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BODY SHAPE DISSATISFACTION: PATTERNS OF CONCERN  
AMONG SUBGROUPS OF COLLEGE FRESHMEN WOMEN

by

Kristina S. Withers Hansen

A thesis submitted to the faculty of

Brigham Young University

In partial fulfillment of the requirements for the degree of

Educational Specialist

Department of Counseling Psychology and Special Education

Brigham Young University

June 2008

BRIGHAM YOUNG UNIVERSITY  
GRADUATE COMMITTEE APPROVAL

of a thesis submitted by  
Kristina S. Withers Hansen

This thesis has been read by each member of the following graduate committee and by majority votes has been found to be satisfactory.

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As Chair of the candidate's graduate committee, I have read in its final form the thesis of Kristina S. Withers Hansen 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 materials, including figures, tables, and charts, are in place; and (3) the final manuscript is satisfactory to the graduate committee and is ready for submission to the university library.

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## ABSTRACT

### BODY SHAPE DISSATISFACTION: PATTERNS OF CONCERN AMONG SUBGROUPS OF COLLEGE FRESHMEN WOMEN

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This study seeks to determine if there are patterns of differences according to college major in terms of the percentage of freshmen women who score in the clinically significant range on a measure of attitude toward body shape. Participants ( $N = 1,982$ ) completed a demographic questionnaire and the Body Shape Questionnaire (BSQ) and were divided into subgroups according to their stated college major. Descriptive statistics regarding BSQ scores were calculated for the total sample and subgroups. Results indicated that a greater percentage of participants in Theater, Communications, Psychology, Dance, Business, and Dietetics majors scored within clinically significant ranges on the BSQ. Students in these majors may benefit from targeted intervention and prevention efforts to address possible body image dissatisfaction.

## Acknowledgements

Sincere appreciation to Dr. Lane Fischer, Dr. Marleen Williams, and Dr. Ellie L. Young for their patience, guidance, and support through my primary research experience. I look forward to the next adventure. Special thanks to my dear husband and family for their constant encouragement and faith in my abilities.

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## Introduction

Concerns about body shape are common among clinical populations as well as the community at large. Numerous studies indicating a pervasive body dissatisfaction component of women college students' self-image are often quoted and lamented. Some researchers have referred to the dissatisfaction that women feel with their appearance as “*normative discontent*” (Rodin, Silberstein, & Striegel-Moore, 1984, p. 267), a phrase suggesting that the essence of a body image disturbance is so prevalent among women that it should be considered a normal part of their life experience (Thompson, Heinberg, Altabe, & Tattleff-Dunn, 1999). *Normative discontent*, however, while implying commonality, must not be confused with harmlessness. Just because an ailment or dysphoria is common does not mean that it is benign.

The relationship between body image disturbances and the etiology and maintenance of eating pathology has been studied repeatedly. Researchers have concluded that body image disturbance is one of the most salient features of the eating disorders anorexia nervosa (AN) and bulimia nervosa (BN) (Bunnell, Cooper, Hertz, & Shenker, 1992; Garner and Garfinkel, 1981; Slade, 1985). Indeed, American Psychiatric Association (APA) definitions of these disorders included in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR, 2000; Appendix 1)* require significant disturbance in the individual's perception of the shape or size of his or her body, or a preoccupation with one's body shape and weight in order to qualify for the diagnoses. Accordingly, body dissatisfaction is often recognized as the single strongest predictor of eating disorder symptomatology among women (Phelps, Johnston, & Augustyniak, 1999; Polivy & Herman, 2002).

Because a person's excessive concerns about body weight or shape can be so damaging, efforts to measure these concerns have led to the development of several instruments designed to

gauge the severity of body shape preoccupation and its associated side effects. Instruments differ based on the body shape construct being studied (internal image, body/non-body self-concept, visual perception), the sample for which the instrument is useful (female/male, adolescents/adults, obese/slender, sighted/blind), and the type of measurement tool (self-report questionnaires, projective tests, silhouette choice, or interview assessments) (Ben-Tovim & Walker, 1991). The Body Shape Questionnaire (BSQ; Cooper, Taylor, Cooper, & Fairburn, 1987; Appendix 2) was designed as a brief self-report measure of a person's concern about the shape and appearance of his or her body.

Consider that such concern is oriented along a continuum of severity. Several factors have been shown to influence a person's perception and attitudes about his or her body, as well as how salient these perceptions and attitudes are to the person's self-image. Internal factors such as the person's psychobiology, life experiences, level and type of competitiveness, degree of achievement orientation, and stage of physical development contribute to a person's level of body shape concern. Likewise, external factors such as peer group and family influences, cultural background, hobby involvement, performance participation, and choice of college major also contribute to a person's conception and opinions about the shape of his or her body.

### *Statement of Problem*

The prevalence of body shape concerns and general body dissatisfaction among college women makes examination of these concerns a valid field of study. Beyond justification based on mere empirical curiosity surrounding this study's particular sample, however, understanding the influences on body shape concern based on a person's initial choice of college major will help to direct prevention and treatment efforts to students who are potentially more prone than others to clinically significant body image disturbances. Such prevention efforts can be costly

and time consuming, thus attempts to accurately identify target populations for intervention and treatment must be encouraged and pursued. Currently, it is unclear whether subpopulations of freshmen women as identified by their college major may be at particularly high risk for clinical levels of body shape concern. The association of body dissatisfaction with the development of eating disorder behaviors among college women makes valuable the measurement of this dissatisfaction, as well as its risk factors and college environment influences.

#### *Statement of Purpose and Research Question*

This study seeks to determine the overall percentage of a sample of freshmen women who score within clinically significant ranges (according to the instrument developer's clinical standards) on a measure of body shape concern. The intent is to identify high-risk groups of students with similar academic interests in order to better allocate university prevention and intervention resources to those groups.

One research question will drive this study: Will there be any pattern of differences according to college major in terms of percentage of women who score in the clinically significant range on a measure of attitude toward body shape? It is the hypothesis of the researcher that the percentage of women who score in the clinically significant range on the BSQ will be more notable for some college major subgroups than for others. It seems logical that a scholastic preoccupation with the appearance and functioning of the body might reflect or be reflected by specific choices of college major and thus qualify as a notable risk factor for potential eating disorder behaviors. This study therefore seeks to discover if fields of study that emphasize the body as a tool or instrument of performance will yield a greater percentage of participants who score within clinical ranges on the BSQ than do fields of study that do not focus on the appearance of the body.

## Review of Literature

Research regarding individuals' perceptions and attitudes about their body shape is an ever-growing store of studies involving clinical and non-clinical populations, a variety of measures, and correlations and associations with eating disorders and other clinical diagnoses. Samples in the literature include both genders and all ages and utilize measures of body shape that yield data indicating that body image concerns may exist along a continuum from normative discontent (Rodin et al., 1984) to clinically significant body image disturbance (Cooper et al., 1987).

### *Body Shape Concerns*

Admittedly, observations of or responses to appearance are highly subjective. Indeed, what is beautiful to one person might be distasteful to another. Even so, a person's perception of or attitude toward his or her body is most likely only a portion of what he or she uses to evaluate the self, but these perceptions and attitudes often constitute an important part of this self-evaluation. The physical body is the only portion of the self that is immediately observable to others. While internal features of the self such as personality, likes and dislikes, values systems, and thoughts and feelings may be more salient to how a person experiences himself or herself, the external physical framework also appears to play an important role in an individual's self-evaluation. The physical body is unique among other characteristics of the self in that it is readily comparable to other bodies, is easily objectified, requires nothing more than observation in order to be judged, and yet can be responsible for affecting most—if not all—of the aforementioned internal features of the self.

Showers and Larson (1999) summarized the structure of physical appearance beliefs according to three general issues: First, the importance of physical appearance to the

individual's self-structure; second, organization of the person's beliefs about physical appearance; and third, the person's knowledge about physical appearance in relation to other aspects of the self. Participants in the Showers and Larson study included 112 university students divided into disordered and nondisordered eating behaviors groups according to their scores on screening instruments presented as a part of the study. The results of this study identified several differences in the self-structure and coping strategies of college-age women with symptoms of disordered and nondisordered eating. Primarily, women with disordered eating evaluated the self-aspect of physical appearance as extremely important and primarily negative in content. This negativity affected other traits of the self and was reflected in a negatively compartmentalized self-structure. In contrast, nondisordered women with negative physical appearance beliefs seemed to structure as a part of the self those negative self-evaluations in a way that isolated them and might minimize their importance and impact on other self-evaluation traits.

Studies of more severe body shape concerns have historically been divided into two basic types of clinical manifestations of body image disturbance. Garner and Garfinkel (1981) explain that the first type is a *perceptual* disturbance in which the person demonstrates an inability to assess accurately his or her size. A perceptual disturbance may be a necessary component of a diagnosis of specific clinical eating pathology anorexia nervosa (AN) or bulimia nervosa (BN), but such body size overestimation is not unique to persons with AN or BN. In fact, Thompson and Thompson (1986) reported that in over 100 asymptomatic females, "the average global distortion level is 25% above accuracy. In addition, over half of this sample had at least one body site that was overestimated by 50% or more" (p. 1067). Thus, while a perceptual disturbance is a necessary component of AN in particular, evidence of this type of body image disturbance is not sufficient to warrant an actual clinical diagnosis. This first type of disturbance is often referred to

as body size distortion. Persons with eating disorders are hypothesized to estimate their body size as larger than is objectively true (Cash & Deagle, 1997).

The second type of clinical manifestation of body image disturbance is an attitudinal or cognitive and affective disturbance in which “patients assess their physical dimensions accurately but they react to their bodies with extreme forms of disparagement” (Garner & Garfinkel, 1981, p. 265). This second type is referred to as body dissatisfaction. Several studies have shown that body dissatisfaction is common among females, particularly during adolescence and young adulthood, but sometimes as early as childhood. Collins (1991) found that 42 percent of the girls in her study ( $n = 1118$ ), aged six to seven years, preferred body figures thinner than their own. Similarly, a survey of 200 children age eight to ten years revealed that 55 percent of the girls and 35 percent of boys were dissatisfied with their weight (Wood, Becker, & Thompson, 1996). Although body dissatisfaction knows no age limit, some studies (Cooper & Fairburn, 1983; Dwyer, Feldman, & Mayer, 1967; Huenemann, Shapiro, Hampton, & Mitchell, 1966; Lewinsohn, Striegel-Moore, & Seeley, 2000; Mazzeo, 1999; Mintz & Betz, 1988; Wardle & Beales, 1986) have shown body dissatisfaction to be even more prevalent among groups of adolescents and college-age populations.

In a 1966 study of teenage girls, Huenemann and colleagues found that an overwhelming majority of their participants were profoundly unhappy with their size and shape: even though only one-quarter of their sample were classified as overweight, nearly three-quarters expressed a strong desire to lose weight. Subsequent studies of adolescents in Western industrialized nations have produced similar findings (Dwyer, Feldman, & Mayer, 1967; Wardle & Beales, 1986). A self-report study of college women conducted by Mintz and Betz in 1988 concluded that the frequency of disturbed eating behaviors as a result of poor body image among college women

was quite high. In this study, data from participants ( $n = 643$ ) suggested that lower self-esteem, poorer body image, and greater tendency to endorse societal beliefs about the importance of female thinness and attractiveness corresponded with progression along the eating-disorders continuum.

Body dissatisfaction and concerns with body shape can be found in similarly high levels among populations of older women. For example, in a study conducted by Cooper and Fairburn (1983), although more than three-quarters of the sample of women attending a British family planning clinic were within 15 percent of average body weight, 39 percent reported that they considered themselves significantly overweight, and 60 percent reported persistently feeling fat. With such negative opinions of one's body shape rampant among female populations, it is quite clear that, indeed, body dissatisfaction is not unique to individuals with clinical eating disorders (Mazzeo, 1999; Striegel-Moore, Silbertstein, & Rodin, 1986). While this dissatisfaction may be common among both clinical and community populations, the disturbing fact remains that "body image dissatisfaction can lead to unhealthy eating patterns, extreme dieting behaviors, and the development of more serious eating disorders, which can have dire health consequences and long-term ramifications" (Skemp-Arlt, 2006, p. 45). Such negative consequences of serious body image concerns therefore warrant further study and concerted prevention and treatment efforts.

#### *Body Shape Concerns and Eating Disorders*

Body image dissatisfaction, excessive weight concerns, and disordered eating patterns have been implicated as risk factors for the development of eating disorders (Brooks-Gunn, 1988; Herzog, Hopkins, & Burns, 1993; Killen, Hayward, et al., 1994; Killen et al., 1994; Killen et al., 1996; Rierdan, Koff, & Stubbs, 1998, Taylor et al., 1998). Specifically, body distortion and body dissatisfaction are both strong predictors of mild and severe eating disturbances

(Cattarin & Thomson, 1994; Stice, 2002). Individuals who suffer from AN and BN often place an excessive emphasis on body shape and weight, and base much of their self-evaluation on these two factors. In a meta-analytic review conducted by Stice (2002), his effect size results showed that body dissatisfaction predicted increases in dieting ( $r = .26$ ), negative affect ( $r = .14$ ), and bulimic pathology and eating pathology ( $r = .13$ ). Further, body dissatisfaction predicted maintenance of bulimic symptoms ( $r = .30$ ). Statistics supported Stice's conclusion that the body dissatisfaction variable "emerged as one of the most consistent and robust risk and maintenance factors for eating pathology" (p. 833). While this is true, the small effect sizes included above may imply that no single factor can account for a large proportion of the variance in change in eating pathology.

Clinical eating pathology can be categorized into three specific diagnoses: AN, BN, and *eating disorder not otherwise specified* (ED-NOS) (APA, 2000). Among these conditions, a preoccupation with body image or shape, weight, and food, in combination with specific behaviors, differentiate the diagnoses (see Appendix 1). As detailed in the *DSM-IV-TR* (APA, 2000), AN is characterized by refusal to maintain a minimally normal body weight, intense fear of gaining weight, and significant disturbance in the perception of the shape or size of the body. AN can be further qualified as restricting type or binge-eating/purging type. The essential features of BN include binge eating and inappropriate compensatory methods to prevent weight gain. The self-evaluations of individuals with BN are also excessively influenced by body shape and weight. BN is further qualified as either the purging type or the nonpurging type. The ED-NOS category is reserved for disorders of eating that do not meet the criteria for either specific eating disorder.

Eating disorders represent a serious mental health problem among adolescent and young adult women. According to studies conducted by Lewinsohn and colleagues, the lifetime prevalence rate of eating disorders for female adolescents was 23 per 1,000, compared with 1.4 per 1,000 for male adolescents (Lewinsohn, Striegel-Moore, & Seeley, 2000). Numbers such as these may explain why efforts to study, prevent, and remediate eating disorder behaviors are generally focused on adolescent females, rather than males. According to these researchers and others, the onset of eating disorder symptoms typically occurs during later adolescence.

Lewinsohn et al. explain that “the hazard rates for both AN and BN peak during the 16-17 age interval; the incidence rates drop to prepubertal levels by age 18 for AN and by age 20 for BN” (p. 1288). Further, Hesse-Biber and Marino conducted a study that determined that “The transition from high school to college appeared to be the most vulnerable time for women in terms of a significant downward mean change in their sense of self” (1991, p. 204). Similarly, Duncan (2005) identified the longitudinal course of eating disorder risk for high school students. He showed increasing risk from freshman to senior year with highest levels of eating disorder risk associated with the oldest high school children. Weichmann (2007) demonstrated the longitudinal course of body dissatisfaction in a college sample of undergraduate females. She showed that the highest levels occurred among incoming freshmen women and steadily decreased throughout their college experience. These findings suggest a noteworthy vulnerability for women beyond typical high school age; thus, it is reasonable to conduct a study of body image concerns pertinent to eating disorders with a young adult sample of college freshmen women.

*The Body Shape Questionnaire and Measurement Techniques*

Existing instruments for measuring attitudes toward the body utilize a variety of different formats. Some of these approaches include self-report questionnaires, interview assessments, projective tests, or silhouette choice. Self-report measures and interview assessments are generally used to gather information about a person's attitude toward or cognitive experience of his or her physical body. Variations of projective tests and silhouette choice exercises are often used to measure body perception. These different types of instruments may appear to measure different constructs of body image, but Ben-Tovim and Walker (1991) explained that their own studies and others have demonstrated that "apparent measures of body image are, in fact, so influenced by attitudinal variables as to be best seen as indirect measures of attitudes themselves" (p. 156). According to this field of thought, all measures of body image—regardless of format—function essentially as measures of a person's attitude toward his or her body.

Most researchers would support the assertion that certain instruments are better suited to measure certain aspects of body image concerns than are others. Keeton, Cash, and Brown (1990) and Cash and Brown (1987), however, maintain that specific parameters of body image that can be measured by various instruments are actually more clinically relevant than other parameters. According to these theorists there is stronger evidence for the validity of outright attitudinal measures of body image than for perceptual measures that focus on the accuracy of body size-estimation (Keeton et al., 1990). In their study of 125 male and female college students, Keeton and colleagues reported more convergent and discriminant validity for the measures of attitudinal modalities of body image than they did for perceptual modalities. "Only attitudinal body image and perceptual, self-ideal discrepancy measures were significantly linked

to eating disturbance. Relationships were generally more consistent for women than for men” (p. 213).

A meta-analysis conducted by Cash and Deagle (1997) supported Keeton’s and others’ claims of the superior validity of attitudinal measures of body image over perceptual measures. According to Cash and Deagle,

attitudinal measures of evaluative body image, including perceptual self-ideal discrepancy measures, produce much more substantial effect sizes than do assessments [sic] of size-estimation accuracy. Attitudinal body image also discriminates between bulimic and anorexic groups, whereas perceptual distortion does not. (p. 119)

Further, Cash and Deagle suggest that investigators of body image concerns should expand their attitudinal assessments from exclusively satisfaction measures to include measures of body-image investment or salience, and measures of emotionality, dynamic situationality, and specific physical foci of body-image experiences.

In 1987 Cooper, Taylor, Cooper, and Fairburn developed the BSQ, a self-report measure of body dissatisfaction designed to specifically assess the “phenomenal experience of concerns about body shape together with their antecedents and consequences” (p. 486). According to its developers, the BSQ’s strength exists in its ability to measure “a psychological dimension that is known to vary considerably in intensity both within patient populations and within community samples. As such, the BSQ should be regarded as providing a measure of the extent of psychopathology rather than a means of case detection” (p. 490). Rosen, Jones, Ramirez, and Waxman (1996) conducted studies of validity and reliability of BSQ scores and expanded the demographics of the sample for which the original BSQ had been designed. Cooper and his colleagues developed and normed the measure using samples of patients with diagnosed eating

disorders. Rosen and his colleagues studied the reliability of BSQ scores by testing its validity to predict clinical body image concerns using populations of obese dieters, university undergraduates, and university staff. The results of these studies led to the conclusion that the BSQ has sufficient criterion validity to differentiate clinical from nonclinical subjects and persons with predictably more or less weight concern. The BSQ also demonstrated good concurrent validity evidence for all clinical and nonclinical samples, with the ability to differentiate negative body image attitudes and symptoms, including concerns about nonweight-related appearance features. According to Rosen et al.,

An advantage of the BSQ seems to be the inclusion of questions that tap into other important body image symptoms, such as distressing preoccupation with weight and shape, embarrassment in public and avoidance of activity or exposure of the body due to self-consciousness, and excessive feelings of fatness after eating. (1996, p. 315)

Overall, Rosen concluded that the BSQ has adequate evidence of validity for research purposes, and the reliability coefficients from BSQ scores are within acceptable ranges. Additionally, Mazzeo (1999) suggested that even a modified, shortened version of the BSQ has proven useful as a screening device for a focused assessment of body image preoccupation among undergraduate women.

### *Influences on Body Shape Evaluations*

*Focus on the self.* Despite a proven correlation between negative body image and negative eating attitudes as measured by the EAT and the BSQ (Bunnell, Cooper, Hertz, & Shenker, 1992; Cooper, Taylor, Cooper, & Fairburn, 1987; Kaneko, 2006), Showers and Larson explain that “eating disorders are not necessarily the consequence of negative physical appearance beliefs alone” (1999, p. 660). Risk factors that may contribute to disordered eating—

such as increased focus on the self, concerns about acceptability or rank among peers, self-esteem, and internalization of the thin-ideal—are abundant among adolescents and young adults.

For example, According to Piaget's theory of cognitive development (Inhelder & Piaget, 1955/1958), adolescents in the formal operational stage begin to practice abstract thought, which also leads to a more intense focus on the self as they imagine what others are thinking of them. This extension of thought beyond themselves can lead to a distorted perception of the relationship between the self and others. A thought distortion known as *imaginary audience* is common among teenagers. Many are convinced that they are the focus of everyone else's attention and concern, and, as a result, become extremely self-conscious (Berk, 2003). Gilbert (2002) explained that considerations paramount during adolescence and young adulthood are multi-faceted and central to a person's evaluation of himself or herself:

Concerns with body image, passing exams, sporting ability, demonstrating our wit or intelligence are all examples where we recognize that our *acceptability, rank and status* among our peers and group, and to potential sexual partners (our worth to them) depends on being recognized as having some value and we are approved of, desired and chosen by them. (p. 8).

These typical high school and college concerns are common but may affect individuals in different ways. In a study conducted by Hesse-Biber and Marino (1991), the researchers concluded that

the transition from high school to college appeared to be the most vulnerable time for women in terms of a significant downward mean change in their sense of self. It was also during this time period that [they] observed the most significant relationships between self-concept and eating problems (p. 203).

In a recent study by Tylka (2004), the researcher raised the following question: “Given that high levels of body dissatisfaction are common among women, whereas bona fide clinical eating disorders are relatively rare, could additional variables interact with body dissatisfaction to influence its relation to eating disorder symptomatology?” (p. 179). This study yielded results indicating that certain moderating variables (drive for thinness, bulimia, body dissatisfaction, impulse regulation, and social insecurity) also contribute to the severity of body dissatisfaction and eating disorder symptoms.

*Body image preoccupation.* Specifically, Mazzeo (1999) explained that it is body image preoccupation that is more relevant to disordered eating than body image attitude. Cash and Deagle (1997) have suggested that a primary distinctive feature of women with eating disorders is the substantial investment they place in body shape and weight for self-worth. Attitudinal assessments of persons suspected of body image concerns should expand “from exclusively satisfaction measures to include measures of body-image investment or schematicity and assessment to capture the specific physical foci, dynamic situationality, and associated emotionality of body-image experiences” (p. 119). Joiner, Schmidt, and Wonderlich (1997) found that body dissatisfaction accounted for a greater amount of global self-esteem among individuals with diagnosed eating disorders than did body dissatisfaction in nonpsychiatric control participants. In other words, the salience of a person’s body image to his or her self-esteem and self-concept appears to be more important than the level of positive or negative feelings one has toward his or her body. For example, in industrialized Western cultures, as adolescents age, they become more aware of societal ideals regarding appearance; yet for many, their physical development draws their body shape away from these ideals (Clay, Vignoles, & Dittmar, 2005). The role that this discrepancy between the individual’s body shape and the

“ideal” body shape plays in an individual’s self-evaluation can be affected by any number of factors. One such factor may be the emphasis that a person places on conforming to the “ideal” or meeting some other, external standard. Indeed, “a primary distinctive feature of women with eating disorders is the substantial investment they place in body shape and weight for self-worth” (Cash & Deagle, 1997, p. 119). However, as Tylka’s (2004) moderating variables suggest, just because a societal ideal exists does not mean that this ideal will be internalized and lead to body dissatisfaction when the ideal appearance cannot be attained. Those who are “at-risk” for developing and/or maintaining body dissatisfaction are those who tend to accept sociocultural norms for attractiveness (Cattarin, Thompson, Thomas, & Williams, 2000).

Frank and Thomas (2003) have concluded that the perceived importance of body shape and weight combined with externalized self-perceptions were found to predict maladaptive eating-related cognitions at the  $p < .01$  level. Their study of undergraduate women ( $n = 236$ ) concluded that externalized self-perceptions (akin to those experienced by adolescents imagining what others think of them, or mental objectification of one’s own body) improved the prediction of both anorexic and bulimic dietary *cognitions*, though not necessarily anorexic or bulimic *behaviors*. Showers and Larson (1999) added that “a woman can have a strongly negative body image without maintaining a negative perception of the self as a whole” (p. 695). For example, Showers and Larson found that

Women who had high self-esteem and some positive appearance attributes were more likely to identify physical appearance as an important aspect of themselves, even when their body image was negative. This suggests that confident women see physical appearance as important, even when their physical appearance beliefs are basically negative. It also suggests the possibility that being able to endorse some positive features

of physical appearance may be an important key to maintaining high self-esteem in conjunction with generally negative body image beliefs. (p. 696).

*Internalization of mass media messages.* An (appropriately) often targeted pathogenic influence on women's body shape self-evaluations is the popular media. "Social values, be they created by group identities or product selling, shape both our social and personal judgements [sic] of 'the ideal or acceptable body' as it pertains to certain categories related to gender, age and sexual advertising" (Gilbert, 2002, p. 29). Numerous studies of the impact that media depictions of ultra-thin, attractive, glamorous women play in influencing women's body satisfaction or dissatisfaction document that many women are vulnerable to negative self-evaluations immediately after being exposed to such images (Cattarin, et al., 2000; Groesz, Levine, & Murnen, 2002; Mills, Polivy, Herman, & Tiggeman, 2002; Pinhas, Toner, Ali, Garfinkel, & Stuckless, 1999; Thompson et al., 1999). The meta-analysis of 43 effects reported in 25 studies produced a

small but relatively consistent and significant effect size of -0.30. . . . In general, as hypothesized, body image for females was significantly more negative after viewing thin media images than after viewing images of either average size models, [or] plus size models, or cars and houses. This effect appears to be stronger when the research design did not expose participants to both the experimental and control images. (Groesz et al., 2002, p. 11)

Through flashy images of "ideal" female beauty promoted unapologetically by film, television, magazine, and Internet, viewers may come to believe that a female's body is her most important attribute. This "ideal" body has flawless skin, a thin waist, long legs, and well-developed breasts. Airbrushing, digital alteration and cosmetic surgery further increase the unrealistic nature of

media images of women as standards for self-evaluation (Thompson et al., 1999). While some research suggests that it is the type of interaction the individual has with the media that results in an effect on body image (Maltby, Giles, Barber, & McCutcheon, 2005), comparisons with many unrealistic ideals would be inherently frustrating for the majority of girls, resulting in a decline in body satisfaction (Clay et al., 2005).

*Competitiveness and perfectionism.* Some studies have focused on competition itself as the culprit in predicting body shape dissatisfaction and body image concerns; however, Burckle, Ryckman, Gold, Thornton, and Audesse (1999) showed that “it is not competition per se that is a primary contributor to eating disorders, but rather a particular form of competitive attitude” (p. 853). In their study, the more Machiavellian hypercompetitiveness—or the need to be successful at all costs—was strongly related to eating disorder symptoms including negative body image. Faer, Hendriks, Abed, and Figueredo (2006) studied the relationship between the pursuit of thinness and female intrasexual competition. These researchers posited that women ultimately compete among themselves for status and for mates. Their study found that competition among females for mates drives two different major pathways:

- (1) intrasexual competition for mates positively influences both body dissatisfaction and drive for thinness which in turn contributes to both anorexia and bulimia; and (2) high intrasexual competition for mates also positively influences high female intrasexual competition for status, general competitiveness, and perfectionism, which in turn contributes only to anorexia. (p. 405).

According to this information, competition within the female gender to attract a potential sexual partner plays a role in the competitors’ body dissatisfaction, drive for thinness, competition for status, and perfectionism. These traits may, in turn, contribute to AN and BN. While some forms

of competition and perfectionism are adaptive and often lead to high achievement, others are less adaptive and may contribute to body image disturbances, eating disorders, and anxiety.

In one study of social physique anxiety (SPA)—a type of social anxiety experienced when an individual perceives that his or her body shape or figure is being negatively evaluated by others—Haase, Prapavessis, and Owens (2002) found that negative, or maladaptive, perfectionism was moderately and positively correlated with SPA, while the more adaptive, positive perfectionism was unrelated to SPA. This finding makes sense since people experience social anxiety when they are motivated to make a particular impression on others but doubt whether they will be successful. Haase et al. explained that

By setting unrealistic high standards and attempting to avoid perceived failure in the eyes of important others (whether in performance or physical shape or appearance), [people] may experience more anxiety and concern about their physique due to the possibility of failure to self-present according to their perceived “perfect” standard. (p. 218-219).

This body shape preoccupation in combination with negative perfectionism may also result in disordered eating.

*Choice of college major.* Among modern American college students, choice of college major is a significant decision. Consider the influence of competitiveness, perfectionism, high achievement orientation, and the closed or exclusive nature of certain fields of study that pervade many students’ college experiences. Add to these important influences the college experience’s increased focus on improving the self, a preoccupation with body image perpetuated by a specific field of study or one’s peers, and increased exposure and self-comparison to media images of the thin ideal and concerns about body image are bound to be high. Also consider the pressure of attaining a certain body shape or weight in order to excel in certain arenas of

competition or achievement, and consider that there are some specific majors that encourage such a specific appearance among their students. It seems logical that some fields of study that focus on the appearance or functioning of the body may foster an awareness of, if not a preoccupation with, body shape. It is not surprising, then, that for many individuals their chosen profession, major field of study, or hobby may place them at risk for body image disturbance (Thompson et al., 1999).

In a study conducted by Joseph, Wood, and Goldberg (1982), the researchers hypothesized that “individuals who are at risk for developing the disorder [AN] will gravitate toward areas of culture where there is increased focus on body size and high-performance expectations” (p. 54). This study involved students majoring in dance, drama, physical education, and English ( $n = 245$ ). Using Garner and Garfinkel’s Eating Attitudes Test (EAT; 1979)—a measure repeatedly validated to evaluate a broad range of target behaviors and attitudes found in persons with AN—Joseph and colleagues found that “the areas of dance and drama represent two subsets of culture where there is a preponderance of individuals who exhibit anorectic symptoms” (p. 56). Of the students participating in the study, 27% of dance majors, 20% of drama majors, 8% of English majors, and 7% of physical education majors scored on the EAT in the range symptomatic of AN. The difference between the frequency of students scoring in the symptomatic range among dance and drama students was significantly higher than in the English and physical education groups ( $\chi^2 = 10.98$ ;  $p < 0.02$ ). Such a significant difference can easily be attributed to the difference in the amount of emphasis the students in these fields place on conforming to a specific body shape.

Garner, Garfinkel, Rockert, and Olmsted (1987) maintain “that both pressures to be slim and high achievement expectations are risk factors for anorexia nervosa” (p. 170). Admittedly,

the results of the Joseph et al. (1982) study say nothing about high performance expectations since the groups probably do not differ in this regard. They do differ, however, in thin body ideal. “The data do not support the contention that incipient anorexia nervosa subjects select pursuits that allow the indulgence of strenuous physical activity. The results primarily support ‘need or desire for thinness’ as an influential variable” (p. 57). In the Garner et al. (1987) study of eating disturbance among ballet students, “drive for thinness” and “body dissatisfaction” were the only Eating Disorder Inventory (EDI) scales which differentiated dancers with a definite eating disorder from the remainder of ballet school subjects. These dancers with diagnosable eating disorders had significantly elevated scores on these scales related to body image.

Another field of study or subgroup of college students who may be at particularly high risk for body image concerns are exercise science majors and college athletes. Striegel-Moore, Silberstein, and Rodin (1986) suggested that sport, with its emphasis on obtaining an optimal weight for athletic performance, represents a subculture that augments society’s pressures to be thin. Berry and Howe (2000) reported that sports with an emphasis on aesthetics, sports that emphasize a lean body build, and sports with weight classes have higher incidences of participants with eating disorder symptoms. Although not all exercise science majors are college athletes, nor vice versa, there are a greater number of exercise science and physical education majors who also participate in intercollegiate athletics. Even so, Thompson et al. (1999) explained that “one does not have to be involved in a formal college or professional athletic training program to suffer the body image complications associated with participation. For instance, several studies indicate that even casual athletes are dissatisfied with their appearance and may be at risk for problems such as eating disorders” (p. 46). Ideally, persons participating

in athletics would follow training programs that emphasize strength and health, in addition to lean body build and weight, in order to be competitive.

Dietetics majors and those whose fields of study focus on nutrition may also be at risk for body image concerns (Reinstein, Kozewski, Chamberlin, & Smith-Johnson, 1992). Grassi (2001) explored attitudes toward obesity among a cluster sample of almost 500 dietetics students from 22 college campuses. According to her research, “a high number of the females (75%) accurately reported themselves as at a healthy weight, yet 63% wanted to lose weight” (p. 40). Thus, while students in fields focusing on the nutrition required to sustain and support a healthy body are aware of what their healthy weight should be, they are also influenced by other factors that lead them to desire to be thinner.

George (2005) has illustrated that “processes of self-evaluation are fundamentally forged through social interaction” (p. 340). These social comparisons can be magnified and multiplied in a college environment, and specifically within major fields of study that limit their enrollment. Crandall (1988), for example, has noted that BN represents an acquired pattern of behavior and that women who are in closed environments such as sororities or exclusive cohorts may engage in disordered eating behaviors as a result of group pressure. Further, a study by Tylka and Subich (2004) provides evidence that perceived sociocultural pressure to lose weight or engage in unhealthy eating behaviors

may provide the context for a woman’s adoption of the belief that a thin body type is most attractive, her experience of negative emotionality and body image disturbance, and her perceptions of less social support, but these personal and relational variables may be the more direct contributors to eating disorder symptomatology. (p. 321).

Pressure from peers, roommates, classmates, teammates, and others in the college environment may play an important role in the development and pervasiveness of body image concerns.

Coaches and instructors are often key figures in a student's life, and a student in a field that emphasizes the thin body ideal may feel driven to lose weight in order to meet the expectations of the coach or instructor. It has been speculated that the greater a student's body shape deviates from what is considered "ideal" for his or her sport or performance, the greater the risk of the development of an eating disorder (Berry & Howe, 2000). Because eating disorder diagnostic criteria encompasses body image concerns, such negative evaluations of one's body may lead some students to engage in increasingly unhealthy and damaging behaviors.

#### *Statement of Purpose and Research Question*

Again, this study seeks to determine the overall percentage of a sample of freshmen women who score within clinically significant ranges (according to the instrument developer's clinical standards) on a measure of body shape concern. This study will explore the percentage of this same sample who scored within clinically significant ranges according to subgrouping by their initial declared college major. The intent is to identify high-risk groups of students with similar academic interests in order to better allocate university prevention and intervention resources to those groups.

One research question will drive this study: Will there be any pattern of differences according to college major in terms of percentage of women who score in the clinically significant range on a measure of attitude toward body shape? It is the hypothesis of the researcher that the percentage of women who score in the clinically significant range on the BSQ will be more notable for some college major subgroups than for others. It seems logical that a scholastic preoccupation with the appearance and functioning of the body might reflect or be

reflected by specific choices of college major and thus qualify as a notable risk factor for potential eating disorder behaviors. This study therefore seeks to discover if fields of study that emphasize the body as a tool or instrument of performance will yield a greater percentage of participants who score within clinically significant ranges on the BSQ than do fields of study that do not focus on the appearance of the body.

## Methods

The following research methods were used in this study.

### *Participants*

Participants included 1,997 women from three study samples. The BSQ and a demographic questionnaire (see Appendix 3) were administered to three random samples of women entering college at a large, private, religious university located in the intermountain West. Participants were recruited from 1,800 randomly selected female freshmen from each of the Fall 2001, 2002, and 2003 cohorts. Of the 1,800 randomly selected entering female freshmen sent measurement instruments in Fall 2001, 658 questionnaires were returned (36.5% response rate). From the 2002 cohort, 696 questionnaires were returned (38.7% response rate). In 2003, 643 female freshmen returned completed questionnaires (35.7% response rate). Participants (in all three groups combined) were 90.6% Caucasian, aged 18-24 years (mean age 18.26), and members of The Church of Jesus Christ of Latter-day Saints.

### *Procedure*

Participants completed a demographic questionnaire requesting information about the participant's age, residence, collegiate sports participation, dance team participation, and choice of college major. The listed anticipated college majors were grouped according to similar subject matter and collapsed by the researchers into 20 major categories offered by the sponsoring university (see Appendix 4).

Each participant was also asked to complete a self-report instrument designed to measure concerns about body shape.

*Instrument: Body Shape Questionnaire*

The Body Shape Questionnaire is “a self-report measure of concerns about body shape, in particular the phenomenal experience of ‘feeling fat’” (Cooper et al., 1987, p. 490). Its 34 items were derived from formal interviews, questionnaires, and demographic information gathered from samples of patients diagnosed with bulimia nervosa, anorexia nervosa, and no clinical eating disorder. Rosen, Jones, Ramirez, and Waxman (1996) reported a test-retest reliability of .88 and a concurrent validity of .77 with the Body Dysmorphic Disorder Examination among university undergraduates. Cooper et al. (1987) reported concurrent validity of the BSQ with the Body Dissatisfaction subscale of the EDI for patients with BN to be 0.66 ( $p < .001$ ). According to these researchers, the BSQ measures body image preoccupation and appears to be a relevant and practical measure of body image symptoms for persons with excessive concerns about weight or shape.

According to Cooper et al., the BSQ “is simple to fill in and can be completed in about 10 minutes” (p. 490). The Body Shape Questionnaire uses a six-point Likert scale (“never,” “rarely,” “sometimes,” “often,” “usually,” “always”) and is scored by summing the scores (1 through 6) for all items to obtain a single total score. Total scores range from 34 to 204, with higher scores indicating more dissatisfaction of the individual’s appearance. Women whose total scores on the BSQ exceed 110 are considered to have body image concerns that may be clinically significant (Cooper et al., 1987).

*Data Analysis*

Participants who completed the measures were grouped into subgroups according to their choice of college major based on the 20 previously described major categories. Scores on the BSQ were analyzed by calculating the percentage of participants in each major category group

who scored within the clinical range. BSQ scores over 110 were considered clinically significant. The mean score of each subgroup, and the median score of each subgroup were also calculated.

## Results

Participants included 1,997 total women from three study samples. Participants with incomplete BSQ information were removed from the sample, resulting in a valid sample size of 1,982 freshmen women. Descriptive statistics were calculated for the total sample to be used as a basis for comparison. Descriptive statistics were also calculated to provide information about the BSQ scores of the women as clustered into subgroups by their choice of college major. Data analyses yielded information included in Tables 1 and 2.

Table 1

*BSQ Scores of the Sample*

	<i>N</i>	<u>Sample</u>	<i>M</i>	<u>BSQ</u>		
		% in Clinical Range <sup>a</sup>		<i>SD</i>	<i>Mdn</i>	Range
Total	1982	33.8	96.23	35.74	92	18 – 201

<sup>a</sup> BSQ score >110.

The distribution of BSQ scores for the sample resembled a normal bell curve (see Appendix 5). For the purposes of this analysis and according to the questionnaire creators' specification, BSQ scores greater than 110 were considered clinically significant. As shown in Table 1, 33.8 % of the total sample scored within the clinically significant range. Those majors with percentages of participants who scored within clinical ranges that are higher than that reported for the total sample were designated as majors of heightened risk for body image concerns. According to this criterion, 11 of the 20 subgroups studied can be considered as having heightened risk for body image concerns (see Table 2).

Table 2

*BSQ Scores by College Major*

College Major	<i>n</i>	Sample	BSQ			
		% in Clinical Range <sup>a</sup>	<i>M</i>	<i>SD</i>	<i>Mdn</i>	Range
Theater	26	46.2	104.08	35.62	105.5	44 – 179
Communications	76	44.7	107.09	39.05	108	33 – 199
Psychology	86	44.2	102.06	32.87	104	36 – 166
Dance	23	43.5	105.91	37.97	95	51 – 175
Business	103	40.8	102.26	35.09	99	42 – 181
Dietetic	37	40.5	101.30	33.96	106	43 – 167
History	73	38.4	98.23	39.63	95	18 – 191
Education	205	37.1	97.17	35.14	94	36 – 190
English	101	35.6	97.19	38.85	87	36 – 196
MFHD <sup>b</sup>	37	35.1	98.16	33.42	98	41 – 168
Music	82	34.1	95.79	32.86	92.5	37 – 174
Social Science	137	33.6	97.64	35.05	95	37 – 201
Undeclared	399	32.8	95.82	34.64	91	34 – 184
Physical Education	93	32.3	97.11	40.38	90	38 – 187
Nursing	132	31.1	95.57	36.21	87	35 – 194
Math/Science	91	25.3	85.15	36.33	72	35 – 175
Language	49	24.5	89.22	32.17	86	41 – 196
Biology/Agriculture	121	23.1	90.26	31.69	88	36 – 190
Engineering/Technology	46	19.6	83.46	31.95	77	39 – 175
Art	65	29.2	92.55	38.46	84	35 – 182

<sup>a</sup> BSQ score >110. <sup>b</sup>Marriage, Family, & Human Development

As detailed in Table 2, subpopulation (college major subgroups) mean BSQ scores ranged from 83.46 to 107.09. Six of the 20 college major subgroups (Business, Communications, Dance, Dietetics, Psychology, and Theater) yielded BSQ means greater than 100, each with over 40% of their respective respondents within clinical ranges. Comparison of statistics calculated for these six majors to those of the other 14 majors showed that these high-scoring six subgroups registered highest on all statistics calculated (percentages, means, and medians), with the exception of the high median BSQ score for MFHD majors ( $Mdn = 98$ ). Because this study seeks only to discover patterns of concern, however, data analysis did not address nor seek to ascertain statistical significance of higher or lower scores. Also, it is wise to remember that the BSQ provides a measure of the *extent* of psychopathology rather than a means of case detection (Cooper, Taylor, Cooper, & Fairburn, 1987), thus individual participant responses must not be used as the sole criteria for diagnosis of eating disorders nor any other aspect of general psychopathology.

## Discussion

The results of this study suggest that the areas of Business, Communications, Dance, Dietetics, Psychology, and Theater represent six subsets of university culture where there is an above-average percentage of individuals who exhibit elevated levels of body image concern, as measured by the BSQ (see Table 2). These results represent a pattern of differences according to college major in terms of percentage of women who score in the clinically significant range on a measure of attitude toward body shape. Only in some aspects do the results support the researcher's hypothesis that fields of study that emphasize the body as a tool or instrument of performance will yield a greater percentage of participants who score within clinical ranges on the BSQ than do fields of study that do not focus on the appearance of the body.

### *Theater and Dance Majors*

Over 46% of Theater majors scored within clinical ranges on the BSQ. This number represents the highest percentage of scores over 110 on the BSQ among all of the subgroups studied. It is noteworthy that the Theater subgroup was within the top three on all statistics reported in this study. Data for the Dance major subgroup showed that 43.5% of respondents in this category scored within the clinical range. Relatively high statistics for these majors were hypothesized, due to these fields' respective emphases on the body as a tool or instrument of performance, and as reported in the literature.

While not specific to dance and theater majors alone, admittedly these subgroups are fairly exclusive and require acceptance into particular major programs in order to pursue their study beyond entry-level courses. As mentioned previously, it is possible that this exclusivity (Crandall 1988) may play a role in the higher levels of body dissatisfaction among students in these performance majors when compared to majors that are less exclusive.

According to Garner, Garfinkel, Rockert, and Olmsted (1988) in a study of eating disturbances among dancers, “the fact that certain subcultures tend to breed particular disturbances may reflect more on the deleterious nature of the environmental pressures rather than on the significance of the symptoms” (p. 174). While the Garner et al. study focused on eating disturbances, the same conclusion might logically be attributed to body image disturbance, a necessary component of eating disorders. Such negative environmental pressures common among students in theater and dance majors might include a focus on appearance of the body atypical in other fields of study, and pressure for thinness from family, peers, teammates, fellow actors, directors, instructors, audience members, and society at large. Garner et al. (1988) also asserted that while the symptoms of AN and BN are statistically common or adaptive within the cultural context of dancers—and, by extension, other stage performers—they nonetheless have serious negative health consequences for the individual and warrant attention and intervention.

#### *Communications Majors*

Analysis of the data for Communications majors yielded the highest mean and median, and the second-highest percentage of participants in clinical range of all of the majors studied. This result was anticipated and similar to the results of an eating attitudes study conducted by Gochnour (2006) using respondent scores on the EAT and this same sample. The correlation between EAT and BSQ scores has been established (Bunnell, Cooper, Hertz, & Shenker, 1992; Cooper, Taylor, Cooper, & Fairburn, 1987; Kanekoa, 2006).

The field of Communications includes print and broadcast journalism, advertising, and public relations—in short, the media. The “body as a tool or instrument of performance” aspect of some Communications majors may be an important contributor to high BSQ scores, but influences outside the self might be equally important. It is possible, then, that students interested

in pursuing studies in this field might be influenced by the sociocultural thin and attractive ideal. While the influence of the mass media is in no way limited to Communications students, it seems logical that persons interested in studying this subject, with or without the intent to pursue a career directly linked to it, might consciously or unconsciously assign a greater influence to text, images, and messages provided by the media than do students of other subjects. According to Festinger (1954), humans have an innate tendency to evaluate themselves via comparison to others. For the average individual, a comparison with highly thin and attractive media models might result in an effect similar to that found by Groesz, Levine, & Murnen (2002) that women felt worse about their bodies after exposure to the thin ideal, as opposed to other types of images. In summary, a scholastic preoccupation with a purveyor of messages emphasizing the thin ideal may lead to increased body dissatisfaction via the process of social comparison (Cattarin, Thompson, Thomas, & Williams, 2000). The results of the current study may also provide support for this issue. Regardless of previous studies, however, this study suggests that female Communications majors at the sponsoring university have an elevated percentage (44.7%) of students scoring within clinically significant ranges on the BSQ—a situation which may warrant further consideration.

### *Psychology Majors*

Unexpectedly, the results of this study indicated that the psychology subgroup had an unusually high percentage of participants who scored within concerned ranges on the BSQ. Overall, this major's mean and median statistics were also high and represent a subpopulation not initially predicted to have such elevated body image concern. Statistical analyses of these psychology majors' responses do not support the researcher's hypothesis.

One consideration regarding the relatively high percentage of clinical range scores gathered from this subgroup might be that students interested in the field of psychology, or the science of the mind and behavior, might be particularly in tune with their own evaluations of the self and might therefore answer questions about their perceptions in an atypically or decidedly concerted way. Of course, it is impossible to know if or how such unusual introspection or above-average self-reflective skills might affect BSQ scores in this study. Regardless, the fact that such a high percentage of psychology majors had BSQ scores within clinically significant ranges may have implications for the health of those students and deserves further study.

### *Business Majors*

Upon cursory consideration of the business field and its relation to body image concerns, there appear to be no elements that might trigger special interest. According to this study, however, the Business subpopulation includes 40.8% of participants scoring on the BSQ over 110. Second thoughts about this phenomenon call to mind the importance of appearance and its association with perceived potential for success or lack thereof studied by several researchers regarding the business world (Berscheid & Walster, 1974; Dion, Berscheid, & Walster, 1972; Hatfield & Sprecher, 1986; Longo & Ashmore, 1992; Snyder, Tanke, & Berscheid, 1977). Studies by these authors indicated that “attractive males and females are viewed as more sociable, friendly, competent, self-confident, popular, and more likely to succeed as well as being better adjusted than people judged to be unattractive” (Ilkka, 1995, p. 13). Obviously, these highly desirable traits attributed to attractive persons are important for achieving success in the business field. Ilkka further explained that “unlike sexism, racism, ageism, and disabilities, the legal or ethical implications of ‘beautyism’ are less likely to be examined” (p. 11). In other words, the pervasive desire for political correctness and adherence to ethical standards supported

by the business community at large is unlikely to examine discrimination or perceived discrimination based on a person's attractiveness.

While evaluations of a person's physical appearance are being made by outside observers in these studies, it is likely that messages about appearance and its importance might be internalized by individual students in the business field and thus affect their perceptions of themselves. It is logical to assume that concerns about attractiveness and body image are intuitively linked, and an emphasis on appearance in interviewing situations, employment opportunities, or advancement practices might translate into a concern about the suitability of one's own physical appearance—making the body a tool or instrument of performance necessary for success. Again, social comparison may contribute to feelings of insecurity or body dissatisfaction. While the results of the current study might slightly support the researcher's hypothesis, these possible explanations for relatively higher statistics among students with this major choice may indicate a need to redirect efforts for prevention and intervention of clinical body image concern in this field.

### *Dietetics Majors*

The study of dietetics does not necessarily have a focus on the performance on the body with relation to appearance, but it does emphasize the relationship between healthful eating habits and nutrition of the body, which affect its performance. The finding that students entering college as dietetics majors are more at-risk for eating disorders than students in other fields of study is supported by Reinstein, Kozewski, Chamberlin, and Smith-Johnson (1992). The relationship between dietetics majors and higher incidents of clinically significant range body image scores is established by the current study. It is possible that the seemingly constant bombardment of messages about the dangers of obesity (Grassi, 2001) might be internalized by

students in this field of study and result in body image concerns and possible unhealthy behaviors. Admittedly, entering freshmen have yet to be exposed to such bombardment, but an interest in the field in general may reflect a predilection for susceptibility to such messages. While there is little research in the literature to suggest that studying healthy eating habits causes or reflects negative body image, it seems logical to relate such a field of study to the effect that eating habits can cause on physical appearance and its effect on a person's self-image.

Five other college major subgroups were designated as heightened risk for ranking above average (see Table 2) in the percentage of their participants who scored within clinical ranges on the BSQ: (in rank order) History, Education, English, MFHD, and Music. Due to the numerous and multifaceted influences on body image, it is difficult to discern why these majors reported higher percentages of clinically significant range BSQ scores than did other majors. It is interesting to note, however, that the Physical Education subgroup had a mean BSQ score ( $M = 97.64$ ) only slightly higher than the mean of the total sample ( $M = 96.23$ ), with only 32.3% of Physical Education majors scoring within clinical ranges. This result contradicts the original hypothesis linking majors emphasizing the body as an instrument of performance to heightened risk for body image concerns.

Further analyses of these results do reflect an almost alarmingly high percentage of participants scoring within clinical ranges on the BSQ in nearly all majors studied. The percentage of clinically significant scores in each subgroup ranged from 19.6% (Engineering/Technology) to 46.2% (Theater) and supports claims by aforementioned researchers that body dissatisfaction is typical of females in industrialized Western nations. Indeed, in this study over one-third of the total population scored in ranges indicative of women with body image concerns that may be clinically significant. Despite the rampant prevalence of

body shape concerns among females in particular, their nearly normative commonality among certain populations does not mean that they do not warrant further examination, prevention, and treatment.

#### *Delimitations and Limitations of the Study*

At least four cautions regarding this study ought to be noted. First, the results may be generalized primarily to women who are the ages of typical high school graduates to college freshmen. Generalizability to older undergraduates or graduate students is unknown. Second, generalizability of the results of this study may be further limited by the demographics of the sample. Participants in this study were generally Caucasian, members of the same religious faith, and students at a large, conservative, religious university requiring adherence to a detailed code of conduct. This code dictates standards of dress and grooming, residential living, academic honesty, and rules governing use of non-medical substances. Samples from university campuses without such a code of conduct and religious adherence may attain different risk results. Third, although the number of participants in this sample is large, response rates were relatively low (approximately 37%). The resulting  $N$  was still large and unquestionably appropriate for a study of this kind, but the low response rate is worth noting. Fourth, self-report measures rely entirely on the understanding and honesty of the participant—a situation typical of most research on this topic and controlled for only by more systematic methods of study. The understanding of items and accuracy of participant responses to the BSQ in this study has not been established.

## Conclusion

Given the findings of this investigation and the high cost of intervention and prevention efforts to address body image concerns, the results of this study provide a list of subgroups of college freshmen women who might be most vulnerable to significant body image dissatisfaction and could thus benefit from targeted intervention. Springer, Winzelberg, Perkins, and Taylor (1999) have demonstrated that “college-based educational interventions appear to successfully improve attitudes and behaviors implicated as risk factors for the development of eating disorders” (p. 19). In addition, prevention programs for other psychopathology suggest that maximized prevention effects occur among populations at heightened risk for the problem (Short, Roosa, Sandler, & Ayers, 1995; Wolchik, West, Westover, & Sandler, 1993). According to this study, it is clear that certain subpopulations of freshmen women as identified by their college major may be at particularly high risk for clinical levels of body shape concern. Students enrolled as Theater, Communications, Psychology, Dance, Business, and Dietetics majors, as well as those in majors classified as having heightened risk, may benefit from targeted intervention and prevention efforts to address possible body image dissatisfaction.

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## Appendices

*Appendix 1: DSM-IV-TR Diagnostic Criteria of Eating Disorders**Diagnostic criteria for 307.1 Anorexia Nervosa*

- A. Refusal to maintain body weight at or above a minimally normal weight for age and height (e.g., weight loss leading to maintenance of body weight less than 85% of that expected; or failure to make expected weight gain during period of growth, leading to body weight less than 85% of 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 or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.
- D. In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles. (A woman is considered to have amenorrhea if her periods occur only following hormone, e.g., estrogen, administration.)

*Specify type:*

**Restricting Type:** during the current episode of Anorexia Nervosa, the person has not regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

**Binge-Eating/Purging Type:** during the current episode of Anorexia Nervosa, the person has regularly engaged in binge-eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas)

(American Psychiatric Association, 2000, p. 589).

*Diagnostic criteria for 307.51 Bulimia Nervosa*

- A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
  - (1) eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances
  - (2) a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)
- B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.
- C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.
- D. Self-evaluation is unduly influenced by body shape and weight.
- E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

*Specify type:*

**Purging Type:** during the current episode of Bulimia Nervosa, the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics, or enemas

**Nonpurging Type:** during the current episode of Bulimia Nervosa, the person has used other inappropriate compensatory behaviors, such as fasting or excessive exercise, but has not regularly engaged in self-induced vomiting or the misuse of laxative, diuretics, or enemas

(American Psychiatric Association, 2000, p. 594).

*307.50 Eating Disorder Not Otherwise Specified*

The Eating Disorder Not Otherwise Specified category is for disorders of eating that do not meet the criteria for any specific Eating Disorder. Examples include

1. For females, all of the criteria for Anorexia Nervosa are met except that the individual has regular menses.
2. All of the criteria for Anorexia Nervosa are met except that, despite significant weight loss, the individual's current weight is in the normal range.
3. All of the criteria for Bulimia Nervosa are met except that the binge eating and inappropriate compensatory mechanisms occur at a frequency of less than twice a week or for a duration of less than 3 months.
4. The regular use of inappropriate compensatory behavior by an individual of normal body weight after eating small amounts of food (e.g., self-induced vomiting after the consumption of two cookies).
5. Repeatedly chewing and spitting out, but not swallowing, large amounts of food.
6. Binge-eating disorder: recurrent episodes of binge eating in the absence of the regular use of inappropriate compensatory behaviors characteristic of Bulimia Nervosa.

(American Psychiatric Association, 2000, p. 594-595) .

## Appendix 2: Body Shape Questionnaire

## BODY SHAPE QUESTIONNAIRE

*Directions: We would like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and fill in the appropriate response to the right. Please answer all of the questions and fill out both sides of the questionnaire.*

		Always	Usually	Often	Sometimes	Rarely	Never
1.	Has feeling bored made you brood about your shape?	<input type="checkbox"/>					
2.	Have you been so worried about your shape that you have been feeling you ought to diet?	<input type="checkbox"/>					
3.	Have you thought that your thighs, hips, or bottom are too large for the rest of you?	<input type="checkbox"/>					
4.	Have you been afraid that you might become fat (or fatter)?	<input type="checkbox"/>					
5.	Have you worried about your flesh not being firm enough?	<input type="checkbox"/>					
6.	Has feeling full (e.g., after eating a large meal) made you feel fat?	<input type="checkbox"/>					
7.	Have you felt so bad about your shape that you have cried?	<input type="checkbox"/>					
8.	Have you avoided running because your flesh might wobble?	<input type="checkbox"/>					
9.	Has being with thin women made you feel self-conscious about your shape?	<input type="checkbox"/>					
10.	Have you worried about your thighs spreading out when sitting down?	<input type="checkbox"/>					
11.	Has eating even a small amount of food made you feel fat?	<input type="checkbox"/>					
12.	Have you noticed the shape of other women and felt that your own shape compared unfavorably?	<input type="checkbox"/>					
13.	Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)?	<input type="checkbox"/>					
14.	Has being naked, such as when taking a bath, made you feel fat?	<input type="checkbox"/>					
15.	Have you avoided wearing clothes which make you particularly aware of the shape of your body?	<input type="checkbox"/>					

TURN OVER



## Appendix 3: Demographic Questionnaire

## DEMOGRAPHIC INFORMATION

- 
1. What is your age? \_\_\_\_\_
  2. Please check one:
 

<input type="checkbox"/> African American	<input type="checkbox"/> Hispanic	<input type="checkbox"/> Native American	<input type="checkbox"/> Caucasian
<input type="checkbox"/> Asian	<input type="checkbox"/> Polynesian	<input type="checkbox"/> Other _____	
  3. Do you live  On-campus (dormitory)  Off-campus  At home
  4. Do you live with  Family  Friends  Assigned roommate  
 Alone  Husband  Other \_\_\_\_\_
  5. What is your home state? \_\_\_\_\_
  6. Who did you live with at home?  Parents  Mother only  
 Father only  Mother and step-father  Father and step-mother  
 Grandparents  Other \_\_\_\_\_
  7. What was your high school GPA? \_\_\_\_\_
  8. Do you now or have you ever participated in athletics?  Yes  No
  9. If yes to question #8, at which level do you or have you participated?
 

<input type="checkbox"/> Intramural	<input type="checkbox"/> Recreational	<input type="checkbox"/> Competition teams
<input type="checkbox"/> Inter-collegiate	<input type="checkbox"/> High school teams	
  10. In which sports do you or have you participated?
 

<input type="checkbox"/> Basketball	<input type="checkbox"/> Soccer	<input type="checkbox"/> Softball	<input type="checkbox"/> Tennis	<input type="checkbox"/> Swimming	<input type="checkbox"/> Cheer
<input type="checkbox"/> Water polo	<input type="checkbox"/> Volleyball	<input type="checkbox"/> Cross country	<input type="checkbox"/> hockey	<input type="checkbox"/> Track & field	
<input type="checkbox"/> Field hockey	<input type="checkbox"/> Badminton	<input type="checkbox"/> Golf	<input type="checkbox"/> Gymnastics	<input type="checkbox"/> Other _____	
  11. Do you now or have you ever participated in dance?  Yes  No
  12. If yes to question #11, how many years did you participate? \_\_\_\_\_
  13. What is your anticipated major? \_\_\_\_\_  
 Undecided

*Appendix 4: Demographic Questionnaire Groupings of College Majors*

Major Category	Similar Majors Included
Art	Art, Graphics, Illustration, Animation, Photography, Visual Arts, Interior Design
Biology/Agriculture	Animal Science, Pre-Vet, Vet Tech, Agronomy, Zoology, Botany, Microbiology, Biology, Horticulture, Landscape, Range Sciences, Molecular Biology, Pre-Med, Medical Teaching, Dental Neuroscience
Business	Business, Business Management, Business Marketing, Finance, Accounting, Information Systems, International Business
Communication	Communications, Print Journalism, Broadcast Journalism, Public Relations, Advertising
Dance	Dance
Dietetics	Dietetics, Nutrition, Food Science
DK/Undeclared	Don't Know, Open
Education	Elementary Education, Childhood Education, Secondary Education, Home Economics Teaching, Speech, Speech Language Pathology, Speech & Audiology
Engineering/Technology	Technology, Technology Education, Industrial Design, Chemical Engineering, Mechanical Engineering, Civil

	Engineering, Electrical Engineering, Computer Engineering, Construction Management, Facilities Management
English	English, English Teaching, Comparative Literature
History	History, History Teaching, Humanities, Family History, American Studies, Philosophy
Language	Any Language Major (Spanish, French, etc.), Linguistics
Math/Science	Math, Math Education, Statistics, Actuarial Science, Chemistry, Biochemistry Lab Science, Geology, Computer Science, Physics, Biophysics, Astronomy
Marriage, Family, & Human Development (MFHD)	Marriage, Family, & Human Development; Home & Family Life
Music	Music, Vocal Performance, Any Instrument Performance, Music/Dance/Theatre
Psychology	Psychology
Social Science	Geography, Sociology, Anthropology, Economics, Political Science, Social Science, Archeology, International Politics, Social Work, International Relations, Travel/Tourism
Theater	Theater, Media Arts, Film

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Appendix 5: Histogram of BSQ Scores of the Sample

