

Starving to Win: An Exploration of Eating Disorders in Female Athletes

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Although viewed as paragons of fitness and health, many female athletes struggle with eating disorders. Athletes participating in sports that emphasize aesthetics or a thin-build, such as gymnastics, figure skating, and endurance running, are at particular risk for the development of eating disorders. While Anorexia Nervosa and Bulimia Nervosa affect an athlete's emotional and psychological well-being, they also cause permanent damage to physical health. The Female Athlete Triad refers to the three-fold condition of disordered eating, amenorrhea, and osteoporosis that commonly occurs in physically active girls and women. This paper examines the etiology of disordered eating in female athletes, explores the influence of coaches on eating disorder development, and introduces potential complications in treatment.

With the 1988 Olympic Games rapidly approaching, 15-year-old U.S. gymnast Christy Henrich's dream of winning an Olympic gold medal was in clear sight. However, when a national judge recommended she lose weight, the 4'10, 90-pound Henrich began a routine of unhealthy eating practices. She developed both Anorexia Nervosa and Bulimia Nervosa, struggling for seven years before finally dying of multiple organ failure at age 22. At the time of death, Henrich weighed a minuscule 47 pounds. Although horrific, Henrich's battle with an eating disorder was not uncommon in the gymnastics community. As her mother recalled, "The first thing other athletes told her was if there's something you want to eat, eat it and throw it up. That's the first thing you learn when you're on the U.S. national team" (Ryan, 1995, p. 57).

Society views female athletes, particularly those competing at the elite level, as the quintessential models of fitness and health. Yet as cases like the death of Christy Henrich suggest, these athletes may not be as healthy as they appear. According to a U.S. Olympics study of 215 elite female athletes from 18 different sports, more than half of the athletes fasted, restricted fluid intake, took laxatives and/or diuretics, and engaged in efforts to increase sweating by wearing plastic suits and using saunas. Moreover, the majority of the female athletes reported intense pressure to lose weight from coaches, fellow teammates, parents, and the media (Franseen & McCann, 1996). Thus, despite the appearance of hale physical conditions, many athletes struggle with eating disturbances. There is a strong relationship between female athletes and eating disorders; studies show that 15-62% of female adult athletes display weight control behaviors (Nativ, 1994). Rates of eating disorders among female athletes have also risen over the

last 10-15 years (Berg, 2000). In a study of eating-disordered women who were hospitalized, Davis and Kennedy (1994) found that 60% of the patients had been involved in competitive athletics or dance prior to the onset of their disorder. The results of these studies are sobering, indicating the need for a closer inspection into the connection between athletes and discrepant eating patterns. In the case of eating disorders, who is at risk? Are some athletes more susceptible to eating disturbances than others? This paper will examine possible risk factors, health concerns, and eating-related identification issues in the female athlete population as well as explore potential treatment options.

Types of Eating Disorders

The term 'Eating Disorder' encompasses a wide range of disturbances in eating patterns. Ninety percent of those with eating disorders are female (Thompson & Sherman, 1993). Due to the relatively lower prevalence of eating disorders in males, this paper will restrict its focus to the psychopathology of eating disorders in females. The major types of eating disorders are Anorexia Nervosa (AN), Bulimia Nervosa (BN), and Eating Disorder, Not Otherwise Specified (Eating Disorder, NOS). The latter category describes individuals who have an eating problem but do not fit the diagnostic criteria for AN or BN (Kalodner, 2005).

The *DSM-IV-TR* (American Psychiatric Association, 2000) defines four specific criteria for AN. The first is that the individual refuses to maintain a normal body weight, and often weighs 15% below what is expected for her age and height. Even though the individual may be drastically underweight, she has an intense fear of gaining weight and becoming "fat," and experiences disturbances in the way she views her body (e.g., an emaciated individual may report feeling overweight). The individual is in denial of the seriousness of her low body weight condition and has an

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absence of at least three consecutive menstrual cycles, a medical condition known as amenorrhea (American Psychological Association, 2000). A female can also be diagnosed with amenorrhea if her periods occur only when induced by estrogen hormones (Wilson & Walsh, 1991). Other medical signs and symptoms of AN include hair and nail loss, lanugo (the appearance of fine hair on the face and arms), muscle weakness, gastrointestinal problems, cardiac arrhythmia, hypotension, hypothermia, and dehydration and electrolyte deficiencies. Anorexia has a mortality rate that ranges from 1-18% each year (Thompson & Sherman, 1993).

Unlike individuals with AN who practice restrictive eating or starving, individuals with BN recurrently vacillate between episodes of binge eating and compensatory purging behavior. During a bingeing episode an individual suffering from BN consumes a large amount of food over a small period of time, experiencing a major loss of control over eating. To prevent weight gain she then engages in subsequent purging behaviors, which may take the form of self-induced vomiting, strict dieting/fasting, excessive exercise, or laxative and/or diuretic use. To be diagnosed with BN, the *DSM-IV-TR* requires a minimum average of two binge eating/purging episodes per week for at least three months (American Psychological Association, 2000). Some signs and symptoms of BN are menstrual irregularities, dental/gum disease, electrolyte imbalance, swollen parotid glands, gastrointestinal problems, dehydration, and lightheadedness and dizziness (Thompson & Sherman, 1993). As with AN, an individual with BN has a persistent concern about her body shape and weight, which may in turn affect self-evaluation (Wilson & Walsh, 1991).

Etiological and Psychosocial Factors of Eating Disorders in Female Athletes

Although twin studies have demonstrated that eating disorders have a strong genetic component (Bulik, Sullivan, & Wade, 2000), they are linked to certain psychosocial factors as well. Some of these social factors include, but are not limited to, family attitudes around eating, peer influences, and unrealistic media images of thin women (Polivy & Herman, 2002). According to social learning theory, people view others as tools to model their own behavior, with the individual and her environment influencing each other. This was supported by Cash and Fleming (2002), who found that peers shape one another's body image in significant ways. Thompson and Sherman (1993) coined the term contagion effect to describe how dangerous eating behaviors are often spread through a peer or social group. Applying the framework of social learning to eating disorders and female athletes, studies illustrate how the culture of an athletic team affects subsequent eating behaviors among its members.

Burckes-Miller and Black (1991) observed that peers from athletic teams may exert a more powerful influence on body image than peers from other social settings. The

researchers attributed this finding to shared team values often promoted within the athletic environment. For example, in high-endurance sports such as long distance running, many athletes and coaches believe that the thinner the runner, the faster the runner (Thompson & Sherman, 1993). Furthermore, since individual scores are summed together for a total team score, team members may encourage one another to maintain a low weight in the interest of the group.

Eder and Parker (1987) also found that among members of female athletic teams, there are numerous interactions regarding appearance and body image. In addition, there is a positive correlation between teammate influences and changes in eating or dieting behaviors (Hausenblas, 2000). This "Do it for the team" mentality may cause athletes to feel responsible for not only their own place on the team, but for the competitive status of the team as a whole. Accordingly, many successful athletes view successful, slim athletes as role models for body-related attitudes and behaviors (Burckes-Miller & Black, 1991). Further, since many cross-country, gymnastics, swimming, and diving teams (among others) traditionally have team dinners before competitive events, athletes may adapt their eating styles to resemble those of their calorie-restricting teammates (Thompson & Sherman, 1993).

The Female Athlete Triad

Eating disordered behavior can adversely affect multiple organ systems, sometimes with permanent or even fatal consequences. The Female Athlete Triad is a term used to describe the three-fold condition of disordered eating, amenorrhea, and osteoporosis that commonly occurs in physically active girls and women. There are many causes of the Triad, but the pressure placed on young women to achieve or maintain a low body weight is often cited as an overarching force in development (Otis, Drinkwater, Johnson, Loucks, and Wilmore, 1997). The greatest risk for the development of the Female Athlete Triad occurs in aesthetic sports that emphasize a lean physique or appearance (e.g., ballet, gymnastics, and figure skating), and in performance sports where coaches and athletes believe that lower body fat enhances performance (e.g., running, cross country, and swimming; Berg, 2000).

Amenorrhea is classified as either the absence of menstruation by age sixteen (primary amenorrhea), or the absence of three or more consecutive menstrual cycles after menarche (secondary amenorrhea). Amenorrhea linked to eating disorders or exercise is hypothalamic in origin, and results in decreased ovarian hormone production and hypogonadism. In a 1996 study conducted by Fogelholm, Lichtenbelt, Wouter Van Marken, Ottenheim, and Westerterp in the Netherlands, examining the prevalence of amenorrhea among 113 professional and student ballet dancers (mean age = 23.3 years), it was found that two dancers had primary amenorrhea, and 9.8% of those not on oral contraceptives had secondary amenorrhea. Other stud-

ies have also found a high risk of amenorrhea in ballet dancers. A meta-analysis conducted by Fogelhom and colleagues (1996) revealed a mean prevalence of amenorrhea in ballet dancers of 31.4%. In addition to amenorrhea, many dancers described in these studies also faced menstrual irregularities. Similarly, Benson, Bourdet, and Loosli (1985) found that 55-67% of ballet dancers had irregular menstrual cycles.

The Sports Environment, Healthy Eating, and Body Image

The sports environment is both a protective and risk factor for the development of eating-related behaviors in women. In some situations, participation in sports is protective and fosters a positive body image. According to Hausenblas (2001), women who play sports are more trusting of other people, have positive body image, and have higher self-esteem. In a study with 114 female high-school aged participants (athletes and non-athletes) Hausenblas (2001) found several differences between the two groups. Specifically, compared to the non-athletes, the athletes in her study reported feeling 53% more in control of their lives. The athletes also conveyed a higher body image than those who did not engage in any sort of athletic activity, and 31% of athletes experienced lower levels of body dissatisfaction. However, the type of sport must also be considered. Sports that highlight physical stature, strength, and power tend to favor athletes who are taller and heavier. Studies have shown that from age ten years, female rowers and soccer, basketball, softball, volleyball, and hockey players exceed the 50th percentiles of the female reference population in physical build (Malina, 1994). However, other sports such as gymnastics, figure skating, diving, cheerleading, and ballet promote aesthetics along with technical ability, rewarding the smaller athlete. These thin body build (TB) sports reinforce the importance of slenderness, equating low body weight and a small body size with optimal athletic performance (Patel, Greydanus, Pratt, & Phillips, 2003).

Research has suggested that females who participate in sports where appearance is emphasized (such as those noted above) are at an increased risk for developing eating disorders. Borgen and Corbin (1987) found that more athletes in the TB sports had Eating Disorder Inventory scores (Garner, Olmsted, Polivy, 1983) similar to or above those of individuals with AN. Otis et al. (1997) outlined some common guidelines shared by the TB sports, further examining how the nature of these sports perpetuates the risk for eating disorder development. These ‘at-risk’ sports include a diverse group of activities: endurance sports, sports where an athlete’s performance is subjectively scored by judges, sports where athletes are required to wear revealing clothing, sports using weight categories for participation (horse racing, some martial arts, wrestling, rowing), and sports that idealize a pre-pubertal body type (figure skating, gymnastics, ballet, diving). The typical female athlete participating in a TB sport confronts body image pressure at

multiple levels. Athletes in sports like gymnastics and long-distance running reported a greater sense of body dissatisfaction than both non-athletes and those participating in non-thinness-demand sports, despite weighing significantly less than both the other groups (Davis & Cowles, 1989).

In the figure skating world, in particular, elegance and grace are foremost associated with thinness. Professional skaters performing on ice sometimes receive reduced pay for being ‘overweight’ (Thompson & Sherman, 1993). Skaters who are unable to achieve or maintain the physical ideals of the sport often experience negative affect, which in turn may cause attempts to control body size through disordered eating (Harris, 1986). For competitive pairs (male-female partner) figure skating, a lean female body is an unspoken requisite to compete. Pairs competitions require the male to lift, throw, and maneuver the female into difficult positions in the air; these acts can be physically straining and cause injury to both partners. Thus for practical, physical, and aesthetic purposes, it is important that the female partner be lightweight.

In their study on the symptomology of eating disorders in Canadian competitive figure skaters, Taylor and Ste-Marie (2001) found that 92.7% of the forty-one skaters surveyed reported pressure to lose weight. The skaters also indicated that in efforts to maintain the thin ideal, they engaged in various weight control measures such as vomiting and/or restrictive dieting at some point. After extensive clinical study of eating disorders in non-athlete women, Rezek and Leary (1991) determined a relationship between self-restricted eating and perceived locus of control. Since figure skating is an aesthetic sport where outcomes are controlled subjectively by judges, athletes may reconcile their perceived lack of control over performance with restricted eating.

According to Scourfield and colleagues (2003), a goodness of fit exists between an individual and his/her environment. In other words, people seek out contexts or environments that match their psychological and genetic dispositions. Applying the goodness-of-fit hypothesis to the prevalence of disordered eating in female athletes, one can hypothesize a “goodness of fit” between an athlete and her chosen sport. Some researchers have suggested that athletes who are predisposed to developing an eating disorder tend to self-select a certain type of athletic activity, a phenomenon known as the “self-selection” or “sport-attraction” hypothesis (Thompson & Sherman, 1993, p. 25). Accordingly, an individual scoring high on the EDI may idealize the graceful, fragile-looking prima ballerina, choosing to emulate both the ballerina’s body type and intense training regimen. In their study of female runners, Estok and Rudy (1996) found that 25% of women who ran more than 30 miles per week had high Eating Attitudes Test scores for Anorexia or Bulimia. When asked what had initially drawn them to the sport, the eating disordered women indicated that they were attracted to running because it represented a salient image of thinness. Since high EDI-scoring individuals often display controlled, obsessive, and perfectionistic

types of behaviors, it is not surprising that they choose to participate in athletic activities in which these behaviors are encouraged.

Eating Disorder Identification Issues in the Female Athlete Populations

The sports environment has the potential to trigger, worsen, or legitimize an eating disorder in vulnerable individuals. In this context, eating disorder diagnoses are complicated by the fact that some athletes are relatively satisfied with their bodies and do not meet the *DSM-IV-TR* criteria for “fear of becoming fat.” However, they may still engage in unhealthy dieting or eating behaviors due to a perceived belief that their success in the sport depends on their attainment of a low body weight or fat content. Ziegler and colleagues (1998) found such a paradoxical weight-related concern in a study of junior elite figure skaters who ironically reported positive body image. The skaters were not dissatisfied with the shape of their bodies, yet strove to reduce weight either gradually (by dieting and exercising) or rapidly (by vomiting). However, since ‘body dissatisfaction’ is at the core of most eating-related issues, such athletes cannot clearly be diagnosed with an eating disorder despite their unhealthy eating behaviors.

The drive for thinness in female athletes may come from a different source. Many sports, particularly those at the elite level, stress the message of “no pain, no gain.” It is not surprising then that male and female athletes of competitive sports often take drastic measures to succeed, including training during physical injury, using steroids, and losing/gaining weight over a short period of time. In this regard, the sports environment often portrays success as the end result of a long journey of arduous physical work and strain. While female athletes may not necessarily wish to lose weight, they may do so because they believe it will maximize chances of winning or accomplishment. This ‘light at the end of the tunnel’ effect may make it easier for athletes to hide or justify weight-related issues, which in turn stalls identification and proper treatment of eating disorders (Thompson & Sherman, 1993).

Another issue informing the identification of eating disorders lies in the exercise component of the sport itself. How does one determine how much exercise is too much? At the elite level, it is customary for athletes to train for six or more hours a day. Athletes with BN may use such rigorous exercise as a vehicle to maintain the disorder. Regardless of whether exercise is designed to enhance performance, athletes with BN may look to excessive exercise as a weight loss tool that can undo the effects of bingeing. For example, after bingeing, a cross-country athlete with BN may run 6-8 miles to punish herself for “being bad” (Thompson & Sherman, 1993, p. 89). Such maladaptive behavior may go unnoticed by parents, coaches, and teammates who see the athlete as dedicated rather than disordered.

Certain personality traits found in good athletes and individuals with AN are found to correlate with one another, further complicating proper eating disorder diagnosis (Thompson & Sherman, 2001). Both elite athletes and individuals with eating disorders are often willing to work to the point of overwork, have a high need for achievement, are selflessly committed to their team, comply obligingly with coaching instructions, are able to endure intense physical discomfort or pain, are willing to lose weight in order to enhance performance, and are perfectionists (Thompson & Sherman, 1993).

The similarities that exist between hard-working athletes and eating disordered individuals were further illuminated in a study conducted by Yates, Leehay, and Shisslak (1983). The researchers compared the behavior and demographics of 60 male marathon and trail runners to a sample of women with AN, drawing parallels between the two groups. Yates and colleagues found that the obligatory runners resembled the anorexic women in familial background, socioeconomic class, and several personality traits. Like the male athletes, the women with AN displayed high self-expectations, demonstrated tolerance for physical discomfort, denied potential physical debilities/injuries, exhibited an inhibition of anger, and showed a tendency toward depression. Although the results of this study were controversial, it demonstrates an association of trait similarities shared among athletes and individuals with AN.

Impact of Coaches on Eating Disordered Behavior

In certain sports that emphasize a lean body type, coaches have been found to increase the risk of eating-related disturbances through some of their attitudes and behaviors (Heffner, Ogles, Gold, Marsden, & Johnson, 2003). Coaches may assume that reducing body fat or weight can enhance an athlete’s performance, and may encourage rapid weight loss (Thompson & Sherman, 1993). It is important to note that many elite athletes also begin their vigorous training at a young age. During this period of primary growth and development, the athletes spend several hours a day with coaches who may often advocate unhealthy or restrictive eating practices.

Coaches’ disparaging comments may catalyze disordered eating behaviors. Rosen and Hough (1988) researched the eating behaviors of 42 female gymnasts on five college teams, finding that 67% of the gymnasts were told by their coaches that they were too heavy. Of this group, 75% reported that they frequently engaged in pathogenic methods (vomiting, laxative abuse, diuretics, diet pills, fasting, and fluid restrictions) to control their weight.

In a similar study, Burgess (1995) found that a gymnastics coach’s personality directly corresponded to the number of team eating-related issues. The researcher found that in relation to personality, the coaches of eating disordered collegiate gymnasts were narcissistic, inflexible, and high in dominance traits. While these studies provide interesting evidence, they do not produce answers to causal

questions regarding the relationship between coaches and their gymnasts. Perhaps the athletic environment, another potential causal factor, is responsible. It is possible that the intense, high-stress atmosphere of collegiate-level competition cultivates strong personality traits in coaches and eating disordered behavior in athletes.

Intervention and Treatment Strategies for Female Athletes with Eating Disorders

Given all that is known about the ways in which eating disorders are manifested in female athletes, treatment needs occur in the form of intervention and therapy. Treatment should not be limited to athletes—coaches and parents need to be educated about eating disorders as well. Since a coach serves as an instrumental authority figure to an athlete's success, it is important that he or she approach weight loss in a healthy, constructive way. A positive, authoritative coach can assuage risks for eating disorder development and promote a healthy body image in his or her athletes.

The effects of a positive coaching style have been demonstrated by Bisecker and Martz (1999) in their study on the impact of coaching style on athletes' eating problems. After assigning 110 male and female college athletes to a negative or a positive coaching vignette condition, the researchers measured body image anxiety and eating-related disturbances. In the negative vignette condition, the coach was performance-centered and focused on issues of weight in a threatening and controlling manner. While the coach also stressed low body weight in the positive vignette condition, he behaved in a problem-centered, caring manner. Bisecker and Martz (1999) found that regardless of gender, participants in the negative vignette condition showed higher instances of dieting, body image anxiety, and fear of becoming fat. Although participants in the positive vignette condition still dieted, they did so in a healthy manner, and did not exhibit the same pathogenic behaviors as the participants in the negative coach condition.

Approaching dieting in a problem-centered way makes it so the athlete does not feel threatened or attacked. Coaches of all backgrounds and coaching styles should be informed about proper nutrition, the daily caloric requirements of athletes, healthy dieting behaviors, and the different types of eating disorders and their respective risk factors.

Although it may be difficult to confront an athlete about a potential eating-related problem, interventions should be led on a collective level by parents, trainers, coaches, and members of the sports management team. Although the athlete may be resistant to treatment and in denial of her eating disorder, proper action must be taken. Such protocol would ideally require every athlete to undergo regular medical examinations. If these examinations reveal extreme weight loss or signs of other health conditions, then critical steps must be taken to protect the ath-

lete's health. These steps may include the termination of all training until the athlete's health improves.

A team of qualified sports psychologists, medical professionals, and nutritionists must closely monitor an athlete suspected of an eating disorder. It also may be beneficial for an eating disordered athlete to begin therapy sessions with a licensed psychologist to successfully address the root of her eating problems.

Conclusion

Despite generally representing a healthful atmosphere, the sports environment can serve as a potential host for eating disorders. Although eating disorders are more prevalent in aesthetic or appearance-related activities or sports, the Female Athlete Triad does not discriminate in its damaging effects. Some athletes' perfectionist personalities may make them more disposed to disturbances in eating, which are only exacerbated by the influences of authoritarian or weight-obsessed coaches. Eating disorders need to be addressed on the team, coach, familial, and individual levels to prevent serious bodily harm. Therapists, nutritionists, and sports psychologists should be available to all athletes regardless of the athletes' eating disorder status. Similarly, sports teams should be required to attend seminars geared at eating disorder recognition, intervention, and treatment at the start of a sports season. On the team level, this experience could endorse group bonding and camaraderie, as it serves as a way for athletes to better understand and help one another. To prevent the irreversible consequences of eating disordered behavior in female athletes, parents, trainers, and other members of the sports community must work together to foster a truly healthful environment.

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