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Publication details
Trent A. Petrie, Christy Greenleaf
Published online on: 13 Oct 2010

How to cite: Trent A. Petrie, Christy Greenleaf. 13 Oct 2010, Male and female athletes with eating disorders from: Routledge Handbook of Applied Sport Psychology, A comprehensive guide for students and practitioners Routledge
Accessed on: 20 Jul 2023
Male and female athletes with eating disorders

Trent A. Petrie and Christy Greenleaf

Although clinical eating disorders (EDs) historically have been considered a woman’s disorder, both male and female athletes experience body image concerns and weight and performance pressures, internalize sociocultural ideals, and engage in restrictive eating and weight control (Petrie & Greenleaf, 2007). EDs and disordered eating (DE) are serious psychological conditions that involve distortions in eating, weight-control, and body-related perceptions (American Psychiatric Association, 2000). Clinical EDs include anorexia nervosa (AN), bulimia nervosa (BN), and eating disorder not otherwise specified (EDNOS). Individuals with AN maintain very low body weight, have extreme fear of weight gain and distorted body image, experience negative self-evaluation, and are amenorrheic (for postmenarchal women). BN is identified by episodic binge eating and compensatory behaviors (e.g., vomiting), along with negative self-evaluation. Individuals with EDNOS meet some, but not all, of the criteria for AN or BN, and include disorders such as binge eating. Athletes also may experience symptoms of EDs that are problematic, which are referred to as subclinical disorders. Subclinical EDs are problematic because the level of psychological disturbances is similar to what is found with clinical EDs (e.g., Petrie, Greenleaf, Reel, & Carter, 2009).

The female athlete triad and muscle dysmorphia (MD) are common in athlete populations. The triad involves the co-occurrence of DE, amenorrhea, and low bone mineral density in women and can lead to health problems, such as stress fractures (American College of Sports Medicine, 2007). MD is more common among men than women and involves excessive concern and preoccupation with a perceived lack of muscularity (Olivardia, 2001). Muscle-enhancing behaviors, such as excessive weight lifting and taking anabolic steroids, and binge eating along with mood/anxiety disorders, are common.

Prevalence

The prevalence of clinical EDs among male and female athletes is slightly higher than in the general public (Petrie & Greenleaf, 2007), and rates for AN tend to be lower than those found for either BN or EDNOS (Greenleaf, Petrie, Carter, & Reel, 2009; Petrie, Greenleaf, Reel, & Carter, 2008). The prevalence of subclinical EDs is generally higher than clinical EDs.
Of the pathogenic behaviors used to control weight, athletes report using excessive exercise and fasting/dieting more frequently than self-induced vomiting or laxatives and diuretics (Greenleaf et al., 2009).

Prevalence data on the triad are sparse, though female athletes are 5 to 10 times more likely to present with two, as opposed to all three, of the components, and lean sport athletes are more likely to experience menstrual dysfunction and low bone mineral density than those in nonlean sports (e.g., Nichols, Rauh, Lawson, Ji, & Barkai, 2006). There are no large-scale, population-based studies on MD, so prevalence rates are unknown, though they are likely to be highest among men, anabolic steroid users, and body builders (e.g., Pope, Gruber, Choi, Olivardia, & Phillips, 1997).

**Identification**

There are psychological and behavioral signs and symptoms associated with DE and EDs (see Table 24.1; Petrie & Greenleaf, 2007), which can help practitioners identify those athletes who may be at risk for, or are experiencing, DE. Early identification reduces risk and assists athletes in obtaining treatment. Moreover, because psychological disturbances, such as low self-esteem and negative body image (Petrie et al., 2009), are associated with subclinical EDs, practitioners need to be able to recognize these as well as clinical EDs. They also should be aware of the physical and medical signs and symptoms, including amenorrhea or menstrual irregularities, constipation, dehydration, dental decay, irregular heart rhythm, gastrointestinal problems, and muscle weakness and cramps.

One identification challenge is that the psychological characteristics and behaviors associated with DE may be considered desirable for elite athletes, be viewed as “normal” within sport, and even be encouraged by coaches (Thompson & Sherman, 1999a). For example, are highly committed athletes who strive for the best demonstrating the desired “pursuit of excellence” or perfectionism associated with AN? Athletes may comply with requests to lose weight – to hopefully improve performances – by severely restricting caloric intake. They also may engage in excessive training, working out for hours outside of practice.

**Table 24.1 Signs and symptoms of eating disorders and disordered eating.**

<table>
<thead>
<tr>
<th>Behavioral</th>
<th>Psychological</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avoidance of eating situations or secret eating</td>
<td>Anxiety/worry</td>
</tr>
<tr>
<td>Binge eating</td>
<td>Body image disturbance</td>
</tr>
<tr>
<td>Body/appearance checking</td>
<td>Depressed mood</td>
</tr>
<tr>
<td>Excessive weighing</td>
<td>External locus of control</td>
</tr>
<tr>
<td>Excessive exercise (in addition to normal training)</td>
<td>Internalized sociocultural values regarding attractiveness</td>
</tr>
<tr>
<td>Exercising despite injury or illness</td>
<td>Unassertiveness</td>
</tr>
<tr>
<td>Purging (e.g., vomiting)</td>
<td>Mood swings</td>
</tr>
<tr>
<td>Dietary restriction</td>
<td>Perfectionism</td>
</tr>
<tr>
<td>Sleep disturbances</td>
<td>Poor self-esteem</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>Rigid thinking and beliefs</td>
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<tr>
<td>Weight loss/fluctuations</td>
<td>Restlessness</td>
</tr>
<tr>
<td></td>
<td>Social withdrawal</td>
</tr>
<tr>
<td></td>
<td>Obsessive-compulsive symptoms</td>
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</tbody>
</table>
Many coaches would interpret such behaviors as indications of athletes' competitiveness and coachability. For some athletes, however, these behaviors may be signs of DE. Athletes who exercise and diet to manage body- and weight-related concerns, or become anxious when they cannot achieve this, likely possess the characteristics that underlie an ED. Highly competitive athletes often push through pain and physical discomfort, which is similar to the ED symptoms of ignoring or denying physical symptoms of hunger. Practitioners should understand the similarities between the characteristics of a dedicated athlete and someone with an ED, and be attuned to their athletes' behaviors, beliefs, and attitudes. Doing so can help practitioners discern which behaviors represent a healthy performance drive and which indicate pathology.

Although most coaches have trained an athlete with an ED (Trattner-Sherman, Thompson, Dehass, & Wilfert, 2005), coaches often lack sufficient knowledge about the identification and prevention of EDs (Turk, Prentice, Chappell, & Shields, 1999). For example, 37% of U.S. college coaches indicated that amenorrhea was “normal.” Further, coaches’ behaviors may increase athletes’ likelihood of developing EDs, such as by monitoring eating patterns, regularly weighing athletes and assessing body fat, and encouraging weight loss through food restriction and extra workouts (Heffner, Ogles, Gold, Marsden, & Johnson, 2003). Athletes may be particularly sensitive to, and influenced by, weight and body comments made by coaches (e.g., de Bruin, Oudejans, & Bakker, 2007). Even when coaches make comments they believe to be supportive, athletes may interpret them as judgmental. Practitioners can educate coaches on ED signs, symptoms, and accurate identification, while also monitoring the sport environment to reduce risk.

**Psychosocial environment**

Both male and female athletes (and non-athletes) are exposed to general sociocultural ideals about appearance, behaviors regarding food and exercise, body size and shape, weight, and attractiveness. For women, the ideal is thin and lean, yet curvaceous. Represented by *Sports Illustrated* swimsuit models, women are expected to attain this body through diet and exercise. For men, the ideal is defined by leanness and muscularity – wide shoulders, narrow waist, and defined muscles in the chest, arms, and abdomen – which can be achieved through muscle enhancing activities, such as weight lifting and supplements. These body ideals are often internalized and become the standard against which one’s own body is evaluated. Because few people can attain these physical ideals, men and women become body dissatisfied, which can lead to the development of EDs.

Athletes also experience sport-specific body, weight, and appearance pressures, such as weight requirements, judging criteria, performance demands, revealing uniforms, and social comparisons with other athletes. Athletes in weight-related sports, such as wrestling, rowing, and judo, are at increased risk for eating pathology, particularly during their competitive seasons. These athletes may engage in pathogenic behaviors, such as intentional dehydration, caloric restriction, excessive exercise, and self-induced vomiting to cut weight. Although these behaviors may be less frequent during off-seasons, they can negatively influence psychological and physical health and should be monitored and addressed.

Judged sports, such as gymnastics and figure skating, place pressure on athletes to maintain aesthetically appealing and positively evaluated physiques. Low self-esteem and the need for approval are common ED attributes; thus it is not surprising that sports with subjective evaluations of performance and appearance might further contribute to body and
weight concerns, including a strong drive for thinness (Zucker, Womble, Williamson, & Perrin, 1999).

Performance demands also can contribute to the maintenance of very low body weight and fat. Athletes and coaches may assume that there is an ideal body for each sport (or position) and that weight loss or gain will automatically enhance performance (Thompson & Sherman, 1999b). For example, a power lifter may believe that any increase in body mass is good, whereas a figure skater may think weight loss will translate into higher scores. Athletes who are too light or too heavy, however, may experience performance decrements due to inflexibility, insufficient strength, inadequate energy, or lack of confidence. Weight-loss also does not automatically translate into lower body fat; rather, athletes may lose important muscle mass. Practitioners can take a holistic approach with coaches and athletes to ensure that changes are not made to training and/or eating regimens under the mistaken assumption that weight-loss (or gain) causes improved sport performances.

Form-fitting and body-revealing attire that is part of many sports, such as swimming, may exacerbate body, appearance, and weight concerns and lead athletes to experience body objectification. Although there is a trend for women’s uniforms to be more revealing than men’s (e.g., two-piece swimsuits in beach volleyball), both genders may experience this pressure (e.g., in swimming and diving both men’s and women’s suits leave little to the imagination).

Athletes may engage in social comparisons with others on weight, body size/shape, eating patterns, and appearance and, as a result, take on their unhealthy beliefs and behaviors. For example, Engel et al. (2003) found that athletes’ restrictive eating behaviors were predicted, in part, by perceptions of teammates’ weight control behaviors. Further, Smith and Ogle (2006) found that “fat talk” was a common occurrence among girls on a high school athletic team. These findings suggest that healthy or unhealthy social norms about eating, body, and weight issues may develop within team environments, and that practitioners may affect the direction and influence of these norms.

**Creating a body-healthy training environment**

One of the most effective ways to reduce the risk and prevalence of ED and DE among athletes is creating a *body-healthy* training environment; that is, athletes’ physical and psychological health is the determining factor in all decisions, recommendations, and requirements regarding training. Such an approach requires that practitioners work with coaches, sports medicine staff, sport administrators, and athletes to change the current myopic focus on performance to one that emphasizes health. Although this idea may be anathema to some, the reality is that healthy athletes – in terms of weight, physical status, physiological functioning, nutrition, and psychological well-being – will perform better than those who are compromised in any of these areas. Many athletes engage in unhealthy eating and weight control behaviors in search of the ephemeral promise of improved performance (Thompson & Sherman, 1999b).

For this approach to be successful, practitioners must align with coaches and administrators and convince them of the benefits of deemphasizing weight-change as a primary means for improving performances. At an organizational level, whether defined by an athletic department, sports club, or single team, these changes could be codified as policy that guides coaches’, athletic trainers’, and athletes’ behaviors (see Bonci et al., 2008, for information from the National Athletic Trainers’ Association that can serve as a blueprint for creating a body-healthy environment). Changes that could be made include: disconnecting weight
and performance gains (deemphasizing weight loss), eliminating weigh-ins and weight requirements, changing sport subcultures that perpetuate unhealthy weight and body behaviors, educating coaches about EDs and nutrition, and integrating nutrition, strength training, and psychological skills into daily practices.

Disconnecting weight and performance

A sizable minority of coaches believe that weight loss can lead to performance gains, and thus, they engage in behaviors, such as monitoring eating patterns, tracking weight, and assessing body fat, which put an unhealthy focus on weight and body size (Heffner et al., 2003). These pressures may cause athletes to resort to pathogenic weight control measures (e.g., excessive exercising, vomiting) that can lead to additional problems, such as menstrual irregularities and/or the loss of lean body mass. Practitioners need to work with coaches to deemphasize weight change as the answer and encourage healthier avenues for improving performance, such as improving skills, eating properly, and developing psychological strategies. There is no ideal body weight or body fat percentage that translates into superior performances (Bonci et al., 2008). There is considerable variability in individual body sizes, shapes, and weights, so coaches need to look beyond the body stereotypes they hold for their sports (e.g., gymnasts are tiny, cross-country runners are tall and lean; Thompson & Sherman, 1999b) and develop individualized performance improvement plans.

Eliminating weigh-ins and weight requirements

It is our view that: (a) athletes should only be weighed for medical reasons, (b) weigh-ins should be conducted by medical personnel (e.g., athletic trainers) and never by coaches, (c) athletes should be informed of the weigh-ins’ purpose and given the opportunity to not be told their weight, (d) weigh-ins should be done privately with only the athlete and medical personnel present, (e) weight should be kept private/confidential and never posted publicly (e.g., in the locker room), and (f) coaches and other personnel should never make comments about an athlete’s weight or body shape. For example, if intensive training is being conducted in hot, humid conditions, medical personnel might weigh athletes at the beginning and end of training sessions to monitor weight loss and hydration. If such weigh-ins are consistent with the above recommendations, athletes will understand their importance in relation to keeping them healthy.

Still, there may be situations in which weight change (gain or loss) could be beneficial for the athlete’s health, well-being, and potentially, performance. In such instances, decisions regarding weight change should be made by a sport management team (SMT) that comprises various professionals, such as strength and conditioning staff, medical personnel, nutritionists, exercise physiologists, and mental health practitioners. The SMT should consider all aspects of the athlete’s physical condition and training before making any recommendations about weight change. If recommended because of expected health benefits, the weight change plan should be discussed with the athlete, including reasons why. Realistic short- and long-term goals should be set as well as establishing and monitoring specific daily training behaviors (Bonci et al., 2008). Athletic trainers may be in the best position to monitor progress and make weekly and monthly reports to the SMT. The focus should always be on the athlete’s health, not on the weight change per se.
Changing the sport subculture

Cultural norms about weight, eating, body size/shape, and appearance may apply to an entire sport (e.g., wrestlers cutting weight) or exist only within a specific team (e.g., a softball team recruiting only “attractive” women). Because of coaches’ power and control and the close, cohesive nature of most sport teams, such norms can be highly influential, leading athletes to adopt alternative beliefs and engage in new behaviors. When these norms are associated with pathogenic attitudes and behaviors, athletes may exercise in addition to normal workouts, not eat dinner after training, vomit after a large meal, not be satisfied with their body size and shape, and/or ingest muscle-enhancing supplements. The often not-so-subtle message of these norms is that to be considered a successful member of this team, the athletes need to conform to others’ behaviors.

Some cultural norms must be changed at the organizational/departmental level, yet most practitioners work directly with coaches and teams, and their efforts should be focused in those domains. Coaches have incredible control and power, and through their messages, behaviors, and what they reward, their athletes come to understand what is expected. Such expectations may also come directly from teammates. In either case, practitioners who have close working relationships with their coaches and athletes and who understand the team’s cultural norms can work to alter existing unhealthy attitudes and behaviors. For example, practitioners might help coaches become aware of how their comments affect players’ confidence and how they pursue weight loss, or they might talk with the team about their expectations that everyone exercise after practices. Because such norms can be entrenched, change may take time and require strong working relationships between practitioners and coaches and athletes.

Educating coaches

Coaches may be well-informed about their sports (e.g., techniques, strategy), but may be limited in their knowledge about the effects on performance of nutrition, mental skills, physiology, and EDs (Turk et al., 1999). Practitioners can provide such coaches with information directly or bring in experts in these areas. Practitioners also might coordinate with the medical staff to help educate coaches about what is normal in terms of physiological functioning (e.g., menstruation) and how training and eating behaviors may contribute to decrements in the athletes’ performances. Such educational efforts can be ongoing and informal (e.g., chatting at practices), or more formal and time-limited (e.g., through scheduled presentations).

Prevention

Practitioners can work with sport teams and institutions to promote the prevention of EDs. Although creating a body-healthy environment is an important first step, practitioners also can focus on programs for at-risk athletes (i.e., those who have internalized body and weight ideals, or are body dissatisfied). Because sociocultural pressures, internalization, and body dissatisfaction are causal risk factors, programs that lessen these factors can reduce athletes’ vulnerability. Recent research with athletes (e.g., Smith & Petrie, 2008) has demonstrated that targeted, time-limited programs can reduce risk factors and improve health. These programs, in as few as six 1-hour sessions, may reduce the risk of EDs without ever directly addressing their signs and symptoms.
Screening and treatment

Screening athletes for EDs can occur during two periods and be facilitated by practitioners’ involvement with sports medicine staff. First, all athletes, as part of a pre-participation physical examination, can provide information regarding their eating and nutritional status, body- and weight-related attitudes, and psychological well-being and, for girls and women, their menstrual functioning (Bonci et al., 2008). This information can be obtained through paper and pencil questionnaires, though care must be taken regarding the confidentiality of their responses (e.g., not sharing them with coaches). Second, throughout the year, athletes’ behaviors, attitudes, mood states, and psychological functioning can be monitored by coaches and medical staff for signs and symptoms of EDs. For example, on road trips, a coach might notice that her female soccer player is eating little at team meals and seems to have lost weight and lacks energy in practices and competitions.

When athletes are identified as having DE attitudes and behaviors or are reporting psychological distress, whether through initial screening or ongoing monitoring, the athlete should be approached and a meeting set up with a member of the SMT to gather more information. The initial approach should be made confidentially and directly with the athlete by someone who knows and has a good relationship with the athlete (e.g., assistant coach), and the focus should be on the athlete’s health and well-being (as opposed to weight and/or performance). Ideally, the SMT member who conducts the interview with the athlete should be a mental health professional who has experience in the diagnosis of EDs (see Bonci et al., 2008).

Such early identification can help limit the negative effects of the suspected disorder and facilitate the athlete receiving treatment. If the athlete is subclinical, through treatment the development of more severe problems, such as the triad or a clinical ED, may be avoided. Also, sport institutes, sport organizations, and coaches have an ethical and legal responsibility to make their athletes’ health and well-being a primary concern. The development of body-healthy sport environments and early identification screening programs are two ways to demonstrate that responsibility, and, from a practical perspective, reduce legal liability (“Starving for a Win,” 2004). Practitioners can work within sport organizations to ensure that such environments exist and that comprehensive plans for education, identification, and treatment are developed.

We recommend other sources for readers to learn more about overall treatment effectiveness and the different modalities and theoretical perspectives that exist (e.g., Brownell & Fairburn, 1995). There are, however, a few issues to highlight regarding the treatment of athletes with EDs. First, it is likely that the licensed mental health provider, such as a psychologist, who provides the ED treatment, will not be part of the SMT or part of the immediate sport environment. The issue of confidentiality and potential communication among interested parties (e.g., coach, SMT) must be considered and addressed at the outset of treatment. The athlete who is in treatment always should be informed about what is communicated, to whom it is communicated, and the purpose of the communication. Ideally, the athlete should be aware of such communications before they occur. Second, athletes who have subclinical or clinical EDs must decide if they are going to continue training while in treatment. It is possible for athletes to continue to train if their overall health and nutritional status and if the treatment itself are not compromised. Such a decision needs to be made collaboratively and involve the input of all the professionals who are involved in the athletes’ treatment, including physicians, psychologists, and nutritionists. When athletes do train and compete while in treatment, mechanisms for effectively monitoring their health
status and treatment goals need to be established and implemented. In addition, if their health and/or treatment progress is compromised, then action needs to be taken immediately to limit training. Finally, athletes are part of broader systems (e.g., teams, organizations), so they should think about how (and what) they will communicate with others about their treatment or potential absence. Such decisions should be made by the athletes in consultation with their mental health providers, but practitioners can help athletes should they decide to talk to their teammates, coaches, or family members. Also, depending on the athletes’ competitive level, the media may be interested in any absence and may request information. It can be useful to view an ED as an injury and the treatment as rehabilitation. Such an approach normalizes the process and can destigmatize the disorder.

Conclusion

EDs are a reality for both male and female athletes, and practitioners are in the position to work effectively with coaches and directors of sport organizations to create sport environments that focus on the athletes’ physical health and overall well-being. Practitioners also can play an important role on the SMT, which can be charged with developing ED policies for the sport organization/team, screening and identification of athletes in the system, prevention of EDs, and the management of those athletes who are in treatment. See Box 24.1 for some practical take-home messages from this chapter.

Box 24.1

Practical take-home messages regarding eating disorders

- Subclinical EDs are similar to clinical EDs in terms of associated psychological, physical, and behavioral disturbances, and thus should be considered serious health concerns.
- Behaviors that are considered “normal” within the sport environment (e.g., menstrual irregularity, training excessively) may be indicators of underlying disturbances in eating, body image, and psychological well-being.
- Pressures within the sport environment, such as weight limits, judging criteria, revealing uniforms, and social comparisons with others, may increase at-risk athletes’ vulnerability. Decoupling weight loss and performance improvements, eliminating weigh-ins and weight requirements, changing sport subcultures that perpetuate unhealthy weight and body behaviors, educating coaches about EDs and nutrition, and integrating nutrition and psychological skills into daily training can help create a body-healthy sport environment.
- Practitioners can help develop screening processes to identify athletes who are at-risk for EDs. They also can implement prevention programs to reduce athletes’ vulnerability.
- When treating athletes with EDs, practitioners need to consider confidentiality, whether or not to continue training, and how (and what) athletes want to communicate with others about their situations.
References


