

## Mini Review

# Male and Female Eating Disorders in Fitness Sports

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## Abstract

Fitness sports may be considered high-risk sports for the development of eating disorders (EDs), along with aesthetic sports, weight division sports, endurance sports, and sports with vertical moves. Based on previous research, the purpose of this paper is to better understand the relationships between EDs and fitness sports among men and women. Fitness activities in general cannot be associated with EDs; different fitness sports are associated with different EDs among males and females. The fear of gaining weight or the desire to lose weight leads women to practice cardio-based activities and notably cardio-based fitness classes. Nevertheless, fitness classes seem not to be the preferred physical activity for women suffering from EDs and fitness sports play an ambivalent role in EDs. In contrast, many men who are unhappy with their body appearance choose bodybuilding to increase their muscle mass and develop EDs. Muscle dysmorphia is characterized by the desire to increase muscle mass and lose body fat, and also includes obsessive compulsive features that are typical to those related to EDs. Muscle dysmorphia is common and has been mostly studied in competitive bodybuilding. The development of EDs in fitness sports among men and women is related to social norms of attractiveness in the Western Society. Further studies are needed among women to analyze more in depth the relationship between other more unstructured cardio-based activities and EDs. Among men, further psychosocial studies with quantitative and qualitative methods, notably among non-competitive bodybuilders, would permit to better understand male EDs in fitness sports.

## Keywords

- Eating disorders
- Fitness sports
- Male
- Female
- Muscle dysmorphia

## ABBREVIATIONS

Eds: Eating Disorders; EAT: Eating Attitudes Test; EDNOS: Eating Disorders Not Otherwise Specified; DSM-V: Diagnostic and Statistical Manual of Mental Disorders – Ve Version

## INTRODUCTION

Sports and exercise are involved in the development of eating disorders (EDs) [1-4]. Fitness sports may be considered high-risk sports for the development of eating disorders (EDs), along with aesthetic sports, weight division sports, endurance sports, and sports with vertical moves [5]. The term “fitness sports” includes all sports commonly practiced in fitness centers, both bodybuilding activities and collective fitness classes with an instructor. Fitness centers have become popular places. The multitude of fitness activities offered and the broad range of users have made them the most prosperous sports facilities in many cities. Based on previous research, the purpose of this paper is to better understand the relationships between EDs and fitness sports among men and women.

## Female ED in Fitness Sports

The existence of ‘anorexia disorders’ regularly enters into discussions about fitness centers because they are recognized

as ideal locations for the development of these disorders [5]. Fitness classes create an atmosphere of “emphasized femininity” [6]: female fitness participants are often surrounded by mirrors, posters showing ideal female bodies, and other women’s bodies (often in tight, revealing clothes) with which women compare themselves, in classes that offer to sculpt bodies to perfection. Cardio-based fitness classes focus on burning fat and calories and are promoted as an essential element in any weight loss regime. According to Prichard and Tiggemann (2008), fitness classes urge participants (mostly women) to become more concerned about their body shape and weight, and therefore may increase the risk of EDs [7].

Studies on EDs in fitness activities have used mostly quantitative methods (i.e., questionnaires) [4, 5, 7, 8]. High ED risks have been observed for women exercising in fitness centers: 9.20% of women scored higher than 30 on the EAT-40 (indicating symptoms of an eating disorder) in the study of Dosil and Diaz (2002) [5]; 10.31% of the women reached the critical threshold indicating EDs (EAT-26 score  $\geq$  20) in the study of Lentillon, Allain and Ohl (2013) [8]. According to Lentillon-Kaestner et al. (2013), the ED risks were higher in private fitness centers and in cardio-fitness classes, and increase with sport engagement [8]. Lipsey et al. (2006) found in a study among female sport center

users that ED scores were positively correlated with engaging in exercise, depression, and body mass index but were unrelated to exercise frequency and duration [4]. In addition, other studies have focused on EDs among fitness instructors and have shown higher ED risks than among fitness participants [9,10]. In Höglund and Normén's (2002) study, 35% of female fitness instructors reported symptoms of EDs that began between 15-17 years of age, and 11% still had an ED [9]. Olson et al. (1996) studied EDs in 30 female aerobic dance instructors and found that 40% of the instructors indicated previous experience with EDs [10].

Studies on EDs in fitness sports using a qualitative method (i.e., semi-structured interviews) are rare; nevertheless, they permit to better understand the role of fitness sports in the development of EDs among females. Interviewing females with clinical EDs, Lentillon-Kaestner et al. (2013) showed that fitness sports were only practiced by women suffering from the restricting type of anorexia nervosa or women who were in a period of food restriction in the evolution of their EDs [8]. The role of fitness sports emerged also as ambivalent in EDs among females. Fitness sports do not seem to trigger EDs; they were sometimes used as a weight loss method, sometimes practiced to eat more or to treat EDs [8,11]. Fitness classes seem not to be the preferred physical activity for women suffering from EDs [8, 11]. Some of the conditions associated with fitness activities bothered some women with EDs. Fitness centers provide an atmosphere in which women's bodies are on display, and there is also an extreme emphasis on weight loss and what the body should look like [7,12-14]. This atmosphere of "emphasized femininity" [6], the presence of mirrors, the emphasis on appearance and comparisons between participants disturb women with EDs who do not accept the normative pressure to conform to traditional standards of femininity and refuse to be assigned to the stereotype of sexy women. Moreover, the rigid schedule, the low intensity and short duration of some fitness classes and the lack of freedom do not align with the motivations of the women, as they exclusively focus on calorie expenditure and on increasing their sports engagement. Women with EDs practice primarily free individual cardio activities during their illness. They also use many other ordinary physical activities (e.g., cleaning, walking); each movement or physical activity is perceived as a way to burn calories [8,11].

### Male ED in Fitness Sport

Eating disorders are more widespread and studied among females than males [15-19]. Nevertheless, males develop specific EDs in fitness sport, also called "muscle dysmorphia". Men, in contrast to women, often tend to perceive themselves as too thin, which is often associated with a desire to increase muscle mass [20, 21]. Muscle dysmorphia is an alteration of body image that primarily affects men and is characterized by the obsessive desire to be more muscular [20, 22, 23]. Until 1997, muscle dysmorphia was known as "reverse anorexia". Since then, researchers have considered muscle dysmorphia as belonging to the altered perception of the body category [22,24]. Although the disorder is part of the "Body Dysmorphic Disorder" category [25], muscle dysmorphia is characterized by the desire to increase muscle mass and lose body fat, and also includes obsessive compulsive features that are typical to those related to EDs [24-

26]. The research suggests a strong conceptual similarity with anorexia nervosa [23,24,27,28], which is why some authors have proposed classifying muscle dysmorphia as an Eating Disorder Not Otherwise Specified (EDNOS) [23,24]. Mosley (2009), who explored the life story of a man who suffered from muscle dysmorphia, clearly showed the relationship between EDs and muscle dysmorphia [23]. Extreme eating behaviors can occur in muscle dysmorphia, such as eating 10 meals a day or eating 30 raw eggs [20]. Olivardia et al. (2000) estimated that approximately a third of men who suffer from muscle dysmorphia also have an eating disorder because of their excessive focus on weak lipids and high protein amounts in food [29]. The consumption of food supplements or steroids is also common among men with muscle dysmorphia [27,30,31]. As underlined by Murray (2010), "recognition of muscle dysmorphia as an ED may offer more clinical utility in recognizing the male experience of ED pathology and also help to reduce the number of current male cases falling into the EDNOS category" ([24], p. 483).

The prevalence of muscle dysmorphia is difficult to estimate [32]. According to previous research, the prevalence varies from 10 to 20% [23,29]. One reason why it is difficult to measure the prevalence of this disorder is that people who suffer from muscle dysmorphia often receive no special treatment [29]. Only when the disorder worsens and leads to depression, suicidal states, addiction (e.g., substance abuse, sport, etc.) or more severe ED do they receive treatment.

Previous studies on muscle dysmorphia used primarily quantitative methods (i.e., questionnaires) and focused on competitive bodybuilding where EDs are common [23,33-35]. Competitive bodybuilding is a male sport that promotes increases in muscle mass and fat loss through diet and strict strength training. Competition success is based on the aesthetic qualities of the athlete, where size, symmetry and muscle shape of muscles are judged [23]. EDs seem to occur more often among competitive than among non-competitive bodybuilders or athletes who do not practice bodybuilding [31,33]. Mangweth et al. (2001) compared EDs in competitive bodybuilders and male anorexics and found that both groups showed an obsession with body appearance [21]. However, in bodybuilders the obsession is focused on muscle mass, while in men suffering from EDs, the obsession centers around fat loss [21]. Similarly, a study by Goldfield, Blouin and Woodside (2006) comparing men suffering from bulimia with competitive and non-competitive bodybuilders found common characteristics between both groups, such as high body dissatisfaction and binge and bulimia behaviors, especially in competitive bodybuilders [36]. In addition, male competitive bodybuilders had a higher risk of developing ED than female bodybuilders [36]. Mikat and Skemp-Arlt (2009) found no difference in characteristics associated with muscle dysmorphia between male bodybuilders on a competitive or amateur level [37]. Finally, Hitzeroth et al. (2001) found that a large proportion (53.6%) of amateur bodybuilders suffered from muscle dysmorphia [38].

### DISCUSSION AND CONCLUSION

This paper contributes to a better understanding of the EDs in fitness sports. Fitness activities in general cannot be associated with EDs; different fitness sports are associated with different

EDs among males and females. The fear of gaining weight or the desire to lose weight leads women to practice cardio-based activities and notably cardio-based fitness classes. In contrast, many men who are unhappy with their body appearance choose bodybuilding to increase their muscle mass and develop EDs. The development of EDs in fitness sports among men and women is related to social norms of attractiveness in the Western Society: "thin women" and "muscular men" [39]. Social pressures to lose weight are crucial in the emergence of body dissatisfaction and anorexia disorders among females [40-47]. The female beauty ideals of Western societies revolve around a slender body, which encourages participation in cardio-based sports and health-enhancing activities and may lead to eating disorders [48]. In contrast, the influence of the ideal male body, lean and muscular, in the media, seems to be very important in the development of body dissatisfaction among boys and in the subsequent development of muscle dysmorphia [39, 49-54]: "Men's magazines tend to emphasize muscle gain and a change in body shape. Sports magazines may be an important training ground for adolescents to learn the importance of muscularity" ([52], p. 390). Further studies are needed among women to analyze more in-depth the relationship between other more unstructured cardio-based activities and EDs. Among men, further psychosocial studies with quantitative and qualitative methods, notably among non-competitive bodybuilders, would permit to better understand male EDs in fitness sports [32].

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