



Theses and Dissertations

2005-11-17

Longitudinal Course of Eating Disorder Risk Among Undergraduate Females at Brigham Young University

Erin Blue Winters

Brigham Young University - Provo

Follow this and additional works at: <https://scholarsarchive.byu.edu/etd>



Part of the [Counseling Psychology Commons](#), and the [Special Education and Teaching Commons](#)

BYU ScholarsArchive Citation

Winters, Erin Blue, "Longitudinal Course of Eating Disorder Risk Among Undergraduate Females at Brigham Young University" (2005). *Theses and Dissertations*. 700.

<https://scholarsarchive.byu.edu/etd/700>

This Thesis is brought to you for free and open access by BYU ScholarsArchive. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of BYU ScholarsArchive. For more information, please contact scholarsarchive@byu.edu, ellen_amatangelo@byu.edu.

LONGITUDINAL COURSE OF EATING DISORDER RISK AMONG
UNDERGRADUATE FEMALES AT BRIGHAM YOUNG UNIVERSITY

by

Erin B. Winters

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

December 2005

BRIGHAM YOUNG UNIVERSITY

GRADUATE COMMITTEE APPROVAL

of a thesis submitted by

Erin B. Winters

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

Date

Lane Fischer, Chair

Date

Marleen Williams

Date

Scott Richards

BRIGHAM YOUNG UNIVERSITY

As chair of the candidate's graduate committee, I have read the thesis of Erin B. Winters 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 materials 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.

Date

Lane Fischer, Chair

Accepted for the Department

Melissa Heath
Graduate Coordinator

Accepted for the College

K. Richard Young
Dean, College of Education

ABSTRACT

LONGITUDINAL COURSE OF EATING DISORDER RISK AMONG UNDERGRADUATE FEMALES AT BRIGHAM YOUNG UNIVERSITY

Erin B. Winters

Department of Counseling Psychology and Special Education

Educational Specialist

This research study examined the prevalence rates and longitudinal course of eating disorder risk among undergraduate females at BYU, and compared the identified prevalence rates at BYU with identified rates at other colleges and universities. Almost 2,000 undergraduate females, in three cohort groups, filled out the Eating Attitudes Test (EAT) once a semester for four to eight semesters. Clinical cut-off scores were used to determine what percentage of participants were at high risk for eating disordered behaviors and symptomology. Overall eating disorder risk prevalence rates at BYU ranged from 9-11%. These rates were significantly lower than identified rates at other colleges and universities. The results also showed notable decreases in the percentages of women who fell in the at-risk range as participants progressed through their college years. Freshmen women had the highest risk for disordered eating behaviors.

ACKNOWLEDGMENTS

I would like to take this opportunity to thank the many people who have helped to make the completion of this thesis possible. First, I want to thank my thesis chair, Dr. Lane Fischer, for all of his encouragement, support, and guidance. Without his prompting and assistance this would not have been completed within the allotted time frame. I want to thank my husband, Mark Winters, for his support and his never-wavering belief in my ability to write and finish my thesis. Many thanks can also be directed to Jacob Fischer for all the work he did collecting and analyzing much of the data used in this study. Finally, I would like to thank David Duncan for keeping me on-track and providing needed motivation.

Table of Contents

Abstract	iv
Acknowledgements	v
Table of Contents	vii
List of Tables	ix
List of Figures	x
Introduction	1
Statement of Problem	4
Statement of Purpose	4
Review of Literature	5
Eating Disorder Diagnostic Information	5
Costs of Eating Disorders	8
Prevalence Using <i>DSM</i> Criteria vs. Self-Report Measures.....	10
Longitudinal Eating Disorder Research	11
College Risk Factors	15
Statement of Problem	17
Statement of Purpose	18
Methods	20
Participants	20
Procedure	20
Instruments	21
Data Analysis	22

Results	24
Research Question 1	24
Research Question 2	27
Research Question 3	28
Discussion	20
References	32
Appendix (Eating Attitudes Test)	37

List of Tables

1. Number of Participants in Each Semester, by Group	22
2. Percentage of Women in At-Risk Range by Group Based on the EAT-40	25
3. Percentage of Women in At-Risk Range by Group Based on the EAT-26	26
4. Percentage of Women in At-Risk Range by Year Based on EAT-40 & EAT 26 ...	27

List of Figures

1. Longitudinal Track of Percentage of Women in At-Risk Range by Semester, Based on the EAT-4026

2. Longitudinal Track of Percentage of Women in At-Risk Range by Semester, Based on the EAT-2627

3. Percentage of Women in At-Risk Range by Year, Based on the EAT-40 and the EAT-26.....28

Introduction

College administrators, counselors, and others have long been concerned with the prevalence and high cost of eating disorders on college campuses. Numerous studies indicate prevalence rates on college and university campuses ranging from 1-20%.

Eating disorders are characterized by severe disturbances in eating behavior, and include two specific diagnoses: Anorexia Nervosa and Bulimia Nervosa. Anorexia is characterized by a significant weight loss resulting from excessive dieting. Bulimia is characterized by a cycle of binge eating followed by purging to try and rid the body of unwanted calories. Many individuals struggling with eating disorders report excessive concern about their body shape or body weight and react with extreme dieting, excessive exercising, self-induced vomiting, and/or taking purgatives or diuretics (Becker, Grinspoon, Klibanski, & Herzog, 1999; Fairburn & Garner, 1986). Individuals with Bulimia frequently report feeling a loss of control over their eating and resort to inappropriate behavior to compensate for overeating (Fairburn & Garner, 1986).

The American Psychiatric Association (APA) (1994, 2000) reports that the most common age of onset for anorexia is the mid-teens, and the onset of bulimia is usually in adolescence but may be as late as early adulthood. The APA also reports an overall eating disorder prevalence rate of 4% in adolescent and young adult females.

Eating Disorders are very costly to the individuals with the disorder, their families and friends, and to society as a whole. These costs include damage to physical health, possible death, mental anguish for the individuals with eating disorders and for those who love them, social alienation, declines in productivity, and medical and psychological treatment costs. Eating Disorders, particularly anorexia, have the highest mortality rate of

any mental illness, with mortality rates for individuals with anorexia ranging from 15-20% (Sullivan, 1995). Many of the adverse physical effects of eating disorders occur fairly quickly, but other effects do not manifest them until much later, even after an individual might have recovered from the eating disorder. These physical effects frequently result in substantial pain and high medical bills.

Research studies investigating the prevalence of eating disorders on college campuses report significantly different rates depending on how stringently the researchers use *Diagnostic and Statistical Manual of Mental Disorders (DSM)* (American Psychiatric Association [APA], 1994, 2000), more specifically the *DSM-IV* or *DSM-IV-TR* eating disorder diagnostic criteria. More stringent adherence to the diagnostic criteria generally leads to substantially lower prevalence rates than more lax adherence. Most research indicates that when strict adherence to *DSM* criteria is used, eating disorder prevalence rates among college and university female students ranges from 1-3%. When self-report questionnaires and measures, and more lax adherence to *DSM* criteria, are used in research studies, eating disorder prevalence rates among college and university females increase substantially to 14-20%. Studies using the Eating Attitudes Test (EAT) to measure eating disorder risk show prevalence rates ranging from 14.15% to 17% (Edwards-Hewitt & Gray, 1993; Kirk, Singh, & Getz, 2001; Prouty, Protinsky, & Canady, 2002).

Relatively few longitudinal studies on eating disorders have focused solely on time at college, although a number have looked at rates of eating disorders among college students compared with eating disorder rates prior to coming to college or after leaving college. These studies indicate that women are both coming to college with high levels of

eating disorder symptomology and behaviors, and may be developing additional symptoms and behaviors upon arrival at college (Pope, Hudson, Yurgelun-Todd, & Hudson, 1984; Prouty et al., 2002; Vohs, Heatherton, & Herrin, 2001). Research also suggests eating problems tend to fluctuate over the course of a couple years in college, but many women tend to improve over time with regards to eating disorder symptomology and behaviors (Drewnowski, Hopkins, & Kessler, 1988; Hesse-Biber, 1992).

While it is well accepted that multiple influences potentially contribute to the development of eating disorders, research indicates that several aspects of college life may increase the risk for the development of eating disorders among college women. College is known to be a time of transition, high stress, pressure to achieve academically and socially, and significant role and identity changes (Rosen, Jones, Ramirez, & Waxman, 1996). Some researchers suggest that the emphasis in the college environment on academic achievement, competition, and attractiveness might influence the development of disordered eating in vulnerable students (Simon-Boyd & Bieschke, 2003). Researchers have found that Caucasian, religious, achievement-oriented females are at higher risk for the development of eating disorders at college (Boskind-White & White, 1983; Prouty et al., 2002). Additional research suggests that individuals living in dorms or participating in sororities -might also be at increased risk because of social contagion, where individuals take on the attitudes and behaviors of the group in which they belong (Drewnowski et al., 1988; Edwards-Hewitt & Gray, 1993).

Statement of Problem

Brigham Young University (BYU) is a large, private institution with many of the risk factors which research has suggested might be linked to high rates of eating disorders among the female undergraduate student population. BYU has a high population of Caucasian, religious, achievement oriented female students. Most of the students who attend BYU leave home for the first time and move to a different geographical location. Students frequently live close together in a dorm or apartment style residence, increasing the risk of social contagion. It is unknown what the actual prevalence of eating disorders risk is on the campus of BYU.

While there are a number of studies examining the prevalence of eating disorders and eating disorder symptomology on college campuses, very few studies look at the longitudinal course of these eating disorders throughout the college experience. The little research that has been completed suggests that the prevalence of eating disorders declines during the course of college, but this assertion has not been well substantiated.

Statement of Purpose

The purpose of this study was three-fold. The first was to track the longitudinal course of eating disorder risk among undergraduate females at Brigham Young University as measured by the EAT. The second was to determine the prevalence of eating disorders risk at BYU. The third was to see how this prevalence compares with other published reports of eating disorder risk and prevalence among college age women. Knowing this information will help administrators and counselors know where to target prevention and intervention efforts, and hopefully help reduce the number of women who struggle with eating disorders during their college years.

Review of Literature

Eating Disorder Diagnostic Information

The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR)* (APA, 2000) specifies that eating disorders are characterized by severe disturbances in eating behavior. There are two specific eating disorder diagnoses: Anorexia Nervosa and Bulimia Nervosa. Individuals might also be diagnosed with an Eating Disorder - Not Otherwise Specified (NOS) if they do not meet criteria for a specific eating disorder.

According to the *DSM-IV-TR*, in order to be diagnosed with Anorexia Nervosa an individual must meet all of the following diagnostic criteria:

1. 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).
2. Intense fear of gaining weight or becoming fat, even though underweight.
3. 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.
4. In postmenarcheal females, amenorrhea, i.e., the absence of at least three consecutive menstrual cycles.

Two subtypes of anorexia are identified: *restricting type*, where individuals do not engage in binge eating or purging behaviors, and *binge-eating/purging type*, where

binging plus the inappropriate use of laxatives, vomiting, and other purging methods are used.

To receive a *DSM-IV-TR* diagnosis of Bulimia Nervosa an individual must meet all of the following diagnostic criteria:

1. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following: 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, and, 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).
2. 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.
3. The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.
4. Self-evaluation is unduly influenced by body shape and weight.
5. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

The two subtypes of bulimia are identified as: *purging type*, where self-induced vomiting, or the misuse of laxatives, diuretics, or enemas are used, and the *nonpurging type*, where behaviors such as excessive exercise or fasting are utilized instead of the purging behaviors in an effort to prevent weight gain.

Examples of Eating Disorder, NOS, 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 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.

Substantial research suggests that the onset of eating disorder symptoms usually occurs during adolescence, and peaks from ages 15-19 (Reijonen, Pratt, Patel & Greydanus, 2003). Typically, younger adolescents are more likely to present with symptoms of Anorexia Nervosa, while older adolescents (ages 17-21) are more likely to present with symptoms of Bulimia Nervosa. The American Psychiatric Association (1994, 2000) reports that the most common age of onset for anorexia is the mid-teens, and the onset of bulimia is usually in adolescence but may be as late as early adulthood. Lewinson, Striegel-Moore, and Seeley (2000) found a significant decrease in first incidence of Anorexia from ages 0-18 through 19-23 (1.3% vs. 0.1%), but relatively little change for first incidence of Bulimia (1.5% vs. 1.3%).

Costs of Eating Disorders

Eating Disorders are very costly to the individuals with the disorder, their families and friends, and to society as a whole. These costs include damage to physical health, possible death, mental anguish for the individuals with eating disorders and for those who love them, social alienation, declines in productivity, and medical and psychological treatment costs.

Eating Disorders, particularly anorexia, have the highest mortality rate of any mental illness. Various studies suggest mortality rates for individuals with anorexia ranging from 15-20%. Sullivan (1995) examined over 42 studies of mortality rates among females with anorexia and found a death rate of approximately 0.56% per year among anorexics. This rate is more than 12 times higher than the annual death rate due to all causes for females (15-24) in the general population. Sullivan also found that the suicide rate among anorexics is 200 times greater than the suicide rate in the general population. Individuals with Anorexia have a higher risk of mortality than individuals with Bulimia.

Other harmful physical effects of eating disorders include emaciation, anemia, cardiac complications, seizures, dental decay, amenorrhea, chronic constipation, infertility, bone loss, and osteoporosis (Beaumont, Garner, & Touyz, 1994; Becker et al., 1999; Reijonen et al., 2003). Many of the adverse physical effects of eating disorders occur fairly immediately (i.e. constipation or anemia), but many effects do not manifest themselves until many years later (i.e. osteoporosis), even after individuals may have overcome their eating disorder. The total medical bills over time related to damage done from eating disorders can be substantial. Of course, individuals suffering from these

secondary physical effects of eating disorders endure tremendous pain and occasional incapacitation.

In addition to adverse physical effects, those with eating disorders frequently suffer emotionally and socially. Often, individuals with eating disorders become so preoccupied and focused on weight loss that they become alienated from family and friends and exclude all other activities not related to their weight loss goals (Beaumont et al., 1994). Other research suggests additional behavioral effects of eating disorders such as: difficulty eating in social settings, social withdrawal, absence from school or work, deceptive or secretive behavior, or stealing (Becker et al., 1999). As might be expected, many individuals with eating disorders also have high levels of depression and anxiety (Fairburn & Garner, 1986; Lewinson et al., 2000).

Friends and family members of individuals with eating disorders also suffer ill effects. Many family members and friends report high levels of anxiety and distress with regards to their loved one's eating disorder. They frequently indicate a sense of helplessness and are not sure how to react to the eating disorder or the resulting alienation and social withdrawal exhibited by their loved one.

Besides concern about the welfare of their students, college and university administrators might also be concerned about a decline in academic productivity among individuals suffering from eating disorders. Kashubeck, Walsh, & Crowl (1994) found that as eating disorder symptomology increased, grade point average decreased. Additionally, students struggling with eating disorders are more likely to miss class (Becker et al., 1999).

Prevalence Using DSM Criteria vs. Self-Report Measures

Research studies investigating the prevalence of eating disorders on college campuses report significantly different rates depending on how stringently the researchers use *DSM-III* or *DSM-IV* eating disorder diagnostic criteria. More stringent adherence to the diagnostic criteria generally leads to substantially lower prevalence rates than more lax adherence. Fairburn, Phil, and Beglin (1990) examined sixteen studies that determined eating disorder, specifically bulimia, classification using self-report questionnaires compared with *DSM-III-R* criteria. These researchers determined that the mean prevalence of bulimia across the self-report measures was almost 10%. The mean prevalence of bulimia using more strict *DSM-III* criteria was 2.6%. When a clinical interview was used along with the *DSM-III-R* criteria, the prevalence dropped to 1.5%. It is important to note that not all of the studies they examined used college or university women.

Most research indicates that when strict adherence to *DSM* criteria is used, eating disorder prevalence rates among college and university female students ranges from 1-3%. In 1988, Drewnowski et al. conducted a prevalence study of bulimia on United States college and university campuses. They contacted 1,007 college students, both graduates and undergraduates, at a representative sample of 53 different colleges and universities. Using stringent *DSM-III-R* diagnostic criteria for diagnosing bulimia, they found an overall prevalence of 1% among women. Mintz and Betz (1988) also used more stringent *DSM-III-R* criteria to determine prevalence of bulimia among Ohio State undergraduates. Their research found approximately 3% of students who met the criteria for inclusion in the eating disorders group.

When self-report questionnaires and measures, and more lax adherence to *DSM* criteria, are used in research studies, eating disorder prevalence rates among college and university females increase substantially to 14-20%. Pope et al. (1984) used self-report questionnaires and *DSM-III* criteria to determine eating disorder prevalence at two colleges. Their research resulted in an eating disorder prevalence rate of 16.7% at college A and 19.6% at college B.

In 1993, Edwards-Hewitt and Gray conducted an eating disorders prevalence study at three colleges using the *DSM-III-R* diagnostic criteria along with numerous self-report questionnaires including the EAT-40. They found an overall prevalence of 14.15% for bulimia and 0.63% for anorexia. In 2003, Simon-Boyd & Bieschke surveyed a sample of freshmen women at a large mid-Atlantic university using self-report measures and found a disordered eating prevalence of 15%. Kirk et al., (2001) conducted a similar study using the EAT-26 and found a prevalence rate of 15.2% among female college students. Prouty et al. (2002) used the EAT-26 at a large mid-Atlantic university to determine eating disorder prevalence among college undergraduate and graduate students. They found an overall eating disorder prevalence rate of 17%.

Longitudinal Eating Disorder Research

Relatively few longitudinal studies on eating disorders have focused solely on time at college, *although* a number have looked at rates of eating disorders among college students compared with eating disorder rates prior to coming to college or after leaving college.

A study by Vohs et al. (2001) examined what happens to the rates of disordered eating when high school students transition to college. In this longitudinal study, they

first surveyed female students in the spring of their senior year in High School to determine rates of disordered eating and student's satisfaction with their bodies. They again surveyed the same students during their freshman year of college. The researchers found that transition to college did not significantly change eating patterns or rates of eating disorders, and concluded that disordered eating symptoms and attitudes are established before college. They did, however, find that more women in college categorized themselves as overweight and reported greater body dissatisfaction.

Another research study provides some contradicting data. In their 1984 research study, Pope et al. found eating disorder prevalence rates ranging from 16.7% - 19.6% at two colleges, but a prevalence rate of only 10.3% at a high school. This indicates that eating disorder prevalence might be higher among college populations than high school populations. Costello (1999) conducted a longitudinal study measuring eating disordered attitudes and behaviors among college women over the course of their first three years in college. She also found that levels of disordered eating decreased from the first to the third year of college. When considering all three research studies, it appears that women have the highest levels of eating pathology when they first arrive at college, although it is difficult to determine whether they come in with high levels or rapidly develop symptomology upon entering the college environment. As one group of researchers summarized, "it may be that late adolescent women are both bringing disordered eating with them from home and high school, and are developing disordered eating at college" (Prouty et al., 2002, p. 4).

Hesse-Biber (1992) interviewed students during their sophomore year of college and two years later during their senior year of college. Using *DSM-III* eating disorder

criteria and the EAT-26, she found that at Time 1 (sophomore year) 18.6% of students had scores in the “abnormal” or “at-risk” for an eating disorder range on the EAT. At Time 2 (senior year), 11.4% had scores in the at-risk range. The percent of new cases of eating disorders during the two-year period was 2.9%. The percent of individuals who fell in the at-risk range at Time 1 who did not fall in the at-risk range at Time 2 was 10.1%. More than 78% of students stayed in the “normal” range during the two-year period. Slightly more than 8% remained in the at-risk category. This research suggests that eating problems tend to fluctuate over the course of college. It also suggests that many women tend to improve with regards to eating disorder symptomology and behaviors, but many women show consistent patterns of disordered eating.

Lewinson et al. (2000) sampled females during adolescence, a year later, and at age 24. They found the incidence of eating disorders dropped as participants got older. The rates of eating disorders were less than 2.8% by age 18 and 1.3% for ages 19-23. Kirk et al., (2001) also found evidence suggesting that younger college women may be at higher risk for eating disorders than are older college women.

Heatherton, Mahamedi, Striepe, Field, and Keel (1997) conducted a longitudinal study that compared body dissatisfaction, eating disorder symptoms, and dieting rates from a sample of college students in 1982, and then the same group participants ten years later. They found that participants reported significantly lower amounts of body dissatisfaction, chronic dieting, and eating disorder symptoms ten years after leaving college. In fact, rates of eating disorders dropped by more than half. This research suggests that disordered eating may peak in college. Despite the evidence that disordered eating rates drop substantially, the researchers also found that more than 1/5 women who

met the clinical criteria for eating disorders in 1982 also met the clinical criteria for eating disorders in 1992.

A research study by Striegel-Moore, Silberstein, Frensch, and Rodin (1989) assessed the prevalence of bulimia among college women at the beginning of their freshmen year of college and again at the end of their freshmen year. They found that the overall rate of bulimia, 3.8%, was relatively unchanged between the two sampling periods. However, although the overall rate of bulimia did not change, many students showed a worsening of disordered eating or an onset of disordered eating during the course of their freshmen year. Students also reported decreased ratings of their attractiveness, high levels perceived stress, increased weight dissatisfaction, and an increased sense of ineffectiveness. One in four students indicated that they put themselves on a diet for the first time during their freshmen year and 15% reported binge eating for the first time.

Dieting behaviors are strongly linked with eating disorders. In fact, Patton, Selzer, Coffey, Carlin, and Wolfe (1999) assert that dieting is the most important predictor of new eating disorders. These researchers found that female subjects who dieted at a severe level were 18 times more likely to develop an eating disorder than those who did not diet. In addition, female subjects who dieted at a moderate level were 5 times more likely to develop an eating disorder. Drewnowski et al. (1988) found that the prevalence of dieting at any one time among college women was highest among freshman (25%), then sophomores (23.6%), then juniors (22.2%), then seniors (18.9%), and lowest among graduate students (13.8%).

In a 1988 research study, Mintz & Betz found a relatively low eating disorder prevalence rate among college women, but also found that 64% of students fell midway between normal and bulimic, suggesting high rates of disordered eating and sub threshold eating disorders. To further substantiate this hypothesis, the researchers found that 82% of the respondents reported one or more dieting behaviors daily, 33% reported more serious forms of weight control such as use of laxatives or vomiting, and 38% reported problems with bingeing.

College Risk Factors

While it is well accepted that multiple influences potentially contribute to the development of eating disorders, research indicates that several aspects of college life may increase the risk for the development of eating disorders among college women. College is known to be a time of transition, high stress, pressure to achieve academically and socially, and significant role and identity changes (Rosen et al, 1996). Many students leave home for the first time, often moving to a different geographical location, and experience a loss of proximal support and social identity (Vohs et al., 2001). Some researchers suggest that the emphasis in the college environment on academic achievement, competition, and attractiveness might influence the development of disordered eating in vulnerable students (Simon-Boyd & Bieschke, 2003). Vohs et al. (2001) hypothesize that, “since stress and eating disorder symptoms are positively correlated, and since the onset of dieting and disordered eating has been linked to difficulties coping with intense emotions, it may be that the transition to college is a critical period for the exacerbation of disordered eating in vulnerable individuals” (p. 282).

In a study of female college freshmen, Simon-Boyd & Bieschke (2003) found that personal-emotional adjustment to college was significantly correlated to disordered eating. More specifically, they found that higher personal-emotional adjustment scores were significantly related to less severely disordered eating. Research conducted by VanLone (2002) substantiates this point, indicating that poor personal and emotional adjustment during the first year of college is significantly related to disordered eating and behaviors.

In 1991, Hesse-Biber and Marino reported on a longitudinal study in which they tracked students from their senior year of high school through their senior year of college. They sampled students three times, first during their senior year of high school, next during their sophomore year of college, and finally during their senior year of college. The researchers used the EAT and measures of self-concept and found a connection between self-concept and eating problems. More specifically, they ascertained that students who either remained in the eating disorder category over the course of the study or who entered the eating disorder category showed decreasing self-concept scores. They also 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” (p. 212). During the time period between the senior year of high school and the sophomore year of college, students showed the most significant relationship between self-concept and eating problems; women who had more severe eating problems also demonstrated a more negative sense of self.

Prouty et al. (2002) sampled over 1,000 female university students and found that age and religion were significantly related to eating disorder symptomology and risk.

Women who scored in the at-risk range on a self-report measure of eating disorder symptomology and behaviors were more likely to be aged 18-21 than those who did not fall in the at-risk range. This suggests that as students aged, their levels of eating disorder risk decreased. The researchers also found that students who fell in the eating disorder category were more likely to be white, in a sorority, and Christian than those who did not fall in the eating disorder category. Boskind-White and White (1983) assert that, "Middle-class adolescents and women in their twenties with a strong orientation toward academic achievement and a traditional lifestyle, including marriage, are most vulnerable."

Some research suggests that upon reaching college young women "pick-up" behaviors that lead to eating disorders. This is called social-contagion, where individuals take on the attitudes and behaviors of the group in which they belong. VanLone (2002) reports that college women frequently developed eating attitudes and behaviors similar to those of their close friends. Edwards-Hewitt and Gray (1993) also found that knowing friends with eating disorders was positively related to disordered eating. Some research suggests that bulimia is most prevalent among undergraduates living in group housing on-campus (Drewnowski et al., 1988).

Statement of Problem

Brigham Young University (BYU) is a large, private institution located in Provo, Utah. Approximately 30,000 students are enrolled full-time, with gender statistics showing 51% male and 49% female. Students come from all 50 states, the District of Columbia, and more than 120 countries. Nine percent of the student body is considered multi-cultural, while 91% are considered Caucasian. Ninety-eight percent of the students

are members of The Church of Jesus Christ of Latter-Day Saints. Approximately 22% of the female students are married. Students entering BYU as freshman have an average ACT score of 27 and an average high school grade point average of 3.71, on a 4.0 scale.

Based on the research regarding college risk factors and their relation to the development and maintenance of eating disorders among college women, one might expect students at BYU to have a fairly high prevalence of eating disorders among the female undergraduate population. BYU has a high population of Caucasian, religious, achievement oriented female students. Most of the students who attend BYU leave home for the first time and move to a different geographical location. Students frequently live close together in a dorm or apartment style residence, increasing the risk of social contagion. Although it is clear that BYU has numerous factors linked with high rates of eating disorders, it is unknown what the actual prevalence of eating disorder risk is, on the campus of BYU.

While there are a number of studies examining the prevalence of eating disorders and eating disorder symptomology on college campuses, very few studies look at the longitudinal course of these eating disorders throughout the college experience. The little research that has been completed suggests that the prevalence of eating disorders declines during the course of college, but this assertion has not been well substantiated.

Statement of Purpose

The purpose of this study was three-fold. The first was to track the longitudinal course of eating disorder risk among undergraduate females at Brigham Young University as measured by the EAT. The second was to determine the prevalence of eating disorders risk at BYU. The third was to see how this prevalence compares with

other published reports of eating disorder risk and prevalence among college age women. Knowing this information will help administrators and counselors know where to target prevention and intervention efforts, and hopefully help reduce the number of women who struggle with eating disorders during their college years.

Methods

Participants

Participants included 1,997 female college students at a large, private university located in Provo, Utah. Participants consisted of three different groups. The first group, with 658 participants, was taken from a random sample of all incoming freshmen women during the fall semester of 2001. The second group, with 696 participants, was from a random sample of all freshmen women during the fall semester of 2002. The final group, with 643 participants, was from a random sample of all incoming freshmen women during the fall semester of 2003. Participants in the sample were predominantly Caucasian and members of The Church of Jesus Christ of Latter-Day Saints. Through the course of this longitudinal study, most of the subjects ranged in age from 18-24.

Procedure

Beginning in Fall 2001, 1,800 female freshmen students at BYU were randomly selected and sent the Eating Attitudes Test (EAT-40), the Body Shape Questionnaire (BSQ), and a demographics questionnaire. Each subject was given a unique identification number so cases could be tracked. The initial response rate was 37%. Those who returned their surveys were sent the EAT and the BSQ again during the winter semester of their freshman year. In Fall 2002, during these student's sophomore year, they were again sent the EAT and BSQ. This pattern of receiving the EAT and BSQ twice during every academic year, continued until their senior year. In Fall 2002, a new group of 1800 female freshmen students at BYU were randomly selected and sent the EAT-40, BSQ, and a demographics questionnaire. These participants received the questionnaires twice a year until their junior year of college. In Fall 2003 a new group of 1,800 freshmen were

again randomly selected and sent questionnaires. The Fall 2003 group received the surveys twice a year through their sophomore year. 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). For the most part, only those students who had returned their surveys the previous semester were sent out a new survey the next semester. This resulted in rapidly decreasing response rates (see Table 1).

Table 1

Number of Participants in Each Semester, by Group

Group	<u>Freshman</u>		<u>Sophomore</u>		<u>Junior</u>		<u>Senior</u>	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
2001	658	487	342	272	185	162	102	102
2002	696	499	269	256	186	194		
2003	572	321	199	241				

Instruments

The Eating Attitudes Test (EAT) was originally designed in 1979 to be used as a screening tool for anorexia. The self-report questionnaire consists of 40 questions that are answered on a 6-point Likert scale ranging from “Never” to “Always.” Only the three most extreme scores are assigned a point value from 1 to 3. Total scores on the EAT-40 can range from 0 to 120. A total score of 30 or above is considered “at-risk” for eating disorder behaviors and symptomology. The questionnaire has a validity coefficient of .87

and an internal consistency coefficient of .79 for anorexic patients and .94 for control subjects (Garner & Garfinkel, 1979). In 1982, Garner, Olmsted, Bohr, and Garfinkel, proposed an abbreviated version of the EAT-40, consisting of only 26 questions and called this survey the EAT-26. The EAT-26 is highly correlated with the EAT-40 ($r = 0.98$). Scoring for the EAT-26 is the same as for the EAT-40, except total scores can range from 0 to 78 and a total score of 20 or above is considered “at-risk” for eating disorder behaviors and symptomology.

The EAT is one of the most widely used self-report measures of eating disorders. Although originally designed to screen for anorexia, it is currently used as a more general screening tool to identify or predict likely cases of all types of eating disorders (Wood, Waller, Miller, & Slade, 1992). In a research study conducted in 2000, Mintz and O’Halloran sought to validate the EAT with *DSM-IV* eating disorder criteria. They conducted clinical interviews with university students to determine if students met *DSM-IV* criteria for eating disorders. After establishing a control group and an eating disorders group, subjects were administered the EAT. The EAT had an accuracy rating of at least 90% when used to differentially diagnose those with and those without an eating disorder. The researchers concluded that the EAT appeared to measure the likelihood of having any *DSM-IV* defined eating disorder and was suitable as a general screening measure with nonclinical samples.

Data Analysis

The data collected from this research study was analyzed according to the specific research questions. The first research question, what is the longitudinal course of eating disorder risk among undergraduate females at Brigham Young University as measured by

the EAT, was answered using descriptive statistics. Descriptive statistics were used to determine the percentage of women in each cohort, across each semester, whose scores fell in the clinical range on the EAT-40 and the EAT-26. Clinical range is considered to be a score greater than or equal to 30 on the EAT-40 and a score greater than or equal to 20 on the EAT-26.

The second research question, what is the prevalence of eating disorder risk at BYU, was also answered using descriptive statistics. Descriptive statistics were used to determine the percentage of women on BYU campus, across all cohort groups combined, who fell in the clinical range.

The third and final research question, how does the eating disorder risk prevalence at BYU compare with other published reports of eating disorder risk and prevalence among college age women, was answered using chi-squared goodness-of-fit tests. Using chi-squared goodness-of-fit tests we compared our observed percentage with an expected percentage based on previous studies that have also used the EAT-40 or the EAT-26. Studies using the Eating Attitudes Test (EAT) to measure eating disorder risk show prevalence rates ranging from 14.15% to 17% (Edwards-Hewitt & Gray, 1993; Kirk et al., 2001; Prouty et al., 2002). For the purpose of this study, a prevalence rate of 15% was used as the expected percentage because this appears to be a reasonable, albeit conservative, estimate based on previous studies.

Results

Research Question 1

What is the longitudinal course of eating disorder risk among undergraduate females at BYU as measured by the EAT? Descriptive statistics were generated to determine the percentage of women in each cohort, across each semester, whose scores fall in the clinical range on the EAT-40 and the EAT-26. Table 2 and Figure 1 show the results based on the EAT-40. Table 3 and Figure 2 show the results based on the EAT-26. Table 4 and Figure 3 show the percentage of women in each year who fall in the at-risk range when cohort groups are combined. Significant decreases were observed in the percentages of women who fell in the at-risk range as participants progressed through their college years. Freshmen women appear to be at the highest risk for disordered eating behaviors. However, the percentage of women at-risk seems to stabilize during the junior and senior years.

Table 2

Percentage of Women in At-Risk Range by Group Based on the EAT-40

Group	<u>Freshman</u>		<u>Sophomore</u>		<u>Junior</u>		<u>Senior</u>	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
2001	14.6	12.3	9.6	12.1	6.5	4.9	7.0	8.1
2002	10.9	11.4	8.9	8.6	8.6	5.3		
2003	11.9	12.8	12.4	12.6				

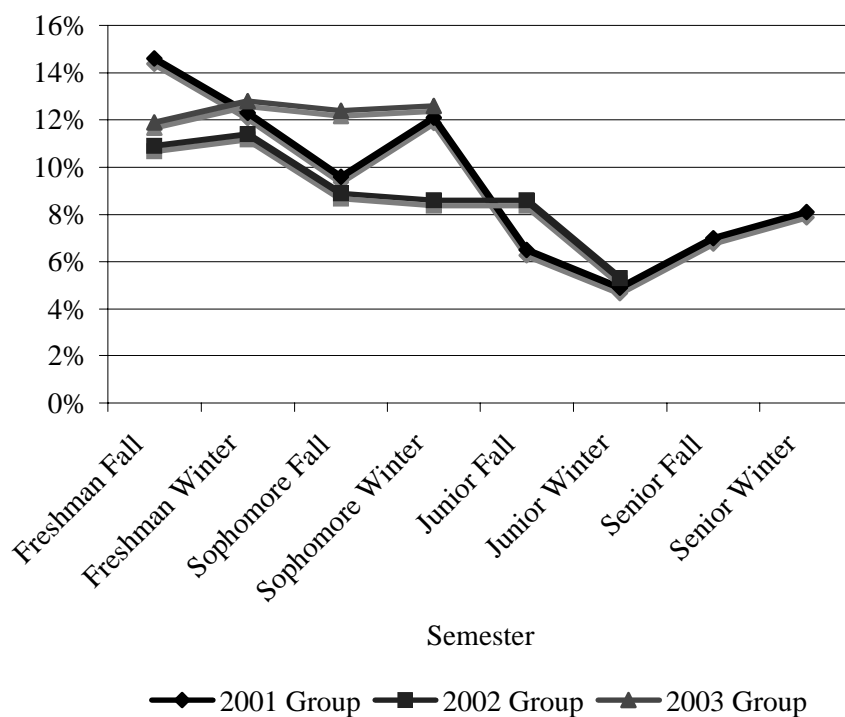


Figure 1. Longitudinal track of percentage of women in at-risk range by semester based on the EAT-40.

Table 3

Percentage of Women in At-Risk Range by Group Based on the EAT-26

Group	<u>Freshman</u>		<u>Sophomore</u>		<u>Junior</u>		<u>Senior</u>	
	Fall	Winter	Fall	Winter	Fall	Winter	Fall	Winter
2001	14.0	12.5	10.3	12.8	6.9	3.9	7.8	7.8
2002	12.7	11.3	9.3	8.4	8.1	5.2		
2003	11.3	10.8	10.1	13.7				

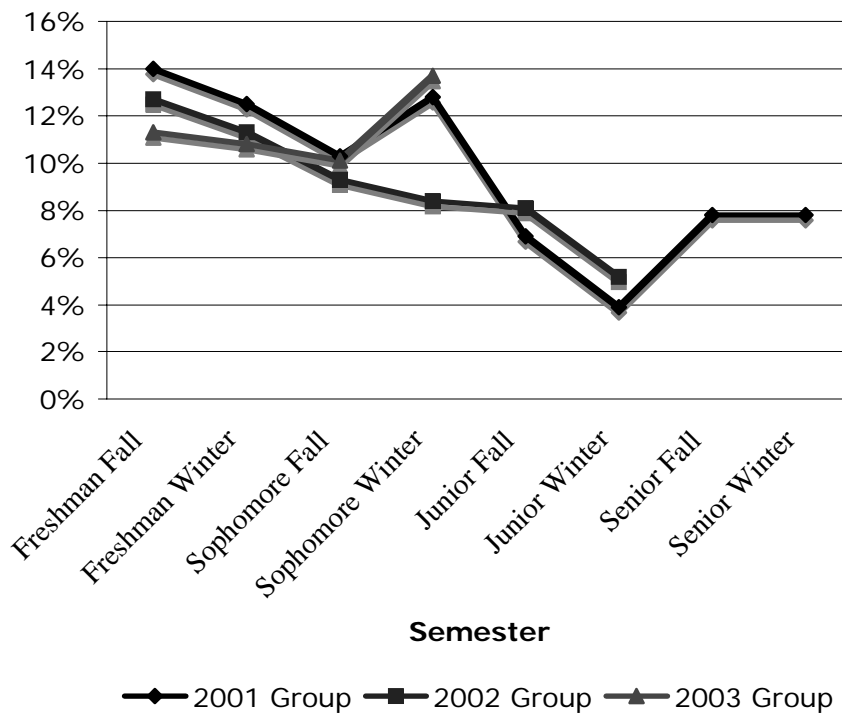


Figure 2. Longitudinal track of percentage of women in at-risk range by semester based on the EAT-26.

Table 4

Percentage of Women in At-Risk Range by Year Based on EAT-40 and EAT-26

Year	EAT-40	EAT-26
Freshmen	12.32	12.10
Sophomore	10.70	10.77
Junior	6.33	6.03
Senior	7.55	7.80

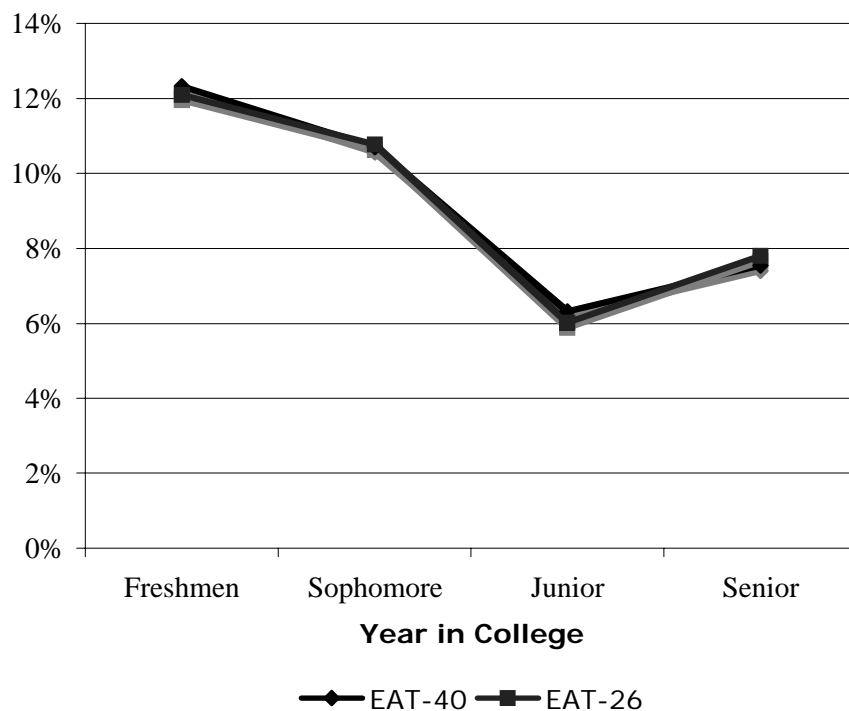


Figure 3. Percentage of women in at-risk range by year based on the EAT-40 and EAT-26.

Research Question 2

What is the prevalence of eating disorders risk at BYU? Descriptive statistics were used to estimate the percentage of undergraduate women on BYU campus, who, at any given time, might fall in the clinical range on the EAT. There were two different ways this statistic was generated. The first technique consisted of looking at the total number of questionnaires filled out compared with the total number of questionnaires identified as “clinical” across all cohort groups. This resulted in overall prevalence rates of 10.9% on the EAT-40, and 10.8% on the EAT-26. It is important to note that these statistics have an over-representation of freshmen and sophomore participants, which groups we know have higher rates of eating disorder risk. Thus, the prevalence rates might be a high estimate of the actual eating disorder risk prevalence at BYU.

The second technique seeks to control for the over-representation of freshmen and sophomore participants by averaging the percentage of women who fall in the at-risk range by year (see Table 4). In this way of estimating, each year, regardless of the actual number of participants, is only counted once. This resulted in overall prevalence rates of 9.23% on the EAT-40, and 9.18% on the EAT-26.

Research Question 3

How does the eating disorder risk prevalence at BYU compare with other published reports of eating disorder risk and prevalence among college age women?

Using chi-squared goodness-of-fit tests, the identified prevalence rates of eating disorder risk at BYU were compared to an expected prevalence rate of 15% based on previous studies conducted at other colleges and universities. All four estimates of overall prevalence rates at BYU were significantly lower than the expected prevalence rate of 15%. More specifically, when a prevalence rate of 10.9% (EAT-40) was used, chi-squared goodness-of-fit tests results showed $\chi^2(1) = 73.50, p < .001$. When a prevalence rate of 10.8% (EAT-26) was used, chi-squared goodness-of-fit resulted in $\chi^2(1) = 75.99, p < .001$. When a prevalence rate of 9.23% (EAT-40) was used, chi-squared goodness-of-fit resulted in $\chi^2(1) = 149.76, p < .001$. Finally, When a prevalence rate of 9.18% (EAT-26) was used, chi-squared goodness-of-fit tests resulted in $\chi^2(1) = 146.63, p < .001$.

DISCUSSION

The data clearly indicate that eating disorder risk prevalence decreases during the college years. Freshmen have the highest rates of risk, while juniors and seniors have the lowest risk prevalence rates. This is consistent with findings from other studies such as Costello (1999), Drenowski, Hopkins, and Kessler (1988), and Hesse-Biber (1992). These researchers also concluded that levels of disordered eating and eating disorder symptomology decrease as students progress through college. Although the incidence of eating disorder risk decreases, it is not clear what causes this decrease. Perhaps there is a natural course of eating disorders and prevalence rates tend to decrease over time regardless of intervention or prevention efforts. It might also be that as students adjust to college and establish new social identities and support systems, they are less vulnerable to the development or maintenance of disordered eating. Finally, students with high rates of eating disorder risk might drop out of college or seek treatment, both of which would lead to lower rates of eating disorder risk prevalence among upperclassmen.

It is interesting to note that although the longitudinal data show notable decreases in eating disorder risk prevalence rates from freshman to junior years, the risk prevalence rates appear to stabilize between the junior and senior years. This could be because risk prevalence rates reach a point where students who are likely to improve already have, and those who maintain high risk rates are likely to stay high. Heatherton et al. (1997) found that more than one out of five women who met the clinical criteria for eating disorders in 1982 when they were in college also met the clinical criteria for eating disorders ten years later. Hesse-Biber (1992) also found that many college women show consistent patterns of disordered eating over time.

Colleges frequently have limited resources in terms of addressing concerns such as eating disorders among female students. The implications of these data are that intervention and prevention efforts would be best utilized if focused during the freshmen and sophomore years. These are the times when risk rates are the highest and the most at-risk students could be reached through focused efforts.

This research also indicates that eating disorder prevalence rates were significantly lower at BYU than at other colleges and universities, despite the fact that BYU appears to have a number of factors that might suggest high rates of eating disorder risk. Prevalence rates of eating disorder risk based on the EAT among undergraduate females at BYU appears to range from 9-11%. Other research studies using the EAT to measure eating disorder risk at colleges and universities show prevalence rates ranging from 14.15% to 17% (Edwards-Hewitt & Gray, 1993; Kirk et al., 2001; Prouty et al., 2002). Again, it is unclear as to why BYU has such significantly lower risk rates. Additional research is needed to further explore this result. Some factors that might influence eating disorder risk prevalence at BYU include the fact that BYU is a private school, has a dress and honor code, and students are primarily members of The Church of Jesus Christ of Latter-day Saints and tend to be very active participants in their religion.

The major strengths of this study are that it focuses strictly on college students, the data was collected every semester, and it uses a staggered baseline design. This provides a more complete picture of changes that occur over the course of college in terms of eating disorder risk, and helps control for cohort effects. It also provides important information on where to most effectively focus prevention and intervention

efforts on college campuses in order to help decrease the potential costs of eating disorders.

The major weakness of this study is the large attrition of participants. This might limit the interpretation of results. In comparison with other prevalence studies noted earlier, the response rate for this study is somewhat lower. For example, Vohs et al. (2001) records a 93% initial response rate. Prouty et al. (2002) had a 54.2% response rate. Edwards-Hewitt and Gray (1993) recruited subjects from psychology classes, and thus did not have a random sampling of students. Simon-Boyd and Bieschke (2003) also recruited subjects from classes and therapy clinics.

References

- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.
- Beaumont, P., Garner, D. M., & Touyz, S. (1994). Diagnoses of eating or dieting disorders: What may we learn from past mistakes? *International Journal of Eating Disorders*, *16*, 349-362.
- Becker, A. E., Grinspoon, S. K., & Herzog, D. B. (1999). Eating Disorders. *The New England Journal of Medicine*, *340*, 1092-1098.
- Boskind-White, M., & White, W. C. (1983). *Bulimarexia: The binge purge cycle*. New York: Norton.
- Cooper, P., Taylor, M., Cooper, Z., & Fairburn, C. (1987). The development and validation of the Body Shape Questionnaire. *International Journal of Eating Disorders*, *6*, 485-495.
- Costello, K. (1999). *Eating disordered attitudes and behaviors among college women: A three paneled longitudinal study*. Dissertation, Miami University. Oxford, Ohio.
- Drewnowski, A., Hopkins, S. A., & Kessler, R. C. (1988). The prevalence of bulimia nervosa in the US college student population. *American Journal of Public Health*, *78*, 1322-1325.
- Edwards-Hewitt, T., & Gray, J. J. (1993). The prevalence of disordered eating attitudes and behaviors in Black-American and White-American college women: Ethnic, regional, class, and media differences. *Eating Disorders Review*, *1*, 41-54.

- Fairburn, C. G., Phil, M., & Beglin, S. J. (1990). Studies of the epidemiology of Bulimia Nervosa. *American Journal of Psychiatry*, *147*, 401-408.
- Fairburn, C. G., & Garner, D. M. (1986). The diagnosis of Bulimia Nervosa. *International Journal of Eating Disorders*, *5*, 403-410.
- Garner, D. M., & Garfinkel, P. E. (1979). The eating attitudes test: An index of the symptoms of anorexia nervosa. *Psychological Medicine*, *9*, 273-279.
- Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine*, *12*, 871-878.
- Heatherton, T. F., Mahamedi, F., Striipe, M., Field, A., & Keel, P. (1997). A 10-year longitudinal study of body weight, dieting, and eating disorder symptoms. *Journal of Abnormal Psychology*, *106*, 117-125.
- Hesse-Biber, S. (1992). Report on a panel longitudinal study of college women's eating patterns and eating disorders; noncontinuum versus continuum. *Health Care for Women International*, *13*, 375-391.
- Hesse-Biber, S., & Marino, M. (1991). From high school to college: Changes in women's self-concept and its relationship to eating problems. *Journal of Psychology*, *125*, 199-216.
- Kashubeck, S., Walsh, B., & Crowl, A. (1994). College atmosphere and eating disorders. *Journal of Counseling and Development*, *72*, 640-645.
- Kirk, G., Singh, K., & Getz, H. (2001). Risk of eating disorders among female college athletes. *Journal of College Counseling*, *4*, 122-132.

- Kotler, L, Cohen, P., Davies, M., Pine, D., & Walsh, B. T. (2001). Longitudinal relationship between childhood, adolescent, and adult eating disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 1434-1440.
- Lewinson, P. M., Striegel-Moore, R., & Seeley, J. R. (2000). Epidemiology and natural course of eating disorders in young women from adolescence to young adulthood. *Journal of the American Academy of Child Adolescent Psychiatry, 39*, 1284-1292.
- Meyer, D., & Russell, R. (1998). Caretaking, separation from parents, and the development of eating disorders. *Journal of Counseling and Development, 76*, 166-174.
- Mintz, L. B., & Betz, N. E. (1988). Prevalence and correlates of eating disordered behaviors among undergraduate women. *Journal of Counseling Psychology, 35*, 463-471.
- Mintz, L. B., & O'Halloran, M. S. (2000). The Eating Attitudes Test: Validation with *DSM-IV* eating disorder criteria. *Journal of Personality Assessment, 74*, 489-504.
- Murray, T. (2003). Wait not, want not: Factors contributing to the development of Anorexia and Bulimia. *The Family Journal, 11*, 276-283.
- Mussell, M. P., Binford, R. B., & Fulkerson, J. (2000). Eating Disorders: Summary of risk factors. *Counseling Psychologist, 28*, 764-797.
- Patton, G., Selzer, R., Coffey, C., Carlin, J., & Wolfe, R. (1999). Onset of adolescent eating disorders: Population based cohort study over 3 years. *British Medical Journal, 318*, 765-768.
- Pope, H. G., Hudson, J. I., Yurgelun-Todd, D., & Hudson, M. S. (1984). Bulimia in three student populations. *International Journal of Eating Disorders, 3*, 45-51.

- Prouty, A. M., Protinsky, H. O., & Canady, D. (2002). College women: eating behaviors and help-seeking preferences. *Adolescence*, *37*, retrieved July 8, 2005, from http://www.findarticles.com/p/articles/mi_m2248/is_146_37/ai_89942836
- Pyle, R., Neuman, P., Halvorson, P., & Mitchell, J. (1991). An ongoing cross-sectional study of the prevalence of eating disorders in freshman college students. *International Journal of Eating Disorders*, *19*, 667-677.
- Reijonen, J. H., Pratt, H. D., Patel, D. R., & Greydanus, D. E. (2003). Eating disorders in the adolescent population: An overview. *Journal of Adolescent Research*, *18*, 209-222.
- Rosen, J. C., Jones, A., Ramirez, E., & Waxman, S. (1996). Body Shape Questionnaire: Studies of validity and reliability. *International Journal of Eating Disorders*, *20*, 315-319.
- Simon-Boyd, G. D., & Bieschke, K. J. (2003). *Predicting eating disorder continuum groups: Hardiness and college adjustment*. Poster presented at the Annual Conference of the American Psychological Association, Toronto, Canada.
- Sloan, D. M. (2005). Empirical classification of eating disorders. *Eating Behavior*, *6*, 53-62.
- Striegel-Moore, R. H., Silberstein, L. R., Frensch, P., & Rodin, J. (1989). A prospective study of disordered eating among college students. *International Journal of Eating Disorders*, *8*, 499-509.
- Sullivan, P. F. (1995). Mortality in Anorexia Nervosa. *American Journal of Psychiatry*, *152*, 1073-1074.

- VanLone, J. S. (2002). *Social contagion of eating attitudes and behaviors among first year college women living in residence hall communities*. Unpublished doctoral dissertation, West Virginia University.
- Vohs, K. D., Heatherton, T. F., & Herrin, M. (2001). Disordered eating and the transition to college: A prospective study. *International Journal of Eating Disorders*, *29*, 280-288.
- Wood, A., Waller, G., Miller, J., & Slade, P. (1992). The development of Eating Attitudes Test scores in adolescence. *International Journal of Eating Disorders*, *11*, 279-282.

EATING ATTITUDES TEST

Please check a response for each of the following statements and fill out **both sides**:

		Always	Usually	Often	Sometimes	Rarely	Never
1.	Like eating with other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	Prepare foods for others but do not eat what I cook.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Become anxious prior to eating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	Am terrified about being overweight.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Avoid eating when I am hungry.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Find myself preoccupied with food.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Have gone on eating binges where I feel that I may not be able to stop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Cut my food into small pieces.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Aware of the calorie content of foods I eat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Particularly avoid foods with a high carbohydrate content (e.g. bread, potatoes, rice, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Feel bloated after meals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Feel that others would prefer if I ate more.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	Vomit after I have eaten.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	Feel extremely guilty after eating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	Am preoccupied with a desire to be thinner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	Exercise strenuously to burn off calories.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	Weigh myself several times a day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	Like my clothes to fit tightly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	Enjoy eating meat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	Wake up early in the morning.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	Eat the same foods day after day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	Think about burning up calories when I exercise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

TURN OVER

