

## CHAPTER I

### INTRODUCTION

#### Rationale

Athletes are faced with medical concerns that affect their performance everyday. Whether it is an injury that can hinder their competition or a substance to enhance it, the pressure to compete at an optimal level is many times overwhelming. The media only heightens this pressure for athletes and it continues to grow. Yet, relatively new to the arena of pressures, are ED among athletes. Generally, ED are an issue that primarily affects adolescent girls and young women, and over the last twenty years research has focused on ED in the college population, with much of the focus on the female athlete (Dick, 1991; Kirk, 1999; Vohls, Hetheron, and Herrin, 2001). Yet, it is shown in this research that many intercollegiate athletic departments do not recognize ED as a medical complication, and therefore do not have a policy in place to address this issue. Many times it takes legal action against the college/university and athletic department for a policy to be implemented. Much of the research shows that ED among intercollegiate athletics is a real problem ( Borgan & Corbin, 1987; Sundgot-Borgen, 1993). It is the responsibility of the athletic department administration and staff to combat this issue and take the necessary steps in order to treat those athletes who face an ED before it becomes a legal issue, or even worse, death. In addition, athletic departments need to have an ED policy complete with intervention strategies and provide educational tools for prevention to assist their athletes along with the support staff that works closely with the athletes. Although the focus of this study is on ED policies at the Division I intercollegiate level, it

is a topic that does not discriminate against athletes at other levels. Although only speculated, if the Division I universities take action and implement such policies, the hope is that it will trickle down to the lower divisions.

### Statement of the Problem

Because there is a problem of ED among collegiate female athletes (Dick, 1991), it is imperative that intercollegiate athletic departments take a stand to treat and ultimately try to eliminate the problem. In order to be successful, and to meet their legal duty, athletic departments need to have a written protocol implemented that contains a comprehensive educational, intervention, treatment, and prevention program included to treat this devastating and sometimes deadly disease.

### Purpose of the Study

Eating disorders in it self, have long been an area of concern among the female population (Heatherton, Mahamed, Striepe, Field, & Keel, 1997) Yet, in the last twenty years the emphasis on ED among the collegiate female athlete has gained considerable attention among researchers (Dick, 1991; Kirk, 1999; Vohls, et al, 2001). Athletes face a great amount of stress during their collegiate years, and many times are the center of scrutiny as well as controversy. Athletes are not only dealing with the same issues that the normal college student endures, but there are added pressures that go along with competition. They are expected to abide by the rules of the institution that they attend, as well as the rules that the NCAA places upon them while they are competing. Substances such as alcohol, tobacco, and drugs can all affect performance, yet so can ED. However, the NCAA does not require a written policy on any substances except those that are banned (Mary Wilfert, personal communication, February 10, 2006). Eating disorders

however, are not considered performance-enhancing, but rather the opposite. Caloric intake is essential in order to survive, yet what about the athlete that does not take in enough calories in one day to have the energy to get out of bed in the morning, let alone compete? In essence, an athlete's performance is compromised. The purpose of this study is to determine the differences between Division I athletic departments having an ED policy and those that do not.

### Significance of the Study

Although there is controversy among researchers as to whether ED among the female athletic population is on the rise, the issue of ED is still apparent in the intercollegiate athletic world. Athletes are facing increased demands to perform competitively, and they need to have a support system in order to deal with those demands. One such support system is the personnel in the athletic department. Yet, personnel cannot assist the athlete unless they have guidelines and policies to follow to help that athlete. Every athletic department across the nation needs to administer an ED policy to help alleviate this problem, or possibly face litigation if such a policy is not enforced.

This study focuses on whether having an ED policy as well as educating student-athletes on ED has an influence on the number of reported cases among female athletes during a 12-month period. Additionally, the NCAA has guidelines for athletic departments to follow concerning alcohol, tobacco, and drugs. They also suggest guidelines for ED. This study further examines if a university had an alcohol, tobacco, or drug policy for their student-athletes, would this influence having an ED policy.

Although many researchers have targeted the medical staff of universities when investigating ED, this study focuses on the administrators of intercollegiate athletic

departments and their perceptions of the problem. Senior Women Administrators are the targeted population for the survey proposed in this study because of their key role in being able to create and implement such a policy. However, developing such a policy takes the effort of other personnel as well. A task force consisting of the athletic department administration, the medical personnel, a registered dietician, and a mental health provider all have a vital role in understanding the need for an ED policy, and ultimately will benefit from the results of this study too.

### Research Questions

This study investigates the following research questions:

1. Failure to provide a policy for treating an ED can be problematic for the institution as well as the athlete. The legal duty of the athletic department is to exercise ordinary care as a reasonably prudent person in the same or similar circumstances. One of the most effective ways of reducing the university's liability for athletes with ED is to prevent them by providing educational programs emphasizing diet, nutrition, weight loss, and athletics performance (Bickford, 1999). An effective ED policy includes such components. Likewise, for the athlete, a treatment protocol is important to ensure prompt and effective management of eating disorders (Beals, 2003). Likewise, almost 40 percent of NCAA institutions reported at least one ED case within their athletics programs between 1988 and 1990 (Dick, 1991). It is suggested that those institutions with an ED policy have less reported incidences of ED because of the guidelines that the policies employ. However, due to the sensitivity and complexity of such an issue as ED, the estimated non-reported cases are higher because of factors such

- as cases that go undetected, or unreported because of the fear that athletes have to suffer consequences such as not being allowed to compete. Therefore, the first research question is: Does having an ED policy influence the number of reported incidences among female athletes?
2. Education on ED provides not only awareness, but many times is the first line of defense for athletes who may be facing an ED. In essence, education is not only the key for the athlete, but also is mandated for the support staff who is working closely with athletes. Proper screening, education, and treatment is necessary in order to reduce the number of incidences among female athletes (Beals, 2003). There is little research available on step-by-step procedures on how to create an ED policy for collegiate athletes; however, there are researchers that have suggested guidelines to follow when creating such a policy and are discussed in detail (Andrews, 2002; Bickford, 1999, Ryan, 1992). Therefore, does having an educational program for female student-athletes influence the number of reported cases of ED?
  3. It is suggested by the NCAA (Mary Wilfert, personal communication, February 10, 2006) that intercollegiate athletic departments have guidelines on alcohol, tobacco, and drugs. However, it is proposed that few intercollegiate athletic departments across the United States have a policy on ED. Some administrators contend that an ED is predisposing in nature, and feel that it is not their obligation to support or intervene with this matter. Yet, it is argued that alcohol, tobacco, and drugs are not an athletic issue and they are also predisposing in nature. Recent research shows that when surveying the head athletic trainers at

Division I institutions, they felt they play a primary role in the management of an athlete with an ED (Vaughan, King, & Cottrell, 2004). As a complex issue, both medical and psychological in nature, it is common to find a multidisciplinary team that works together to treat those athletes with an ED. Research has shown that most of the members of this team consist of the medical staff (e.g. team physician, athletic trainer), a dietitian, and a psychologist (Baer, Walker, & Grossman, 1995; Joy, Ireland, Martire, Nattiv, & Varechok, 1997; Hotelling, 1999). Although it is perceived as a medical issue and is usually managed by the support staff in the athletic department, it is not always perceived as an “athletic” issue by the administration. If there are those administrators in intercollegiate athletics that do not perceive an ED as a problem on the rise in their athletic population, or do not see it as an “athletic” problem in general, then they probably do not enforce or support the creation of an ED policy. Therefore, it is imperative that awareness on ED is brought to the administration’s attention. Lastly, the third research question addresses: If a university had an alcohol, tobacco, or drug policy for their student-athletes, will this influence having an ED policy?

#### Delimitations of the Study

The scope of this study is on ED policies at all 330 NCAA Division I institutions across the country. The primary focus is on college student-athletes, and thus the generalizability of this study is limited to those that participate in an intercollegiate sport as well as being only of the female gender. Additionally, the base of this research is a survey. Yet, surveys sometimes lack internal validity due to measurement error. In this

study measurement error is controlled by obtaining data from the appropriate source, senior women's administrators.

### Definition of Terms

Alcohol Policy: Those guidelines that govern the use and/or abuse of alcohol

Amenorrhea: Absence of menstrual periods for 6 months in a woman who had previously been regular, or for 12 months in a woman who had irregular periods.

Anorexia Athletica: A subclinical form of anorexia often found in athletes. A female athlete that does not meet the DSM IV diagnostic criteria for anorexia nervosa yet demonstrates an intense fear of gaining weight or becoming fat even though she is underweight; at least 5% less than expected normal weight for age and height for the general female population (Sundgot-Borgen, 1993).

Anorexia Nervosa: (as defined by the DSM IV):

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); Extreme fear of gaining weight;
2. 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;
3. Absence of three or more consecutive menses.

Ascetism: The practice of the denial of physical or psychological desires in order to attain a spiritual ideal or goal.

Athlete: A female who is a member of a women's intercollegiate varsity team.

Binge Eating Disorder: (as defined by the DSM IV): Identifies those individuals who regularly engage in binge eating without the regular use of compensatory purging.

Bulimia Nervosa: (as defined by the DSM IV):

1. Recurrent episodes of binge 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. Binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for three months;
4. Self-evaluation is unduly influenced by body shape and weight;
5. The disturbance does not occur exclusively during episodes of anorexia nervosa.

Drug Policy: Those rules that govern the use and/or abuse of banned substances

Eating Disorders Not Otherwise Specified (as defined by the DSM IV):

Used when the eating disorder appears to fall within the larger category, but does not meet the criteria of any specific disorder within that category.

Eating Disorder Policy: Guidelines that ensure proper nutrition and a healthy body weight for competition in an athletic environment

Female Athlete Triad: A combination of three interrelated conditions that is associated with athletic training: disordered eating, amenorrhea and osteoporosis.

Ordinary Care: The care that a reasonable man would exercise under the circumstances; the standard for determining legal duty.

Osteoporosis: A disease characterized by low bone mass and deterioration of bone tissue.

Preparticipation examination: A medical examination by a physician to detect illnesses and injuries that, while not precluding participation in sports, still require attention and treatment.

Senior Women's Administrator (SWA): Under the supervision of the director of athletics, the SWA is the highest-ranking female administrator, who assists with all aspects of athletics administration (as defined by Pam Gill-Fisher, NCAA News, March 16, 1998).

Tobacco Policy: Guidelines that govern the use and/or abuse of tobacco

## CHAPTER II

### REVIEW OF LITERATURE

#### Introduction

“It is an attempt to find an identity, but ultimately strips you of any sense of yourself”(Hornbacher, 1998). Eating disorders primarily affect adolescents and adults, with about 90% of those being female (Bemporad, 1996). Women, during puberty tend to gain fat while men gain height and muscle (Vohl, et al., 2001). A woman’s self-image is often linked to her physical appearance and thinness. This is often manifested by the influences of peer groups, authoritative figures, and societal pressures. Females also tend to have a slower metabolic rate than males, therefore burning calories slower (Thompson & Sherman, 1993). The etiology behind ED is multifactorial. Genetics, temperament, neurochemistry, family dynamics, pubertal development, and social-cultural issues all play a role in the development of an ED. However, three demographic factors are examined that are the most influential.

#### Demographic Factors

The three demographic factors that influence ED are gender, race, and age (Thompson & Sherman, 1993, p. 2-3). It is well known that ED is prevalent among the female population more so than the male population, yet there is disparity among the figures because ED in males may be underreported (Kirk, 1999). Yet, the rate among females is much greater because of the stereotype that society puts on females that being thin is the only way to be beautiful, successful, and happy. In a study done by Wooley, Wooley &, Dyrenforth (1979), women who were overweight were viewed as weak and unable to

take care of themselves. The media encourages this by focusing their articles on dieting and weight loss and their bias towards slimness. This in turn promotes women to do whatever it takes to be thin, furthermore encouraging the upsurge of ED (Alayne, 1991).

Race has been found to be related to ED as well. Low rates of anorexia nervosa and bulimia nervosa have been reported for African-Americans and other minorities (Thompson & Sherman, 1993, p. 2). While most of those being treated with ED are white, this may be related to cultural expectations placed on certain ethnic and racial groups (Thompson & Sherman, 1993, p. 2). In Western cultures, thinness is equated with higher educational and vocational status (Alayne, 1991, p. 20). In addition, an obsession with slimness is concentrated in cultures in which food is abundant (Polivy & Herman, 1987). It has been suggested in the literature, that socio-economic factors can also play a role in the prevalence of ED (Thompson & Sherman, p. 3). Women from low class backgrounds are six times more likely to be obese than their upper class counterparts (Alayne, p. 20). Lastly, the DSM IV estimates 0.5% - 1.0% of females meet full criteria for anorexia nervosa with the average age of onset being 17 years. Bulimia nervosa is estimated to occur at a rate of 1% - 3% in females and tends to begin in late adolescence or early adulthood (Miller, Scheele, Horacek, Dodge &, Cox, 1998). However, in the end, ED does not discriminate against any racial, ethnic, or cultural background. What was once being targeted as a higher socioeconomic class disease is now targeting anyone that may fall into its trap. Of particular interest, is the collegiate population, specifically the collegiate athlete which is discussed in detail.

In the world of fitness and sports, ED and disordered eating are diets that have gone horribly wrong. Athletes tend to want to lose weight, excel in sports, and remain fit, but

sometimes lose control and end up with a body and spirit ravaged by starvation, binge eating, and frantic compulsive exercise. Because of these high expectations that athletes have for themselves, they tend to be at a higher risk for ED than among the general population.

This is especially true among the female athlete. Female athletes are plagued with the beliefs and behaviors of our Westernized culture. Studies (Garner, & Garfinkel 1997; Orbach, 1986) have argued convincingly that the increase in the prevalence of ED is directly related, and perhaps caused by, a shift toward glamorizing or idealizing thinness among women. Another dilemma that female athletes face is the introduction to sport at an early age. On one hand, early participation in sport increases one's self-esteem (Sands, et al., 1997), and increase their likelihood of being a health conscious adult, but on the other hand, as girls become more proficient at sports they paradoxically are increasing their vulnerability to ED in the highly competitive athletic culture. The same is true among those individuals that have an early start of sport-specific training. Beginning training for a targeted sport before the body matures hinders these athletes from choosing a sport suitable for their adult body type (Sundgot-Borgen, 1994). The personae of a competitive athlete many times mask the same traits as one with an ED. Perfectionism, compulsiveness, and high achievement are traits that are advantageous for an athlete, but all too often these traits lead an athlete down a path of destruction (Vohls, et al., 2001).

Multiple studies have demonstrated an increase in the prevalence of ED and disordered eating among athletes of all skill levels (Powers & Johnson, n.d.). The sports that emphasis the aesthetic practices and strict weight restrictions and sports that are

judged seem to be at a higher risk (Elizabeth, et al., 1997; Picard, 1999; Plessinger, n.d.). When patterns involve denial of many pleasures, dieting and exercise becomes one aspect of a broader picture of asceticism (Alayne, 1991, p. 11). From a historical perspective, ED are viewed as ascetic practices, and three of the most common ones are further discussed.

### History: Anorexia

The most common and the longest historical documentation of all of the ED is anorexia nervosa. According to the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000), anorexia nervosa has been defined by the following 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); 2) extreme fear of gaining weight; 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; and
- 4) absence of three or more consecutive menses.<sup>1</sup>

Anorexic habits date back to medieval times (Alayne, 1991). In a quest for spiritual purity, women would self-starve themselves to be more acceptable in God's eyes. Even in those times, ED were examples of aesthetic practices. Dieting and exercise became one aspect of a broader picture of asceticism. The belief was that one had to strive towards an ideal and in their view that was the only direct route towards total happiness and acceptance (Alayne, p. 12). Richard Morten described the first case of anorexia in current medical literature in 1694. He described a self-starving 18-year-old female who

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<sup>1</sup> From the Diagnostic and Statistical Manual of Mental Disorders, Text Revised, Copyright 2000 by the American Psychiatric Association. Reprinted by permission.

looked like a skeleton clad in skin. He called her disorder “nervous consumption”, and yet he did not document the case was related to control or obsession with food as with today’s clients with ED (Lelwica, 1999). In Europe during the mid to late 1800’s, the idea of “Muscular Christianity” became a guiding force in the increasingly sedentary middle class. Physicians noted an association between anorexia and exercise, or “hyperactivity” (Alayne, 1991). The idealization of slimness commenced during the 1920’s, and was contrasted in the 1940’s and 50’s by the curvaceous body of Marilyn Monroe, and was exemplified again in the 1960’s by the supermodel Twiggy along with the significant low weights of the Miss America’s and Playboy centerfolds (Alayne, 1991). With the death of Karen Carpenter in the 1970’s, ED received media attention that focused on the life-threatening consequences (Tenore, 2001).

However, it was not until the late 1980’s that ED in the collegiate setting became a concern (Hotelling, 1999). Along with the potential of death, serious health consequences are also associated with anorexia. Women remain in denial even though these health consequences loom over them. A decrease in blood pressure and body temperature, hair loss, a decrease of protein content in the blood, amenorrhea, and cardiac problems are all medical problems associated with anorexia nervosa (Hickin, n.d.). Additionally, amenorrhea has been found to be associated with bone density loss, which leads to osteoporosis and fractures (Drinkwater, Chesnut CH III, Bremner, Shainholtz, & Southworth, 1984; Myburgh, Hutchins, Fataar, Hough, & Noakes, 1990; Warren et al., 1991). Furthermore, a combination of ED, amenorrhea, and osteoporosis is termed the female athlete triad (Yeager, Agostini, Nattiv, & Drinkwater, 1993).

## Bulima Nervosa

Bulima nervosa is historically documented as far back as the ancient Egyptians, Greeks, Romans, and Arabians. Egyptians would purge themselves for three days each month as a ritual to ensure and preserve health. References using the term bulima have been included in the medical texts since the 1700's (Kirk, 1999).

Only since 1979 has the clinical features of bulima nervosa been specific in which Gerald Russell (1979) coined the term bulima as a binge-purging disorder related to anorexia nervosa, but with different distinguishable criteria. With the publication of the DSM III-R (American Psychiatric Association, 1987), the term bulima, which denoted bingeing behavior only, was changed to bulima nervosa. Documented accounts in the 1980's showed that bulima nervosa was the ED of choice over anorexia nervosa, to the point that the occurrences of bulima nervosa to anorexia nervosa were 2 to 1 (Russell, 1979). Recently, the DSM-IV (American Psychiatric Association, 2000) criteria for bulima nervosa are as follows:

- 1) recurrent episodes of binge 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) binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for three months; 4) self-evaluation is unduly influenced by body shape and weight; and 5) the disturbance does not occur exclusively during episodes of anorexia nervosa.<sup>2</sup>

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Bulimia nervosa masquerades anorexia nervosa in many of the same medical characteristics and problems, along with the psychological characteristics and behavioral problems as anorexia, however, it is harder to detect the physical signs. This is because a bulimic will maintain close to or normal weight, and not look like a “walking skeleton” like many anorexics appear to be. In some instances, anorexia is a predecessor to bulimia. A person is more likely to develop bulimia in their late teens or early 20’s (Eating Disorders Association, n.d.). Bulimia has often been referred to as the binge-purge syndrome. Binge eating and purging usually becomes a means through which the individual attempts to regulate or manage emotion (Thompson & Sherman, 1993, p. 11). Bulimia, like anorexia, can be a life-threatening problem. Bulimics often have an imbalance or dangerously low levels of essential minerals in the body that can significantly or fatally affect the working of vital internal organs. Other dangers can include rupture of the stomach, choking, and erosion of the tooth enamel (EDA, n.d.).

### Other Eating Disorders

The DSM-IV (American Psychiatric Association, 2000, text revision) gives credence to another variant of disordered eating in addition to anorexia nervosa and bulimia nervosa. Eating Disorders Not Otherwise Specified (EDNOS) is used when the “eating disorder appears to fall within the larger category, but does not meet the criteria of any specific disorder within that category”.<sup>3</sup> A substantial number of individuals with ED fit only this category. Examples of EDNOS include individuals who regularly purge but do not binge eat, individuals who meet criteria for anorexia nervosa but continue to menstruate, and those individuals who meet the criteria for bulimia nervosa, but binge eat

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<sup>3</sup> From the Diagnostic and Statistical Manual of Mental Disorders, Text Revised, Copyright 2000 by the American Psychiatric Association. Reprinted by permission.

less than twice weekly (The Academy for Eating Disorders, n.d.). Finally, a new diagnostic classification within the ED group called “binge eating disorder” (BED) has been proposed to the DSM-IV. BED identifies those individuals who regularly engage in binge eating without the regular use of compensatory purging (Brewerton, 1997).

Likewise, the term anorexia athletica, a subclinical but serious problem has been linked to athletes with ED. Sundgot-Borden (1993) has proposed a set of distinguishing features that leads to ‘anorexia athletica’. She defines anorexia athletica in terms of absolute criteria (which must be present) and relative criteria (may be present). However, researchers at Toronto General Hospital and York University in Toronto have reported a study which indicates that “there is little valid support for the theory that athletes with eating disorders are psychologically different from their nonathlete counterparts, nor any justification for the label ‘anorexia athletica’ or ‘activity anorexia’ (Anorexia Nervosa and Related Eating Disorders, Inc., n.d.).

### The Female Athlete Triad

Risk factors that lead to ED among the female athlete have been discussed in great detail. However, along with an ED, other risk factors are potentially dangerous to a female, such as amenorrhea and osteoporosis. Factors that cause amenorrhea include exercise, low weight, low fat content, stress, hormonal changes, and nutritional composition. Even brief episodes of amenorrhea or irregular menses in female athletes have been associated with osteoporosis and infertility problems (Powers & Johnson, n.d.). Drinkwater et al., (1984) found that athletes who are amenorrheic have reduced bone density and bone mineral content. They found that a group of female runners with a chronological age of 24.9 years had an average bone mineral density equivalent to 51.2

years of age. While bone mineral density increases with the resumption of normal menses, it still remains well below average even after a 4-year follow-up (Drinkwater & Brummer, 1990).

Prevalence of the triad is hard to assess because of the limited data, yet in the United States studies suggest prevalence in female athletes is between 15 percent and 62 percent (Drummer, Rosen, Heusner, Roberts, & Counsilman, 1987; Rosen & Hough, 1988; Rosen, McKeag, Hough, & Curly, 1986). Beals & Manore (2002) examined the prevalence of and relationship between the disorders of the female athlete triad in collegiate athletes participating in aesthetic, endurance, or team/anaerobic sports. The study concluded that the athletes “at risk” for ED more frequently reported menstrual irregularity and sustained more bone injuries. Interestingly Frusztajer, Dhuper, Warren, Brooks-Gunn & Fox (1990) suggested that with increased incidence of stress fractures, there are changes in the nutritional patterns of the bone even before changes in bone density occur. This in essence suggests that the quality of bone may be affected even before changes in bone density.

Nattiv (1994) indicates that common characteristics of women who have the triad are a perfectionist with high goals, being very critical of her and having very high expectations, and having fairly low self-esteem. Joy, et al., (1997) concludes that most of the women with the triad are dedicated athletes, very motivated, achievement orientated, and have a strong work ethic. They also tend to ignore or minimize minor injuries (Joy et al., 1997). Low body weights among athletes even without having an ED have adverse health consequences. Low body weight predisposes women to amenorrhea, and estrogen

supplementation, without weight gain, does not seem to reverse the bone loss or the vulnerability to osteoporosis (Garner, Rosen & Barry, 1998).

### Eating Disorders Among College Students

W. Wooten, (unpublished communication, 1990) indicated that ED are the third leading cause of morbidity among college students behind depression and substance abuse. In a study conducted by Vohs, et al.,(2001), eating patterns among college students are well established before arriving to campus. Additionally, among the women surveyed, weight and body dissatisfaction were found to be significantly higher during college than after college. Pinkerton, Hinz & Barrow (1989) suggest that college students are particularly at risk for experiencing various forms of developmental crises and psychological distress because the normal stage of adolescent development they face involves major transitions that are not easily accomplished. They contend that college-age youth must master the challenges of “separating from family and assuming independence, consolidating an identity and a mature sexuality, learning to manage feelings of intimacy, establishing a set of values, and solidifying career goals”. For those college students who master these goals, the rewards are substantial, but for those who do not, it is potentially be a crippling and possibly a deadly experience.

Over the last three decades many researchers have focused their attention on ED among college students (Prouty, Protinsky, & Canady, 2002; Sundgot-Borgen, 1993; Vaughan, et al., 2004; Vohls, et al., 2001). Many of the traits of those individuals with ED generally can be found in the young adult population. Using the complex biopsychosocial model, it takes into account all sorts of factors, ranging from the broadly cultural to the narrowly biological, which also encompasses the familial, social,

cognitive, learning, personality, and other factors (Adolescent Medicine Committee, Canadian Paediatric Society, 1998). Of particular concern is the growing prevalence of gender-related mental health concerns on college campuses (Arnstein, 1995). Numerous studies have reported a high incidence of diagnostically sub-threshold problems centered on body image dissatisfaction and weight preoccupation in this population. One study found that about one quarter of female undergraduate students surveyed felt that their eating was out of control, and 6% admitted to using laxatives or purged after meals (Koszewski, Newell & Higgins, 1990). Borgen & Corbin (1987) reported that 15% or more of college campus women meet diagnostic criteria for anorexia nervosa or bulimia nervosa.

Eating disorders are not limited to just women. Although the reported incidence is much lower, men have been affected also. Both women and men who experience ED ultimately want the same outcome, to be thin. However, the means by which they do it, and the reasons behind what they are doing, differ immensely. Heatherton, et al., (1997), using a longitudinal study, compared college men and women dieting patterns while they were in school and ten years later, found that among the women, weight and body dissatisfaction were significantly higher during college than after college. Interestingly, the opposite was true for the men. Men reported having a higher weight and body dissatisfaction after college than during college. Furthermore, some studies suggest that belonging to certain subpopulations in college can increase the likelihood of disordered eating (Rosen, et. al, 1986; Sykes, Gross, & Subishin, 1986).

### Eating Disorders Among the College Athlete

One such college subpopulation is the student-athlete. Athletes are at an increase risk for ED for several reasons. Athletes tend to exemplify many of the same personality characteristics as those with ED. Compulsive athleticism and ED are found in cultures where there is considerable pressure on individuals to demonstrate personal best (Alayne, 1991). They are apt to be perfectionists while pursuing unrealistic goals, compulsive, ritualistic, especially with regard to eating and eating-related behaviors like weighing and exercise (Sundgot-Borgen, 1993). Their thinking is typically absolute, concrete, and obsessive (Powers, & Johnson., 1999). Additionally, along with emotional instability, depression and low self-esteem are contributors to their disorder as well (Thompson & Sherman, 1993). Along with adjusting to the normal stress associated with college life, an athlete has the added stress of rigorous training schedules, as well as the pressures of performance. According to a statement from the American College of Sports Medicine in 1992, ED effect 62% of females in sports like figure skating and gymnastics (Thompson, 2002). In addition, Davis and Cowles (1989) conducted a study that compared athletes in sports where a thin body build was viewed as advantageous (gymnastics, synchronized swimming, diving, figure skating, distance running, and ballet) versus those sports not stressing a thin body build. Results indicated that the thin body build group had a greater drive for thinness, was significantly thinner, and had fewer menstrual cycles.

Furthermore, the thin body build athletes tended to be less stable, and reported a lower sense of emotional well-being. In an alarming study of college athletes, Guthrie (1991) found that 23% of the athletes reported that they had an ED in the past, 14% admitted to

currently having an ED, and 73% of female gymnasts, 41% of synchronized swimmers, 39% of cross country runners, and 36% of swimmers and divers reported pathological eating behaviors. Moreover, Zucker, Womble, Williamson & Perrin (1999), found that athletes who competed in sports that were refereed showed lower scores when measured on ED pathology compared to those athletes participating in judged sports. It appears that the college athlete is more at risk for developing an ED than the non-athlete, yet this remains a controversy among researchers (Kirk, 1999). Regardless of whether the college athlete is more at risk than the non-athlete, ED are like a virus on college campuses. Everyone is susceptible, and it does not discriminate. Thus, this study investigates the need for university intercollegiate athletic departments to alleviate this problem by having an ED policy with guidelines and intervention strategies to help those faced with this dilemma and cater it to their needs.

Over the past two decades, the increasing number of studies has shown that the athlete is at high risk for developing an ED (Borgen, 1985; Dick, 1991; Dummer, et al., 1987; Nattiv, 1994; et al., 1986; Sundgot-Borden, 1993). However, other research has suggested that athletes are at no greater risk of developing ED than the nonathlete (Carter 2002; Gutgesell, Moreau & Thompson, 2003; Kirk, 1999; Warren, Stanton & Blessing, 1990). This disparity is a result of the testing or screening tool used in the study. Many times when studies are conducted anonymously, there is a greater chance for honesty among the participants. Likewise, until recently, there has not been an effective screening tool to assess the athletic population eating behaviors (McNulty, 2001).

### Management of Eating Disorders

Female athletes already have heightened concerns about body image and the relationship between weight and athletic performance, and they also tend to be more affected by what an authoritative figure may say or do when it comes to weight issues. Selby, Weinstein, & Bird (1990) found that when seeking assistance about weight concerns, males (49%) would seek help from an athletic trainer, versus females (33%), who would rather seek assistance from a dietician. The study further concluded that when facing traumatic events, athletes turn to family members, friends, and teammates, followed by intimate partners and coaches. The matter on ED therefore becomes an issue for all who are involved. Therefore, it takes a team approach where the primary objective is to educate about the risks of ED and to recognize the warning signs associated with this condition. However, that education is not just limited to athletes. For an athlete to trust someone with such a delicate issue, that individual must be knowledgeable about how to intervene and assist in getting the athlete the help they need. Therefore, the support staff who work with athletes on a daily basis need to be educated as well.

College campuses are the breeding ground of knowledge. Yet, until the late 1980's, there was scant literature regarding the prevention and treatment of eating disorders among college students. Since that time, the National Eating Disorders Association holds an annual conference that features keynote speakers and workshops that address educational and treatment programs at universities across the United States (Hotelling, 1999, p.208). In addition, there are numerous articles discussing ED among college students, and the need for an expanded role in the areas of student psychosocial concerns and prevention and for greater collaboration with other student services, such as

counseling services and residence halls is warranted (Schwitzer, Bergholz, Dore & Salimi, 1998).

Today's society puts pressure on women to be thin, but it also condones the notion of a "quick fix" for whatever may aile it. Unfortunately, with ED, there are no "quick fixes" when it comes to treatment, but there are many intervention strategies to aid in the prevention of those that are susceptible to ED. Prevention relies most heavily on providing information to increase understanding, enhance attitudes, and promote healthier behaviors (Schwitzer, et al., 1998). In essence, education is prevention. Many researchers have employed different strategies for providing this education to the college student. One of the most effective means of education has been the peer educator. A study done by Prouty, Protinsky & Canady (2002) showed that a significant number of college-aged females turned to their friends and peers for help before turning to college mental and physical health professionals. This enables those at risk for ED to receive information in a lower threatening environment and use peer support as an adjunct to mental health counseling. Peer educators initiate workshops in settings around campus such as resident halls, sororities, and athletic teams (Schwitzer, et al., 1998). Yet, it is important that college administrators and those health educators do not depend entirely on peer educators as their only means of intervention. Peer educators, although somewhat trained, do not have the formal training that is required to aid those individuals that may be facing the consequences of an ED (Schwitzer, et al., 1998). Likewise, it should not be expected of them to take on such a task.

Many universities have established an Eating Disorders Task Force, which represent the commencement of a program based on a multidisciplinary approach to the problem of

ED. Among the membership of the Task Force are professionals dedicated to having an interest in ED. Those professionals may include, but not limited to, physicians, psychologists, dieticians, psychiatrists, athletic trainers, exercise physiologists, physical and health educators, advisors to fraternities and sororities, recreation center staff, housing and food service, and counselors. The goals of the Task Force are to reduce the incidence, prevalence, and effects of ED on campus. The Task Force represents various departments on campus and can lead to increased awareness among all college students. The Task Force and the diversity of its members can assist in intervention strategies that include primary prevention which is prevention aimed at students who are susceptible to the development of eating problems during the college years; secondary prevention which addresses moderate diagnostically sub threshold eating problems most prevalent on campuses; and remedial treatment of those with ED (Hotelling, 1999).

Although the Eating Disorders Task Force is warranted for the entire campus, when intervening with intercollegiate athletes the goals of intervention may possibly shift to accommodate an athlete's specific needs. For example, Baer, et al., (1995) proposed the need for a Disordered Eating Response Team to support the health and performance of their athletes at a Midwest university. Members of the team include the team physician, head athletic trainer, staff athletic trainer (only one athletic trainer participates to promote continuity and facilitate communication), a dietician knowledgeable about physical performance, and a psychologist. Several studies have found that body dissatisfaction is predictive of ED symptoms among nonclinical samples of nonathletic adolescent girls and young women (Attie & Brooks-Gunn, 1989; Rosen, 1992). However, in order to develop effective primary prevention programs, it is necessary to identify factors that

antedate the development of body dissatisfaction. Williamson et al., (1995) have proposed a new model for the development of body dissatisfaction in the female athlete. The model shows that social influence, performance anxiety, and athlete self-appraisal are three factors that may influence and antedate the development of concern about body size and shape. The researchers found that social pressure from coaches and peers for thinness combined with anxiety about athletic performance and negative self-appraisal of athletic achievement was associated with body dissatisfaction. The advantage of the model is that it suggests ways of identifying factors among competitive athletes that contribute to the development of body dissatisfaction (Powers & Johnson, 1999).

The challenge lies in how do those that work with athletes identify those individuals who are dissatisfied with their bodies? Due to the “secretative” nature of ED and the problems associated with them, many times they go unreported. The researcher looks at those universities that have ED policies and those that do not, and the number of reported incidences among female athletes. Some athletic departments have taken steps to reduce the number of nonreported incidences by employing standardized questionnaires on disordered eating behaviors, yet many athletes deny such practices or provide fake answers to the questionnaire (O’Connor, Lewis &, Kirchner, 1995). Sundgot-Borgen (1994) contends that follow-up interviews are necessary after distributing self-report surveys to athletes because of the tendency for athletes to underreport disturbed eating behaviors and attitudes. Likewise, many athletes think that disordered eating practices are harmless and do not see ED as a problem (Joy et al., 1997). Furthermore, there are researchers who do not agree that educating the athlete on ED is the answer. Hsu (1990) suggests that educational programming may actually

encourage ED by making individuals aware of pathogenic behaviors. Garner (1985) suggests that programs aimed at prevention may inadvertently glamorize ED. He noted, however, that we should not abandoned preventative efforts, but should be cautious when providing information on ED. According to Thompson & Sherman (1993), one way to avoid the problem that Hsu and Garner discussed is to focus less on ED per se, and more on information specifically related to sports such as nutrition, body weight, body composition, and sport performance when educating the athlete. He further contends that when educating the sport-personnel who work with athletes, the information given should be specifically related to ED.

#### The Intercollegiate Athletic Department Responsibility

It is the responsibility of the sport-personnel and the athletic department as a whole to be educated on the risks and the effects that ED can have on an athlete. Many times coaches have the finger pointed at them when an athlete presents with behaviors associated with ED. For the most part, coaches have a positive impact on an athlete's career. However, there are times when a coaches' behavior and attitude can have a negative effect and can contribute to the development of an ED (Rosen et al., 1988; Harris & Greco, 1990). Through education, coaches can help to alleviate this persona by being exposed to matters related to ED, health-related issues, and male sport support understanding the issues specific to female athletes (Thompson, et al., 1993).

Other support staff has obligations to the athlete as well. The athletic trainer is a viable resource for the athlete. Athletic trainers are a good source for informing and educating an athlete on ED because of their health background. Additionally, athletes

tend to confide in their athletic trainer on many different issues because although the trainer may be an authoritative figure, the athlete does not find them threatening.

The team physician has a responsibility to the athlete also. One possible method to aid in identifying those athletes who are at risk for ED, is the preparticipation physical examination. At the collegiate level, all athletes go through a medical examination before they can participate in their sport. Questions on the examination that are key to identifying those at risk pertain to a female athlete's menstrual cycle and any history of stress fractures among both male and female athletes (Joy et al., 1997; Koester, 2003). Physicians must be knowledgeable about ED in order to recognize answers to questions that may signify an athlete at risk. Furthermore, if a physician encounters an athlete with an ED, behavioral contracting may be an effective tool for monitoring and to determine medical clearance for sports participation (Brubaker & Leddy, 2003).

Athletes are human, but at the collegiate and elite levels, society many times treats them like robots. Athletes are put on pedestals, and are expected to be competitive at all costs. Therefore, it is imperative that the support staff that works closely with athletes helps to provide an environment that is positive and allows for the athlete to excel in his or her sport without any undue stress. The athletic community is a family in itself, and it takes a commitment from all members in order to be successful. Many of the personnel that work in the intercollegiate athletic departments will admit that, "If it was not for the athletes, they would not have a job". Although this may be true, there has been a lack of commitment of Division I intercollegiate athletic programs to take steps to initiate awareness as well as intervention about ED. The first step to awareness is for the athletic department to have an ED policy, so that when an athlete is faced with an ED, they can

rely on the administration and staff to support them and get them the necessary help that they need. In a study done by Beals (2003), surveys were sent to 170 Division I athletic programs. Of those surveys returned, education about eating disorders (ED) and menstrual dysfunction (MD) was made available to athletes by 73% of the schools, and 61% made this information available to coaches. Additionally, less than 41% of the schools made such education a requirement. According to Pauline Powers, coauthor of the 1999 NCAA study on athletes and ED, intercollegiate athletic departments showed resistance to the idea of examining the connection between athletics and ED. She further explained that some schools were fearful that the problem was present and did not want to acknowledge it, but the other part was concern that the study would in some way interfere with the athletes' careers and interest in sports (Interview with Dr. Pauline Powers, 1999).

There are however, universities that have made the commitment for creating programs specifically to combat the issues of ED and have been successful. The performance team at the University of Texas at Austin is one such example. The team has designed intervention strategies to prevent and provide services pertaining to ED for Division I athletic programs (Thompson & Sherman, 1993; Ryan, 1992). Other universities, such as the University of North Carolina at Chapel Hill, use a Disordered Eating Case Management Team to monitor a referred athlete that has issues with ED (UNC Protocol for Student Athletes Treatment of Disordered Eating; W. Prentice, personal communication, July 10, 2003). The University of Tennessee Women's Collegiate Athletic Program developed Team ENHANCE (Enhancing Nutrition, Health, Athletic performance, Networking, Community, and Education) to create a healthy culture in

which student-athletes can thrive (The University of Tennessee Women's Collegiate Athletics, n.d.). Likewise, the University of Cincinnati developed a nutrition curriculum to be implemented to all athletes annually to reinforce the role of nutrition in supporting health and performance (Baer et al., 1995). In addition, although it is warranted that all Division I intercollegiate athletic programs have an ED program in place, it is important to identify appropriate standards and guidelines for programs that are administered. Andrews (2002) suggests guidelines for athletic departments in the development of policies and procedures for referring collegiate athletes with ED. However, it is best to confer with the university's legal counsel and have them approve whatever procedure, policy, or intervention strategy that is developed and implemented (Miller, Scheele, Horacek, Dodge & Cox, 1998). The NCAA News (National Collegiate Athletic Association [NCAA], 2000) addressed the legal issues behind collegiate athletics and ED. Barbara Bickford, an assistant professor of exercise and sport science who specializes in legal issues in college sports, reports that by addressing the issue, coaches, trainers, and administrators protect not only the university but also their student-athletes' well being. Bickford (1999) further discusses universities' potential for legal liability if they continue to allow student-athletes with ED to participate in sports. She also discusses a risk-management program designed to assist athletic departments in meeting their legal duties with athletes and limit the university's liability in case of serious injury or death.

Additionally, Division I intercollegiate athletic departments have to make the initial step to ensure a safe and healthy environment for their student-athletes. Many universities ensure this safe and healthy environment by providing policies to protect

their athletes. As recommended by the NCAA, guidelines are set forth to educate athletes on alcohol, tobacco, and drugs, as well as ED, but the NCAA does not require a written policy on these issues (Mary Wilfert, personal communication, February 10, 2006). The resources to initiate an ED policy are endless. Many athletic governing bodies such as the NCAA, the American College of Sports Medicine (ACSM), the American Dietetic Association (ADA) and USA Gymnastics have taken position stands and offer recommendations and resources to assist those athletic departments in their effort to combat eating disorders and disordered eating among their athletes (NCAA, n.d.; ACSM, 1997; ADA, 2001; USA Gymnastics, 1995).

## CHAPTER III

### METHODS

The purpose of this study was to determine the differences between Division I intercollegiate athletic departments having an ED policy and those that do not and to determine variables that influence those differences that can lead to an increase in the incidence of reported cases of eating ED during March 2004 through March 2005. Variables include educational programs on ED provided to student-athletes, and whether athletic departments provided other policies for their student-athletes such as alcohol, tobacco, or drug policies. This chapter includes information about the participants, design and procedures, instrumentation, and finally, data analysis and statistical treatment.

#### Participants

Three-hundred and thirty (N=330) Division I senior women's administrators (SWA) were sent a survey in March 2005 and were asked to report data from the time period of March 2004 through March 2005. The survey consisted of questions related to ED and whether or not they did have a policy in place in their athletic department at their institution.

The researcher selected these SWA's based on purposive sampling. The SWA's were determined by the researcher to be representative of the population for the purpose of this study. Although ED are regarded as a medical issue and many times the medical personnel such as the head athletic trainers or team physicians are the individuals who are the most qualified on the issues of ED, the SWA's of these institutions were selected

based on their knowledge of administrative policies and procedures in their current athletic department. Based on the evidence that has been previously noted that ED are more apparent among females, the researcher selected the participants based on their gender and the probability that they are more inclined to be the administrator that handles these problems with female athletes. Furthermore, it is interesting to the researcher, to note the sample's perspective and the level of priority that an administrator of an intercollegiate athletic department has for ED among female collegiate athletes. Prior to participating, all of the SWA's have signed an informed consent form according to standards set forth by the University Human Subjects Committee.

### Design and Procedure

This quantitative research employs an ex post facto design to predict the relationships between and within those Division I intercollegiate athletic departments that have and do not have ED policies, as well as the differences in the number of reported cases between both groups. Likewise, the survey consisted of questions that were created by the researcher. Thus, this research is deemed a pilot study or preliminary investigation designed to test research hypotheses, gather data, and validate the methodology for research on ED. A cover letter describing the nature of the research, an informed consent form, and an ED survey was addressed to the senior women's administrator and sent to all of the 330 Division I intercollegiate athletic departments (see Appendix A). Addresses for the SWA's were obtained by email attachment from the Collegiate Directories Inc. in Cleveland, OH.

The survey consisted of 31 questions (see Appendix A). Questions 1 through 15, and questions 23 through 31 were answered by checking a box either yes, no, or not sure.

Questions 16 through 22 were questions using a Likert scale with categories of responses from strongly disagree, disagree, no opinion, agree, and strongly agree. In addition, the last set of questions (23-31) was questions of demographics. The first question was: Does your athletic department currently have an eating disorder policy for athletes? If the participant answered yes, they were instructed to continue to answer the survey and to also to provide a copy of their current policy either by electronic mail, fax, or the self-addressed stamped envelope provided. If they answered no to question one, then they were instructed to continue answering the survey. After completing the survey, the participants were asked to return the survey and the signed consent form in the self-addressed stamped envelope that was provided. If the participant from an institution that had a policy chose to send their policy back in the envelope provided along with the survey, and if postage costs were more than was provided on the envelope, then the researcher agreed to reimburse the participant if necessary.

The participants were informed that their survey would only be referenced by a numeric code at the top of the survey, and the only person that could correlate that code to the institution would be the researcher, thus all data was kept confidential. Furthermore, an additional code consisting of the number 1 or 2 was located at the top of the survey to be circled by the participant to indicate if they choose to receive the results of the research once completed.

Once the surveys were mailed by the researcher, four weeks were allowed for returns. The initial response rate was 32.7 % (n=108). At this time, the researcher followed-up on the mailing, by using the 2003-2004 National Directory of College Athletics (Collegiate Directories Inc., 2003) and making telephone calls to the nonrespondent SWA's at each

university. If the researcher did not have direct contact with an SWA by telephone, then a message was left on their voicemail as a reminder to the individual of the importance of completing the survey. Of those SWA's that the researcher did reach, if the SWA no longer had the packet that was originally sent to them, it was requested to be sent again by either postal mail or by electronic mail as an attachment. The researcher allowed an additional two weeks for those respondents to increase response rate. Finally, one last attempt by telephone was made by the researcher to the remainder of the SWA's who had not responded to the survey. Again, if there was no direct contact, another voicemail was left, and another reminder of the importance of the research.

### Instrumentation

The instrument used to gather the information for this study was a self-report survey containing open- and closed-ended questions as well as a 5-point Likert scale with presumed equal intervals between points. This survey was used to measure the perceptions of the participants about ED among intercollegiate female athletes.

To establish the face and content validity of this research, a panel of experts was used. The assistance in the design of the research was given by a professor of the researcher's. (Sharon Guthrie, personal communication, June 19, 2002). In creating the questions for the survey, the researcher was assisted by a colleague from the University of Cincinnati, Cincinnati, OH. (Keith King, personal communication, July 6, 2002). Along with Dr. King (personal communication, September 9, 2003) a panel of experts who have had experience with research in the area of ED (Sharon Guthrie, personal communication, October 2, 2003; Beals, personal communication, October 14, 2003) were asked to evaluate the questions in the survey. It was then e-mailed by attachment to the

researcher's advisor (Kerry Redican, January 5, 2004) who suggested additional demographic questions (questions #24, 27-31) to be asked of the SWA's. After adding these questions, the survey was again reviewed by each of the parties aforementioned, and there was agreement on the content of the survey. Validity is further established by those who have a comprehensive statistical background as to the type of analysis to be used in this study (Michael Lacourse, personal communication, June 2003-July 2005).

### Data Analysis and Statistical Treatment

In regards to testing the hypothesis and provide evidence to support the research questions both descriptive and inferential statistics were used to analyze the data. The data reduction and analysis were divided into the following components:

1. Analysis of the differences in the number of Division I intercollegiate athletic departments that currently have or do not have an ED policy and the differences in the number of reported incidences over a 12-month period.
2. Analysis to compare the variables among those athletic departments that offer an educational program to their student-athletes on eating disorders and the number of reported incidences in a 12-month period.
3. Analysis between the groups on those that have an alcohol, tobacco, or drug policy for their student-athletes, and also have an ED policy.

Frequencies were used to explain demographic information and to analyze component

1. In regard to the reported incidences of eating disorders among female athletes at those institutions that have a policy and those that do not. Frequencies and inferential statistics using independent t-tests, ANOVA, ANCOVA, and chi-squared were used to summarize the data for components 1, 2 and 3.

## CHAPTER IV

### RESULTS

This chapter presents the results of the study pertaining to the three research questions set forth in Chapter One. Those questions were: (1) Does having an ED policy influence the number of reported incidences among female athletes? (2) Does having an educational program for female student-athletes influence the number of reported cases of ED? (3) If a university had an alcohol, tobacco, or drug policy for their student-athletes, will this influence having an ED policy? It is important to note that with the following analysis, not all of the participants answered every question and therefore it is reflected in the data. The data was processed using the Statistical Package for the Social Sciences Release 12.0.1 (January 10, 2006), and analyzed by the researcher with the assistance of Vance Tammen (personal communication, January 2006 through March 2006).

#### Demographics

Of the three hundred and thirty (N =330) NCAA Division I universities across the nation, one hundred and forty-five (n=145) responded to the survey, making a 43.7 % return rate. The initial response rate was 32.7 % (n=108). At this time, the researcher followed-up on the mailing and made telephone calls to the nonrespondent SWA's at each university. The researcher allowed an additional two weeks for those respondents. At this point, the response rate was 41.5% (n=137). Finally, one last attempt by telephone was made by the researcher to the remainder of the SWA's who had not responded to the

survey. An additional two weeks was allowed for response, and then the final return rate was calculated.

Tables 1 through 8 provide demographic information using descriptive statistics for this research. Although the survey was intended for SWA's, there were other participants that answered the questions. The participants were senior women's administrators (SWA); 95.9% (n=139), certified athletic trainer (ATC); 3.4% (n=5); and director of athletics (AD); .7% (n=1) (see Table 1).

Table 1

Frequency Scores for Survey Participants

Participant	<i>f</i>	%	Cum %
SWA	139	95.9	95.9
ATC	5	3.4	99.3
AD	1	.7	100.0

The SWA's also held other positions at their institutions 78.6 % of the time (n=110) ranging from athletic administrator; 89.0% (n=97), coach; 2.8% (n=3), instructor/faculty; 1.8% (n=2); student services; 2.8% (n=3), other; 2.8% (n=3), or did not answer; .3% (n=1) (see Table 2).

Table 2

## Frequency Scores for Other Positions Held by SWA

Position	<i>f</i>	%	Cum %
Athletic Administrator	97	89.0	89.0
Coach	3	2.8	91.7
Instructor/Faculty	2	1.8	93.6
Student Services	3	2.8	96.3
Other	3	2.8	99.1
Did Not Answer	1	.3	100.0

Of those that responded, 50.3 % (n=73) indicated they did have an ED policy, 44.8% (n=65) did not have an eating disorder policy, and 4.8% (n=7) did not know whether they had a policy or not (see Table 3).

Table 3

Frequency Scores for Eating Disorder Policy

Policy	<i>f</i>	%	Cum %
Yes	73	50.3	50.3
No	65	44.8	95.2
Did Not Know	7	4.8	100.0

Of those that did have policies, only nine actually sent a copy of the policy, with one of those being utilized for recreational athletes. However, of those that do have ED policies,

36 times ( $M = 13.39$ ,  $SD 1.644$ ) it had been used on female athletes within the time of this study (see Table 4).

Table 4

Mean Scores for Times Eating Disorder Policy Used on Female Athletes

Policy	<u>M</u>	<u>SD</u>	<u>n</u>
Yes	13.39	1.644	36

As noted in Chapter Two, implementing an ED policy, takes a multidisciplinary team in an effort to understand the needs of an athlete faced with an ED. Consequently, there are a number of individuals that need to be included for the policy to be effective and it begins with those individuals who create and implement an ED policy. Of those athletic departments that have ED policies, the director of athletics (AD) (9.5%, n=31); senior women's administrator (SWA) (11.2%, n=37); compliance director (1.5%, n=5); athletic trainer (ATC) (20.6%, n=68); team physician (15.1%, n=50); legal counsel (5.5%, n=18); registered dietician (RD) (12.2%, n=40); psychologist (14.2%, n=47), and other (4.7%, n=15) have all been involved in creating and implementing their current policy.

Furthermore, when asked if there was a consequence to their athletes if they did not adhere to the guidelines of the policy, of those that responded, 66.7% (n=54) responded yes; 16.0% (n=13) answered no; and 17.3% (n=14) did not know (see Table 5). Table 6 displays the consequences, 48.9% (n=22) was a suspension from the team; 11.1% (n=5) was a medical disqualification; 26.7% (n=12) was a removal from the team; 11.1% (n=5) was individualized to the athlete; and 2.2% (n=1) was referral to counseling.

Additionally, when using a Likert scale from strongly disagree to strongly agree, 14.2% (n=20) of the respondents strongly disagreed that a female athlete should be suspended from sport participation if they had an ED until it was resolved, 53.9% (n=76) disagreed, 13.5% (n=19) had no opinion; 16.3% (n=23) agreed and 2.1% (n=3) strongly agreed with a suspension (see Table 7). Lastly, when asked if they had ever dealt with an athlete with an ED, the response from the participants who answered the question was 71.8% (n=102) said yes; 26.8% (n=38) said no; and 1.4% (n=2) did not know (see Table 8).

Table 5

Frequency Scores for Consequence

Consequence	<i>f</i>	%	Cum %
Yes	54	66.7	66.7
No	13	16.0	82.7
Did Not Know	14	17.3	100.0

Table 6

Frequency Scores for Type of Consequences

Consequence Type	<i>f</i>	%	Cum %
Suspension	22	48.9	48.9
Medical Disqualification	5	11.1	60.0
Removal from Team	12	26.7	86.7
Individualized	5	11.1	97.8
Referral to Counselor	1	2.2	100.0

Table 7

Frequency Scores for Suspension from Team

Likert Scale	<i>f</i>	%	Cum %
Strongly Agree	3	2.1	2.1
Agree	23	16.3	18.4
No Opinion	19	13.5	31.9
Disagree	76	53.9	85.8
Strongly Disagree	20	14.2	100.0

Table 8

Frequency Scores for Dealing with Athletes with ED

Dealing with Athletes	<i>f</i>	%	Cum %
Yes	102	71.8	71.8
No	38	26.8	98.6
Did Not Know	2	1.4	100.0

Question #1

The important question for the study addressed the issue of differences in the reported cases of ED over a 12-month period among female college athletes at universities that have ED policies and those that do not. It is important to note that not all participants answered the question on reported incidences and the data reflects only those that did. However, of those schools that did report incidences of ED, 39 schools had an ED policy

while 28 did not have a policy. Table 9 presents the results of a one-way ANOVA test, this study found no significant differences among those schools with a policy and those without a policy;  $F(1, 65) = 1.315, p < .256$ .

Table 9

Analysis of Variance for Policy and Reported

	df	F	Sig.
Between Groups	1	1.315	.256
Within Groups	65		

Question #2

Much of the research on eating disorders concludes that education is prevention and prevention relies most heavily on providing information to increase understanding, enhance attitudes, and promote healthy behavior (Schwitzer, et al., 1998). Over the 12-month period in which this study was conducted, only 58.6 % (n=85) of the athletic departments indicated that they provided education on ED to their athletes, while 39.3% (n=57) did not, and 2.1% (n=3) did not know (see Table 10). Furthermore, those athletic departments that stated incidences of ED during the time of the survey was n=117, yet the actual number of schools that reported ED cases for the survey was n=69, and only n=66 schools provided usable data.

Table 10

Frequency Scores for Education to Athletes

Education	<i>f</i>	%	Cum %
Yes	85	58.6	58.6
No	57	39.3	97.9
Did Not Know	3	2.1	100.0

A one-way analysis of variance (ANOVA) was conducted to determine whether a significant difference emerged for an intercollegiate athletic department providing educational programs on ED to their student athletes over a 12-month period. Table 11 shows these results. Of those with reported cases, n=43 were from schools with educational programs, where as n=23 were from schools without educational programs. Those universities that had educational programs were not significantly different in reported cases compared to universities without programs  $F(1, 64) = .628$   $p < .43$ . Thus, no significant differences on having an educational program and reported cases were found between the groups.

Table 11

Analysis of Variance for Educational Programs and Reported

	df	F	Sig.
Between Groups	1	.628	.431
Within Groups	64		

In addition, to test the potential of having a policy sharing variance with reported ED cases, an analysis of covariance (ANCOVA) was conducted. Again, the data only shows those schools that answered the question. Of the 39 schools with a policy, it was reported an average  $\underline{M}$ =3.47,  $\underline{SD}$  = 2.68 eating disorder cases. Those 28 schools without an ED policy, reported an average of  $\underline{M}$  = 4.75,  $\underline{SD}$  = 6.45 ED cases. Table 12 shows the results of the ANCOVA, revealing no significant differences between the groups;

$$F(2, 63) = .995, p < .376.$$

Table 12

Analysis of Covariance for Policy, Educational Program with Reported

Policy	$\underline{M}$	$\underline{SD}$	$\underline{n}$
Yes	3.47	2.68	38
No	4.75	6.45	28

Finally, because much of the current research and reported data on ED is from medical personal working with female athletes, this research addressed whether the athletic department provided an educational program to their athletic training staff. Amazingly, 43.7% (n=62) did not provide educational programs, while 39.4% (n=56) did, and 16.9% (n=24) did not know (see Table 13). The data is similar for coaches of women sports. The present study shows 38.6% (n=56) of athletic departments provided an educational program to their coaches, 56.6% (n=82) did not, and 4.8% (n=7) did not know (see Table 14).

Table 13

Frequency Scores for Education for ATC

Education	<i>f</i>	%	Cum %
Yes	56	39.4	39.4
No	62	43.7	83.1
Did Not Know	24	16.9	100.0

Table 14

Frequency Scores for Education for Coaches

Consequence	<i>f</i>	%	Cum %
Yes	56	38.6	38.6
No	82	56.6	95.2
Did Not Know	17	4.8	100.0

Question #3

Differences in schools with or without an ED policy were, as expected, not significant. Seventy-three (73) schools had a policy where 65 did not;  $X^2 = .464$ ,  $p < .496$ . However, the results were different comparing alcohol, tobacco, and drug use. As expected, schools were much likely to have an alcohol policy;  $X^2 = 89.29$ ,  $p < .0001$ , likely to have a tobacco policy;  $X^2 = 73.39$ ,  $p < .0001$ , and to have a drug policy;  $X^2 = 134.25$ ,  $p < .0001$  (see Table 15).

Table 15

Chi-Square for ED, Alcohol, Tobacco, and Drug Policies

	ED	Alcohol	Tobacco	Drug
$\chi^2$	.464	89.294	73.388	134.247
df	1	1	1	1
Asymp. Sig.	.496	.0001	.0001	.0001

Furthermore, one hundred and forty-three ( $n = 143$ ) participants reported data on female athletes ( $M$  number = 203.59,  $SD = 89.103$ ) and an independent sample t-test revealed a significance difference in that an athletic department with a higher number of female athletes were more likely to have an ED policy;  $t(1, 131) = 2.033$ ,  $p < .04$  (see Table 16).

Table 16

t-test Results for Number of Female Athletes and Eating Disorder Policy

	$t$	$df$	Sig. (2-tailed)	Mean difference
Equal Variances Assumed	.2033	131.0	.044	29.69
Equal Variances Not Assumed	2.064	129.940	.041	29.693

## CHAPTER V

### DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

This study investigated the differences between Division I athletic department's having an eating disorder policy and those that do not. In addition, this study focused on whether having an ED policy as well as educating student-athletes on ED had an influence on the number of reported cases among female athletes during a 12-month period. Lastly, this study examined if a university had an alcohol, tobacco, or drug policy for their student-athletes, would it influence having an ED policy. First, a discussion of the results of this study as they relate to each research question is addressed. Secondly, the limitations and recommendations for future research are discussed.

#### Discussion

One hundred and forty-five (n=145) Division I universities responded to this survey on ED. Of those, 73 indicated that they do have an ED policy or guidelines in their intercollegiate athletic departments. Of those that indicated they have policies, only 9 actually sent a copy of the policy, with one of those being utilized for recreational athletes. Of the copies received, each had their own version of what their policy employed. This in part is due to that there are only general guidelines to follow, and the interpretation is diverse in nature. Each of the policies reviewed revealed similar components that meet the criteria to properly treat an athlete with an ED. The primary goal of each policy presented was to implement an effective multidisciplinary approach for the intervention, treatment, and prevention needed to treat an ED. Problems related to ED are discovered through initial assessment that includes a pre-participation physical

examination, as well as self-referral or referral from a team member, coaching or other staff member, or a member of the wellness team. The wellness team is comprised of highly skilled cadres which have the appropriate skills and credentials to treat an athlete with an ED. In most incidences, those individuals are comprised of the sports medicine staff, the counseling center, and a registered dietician. If the wellness team concludes that the student-athlete has an ED, then they will develop a treatment plan for the athlete. The treatment plan may consist of such elements as: 1) required visits with the sport psychologist, registered dietician, and team physician; 2) attendance of a nutrition and body image support group; 3) weigh-ins; 4) limitation or cessation of sport activity, depending on severity as determined by the team physician; and 5) any other intervention as deemed medically or psychologically necessary.

Additionally, upon review of the written plan for treatment, the student-athlete is asked to sign a contract stating that they will comply with the treatment plan, or be suspended or removed from the team if deemed appropriate. Finally, many of the policies suggest weekly or monthly meetings of the wellness team for the purpose of the individual health care providers to present and to receive feedback on individual student's cases involving eating behaviors or other nutritional issues.

In reference to the research questions, the results do not support that there is a significant difference in the number of reported incidences of ED among female intercollegiate athletes at those institutions that have a policy and those that do not. A total of 69 universities reported incidences of ED, and although it was suggested that those institutions with an ED policy would have less reported incidences of ED because of the guidelines that the policies would employ, this study did not support that. Despite

no significant difference, the death of any individual, whether it is Karen Carpenter or wrestlers trying to make weight, the important message is that these deaths create a potential for an ED policy.

Likewise, in comparing those institutions that offered an educational component on ED for their student athletes within the last 12 months, and the reported number of incidences, there was no significant difference. Additionally, it is difficult to assess the number of actual reported cases due to the nature of this issue. This conclusion could suggest two different scenarios with two very different outcomes. First, because ED are such a “secretative” disease athletes are not coming forward when they have the signs and symptoms of an ED to receive the help that they so desperately need. Furthermore, as indicated in one survey, the incidences remained unreported to the researcher, because of confidentiality. As seen in recent years by the indoctrination of HIPAA (Health Insurance Portability and Accountability Act), which protects the security and privacy of health data, researchers are finding obstacles to overcome when assessing information concerning an individual’s health. This being the case, it is possible that the actual reported incidences are far less than what is estimated among the female athletic population, and therefore, goes underreported.

The second scenario addresses this outcome in a different light. Whether discussed openly, the truth is that ED awareness is becoming more of a reality not only among athletes, but the general population as well. The media especially elicits this with young celebrities that have been diagnosed with an ED, and portraying it as a cool and trendy thing. Could it be that due to this awareness, individuals who are faced with an ED, athletes in particular, are seeking education on their own? Historically, studies on ED

have identified the college female to be at greater risk (19% to 4%) than the general population (4% to 1%) for developing an ED (DSM IV, 1994; Borgin & Corbin, 1987). Furthermore, Kirk (1999) indicated that college females in general displayed higher percentages of ED behavior than the general population. This higher risk factor is believed to be due largely to the lack of predictability of the new college environment, different social codes of conduct, higher demands for academic performance, and little or no access to adults for guidance (Cauwels, 1983; Root, Fallon., & Friedrich, 1986). Therefore, it is necessary that a support system is in place, and for female athletes, this support system is likely to be more readily available than for their female college counterparts. Research has shown that when surveying the head athletic trainers at Division-I institutions, they felt that they play a primary role in the management of an athlete with an ED (Vaughan, et al., 2004).

Regardless of the outcome, many researchers have concluded that education and prevention programs about ED need to be incorporated into every sport, athletic department, and counseling center across campus to help combat the occurrences of ED among college women (Joy, et al., 1997). However, this study does not support this conclusion. Therefore, these results suggest implications for further research on this topic. Most of the barriers that affect those from intervening in the sport environment are lack of knowledge and confidence of the coaches, administration, and support staff (Vaughan, et al., 2004). Along with providing education to student-athletes, the support staff should be educated as well. Of the reporting institutions, only 56 reported having an educational program for their athletic trainers and coaches during the time of this study. The fact that female college athletes have accessibility to a support staff that consists of

individuals such as coaches, athletic trainers, physicians, and academic advisors, deems necessary and appropriate that these support personnel stays current on the strategies necessary to reduce ED. As a complex issue, medical and psychological, it can be common to find a multidisciplinary team that works together to treat those athletes with an ED. Most of the members of this team consist of the medical staff (eg. team physician, athletic trainer), a dietitian, and a psychologist (Baer, et al., 1995, Joy, et al., 1997; Hotelling, 1999).

Ultimately, prevention relies most heavily on providing information to increase understanding, enhance attitudes, and promote healthier behaviors (Schwitzer, et al., 1998). In addition, as Bickford (1999) emphasizes one of the most effective ways of reducing the university's liability for athletes with ED would be to prevent them by providing educational programs emphasizing diet, nutrition, weight loss, and athletics performance. Although it is apparent that there is more awareness on ED, this study did not support the notion that education is appropriate in order to intervene and prevent this problem from escalating. However the information is administered, it needs to reduce not only those at risk for an ED, but those that have not reported their ED in order to get the help they need.

Finally, the third question addressed the athletic departments that may have an alcohol, tobacco, and/or drug policy and whether that influenced having an ED policy. Although no significance difference, the results indicated if an athletic department had an alcohol, tobacco, or drug policy than they were more likely to have an ED policy. This question stems from the perceptions of the some of the administration in intercollegiate athletics. Some would believe and in one instance was actually stated, that an ED is not

an athletic related issue and therefore could not justify having a policy. However, the vast majority of the universities surveyed indicated that they had at least one of these other policies in place. It is ironic that these issues are also predisposing in nature, and therefore, not athletic-related either. In fact, they can actually be warranted as addicting in nature, and therefore, an athlete may deal with it during their entire college career before receiving help. Interestingly, the NCAA has by-laws that their institutions have to educate the student-athlete on banned substances, which include a list of drugs and tobacco as well. Every D-I football program is drug tested every year, while other sports are randomly tested. In addition, the NCAA has guidelines for education on alcohol, drugs, and tobacco, as well as guidelines for ED. Furthermore, the NCAA has no by-law requiring a written policy on any of these issues except for tobacco which is not allowed during practice or competition for any NCAA institution (Mary Wilfert, personal communication, February 6, 2006).

### Conclusions

Research in the area of ED among intercollegiate athletes has been diverse. This study is essentially a pilot study. It is important as a test bed for ideas and as an evaluation and assessment measure for future research. Most of the research has relied on subjective questionnaires, and it is difficult to conclude if athletes are being honest about their eating habits with these modes of testing (Kirk, 1999). However, it is clear that ED are issues that are very real in the athletic realm, and the common denominator is prevention. As members of an intercollegiate athletic department staff, it is the responsibility of the sports medicine team, the administrators, and even the officials to not only comply, but encourage the athletes to be educated on issues that can effect their performance, and in

some cases their lives, while a member of an athletic team at their institution. It is interesting to note that although the NCAA recommends that each athletic department conduct a drug and alcohol education program once a semester, they are vague in their recommendation for when to educate the athlete on proper nutrition. [The NCAA Sports Medicine Handbook recommends as follows: "...Educating the young, physically active females on proper nutrition, safe training practices, and the risks and warning signs of the female athlete triad" (NCAA Sports Medicine Handbook, 2002-03, {37}). In addition, although it is recommended throughout this study on the legislative recommendations for an athletic department to have a written policy on eating disorders, the NCAA does not offer written support of this recommendation. However, the NCAA does state the following concerning a policy on drugs and alcohol: "Each athletic department should have a written policy on alcohol, tobacco and other drugs. This policy should include a statement on recruitment activities, drug testing, discipline, counseling or treatment options" (NCAA Sports Medicine Handbook, 2002-03, {22}). [The NCAA does have a general written action plan with guidelines on intervening with an athlete who potentially has an eating disorder. The last step of this action plan is to "develop a plan and compliance contract with the athlete"] (NCAA Sports Medicine Handbook, 2002-03, {38}).

In conclusion, again it must be noted that ED is a very real dilemma in the athletic world, and although controversial, it cannot be ignored. The backbone behind intercollegiate athletic departments is their athletes, without them, athletic departments would not exist. In order to keep intercollegiate athletics at a competitive edge, they have to recruit athletes that are competitive as well. However, if an athlete faces an ED, the

chances for them to continue to compete without complications are difficult. Eating disorders are very real dilemmas that unfortunately are not going away anytime soon. An ED policy ultimately serves as a guideline to be used as a reference tool by the athletic department and its staff to initiate help for an athlete to combat this issue, and possibly save their life.

### Limitations

Due to the nature of this study, it does have its disadvantages and problems associated with it. First, there is the question of external validity. The non-response error is higher than what is expected. It was however controlled to some extent by double dipping. From the non-respondents, a random sample was drawn, and their response was achieved by a phone call. After double dipping on two occasions, the non-respondents dropped to 56.3%. Again, external validity is compromised due to non-probability sampling. The sampling of the SWA's for this study is based on personal judgment of the researcher. Additionally, of the population surveyed, there are 145 participants, yet only 139 of those are senior women's administrators. Although most ED surveys are distributed to a member of the medical staff, this study was interested in ED policies, and the researcher felt that an athletic administrator, specifically a female administrator, is able to answer the questions with more clarity than another member of the athletic department. Because the study is limited to Division I athletic departments, it reduces the opportunity to generalize to the target population that consists of all intercollegiate athletic departments across the United States.

Another limitation is the reported incidences of ED in intercollegiate athletics. Many of the universities surveyed indicated that they had incidences of ED during the 12-month

period, but did not disclose the number of incidences. This underreporting can be the result of ignorance on the administration not knowing the actual number of incidences, or a better explanation, as mentioned earlier in this survey, is the indoctrination of HIPAA laws.

Lastly, the scope of this study does not investigate the number of reported incidences of alcohol, tobacco, and drug use among athletes at the D-I level. This research effort could help determine if athletes are more at risk for these other issues rather than ED alone. Furthermore, the lack of ED policies could imply that universities have seen more athletes with these other issues which warranted implementing a policy, than with ED. However, despite no significant differences in the policies, the groups that have these other policies, should indeed have an ED policy to meet the demands of those athletes who may be faced with this dilemma.

### Recommendations

Recommendations for future research are derived from this study and are presented in this section. First, this study was quantitative. Yet, the complex etiology of ED makes intervention and prevention difficult. Sundgot-Borgen (1994) contends that follow-up interviews are necessary after distributing self-report surveys to athletes because of the tendency for athletes to underreport disturbed eating behaviors and attitudes. Having research that is qualitative in nature, with not only follow-up interviews, but also in-depth interviews based on the biopsychosocial model as described by Adolescent Medicine Committee (Canadian Paediatric Society, 1998) in chapter two, would provide a more accurate way of integrating treatment protocols based on the athlete's specific needs.

This study did not support education on ED for the student-athlete in regards to reported incidences. As other researchers noted (Hsu, 1990), suggests that educational programming may actually encourage ED by making individuals aware of pathogenic behaviors. Providing information on proper dietary practices and body composition may be more beneficial to the athlete than mandated education.

Finally, although not written, the action plan from the Sports Medicine Handbook may possibly be a precursor to what the NCAA has in mind for a future guideline for intercollegiate athletic departments to initiate an ED policy for their athletes. Eating disorders are a reality in college athletics. As explained by Bickford (1999), as a risk management tool, universities have a legal responsibility to limit their liability in case of serious injury or death. An ED policy is such a tool. Therefore, for those universities that have not yet adopted an ED policy, the NCAA guidelines can be used as a model.

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APPENDIX A

April 8, 2005

Dear Senior Women's Administrator:

As a certified athletic trainer for the last twelve years, and having the experience of working in the Division I intercollegiate setting, it is alarming the number of female athletes that I have come in contact with that have been faced with an eating disorder. Currently I am finishing my doctorate in education from Virginia Tech in Blacksburg, Virginia, and I have made it a point to become increasingly aware of this dilemma, and have both professionally and morally taken a stand to help these athletes in crisis.

Because of the lack of understanding of a potentially deadly dilemma among both athletes and the personnel that work with them, I have created a survey that is geared towards the intercollegiate administration, particularly the SWA, to help with the awareness and the responsibility of having an eating disorder policy among Division I athletic departments.

Please take a few minutes to fill out the survey as well as the signed consent form, and return it to the address listed above at your earliest convenience. The answers that you provide in the survey will remain strictly confidential, and only myself and my committee members will have access to them. Additionally, if you are returning a copy of your eating disorders policy, please also include it in the envelope.

Eating disorders is a very real dilemma that female athletes face. It is imperative that as personnel who work closely with these athletes, that we have the capability and knowledge to help them with the intervention and prevention of such a debilitating disease that can become deadly if not treated.

Thank you for your time and effort in this matter. In addition, if you would like to receive a copy of the results, please circle the number one on the top right-hand corner of the survey. If you do not, then please circle the number two. Furthermore, if you have any questions please do not hesitate to contact me via email at [lhartman@vt.edu](mailto:lhartman@vt.edu).

Respectfully,

Laura Hartman-Dill, M.Ed., A.T., C.  
Doctoral Candidate  
Attachments (2)

## Informed Consent for Participants in Research Projects Involving Human Subjects

Title of Project: Eating disorder policies among NCAA Division I intercollegiate athletic programs.

Investigator: Laura Dill

### **Purpose of this Research**

Eating disorders in it self, has long been an area of concern among the female population. Yet, in the last twenty years the emphasis on eating disorders among the collegiate female has gained considerable attention among researchers. Athletes face a great amount of stress during their collegiate years, and many times will be the center of scrutiny as well as controversy. The purpose of this study will be to investigate two related issues: The number of Division-I intercollegiate athletic departments that currently have or do not have an eating disorder policy; and to determine if there are differences among those that have a policy and those that do not that can lead to an increase in the incidence of reported cases of eating disorders in a 12-month period. The subjects involved in this study include all Division I senior women's administrators across the country. The researcher chose the SWA's based on their gender and their knowledge of administrative policies and procedures in their current athletic department.

### **Procedures**

Your role in this research is to fill out a three- page survey based on whether you currently have/have not an eating disorders policies in your intercollegiate athletic department. The researcher asks only that you fill out this survey and return it in the self-addressed stamped envelope provided, and to also send a copy of your policy if applicable. If the researcher has not received the survey back from you within two weeks, then a follow-up phone call will be made to answer any questions and to remind you to please send the survey back to the researcher.

### **Risks**

The research being conducted uses human subjects, and therefore there is potentially a risk involved. However, the risk to you as a participant is minimal to none due to the nature of the research. As with any survey, your response is important in the data collection and increases the validity of the research being conducted, yet there are no consequences if you choose not to answer and return the survey to the researcher.

### **Benefits**

The results of the survey will be informal and there will be no guarantee of benefits to encourage you to participate in this research. However, the results will be beneficial to intercollegiate athletic departments that both have policies as well as those that do not have policies. For those universities who do utilize an eating disorders policy, the survey assesses the scope of the policy, and the effectiveness that it has had on combating the

issues of eating disorders. For those universities who do not have such a policy, the survey will address the need along with the legal responsibilities that intercollegiate athletic programs have toward their student-athletes concerning eating disorders. In addition, the information gained from this research will be informative to all levels of intercollegiate athletic departments across the country on the importance and need of having an eating disorders policy implemented for their student-athletes. Furthermore, a code consisting of the number 1 or 2 will be located at the top of the survey to circle by the participant to indicate if they choose to receive the results of the research once completed.

### **Extent of Anonymity and Confidentiality**

Although the respondents to the survey are not anonymous, their responses will remain confidential and the results will be utilized only for statistical purposes for the research. Confidentiality will be addressed by informing the participants that their survey will only be referenced by a numeric code at the top of the survey, and the only person that could correlate that code to the institution would be the researcher.

### **Compensation**

Subjects participating in this research will not be compensated, but their participation is greatly appreciated.

### **Freedom to Withdraw**

Subjects are free to withdraw from a study at any time without penalty. In addition, subjects are free not to answer any questions on the survey that they choose without penalty.

### **Subject's Responsibilities**

I voluntarily agree to participate in this study.

### **Subject's Permission**

I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent:

\_\_\_\_\_ Date \_\_\_\_\_

Subject signature

\_\_\_\_\_ Date \_\_\_\_\_

Witness (optional)

Should I have any pertinent questions about this research or its conduct, and research subjects' rights, and whom to contact in the event of a research-related injury to the subject, I may contact:

<u>Laura Dill</u> Investigator	<u>(949)492-1067 / lhartman@vt.edu</u> Telephone/e-mail
<u>Kerry Redican</u> Faculty Advisor	<u>(540)231-5743 / kredican@vt.edu</u> Telephone/e-mail
<u>John Burton</u> Departmental Reviewer/ Departmental Head	<u>(540) 231-5347/ jburton@vt.edu</u> Telephone/e-mail
<u>David M. Moore</u> Chair, Virginia Tech	<u>(540)231-4991/ moored@vt.edu</u> Telephone/e-mail

Institutional Review Board  
For the Protection of  
Human Subjects  
Office of Research Compliance-CVM Phase II (0442)  
Research Division

This informed consent is valid from 1/2005 to 8/2005

Institution Code \_\_\_\_\_  
 Result Code 1 or 2

## EATING DISORDERS AMONG FEMALE INTERCOLLEGIATE ATHLETES

Directions: Please take a few minutes and answer these questions as accurately and honestly as possible. Your participation in this study is crucial and greatly appreciated. Your answers will remain strictly confidential. If you would like the results from this study, please circle the #1 above or the #2 if you do **not** want the results.

**Please answer the following questions by checking the most appropriate box or filling in the blank.**

1. Does your institution have a policy on dealing with eating disorders among your female athletes?  
 If yes go to question #2, if no go to question # 6
 

Yes	No	Not Sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
  
2. How many years has this policy been in place? \_\_\_\_\_
  
3. To your knowledge, has this policy been used on female athletes in the last 12 months?  
 If yes, how many times? \_\_\_\_\_
 

Yes	No	Not Sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
  
4. To your knowledge, who was involved in implementing the current policy?
 

AD	SWA	Compliance Director	Head/Assistant athletic trainer	Team doctor
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal counsel for your institution	Registered dietician	Psychologist		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Other (please specify) _____				
<input type="checkbox"/>				
  
5. If an athlete refuses to adhere to the guidelines of the policy, is there a consequence?  
 If yes, briefly explain \_\_\_\_\_
 

Yes	No	Not Sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
  
6. Has an educational program on eating disorders been offered to athletes at your institution within the past 12 months?  
 If yes, how many hours of training were provided? \_\_\_\_\_hours
 

Yes	No	Not Sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
  
7. Has an educational program on eating disorders been offered to the athletic training staff at your institution within the past 12 months?  
 If yes, how many hours of training were provided? \_\_\_\_\_hours
 

Yes	No	Not Sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
  
8. Has an educational program on eating disorders been offered to the coaches at your institution within the past 12 months?  
 If yes, how many hours of training were provided? \_\_\_\_\_hours
 

Yes	No	Not Sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. To the best of your knowledge, has any female athlete at your institution had an eating disorder in the past 12 months?  
If yes, how many? \_\_\_\_\_
- Yes      No      Not Sure
10. Have you ever dealt with an athlete with an eating disorder?
- Yes      No      Not Sure
11. If an athlete approaches you with an eating disorder, whom do you refer that athlete to for intervention/treatment?
- Athletic trainer    Registered dietician    Coach    Team Doctor
- Psychologist    Other (please specify)    Not Sure
12. Does your athletic department have an alcohol policy for your athletes?
- Yes      No      Not Sure
13. Does your athletic department have a tobacco policy for your athletes?
- Yes      No      Not Sure
14. Does your athletic department have a drug policy for your athletes?
- Yes      No      Not Sure
15. To your knowledge, has your institution ever had legal action taken against it for an eating disorder related issue?
- Yes      No      Not Sure

**Please circle the appropriate response to each of the following questions.**

- |   | Strongly<br>Disagree | Disagree | No Opinion | Agree | Strongly<br>Agree |
|---|----------------------|----------|------------|-------|-------------------|
| 16. I believe an eating disorder is not an athletic related issue.  | 1                    | 2        | 3          | 4     | 5                 |
| 17. I believe treatment for an eating disorder should be left to the athlete to initiate.   | 1                    | 2        | 3          | 4     | 5                 |
| 18. I believe I have adequate knowledge to deal with a female athlete who may have an eating disorder.  | 1                    | 2        | 3          | 4     | 5                 |
| 19. I believe that a female athlete should be suspended from sport participation if they have an eating disorder until it is resolved.                  | 1                    | 2        | 3          | 4     | 5                 |
| 20. I believe a full-time registered dietician should be on the athletic department staff to help prevent eating disorders from developing in athletes. | 1                    | 2        | 3          | 4     | 5                 |

- |   | Strongly<br>Disagree | Disagree | No Opinion | Agree | Strongly<br>Agree |
|---|----------------------|----------|------------|-------|-------------------|
| 21. I believe the percentage of female intercollegiate athletes with eating disorders is on the rise.   | 1                    | 2        | 3          | 4     | 5                 |
| 22. I believe more attention by the intercollegiate athletic department should be placed on preventing athletes from developing eating disorders. | 1                    | 2        | 3          | 4     | 5                 |

**Please answer the following demographic questions by checking the most appropriate box or filling in the blank.**

23. Do you hold another position(s) other than the SWA at your institution? Yes No Not Sure
- If yes, please list other position(s). \_\_\_\_\_
24. Your age? \_\_\_\_\_
25. Number of years as an SWA? \_\_\_\_\_
26. Number of years at your current institution? \_\_\_\_\_
27. Location of your institution? Urban Rural Suburban
28. Your race/ethnicity? African American Asian Hispanic Caucasian Other \_\_\_\_\_
29. Number of students at your institution? \_\_\_\_\_
30. Number of female athletes in your intercollegiate athletics program? \_\_\_\_\_
31. Your highest degree earned? Bachelors Masters Doctorate Other \_\_\_\_\_

**Thank you for your time and effort in completing this survey.**

APPENDIX B

**American Psychiatric Publishing, Inc.**  
**1000 Wilson Boulevard**  
**Suite 1825**  
**Arlington, VA 22209**

**Tel: 703-907-7875**

**Fax: 703-907-1092**

March 8, 2004

Laura L. Dill  
Virginia Polytechnic Institute & State University  
204 El Levante  
San Clemente, CA 92672

Dear Ms. Dill:

I am responding to your March 2, 2004 request to reproduce the *Diagnostic Criteria for Anorexia Nervosa; Bulimia Nervosa, and Eating Disorder Not Otherwise Specified* from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, (Copyright 2000)* in your doctoral dissertation.

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Sincerely,

Kathy Stein  
Director of Financial and Business Operations

# Laura L. Dill

204 El Levante • San Clemente, CA 92672 • Phone: (949)492-1067 • Email: laura.dill@cui.edu

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## PROFESSIONAL EXPERIENCE

---

- 2005-present     **Concordia University-Irvine • Irvine, CA**
- Faculty/ Athletic Trainer*
- Instructor for curriculum athletic training program and Exercise & Sport Science Division • Assist in the care, prevention, and rehabilitation of athletic injuries for all college athletes
- 2003-2005     **Saddleback Junior College • Mission Viejo, CA**
- Part-time Assistant Athletic Trainer*
- Assist in the care, prevention, and rehabilitation of athletic injuries for all junior college athletes • Instructor for physical education/health classes
- 1999-2002     **University of California, Irvine • Irvine, CA**
- Assistant Athletic Trainer*
- Assist with the care, prevention, and rehabilitation of athletic injuries for 500 athletes in 23 varsity sports • Head staff athletic trainer for women's volleyball, and men's/women's cross country & track • Coordinating ordering of supplies • Lecturer for athletic training/sports medicine classes • Supervision of student athletic trainers
- 1998-1999     **San Clemente Orthopedic Rehabilitation (SCOR) Physical Therapy • San Clemente, CA**
- Athletic Trainer*
- Worked with physical therapist in the care, prevention, and rehabilitation of athletic and orthopedic related injuries • Outreach athletic trainer for local high school • Coordinator for ordering of athletic training supplies • Supervision of student athletic trainers/physical therapy aides
- 1995-1998     **Virginia Tech University • Blacksburg, VA**
- Assistant Athletic Trainer*
- Primarily responsible for prevention, care, and rehabilitation of athletic injuries during interscholastic competition for 7 sports • Head staff athletic trainer overseeing women's basketball, men's/women's cross country/track, women's softball, and cheerleading • Assisted the head athletic trainer with the evaluation and rehabilitation of football injuries

- 1995            **Louisville Thoroughbreds Professional Men's Soccer Team • Louisville, KY**  
*Head Athletic Trainer*  
 Oversaw the prevention, care, and rehabilitation of the team during their season •  
 Directly involved in pre-season conditioning programs for the team
- 1994-1995      **Sports Medicine Louisville • Louisville, KY**  
*Athletic Trainer*  
 Teamed with a physical therapist in the care, prevention, and rehabilitation of  
 orthopedic related injuries • Head athletic trainer for 4 local high schools
- 1992-1994      **Wellington Orthopedic & Sports Medicine • Cincinnati, OH**  
*Graduate Assistant Athletic Trainer*  
 Partnered with a physical therapist in the treatment and care of athletic and  
 orthopedic related injuries • Head athletic trainer at 2 local high schools •  
 Liaison between coach, parent, and orthopedic doctor concerning student-  
 athletes

## TEACHING EXPERIENCE

---

- 2005-present    **Concordia University-Irvine • Irvine, CA**  
*Faculty*  
 Athletic training curriculum classes; Exercise Sport & Science classes
- 2003-2005      **Saddleback Junior College • Mission Viejo, CA**  
*Instructor*  
 Prevention & care of athletic injuries; Standard First-Aid/CPR; Lifetime Fitness;  
 and Health classes
- 2000-2003      **Azusa Pacific University • San Diego, CA**  
*Adjunct Professor*  
 Introduction to sports medicine; philosophy & history of physical education &  
 sport; Fitness for life

1999-2002      **University of California, Irvine • Irvine, CA**

*Lecturer*

Introduction to athletic training; Advanced athletic training

## **EDUCATION**

---

1997-present      **Virginia Tech • Blacksburg, VA**

*Doctoral student in Curriculum & Instruction*

Expected graduation date: May, 2006

1992-1994      **University of Cincinnati • Cincinnati, OH**

*Masters of Education*

Health Promotion & Education with emphasis in exercise physiology

1988-1992      **Ohio University • Athens, OH**

*Bachelors of Science*

Athletic Training/Health with emphasis in exercise physiology

## **CERTIFICATIONS**

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National Athletic Trainers' Association • Instructor Standard First-Aid/CPR