clinics with Bulimia Nervosa, is purging through induced vomiting (APA, 2000a). Other compensatory behaviors include the use of diuretics, fasting for a period of time, or exercising excessively. As such, Bulimia Nervosa also is broken down into subtypes: the purging type and the non-purging type. Individuals who suffer from Bulimia Nervosa are usually within normal weight ranges. Rarely do women with bulimia have weights that place them in the obese range or that of those with anorexia. Thus, they are able to blend in with their peers making the bulimic behaviors easier to practice in secret.

Physical Ramifications of Eating Disorders

Eating disorders cause many physical problems for the individuals who engage in their practice. Many of the physical symptoms of anorexia are similar to starvation. The mortality rate for those individuals who suffer from Anorexia Nervosa is the highest of any mental illness, with a mortality rate of over 10% of individuals dying from its effects (APA, 2000a). Individuals with anorexia exhibit amenorrhea, constipation, abdominal pain, lethargy, and cold intolerance. In addition, individuals may develop lanugo, or a

fine downy hair that grows on their torso. Individuals who engage in purging may also have severe dental problems such as enamel erosion. Individuals with Bulimia Nervosa are likely to develop anemia, have problems with constipation and diarrhea, and may also suffer from tooth enamel erosion, dehydration, and irregular heart rate which can result in heart failure.

Comorbid Diagnoses

Individuals suffering from Anorexia Nervosa also commonly manifest depressive symptoms, including depressed mood, decreased interest in sex, social withdrawal, irritability, and insomnia (APA, 2000a). Thus, the comorbid diagnosis of Major Depressive Disorder is not uncommon in treating individuals with eating disorders. Another common comorbid diagnosis is Obsessive Compulsive Disorder. Many individuals with Anorexia Nervosa present with obsessive thoughts that have to do with food. However, to receive a comorbid diagnosis of Obsessive Compulsive Disorder, the individual must exhibit obsessions and compulsions that are unrelated to food, body image, or weight.

Other concerns that anorexic patients present include a fear of eating in public, a need for control of their environment, black and white thinking, perfectionism, and repressed emotional expression. As such, a number of individual with anorexia also meet the criteria for a personality disorder. In comparison to the restricting type, bingeing/purging type individuals with anorexia are more likely to have poor impulse control, which may be related to the fact that they tend to abuse alcohol, exhibit more mood instability, are sexually active, and attempt suicide more frequently than their restricting peers (APA, 2000a).

Individuals with Bulimia Nervosa often present symptoms of anxiety which frequently disappear following effective treatment. However, some individuals will struggle with anxiety over the course of their lives. Individuals with bulimia are also known to suffer from depression, a low self-esteem, and have extreme feelings of shame or guilt as a result of their bingeing behavior. The DSM-IV cites that the lifetime prevalence of substance abuse and dependency using alcohol or stimulants is at least 30% among individuals who suffer from bulimia (APA, 2000a). The development of a personality disorder is also common among those suffering from bulimia. The most common disorder that is diagnosed comorbid with bulimia is Borderline Personality Disorder.

Eating disorders affect a wide variety of aspects in the lives of women who suffer from their effects. In a study conducted by Pyle, Neuman, Halvorson, and Mitchell (1991), over 40% of their sample of bulimic women reported having problems in social, vocational, intimate, and family relationships. Although the majority of respondents reported no impairment of any kind from their eating disorder, this may be due to the degree women are entrenched in their eating disorder which may cause them to not recognize the damage that is being done to their lives.

Prevalence Rates

Reported lifetime prevalence rates of Anorexia Nervosa vary across studies from .5% to almost 3.7% for more broadly defined anorexia. In regards to Bulimia Nervosa, the lifetime prevalence rates have been reported to be approximately 1.1% to 4.2% of the population. At these rates, at least 2 million female Americans meet the criteria for a diagnosable eating disorder (Mussell et al., 2000). Eating disorders are more commonly

seen in women than in men, with estimates of the female-male prevalence rates ranging from 6:1 to 10:1 (APA, 2000b). The onset of such disorders usually occurs during adolescence and early adulthood, before the age of 25 (Mussell et al., 2000). Studies have demonstrated great variance in their prevalence rates among a number of populations. One possible reason for this discrepancy may be that studies do not use uniform diagnostic criteria to define eating disordered behavior. Another possible reason may be that eating disorders are often placed on a continuum from no concern about their weight and normal eating patterns to anorexia and bulimia DSM diagnoses with many levels of disordered eating falling between these two extremes (Mintz et al., 1988).

Research has found that the highest incidence rates of anorexia in females occurs among those who range in age from 10 to 19 years old whereas, the highest incidence rate for females with bulimia was for those between 20 to 39 years of age (Lewinson, Striegel-Moore, & Seeley, 2000). Thus, the risk for developing anorexia after adolescence is rare, but the risk of developing bulimia into the college years is high. Lewinson et al. (2000) conducted a study that questioned over 1,500 participants and followed up with the participants a year later and then again in their 24th year to see the progression of eating disorders in their lives. They found that the incidence rate of eating disorders was less than 2.8% by age 18, and 1.3% for those between the ages of 19-23. However, this study also showed that while the incidence rate for anorexia decreased, the rate of women with bulimia increased.

Risk Factors in Developing Eating Disorders

There are a number of risk factors associated with the development of an eating disorder. Biology would suggest there is a heredity component to the disorder as

individuals with eating disorders are much more likely to have a relative who has struggled with obesity or an eating disorder than are those in the general population. Twin studies have also shown a relationship between heredity and the development of eating disorders (APA, 2000b). Other family characteristics have also been attributed to the development of eating disorders including enmeshed family relationships, overprotective mothering, and an overemphasis on competitiveness. Studies also suggest that observations of a girl's mother dieting, her father's preference for thinner female body types, and direct comments about her weight may be very powerful in molding a child's negative attitudes about her body, weight, and shape (Mussell et al., 2000).

Although eating disorders are being diagnosed in individuals as young as eight years old, typically they begin to develop in early adolescence as puberty begins. This may be due to the fact that young women have a hard time adjusting to their changing frame. The development tasks associated with this period, including forming peer relationships, beginning to date, increased independence from their family of origin, and a developing sense of identity, may add to the likelihood of eating disordered behavior (Mussell et al., 2000).

Many girls who develop eating disorders have been victims of abuse or traumatic childhood experiences and as a result have developed coping mechanisms such as eating disorders to deal with the pain and mistrust of others. When deep into their disorder, women report feeling numb, practically emotionless, and as such are unable to control their emotions. Empirical findings suggest that, although not specific to the later development of an eating disorder, sexual abuse does put women at risk for developing a variety of psychological disorders. Other adverse childhood experiences have also been

seen as risk factors in the development of an eating disorder, such as parental discord or physical abuse (Mussell et al., 2000).

Women who develop eating disorders are often perfectionists. As such, they are often high-achieving and goal-oriented. This need for perfection may be carried over to their physical appearance as women with eating disorders can be highly self-critical about their body and their personal achievements and have a low self-esteem. Mussell et al. (2000) suggest that acceptance of the “superwoman ideal,” which incorporates overachievement in the areas of beauty, relationships, and career may be associated with conflicting role expectations and confusion in the development of identity or self-concept. In their attempts to reach this level of perfection in their lives, women may turn to an eating disorder to accomplish their goals.

Low self-esteem is correlated to the development of eating disorders and is a key component of diagnosing eating disorders at a clinical level. There are many reasons why low self-esteem has been correlated to the development of eating disorders. Among those may be that a low self-esteem may increase the vulnerability to social pressures to be thin and increase the likelihood of the individual to engage in activities that will enable him or her to meet this societal ideal of being thin. Low self-esteem has been correlated to the development of eating disorders in numerous studies. Low self-esteem, in addition to perfectionism and neurotic personality traits, has also been linked to the development of disordered eating. Gual Perez-Gaspar, Martinez-Gonzales, Lahortiga, de Irala-Estevez, and Cervera-Enguix (2002) conducted a study of 2,862 girls from 39 different schools. In this study, researchers gave the girls a 40-item version of the Eating Attitudes Test (EAT). They found 319 girls who scored over 30 on the EAT and sent them on for

further psychiatric evaluation. From this smaller sample, 9 cases of anorexia, 22 cases of bulimia, and 88 cases of eating disorder not otherwise specified were diagnosed. These girls were then asked to fill out validated scales concerning self-esteem and neuroticism. They found that two major characteristics stood out among the girls, a negative self evaluation and a need for perfection. However, it is unknown whether low self-esteem and neuroticism are risk factors or consequences in the development of an eating disorder.

Additional risk factors in the development of eating disorders may include codependency, constricted emotion, and exaggerated caretaking. Caretaking of others is often done in an effort to not think about their own lives and problems. Women with eating disorders tend to stifle their own feelings, often seeing their feelings as unimportant and selfish. College-aged women who display more dependent characteristics also have higher levels of eating disordered behavior. Research supporting the theory that eating disorders are exacerbated by their codependency on parental figures suggests that anorexic women may develop a reliance on weight loss as a means for establishing a sense of personal efficacy and control. Similarly, bulimic women may binge in order to sooth themselves as they have learned to expect others to be insensitive or unavailable to meet their needs.

As families of anorexic women have been characterized as being overly enmeshed, overprotective, and conflict avoiding, women may focus on weight and eating as a way to grasp a sense of control and personal identification. In contrast to the family environment of those with anorexia, hostile enmeshment and an unresponsive, unemotional environment often characterize families of women with bulimia. Women

with bulimia often express these emotional conflicts through their excessive mistrust, resentment, and excessive guilt (Dinah & Richard, 1998).

Research has identified numerous risk factors that lead to the development of an eating disorder. However, Pyle et al. (1991) reported that the most predictive indicator of disordered eating and the development of bulimia was the fear of loss of control over eating. Over 83% of the bulimic students in their sample reported an intense fear over losing control, whereas only 6% of the non-bulimic students in the study reported having similar fears. Another risk factor that has been identified is the degree to which an individual is dissatisfied with their body, shape, or weight.

Body Dissatisfaction as a Risk Factor

One of the main diagnostic criteria for both anorexia and bulimia is a disturbance in the individual's body composition and shape. This negative body image can be measured by both cognitive-evaluative dissatisfaction and by perceptual body size distortion (Groesz, Levine, & Murnen, 2001). Individuals who suffer from Bulimia Nervosa and Anorexia Nervosa often place an excessive emphasis on body shape and weight, and base much of their self-esteem on these two factors. Research suggests that individuals with Bulimia Nervosa, purging type, are more concerned about their weight and body shape, and experience more depressive symptoms than do individuals with Bulimia Nervosa, non-purging type. Springer, Winzelberg, Perkins, & Taylor (1998) stated that "excessive weight concerns, body image dissatisfaction, and disordered eating patterns are commonly exhibited by female college students and have been implicated as risk factors for the development of partial and full-syndrome eating disorders" (p. 13).

As such, school-based interventions and education about eating disorders has been strongly recommended.

Body dissatisfaction or a disturbance in body image has long been recognized as a central feature in the development of Anorexia Nervosa. As body dissatisfaction can encompass a wide range of aspects, the DSM-IV criteria breaks body dissatisfaction into two distinct concerns, namely body shape and body size overestimation. This dissatisfaction may vary from different regions of the body and range in its intensity from mild dissatisfaction to extreme hatred where the patient finds their body loathsome and disgusting (Cooper, Taylor, Cooper, & Fairburn, 1987).

Eating disorders appear to be far more prevalent in industrialized societies, as attractiveness is often a measure of thinness. This may be due in part to media influences that suggest that thinness is equated to being beautiful, successful, and happy. The media often communicates to women current trends in sociocultural standards of physical appearance. At the present time, these standards equate female beauty and thinness as a high priority. Women may then internalize this standard and pursue the same degree of thinness. Digitally perfected images, accompanied by articles and advertisements that promote this sociocultural standard, are the norm for magazine companies who set unrealistic benchmarks for women in trying to achieve the ideal frame. Models used in advertising companies have changed dramatically over the years. In 1894, the average female model was 5' 4'' tall and weighed about 140 pounds. In the late 1940's models began to slim down and weigh in at an average of 125 pounds and by 1970, models were on average 5' 8'' tall and weighed only 118 pounds (Lokken, Worthy, & Trautmann,

2004). Research suggests that this trend has continued into what we now see on runways and fashion magazines everywhere.

Lokken et al. (2004) conducted a study that examined the effects of magazine exposure and the awareness and sociocultural standards of beauty in a sample of 540 college-aged, undergraduate students. They found a significant correlation between magazine exposure and drive for thinness and also between the women's preference for beauty and fashion magazines and their internalization of sociocultural standards. A regression analyses found that awareness and internalization of sociocultural norms appeared to be predictive of body dissatisfaction, an increased drive for thinness, and bulimic symptomatology. Research has shown that women who have low self-esteem and poor body image are likely to seek out magazines that portray advertisements with slender, attractive models (Groesz et al., 2001). These women may seek out these magazines as a measure of social comparison. They are also more likely to use appearance and weight in evaluating other women.

In a meta-analytic review, Groesz et al. (2001) found that when researchers asked adolescent girls how they would describe an ideal girl's body, participants stated that a girl who was 5' 7" tall, weighed 100 pounds, and had long blond hair and blue eyes was their ideal. This standard of beauty is unattainable for most girls and may contribute to body dissatisfaction, low self-esteem, negative affect, and the development of eating disorder behaviors. Yet, this is the standard that is portrayed in the media on billboards, television ads, magazines, and even on the radio. The female body is reflected and projected in the media as an object of desire, shown in pieces rather than, as with males, portrayed with a focus on the face of the whole clothed body. Objectifying the body adds

to the focus of young adolescents girls from achievement to appearance consciousness (Groesz et al., 2002).

As the media does not focus as much attention on standards of physical attraction for men, boys do not learn to view their body solely as an object to attract others to them as girls do. Boys learn to use their bodies as a tool for mastering their environment. When boys experience dissatisfaction, it is usually around the concerns of not being large or muscular enough. This drive for the ideal body may be exacerbated by the media's portrayal that beauty is equated to morality, as "a good girl" is able to be and remain thin and in control of her desires, making weight a quick barometer by which a women can measure herself and her worth, or how she is doing as a women (Groesz et al., 2001).

In the United States, eating disorders appear to be more prevalent among young Hispanic women, Caucasian women, and Native American women than their Asian or Black counterparts. However, in a number of studies conducted in the South-East region of the United States, eating disorder behaviors appear to be more common among African American women than among women of other ethnicities in the population. African American women are more likely to suffer from Bulimia Nervosa than from anorexia (APA, 2000b).

College Atmosphere and Eating Disorders

In addition to psychological and physical determinants in the development of an eating disorder, it has been suggested that certain environments can exacerbate the risk factors that lead to the development of eating disorders. Some researchers have identified college as an environmental risk factor in the development of eating disorders. Research studies have reported that as many as 80% of college-aged women diet and 50% binge

eat during their first year of college. Other studies have shown that disordered eating and body dissatisfaction may peak during college and taper off as an individual graduates. This is evident as 82% of women reported wanting to lose weight during college, in contrast to 68% of women reporting desired weight loss after college (Vohs, Heatherton, & Herrin, 2001).

Hesse-Biber and Marino (1991) conducted a longitudinal study of college women which assessed their changes in self-concept as they transitioned from high school to college. The researchers found that a number of factors, including perceived physical attractiveness, social self-confidence, assertiveness, and popularity with the opposite sex were all connected to an individual's sense of self-concept and eating problems. The findings also suggested that the early years of college are the most vulnerable time in the development of a positive self-concept for female students. In a study conducted by Vohs, et al. (2001), researchers followed 342 girls from their senior year of high school through their freshman year of college and found that although college students viewed themselves as being significantly heavier in their first year of college, their frequency of dieting and disordered eating patterns remained the same as their assessments in high school.

Mintz et al. (1988) conducted an investigational study into eating disordered behavior among college-aged women. As prevalence rates for eating disorders are so diverse among various studies, they conducted research on the frequency of eating disordered behaviors such as bingeing, the use of laxative or diuretics, and dieting. Their sample included 682 women and after controlling for anorexia and obesity, they were left with a sample size of 643 women. Among their sample, 82% reported one or more

dieting behaviors each day and 33% reported more serious forms of weight control including purging at least once a month. Thirty-eight percent of the sample also indicated problems with bingeing. Other findings included 50% of the sample stated they counted calories and 75% reported that they ate low-calorie foods. Thirty percent reported using fasting as a weight control technique and 20% took appetite control pills. However, relatively few of these women met formal diagnostic criteria for a specific eating disorder.

Strigel-Moore, Silberstein, Frensch, & Rodin (1998) suggested that in addition to the general pressures placed on college students to succeed academically, there is also a specific pressure towards thinness that is apparent on college campus. This may be due in part to the competitive nature fostered on many college campuses. The intense academic and social pressure of campus life may increase vulnerability to a wide range of clinical symptoms, including the development of eating disorders. Strigel-Moore et al. conducted a study designed to predict what variables contribute to the development of eating disorders over the first year of college. Their sample included 1,040 students, 590 males and 450 females, who filled out the initial questionnaires and 962 students who participated in the follow-up questionnaire given at the end of the year. A total of 342 male participants and 330 female participants participated in both phases of the data collection. Results of the survey showed that women who previously were not dieting or binge eating were significantly more likely to start dieting and binge eating by the end of the year. The study also showed that women who reported that they were dieting and binge eating at the beginning of the study were unlikely to report that they were no longer involved in those behaviors at the end of the year. Results of the survey showed more

than one-fourth of the class put themselves on a diet before the end of their freshman year of college and 15% of females began to binge eat for the first time during their freshman year of college.

As college campuses differ in their makeup and student body and possibly in terms of present risk factors, Kashubeck, Walsh, and Crowl (1994) conducted a study that compared two different campus environments and examined the possible risk factors for developing eating disorder symptomatology on each campus. Campus A was a medium-sized, private liberal arts university in the Midwest where the student body is perceived as being rather conservative in both their political views and dress and where fraternities and sororities make up a large social force on campus. Campus B was a small private, liberal arts college where the atmosphere is centered on intellectual talent and political activism. The results of this study showed that there were no differences in the rates of eating disorders in the student bodies between the two campuses. However the identified risk factors for developing an eating disorder varied. Risk factors related to Campus A included perceived pressure to dress well, be intellectual, and have a lower grade point average. Risk factors for Campus B included having low masculine gender role identification and being female. The results of this study suggested that it is imperative to examine variability among campuses in developing theories of risk factors and implementing interventions for each campus.

As eating disorders are most prevalent during the later years of adolescence and into young adulthood, researchers believe that eating disorder symptomatology will decrease with age and body satisfaction will increase. In 1997 Heatherton, Mahamedi, Striepe, Field, & Keel published their finding of a research study they conducted

longitudinally over the course of ten years as the participants made the transition from their college days to adulthood. Researchers hypothesized that as individuals settled down, got married, and started into their profession, they would develop a more coherent sense of identity and that the importance that they placed on physical appearance would diminish over time. During the spring term of 1982 researchers gave questionnaires to 625 women and 276 men that asked questions pertaining to their background, height and weight, abnormal eating patterns, history of dieting, eating attitudes and behaviors, and body shape. Ten years later, researchers tried to identify the participants and follow-up with them. The researchers were able to contact 515 (82%) women and 209 (76%) men from the original study.

The results of this study suggested that eating disorder symptoms, body dissatisfaction, and chronic dieting decrease in the years following college. Although, female participants reported gaining an average of four pounds over the ten-year period, they were much less likely to report that they were overweight in 1992 than they did in 1982, suggesting their criteria for judging themselves as overweight had changed. Women also reported a significant decrease in their level of binge eating, fasting, and laxative use. Ten years later, more than one in five women who met the clinical criteria for an eating disorder while in college still met the same criteria. This suggests prevention of the development of eating disordered behaviors during adolescence and college is imperative.

Treatment Options

Prevention programs (Stice, Mazotti, Weibel, & Agras, 2000) focused on decreasing thin ideal internalization, body dissatisfaction, dieting, negative affect, and

bulimic symptomatology have been shown to be effective. Effective programs do not focus on the negative behaviors women with eating disorders engage in but rather they focus on healthy eating patterns and discussions about “real bodies” and the thin-ideal body image that is seen in the media.

Springer et al. (1999) conducted a study using an undergraduate class of women that ran for 10 weeks, each week having a two-hour session to discuss such topics as media, history of beauty, biological/ evolutionary aspects of attractiveness, adolescent development, disability, aging, body building, cosmetic surgery, anorexia and bulimia, risk factors and consequences, obesity, and cultural differences. After each session, the students were required to write a short reaction paper about the day’s topic. Posttests revealed that at the end of the intervention self-report inventories of body image and eating behaviors showed significant improvements. The improvements in body image occurred without any emphasis in the program on changes in eating behaviors or changes in the participant’s weight.

Prouty, Protinsky, & Canady (2002) conducted a study on a large college campus in the mid-Atlantic area to find out what kinds of services students thought would be helpful in the treatment of eating disorders. Their study suggested women would confer with either a physician or a dietitian to answer their questions. As the group believed that eating disorders are both mental and physical health issues, they would prefer individual therapy, followed by group therapy or a consultation with a dietitian. However, the questionnaire also revealed that all of the women said they would first seek a friend’s help. Thus, programs that universities sponsor to promote healthful relationships with food and body image should be conducted where not only those who are at risk are

served but also their friends and roommates. Researchers suggest this may be best accomplished by presenting this information in the dormitories, sororities, gyms, classrooms, or social groups where peers will have the opportunity to learn as well.

Research suggests that body dissatisfaction plays a key role in the development of eating disordered behavior. Thus, research into the changes in body satisfaction over time and the environmental influences on ratings is imperative to understanding how to improve body satisfaction.

Research Questions

1. What is the longitudinal course of body dissatisfaction among undergraduate females at Brigham Young University as measured by the Body Satisfaction Questionnaire?
2. Are there significant changes in body dissatisfaction that occur over time as women make their way through school?
3. What is the prevalence of body dissatisfaction risk at Brigham Young University?
4. What is the prevalence of body dissatisfaction according to living environment?

METHODS

Participants

Participants included 1,997 female college students at a large, private, western university located in Provo, Utah. Participants were recruited over a three-year period and divided into groups based on the year they entered college. Group 1 consisted of 658 students and was taken from a random sample of all incoming female freshman students during the fall semester of 2001. Group 2 had 696 participants who were randomly selected as freshman in the fall semester of 2002. Group 3 was randomly selected during the fall semester of 2003 and consisted of 643 participants. The participants in all three groups were predominately Caucasian, ranging in age from 18-24 years old and were members of The Church of Jesus Christ of Latter-day Saints.

Procedure

In the fall semester of 2001 (Group 1), 1800 female students entering BYU as freshman were randomly selected and sent the Eating Attitudes Test (EAT-40), the Body Shape Questionnaire (BSQ), and a demographic questionnaire. The initial response rate was 37% or 658 students. These students were then assigned an identification number and were included in the subsequent mailings sent throughout their college experience. These students received the EAT and BSQ again during winter semester of their freshman year. These students were followed throughout their college experience in a similar fashion, receiving two questionnaires a year until their senior year. Another group of 1800 were randomly selected in fall semester of 2002 (Group 2) twice a year until their junior year of college. An additional 1800 in the 2003 cohort received the same questionnaires until their sophomore year of college (Group 3). This procedure resulted

in eight semesters of data for Group 1 (2001), six semesters of data for Group 2 (2002) and four semesters of data for Group 3 (2003). Generally only those students who returned the questionnaire from the previous semester were sent additional surveys in the semesters that followed. This resulted in a decreased response rate as each semester passed. Table 1 shows the number of participants by semester and cohort.

Table 1

Number of Participants in Each Semester, by Group

Cohort	Freshman		Sophomore		Junior		Senior	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
2001 Group	658	472	342	272	203	156	104	101
2002 Group	696	499	310	234	190	182		
2003 Group	629	294	205	215				

Instruments

The BSQ was developed by Cooper et al. (1987) to measure concerns about body shape, weight, and size in individuals with eating disorders or others who experience body image concerns (Rosen, Jones, Ramirez, & Waxman, 1996). The BSQ also examines symptoms of poor body image such as preoccupation with weight, avoidance of social situations, and feelings after eating food. The BSQ is a 34-item self-report inventory that was empirically derived using samples of patients with diagnoses of Bulimia Nervosa, Anorexia Nervosa, as well as with women who were without clinical eating disorder diagnoses. The BSQ demonstrates evidence of concurrent validity with the EAT ($r = .61$) and with the Body Dissatisfaction subscale of the Eating Disorder

Inventory (Garner, Olmsted, & Polivy, 1984) ($r = .66$). Scores on the BSQ range from 34 to 204, with higher scores indicating a greater propensity of having eating disordered behavior emerge. The higher scores indicate body shape concerns, a desire to be thinner and such intense feelings of self-consciousness about their body that they avoid situations in which people may be able to see their body. Women diagnosed with eating disorders are likely to score above 110 on the BSQ whereas women without eating disorders and those who express excessive concerns about feeling fat are more likely to score less than 90. Therefore women who score over 110 on the BSQ are considered to have body image concerns that may be clinically significant (Cooper et al., 1987).

Data Analysis

The data collected from this research study was analyzed according to the specific research questions. The first research question addresses the longitudinal course of body dissatisfaction among undergraduate females at Brigham Young University as measured by the BSQ and was analyzed using descriptive statistics. Descriptive statistics were also used to determine the percentage of women in each cohort, across each semester, whose scores fell in the at-risk range on the BSQ. Clinical range is considered to be a score greater than or equal to 110 on the BSQ. This was done using descriptive statistics, looking at the percentage of women on BYU campus, across all cohort groups combined, who fell in the clinical range on the BSQ.

To answer the second research question, a Paired Sample T-test was used to determine whether there were significant changes in their body dissatisfaction ratings that occurred as women made their way through school.

The third research question was answered by looking at frequency data of BSQ scores and calculating what percent of those scores were over the clinical cutoff score of 110. In this analysis, BSQ scores from winter semester of 2005 included a group during their senior year, a group during their junior year, and a group in their sophomore year. This sample was selected as the number of freshman who participated in the study far outweighed any other years.

The final research question was answered by running eight separate analyses of variance, looking at each time data was collected and if there were significant differences found between the groups.

RESULTS

All statistical functions relating to the data analysis were performed using SPSS version 10 statistical analysis program. The sample sizes that were collected varied each semester, as the study ran for only four years and as the return rate decreased over time.

Research Question 1

What is the longitudinal course of body dissatisfaction among undergraduate females at Brigham Young University as measured by the Body Satisfaction Questionnaire?

To answer this question the data was analyzed using descriptive statistics. The mean was calculated to examine whether body dissatisfaction rating increased or decreased as the women worked their way through school. Table 2 shows the results of the mean calculation for all groups across semesters. Two groups were also used in looking at the longitudinal course of body dissatisfaction ratings. Figures 1, 2, and 3 show the results of the three cohort's body dissatisfaction ratings as they progress through school. The *List* group, included in Table 2 and Figures 1, 2, and 3, includes only those participants who stayed in the study for the duration, and the *All* group includes all surveys that were returned.

Table 2

Mean Scores of the Body Satisfaction Questionnaire by All Participants and List Wise

Semester	2001 Cohort		2002 Cohort		2003 Cohort	
	All	List	All	List	All	List
1 st	96.8	86.3	93.9	83.9	98.3	92
2 nd	95.1	89.4	92.5	85.3	99.9	94
3 rd	92.6	86.9	88.1	84.8	93.2	87.3
4 th	91.5	87.4	90.7	87.2	94.9	95.1
5 th	86.6	82.9	87.2	82.4		
6 th	86.3	84.6	86.8	84.7		
7 th	85.9	83.3				
8 th	87.7	84.9				

Longitudinal Course of BSQ Total Scores : Group 1

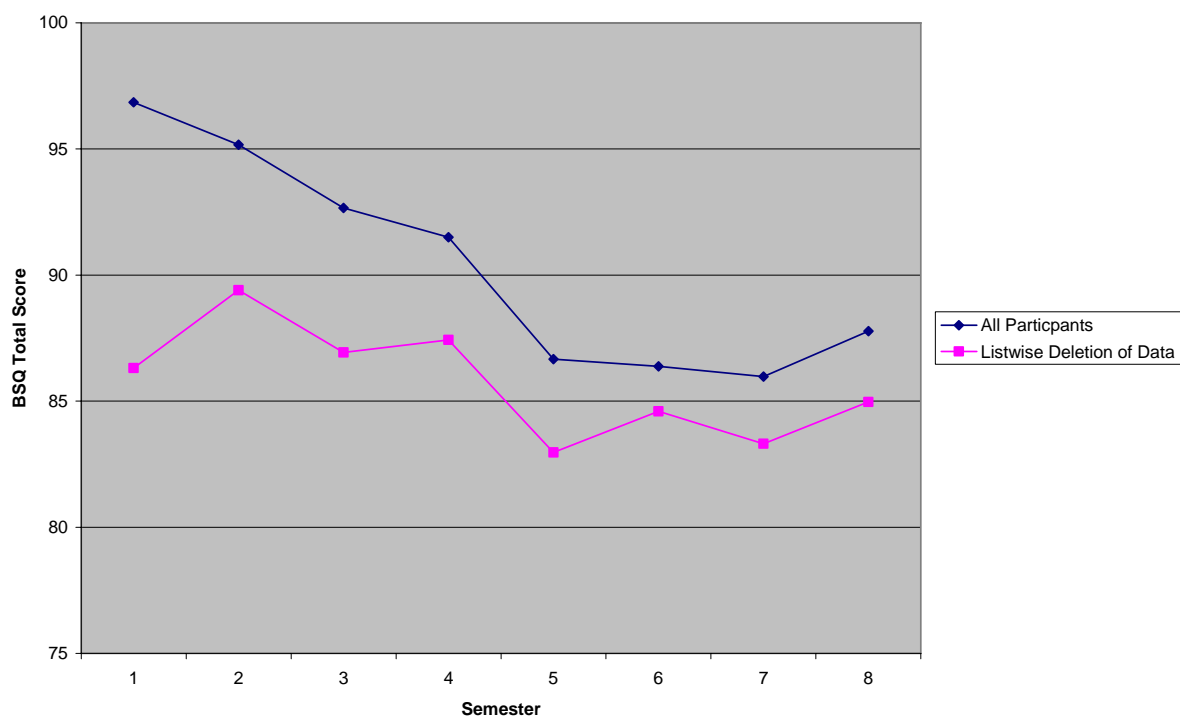


Figure 1. Longitudinal course of BSQ total scores: Group 1.

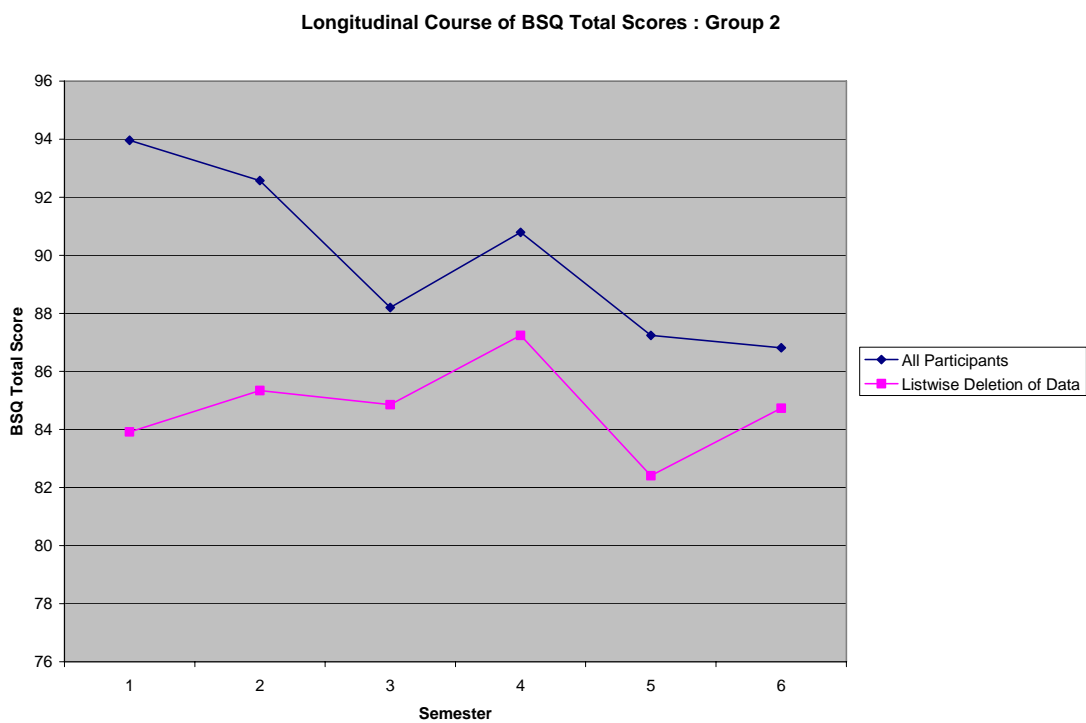


Figure 2. Longitudinal course of BSQ total scores: Group 2.

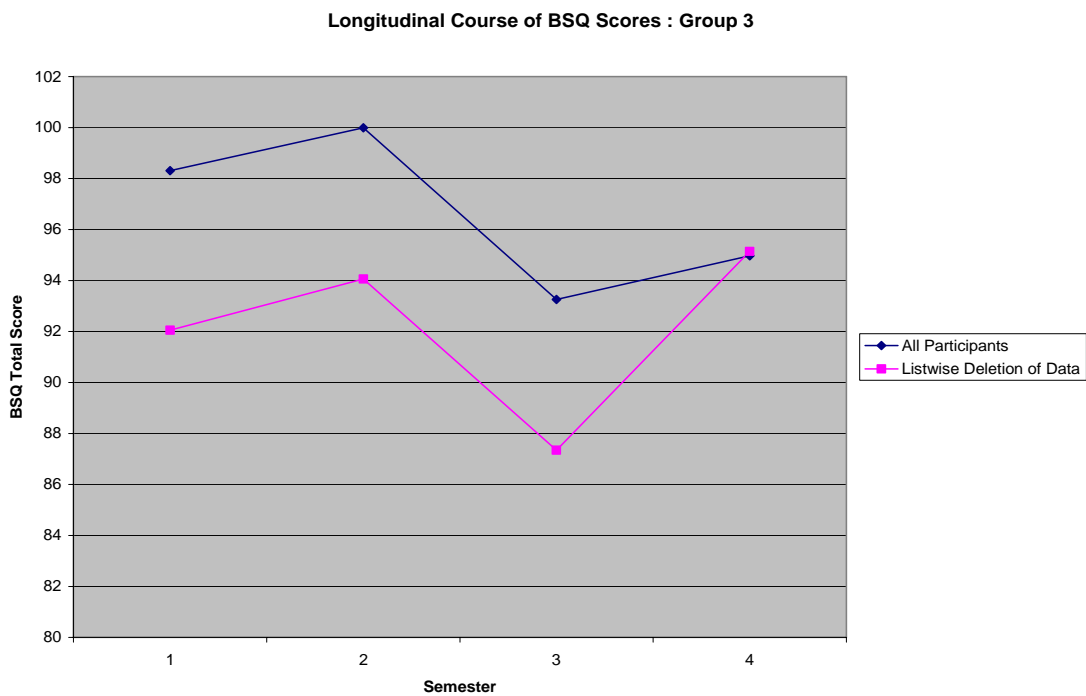


Figure 3. Longitudinal course of BSQ total scores: Group 3.

Research Question 2

Are there significant changes in body dissatisfaction that occur over time as women make their way through school?

Table 3 shows the significance levels of a paired samples test that examined the first time each cohort completed the rating scale and the last time they completed the scale to see if there were significant changes in body dissatisfaction ratings across time. While there is an apparent downward trend, they are not significant changes in body dissatisfaction over time.

Table 3

Paired Sample Test: Cohorts 1, 2, and 3

Cohorts	<i>M</i>	<i>t</i>	<i>Df</i>	Sig. (2-tailed)
Cohort 1: BSQ Total Time 1 – Total BSQ 8	1.21782	0.414	100	0.679
Cohort 2: BSQ Total Time 1 – BSQ Total 6	1.76374	0.934	181	0.352
Cohort 3: BSQ Total Time 1 – BSQ Total 4	1.59906	1.105	211	0.27

Research Question 3

What is the prevalence of eating disorder risk at Brigham Young University?

Descriptive statistics were generated to determine the percentage of women in each cohort, across each semester, whose scores fell in the clinical range on the BSQ. Scores of over 110 on the BSQ were considered clinically significant. The histogram

shown in Figure 4 shows all three cohorts at one time. Findings suggest that over 34% of women on BYU campus are in the at-risk range scoring over 110 (see clinically significant cut off line) on the BSQ at any one time. This sample was chosen as to not overly represent a high number of freshmen. At the time of this sample, participants in Cohort 1 were seniors, participants in Cohort 2 were juniors, and participants in Cohort 3 were completing their sophomore year.

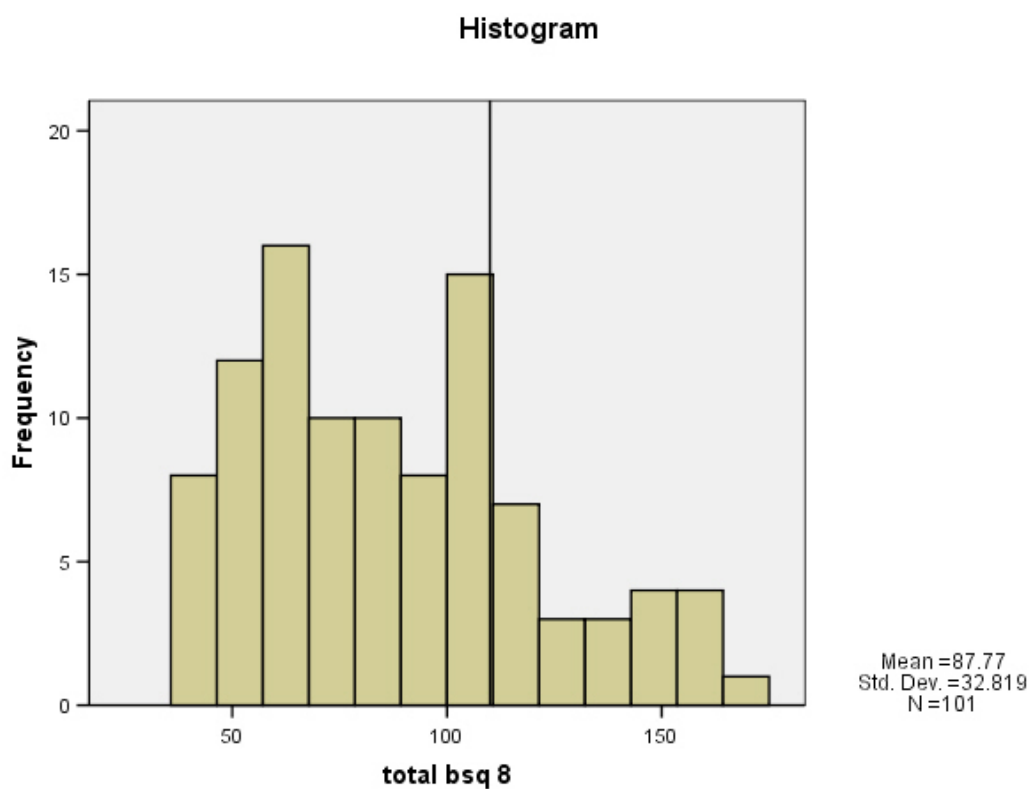


Figure 4. Total BSQ scores for all cohorts (winter 2005).

Research Question 4

Do body dissatisfaction ratings vary across living environments (dorm, apartment, home)? Are there significant differences between these groups and their body dissatisfaction scores?

Eight ANOVA's were conducted testing for significant differences among the various housing groups using the Bonferonni Inequality to protect against cumulative Type I error. Table 4 shows that no significant differences were found between any of the groups.

Table 4

Significance Ratings for Variance across Living Environment for Each Sample

Semester	<i>F</i>	Sig.
BSQ Total Time 1 – Fall '01	0.304	0.738
BSQ Total Time 2 – Winter '02	0.232	0.793
BSQ Total Time 3 – Fall '02	1.861	0.156
BSQ Total Time 4 – Winter '03	3.699	0.025
BSQ Total Time 5 – Fall '03	1.147	0.319
BSQ Total Time 6 - Winter '04	1.525	0.219
BSQ Total Time 7 – Fall '04	2.342	0.101
BSQ Total Time 8 – Winter '05	2.984	0.055

DISCUSSION

The longitudinal course of body dissatisfaction among undergraduate females at Brigham Young University, as measured by the Body Satisfaction Questionnaire, appears to show a decrease in mean body dissatisfaction scores as the women progress through school. Although these results were not statistically significant, this trend was consistent among two of the three cohorts. Those in Cohort 3, who were only followed through the second year of college, did not show a decrease by the end of their sophomore year. However, we do not know whether their ratings would have followed the pattern established by Cohorts 1 and 2 as they progressed into their junior and senior year of college. Although the changes in the ratings were not found to be clinically significant over time, women at BYU do not tend to have the same percentages of eating disordered behavior as women on other college campuses across the nation (Winters, 2005).

In looking at the graphs of body dissatisfaction ratings for all three cohorts, a pattern of consistently higher BSQ scores was observed during the winter semester. This may be due to a number of factors including holiday weight gain, weight-related New Years resolutions, or simply that women tend to feel more negatively about the body image during the winter months. Another hypothesis may be that women may have better body satisfaction after having spent the summer away and upon coming back to campus experience increased body dissatisfaction. As such, this may be a key time for prevention programs to focus on helping women who are at risk for developing an eating disorder.

Although we see over 34% of women at BYU with clinically significant body dissatisfaction scores, they do not seem to be manifesting their dissatisfaction in their bodies through eating disorder behavior. The EAT (Eating Attitudes Test), which more

accurately predicts the likelihood that a woman is suffering from an eating disorder based on dysfunctional eating patterns, was administered at the same intervals as the BSQ throughout the duration of the study. The results of this research consistently showed that the prevalence rate of eating disorders among women at BYU ranges somewhere from 9-11%. This percentage is lower than many other studies conducted at colleges and universities whose prevalence rates ranged from 14.15% to 17% (Winters, 2005).

There may be a number of different reasons for the lower rate of eating disorders on BYU campus, including the support the students have as they make the transition from living at home to college. BYU students who are members of the Church of Jesus Christ of Latter-day Saints are placed in religious groups that provide social opportunities. They are also assigned home and visiting teachers who visit once a month to offer assistance and support. Another protective factor associated with membership in the Church of Jesus Christ of Latter-day Saints is the Word of Wisdom, a religious guideline for how people are to take care of their bodies. Eating nutritious food, getting needed sleep, and abstaining from drinking alcohol, coffee or tea, smoking, or taking other illegal substances into their bodies are all part of this counsel. As such, even though women at BYU appear to be very concerned about their physical appearance, they seem to be manifesting this concern through healthier ways of coping as opposed to turning to eating disorder behavior.

Many factors were considered as part of this study in determining what factors were related to an increase in body dissatisfaction. As such, the variable of living environment was examined to see if students who lived in the close quarters of dormitories had higher BSQ scores than those living off-campus or at home with their

parents. The results of this analysis did not appear to be a significant factor in determining body dissatisfaction ratings.

Strengths of the Study

As data was collected over a period of four years, we were able to see some distinguishable patterns in body dissatisfaction over time and as women lived in different environments. An additional strength of the study was that we were able to factor out those who did not return all of the assessments and look at those who had completed all assessments to see a change over time. As such, we still had a rather large sample who returned the surveys over the years.

Weaknesses of the Study

One of the weaknesses of the study is that we were not able to follow all three cohorts throughout all four years of their education at Brigham Young University to see if the decrease in BSQ scores was consistent in all three cohorts. Another weakness of the study is the attrition rate that was found among participants. Although we started off with a large sample size, it appears that those with the highest BSQ scores dropped out of the study early. This may be due to their inability to continue on in school, changing life circumstances, or the measures were so distressing that they decided not to participate. It would be interesting to look at these women ten years after their graduation to see if their body satisfaction has improved similarly to those in other studies as reflected by a decreased body dissatisfaction rating.

As this research was conducted on a relatively unique sample, the results may have limited generalizability. Future research may want to compare BSQ ratings from

other college campuses to those found in this study to see if the percentages of women scoring over 110 are comparable among college campuses.

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Body Satisfaction Questionnaire

We should like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right. Please answer all the questions.

OVER THE PAST FOUR WEEKS:

Never = 1, Rarely = 2, Sometimes = 3, Often = 4, Very Often = 5, Always = 6

1. Has feeling bored made you brood about your shape?
2. Have you been so worried about your shape that you have been feeling that you ought to diet?
3. Have you thought that your thighs, hips or bottom are too large for the rest of you?
4. Have you been afraid that you might become fat (or fatter)?
5. Have you worried about your flesh not being firm enough?
6. Has feeling full (e.g., after eating a large meal) make you feel fat?
7. Have you felt so bad about your shape that you have cried?
8. Have you avoided running because your flesh might wobble?
9. Has being with thin women made you feel self-conscious about your shape?
10. Have you worried about your thighs spreading out when sitting down?
11. Has eating even a small amount of food made you feel fat?
12. Have you noticed the shape of other women and felt that your own shape compared unfavorably?

13. Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)?
14. Has being naked, such as when taking a bath, made you feel fat?
15. Have you avoided wearing clothes which make you particularly aware of the shape of your body/
16. Have you imagined cutting off fleshy areas of your body?
17. Has eating sweets, cakes, or other high calorie food made you feel fat?
18. Have you not gone out to social occasions (e.g., parties) because you have felt bad about your shape?
19. Have you felt excessively large and rounded?
20. Have you felt ashamed of your body?
21. Has worry about your shape made you diet?
22. Have you felt happiest about your shape when your stomach has been empty (e.g., in the morning)?
23. Have you thought that you are the shape you are because you lack self-control?
24. Have you worried about other people seeing rolls of flesh around your waist or stomach?
25. Have you felt that it is not fair that other women are thinner than you?
26. Have you vomited in order to feel thinner?
27. When in company have you worried about taking up too much room (e.g., sitting on a sofa or a bus seat)?
28. Have you worried about your flesh being dimply?

29. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape?
30. Have you pinched areas of your body to see how much fat there is?
31. Have you avoided situations where people could see your body (e.g., communal changing rooms or swimming baths)?
32. Have you taken laxative in order to feel thinner?
33. Have you been particularly self-conscious about your shape when in the company of other people?
34. Has worry about your shape made you feel you ought to exercise?