Muscle dysmorphia and psychopathology: Findings from an Italian sample of male bodybuilders

Claudio Longobardi, Laura Elvira Prino, Matteo Angelo Fabris, Michele Settanni

Department of Psychology, University of Turin, Italy

1. Introduction

Bodybuilding has a relatively recent history and since the 1960's, has experienced increasing popularity in Western Countries (Parish et al., 2010). This increase in popularity might be due to the fact that body satisfaction has become a central aspect in self-concept, not only for women but also for men (McCabe and Ricciardelli, 2004), and because mass media presents exceptionally muscular men as a perfect standard of male beauty (Leit et al., 2001). Nowadays, society often considers manliness and masculinity as synonymous (Thompson and Cafri, 2007). There are several reasons why people decide to do bodybuilding (Parish et al., 2010) and these cannot always be reduced to problems relating to low self-esteem or threatened virility, but may also inclusive of physical health reasons. The sport of bodybuilding has proven to be intriguing to researchers in the field of mental health, and some have examined diverse psychological dimensions in this athletic population such as body image dissatisfaction and the pursuit of the perfect ideal body (Peters and Phelps, 2001; Goldfield and Woodside, 2009), social physique anxiety (Schwerin et al., 1996), unhealthy diet and disordered eating behaviors (Davis and Scott-Roberton, 2000; Goldfield et al., 2006), bodybuilding dependence or excessive exercise (Smith and Hale, 2004; Hale et al., 2010; Emini and Bond, 2014), anabolic steroid abuse (Davis and Scott-Roberton, 2000) and related psychological disorders (Goldfield and Woodside, 2009; Moss et al., 1992), narcissism (Rubinstein, 2003), social functioning (Ahmadi et al., 2013), and sexual functioning. Specifically, in 1993, Pope, Katz and Hudson observed a particular syndrome in a sample of body builders called Reverse Anorexia, subsequently renamed muscle dysmorphia. Muscle dysmorphia is currently recognized by DSM-5 (APA, 2013) as a subtype of Body Dysmorphic Disorder. It is a syndrome characterized by an obsessive preoccupation regarding one's body size, perceived as small, weak, puny and not large and lean enough (Pope et al., 2000). However, individuals who experience muscle dysmorphia usually present hypertrophic muscles, with a desire to further increase their muscles mass. Hence the comparison with Anorexia Nervosa (Pope et al., 1993). The preoccupation with muscularity pushes these individuals to adopt dangerous health behaviors such as excessive training, restrictive diet and anabolic steroid consumption, all of which may compromise social and working functioning (Pope et al., 2000). The estimated age of onset of muscle dysmorphia is typically between late adolescence and early adulthood, and the etiology of this condition requires more detailed studies (Fabris et al., 2017). A large percentage of individuals with muscle dysmorphia present poor or absent insight (Cafri et al., 2008), they spend a great deal of time thinking about their own muscularity (Cafri et al., 2008), they manifest avoidant behaviors that are revealing from a clinical point of view as well as checking behaviors, in particular related to appearance and muscularity (Olivardia et al., 2000). Moreover, people with muscle dysmorphia symptoms report greater body dissatisfaction and aspire to further increase their weight (Danilova et al., 2013). The vast majority of people...
with muscle dysmorphia are on a high protein diet (Segura-García et al., 2010), and they frequently resort to dietary supplements (Hitzeroth et al., 2001; Danilova et al., 2013). These individuals feel obliged to follow their diet plan and training program, they demonstrate scarce mastery of their own physical activity (Cafri et al., 2008), and when they skip a training session, they feel more distressed than individuals at low risk of muscle dysmorphia.

Muscle dysmorphia is positively associated to global psycho-pathology (Wolke and Sapouna, 2008) and to a variety of symptoms and psychiatric disorders. Data from studies involving clinical samples reveal an association between muscle dysmorphia diagnosis, Anxiety Disorders, Bipolar Disorders, Depression or lifetime history of depression (Olivardia et al., 2000; Cafri et al., 2008), and Mania and Hypomania (Pope et al., 1993).

Data from studies involving non-clinical samples show an association between measures of risk of muscle dysmorphia and psychopathological symptoms related to Obsessive Compulsive Disorder, Anxiety Disorders, Hostility (Maida and Armstrong, 2005), Depression, Alexithymia (Grieve and Shacklette, 2012), Social Physique Anxiety (Thomas et al., 2014), Interpersonal Sensitivity and Paranoia (McFarland and Kaminski, 2009), and Exercise Dependence (Soler et al., 2015).

Furthermore, the relations between muscle dysmorphia and eating disorders have received special attention. Based upon this evidence, some authors argue that muscle dysmorphia can be classified as an eating disorder (dos Santos Filho et al., 2015). Pope et al. (2005) found that 22% of men with Body Dysmorphic Disorder (BDD) have muscle dysmorphia and, when compared to BDD only, these men are at an increased risk of negative long-term outcomes considering that BDD-muscle dysmorphia co-morbidity is associated with a lower quality of life, higher suicide risk, and more anabolic steroid and other substance intake. Co-morbidity between muscle dysmorphia and BDD has also been confirmed by other studies (Hitzeroth et al., 2001). Finally, people with muscle dysmorphia symptoms also tend to present low self-esteem (Wolke and Sapouna, 2008; Murray et al., 2013; Compte et al., 2015), difficulties in emotional regulation (Murray et al., 2013), perfectionism (Maida and Armstrong, 2005), anxiety in social interaction (Compte et al., 2015) and insecure attachment style, in particular avoidant attachment (Fabris et al., 2017).

Nevertheless, previous studies’ results present some disagreements, for instance Maida and Armstrong (2005) found no association between muscle dysmorphic symptoms and Paranoia, while Boyda and Sheslin (2011) did not observe a significant relationship between muscle dysmorphia symptomatology and Depression. Furthermore, the relationship between muscle dysmorphia and anabolic steroid intake is debatable (Fabris et al., 2017).

Literature has highlighted the presence of dissociative symptoms in other disturbances characterized by body image dissatisfaction, such as eating disorders. Many studies have recognized the importance of dissociation for the understanding of these disorders: different hypotheses have been proposed to explain the link between dissociation and body image disorders, however they share the recognition of the importance of dissociative experiences on the onset of the disturbances (Dalle Grave et al., 1996; Fuller-Tyszkiwicz and Müssap, 2008). Some studies demonstrate that individuals with muscle dysmorphia often report adverse experiences in their life course, possibly related to trauma and to consequent development of dissociative symptoms (Wolke and Sapouna, 2008; Fabris et al., 2017). However, to our knowledge, no studies took into account the co-occurrence of dissociative symptoms and MD. Given that muscle dysmorphia presents body image dissatisfaction, we think that investigating the link between muscle dysmorphia and dissociation could be useful to reach a better understanding of the muscle dysmorphia onset and development.

The aim of this study is to investigate psychopathological features associated with muscle dysmorphia symptoms in the Italian context using a sample of competitive and non-competitive bodybuilders. In particular, we focus on the possible link of muscle dysmorphia and dissociative experiences. We expect to replicate some of the findings of previous research on psychopathological correlates of muscle dysmorphia (Cafri et al., 2008; Wolke and Sapouna, 2008). In addition, on the basis of literature on body image disorders, we aim to find a significant positive association between muscle dysmorphia and dissociative symptoms.

2. Methods

2.1. Participants

Participants were invited to participate through bodybuilding-related Facebook groups. Participants were included in our sample if they were Italian, between 18 and 65 years of age, and were currently involved in bodybuilding training (both competitive and non-competitive). Competitive Bodybuilders are defined as men involved in national or international bodybuilding competitions, while non-competitive bodybuilders are men that train without the motivation to compete. All participants were voluntary and did not receive incentives for participation. Data was collected during February through November of 2015 using an online questionnaire. After expressing their informed consent to participate in the survey, a total of 217 participants were recruited. Of these participants, 72 were excluded because they did not meet the selection criteria since they did not complete the questionnaire in its entirety.

The final sample consisted of 145 men and had a mean age of 30.0 years (SD = 9.1, range 18–62). As regards education level, 23% (n = 34) of the participants had completed middle school, 59% (n = 86) had obtained a high school diploma, and 17% (n = 27) had completed college. In regard to relationship status, 59% of the participants are in a stable relationship, and 17% (n = 25) were married.

As to years of bodybuilding, 79% (n = 115) of the participants had been doing body building activity for more than 3 years, and 21% (n = 30) for less than 3 years. On the whole, 44% (n = 64) of the participants reported taking part in body-building competitions, while the others were non-competitive. In regard doping substances, 15% (n = 21) of the sample reported the use of anabolic steroids.

2.2. Instruments

2.2.1. Socio demographic questionnaire

Participants completed a questionnaire inquiring about their age, education, number of years doing bodybuilding, competitiveness and anabolic steroid consumption.

2.2.2. Muscle Dysmorphic Disorder Inventory (MDDI, Santarnecci and Dettore, 2012)

The MDDI is a 13-item self-report tool intended to measure the risk of muscle dysmorphia, it contains questions on cognitions, emotions, and behaviors related to body image. Item response categories are on a 5-point Likert scale, ranging from “never” to “always”; the score of the test is obtained as the sum of the scores of each item. For this study, a threshold value ( > 39 points) was used, which was proposed by Varangis et al. (2012) showing 75.0% specificity and 73.7% sensitivity, with a Cronbach’s alpha coefficient equal to .85 in an Italian validation study (Santarnecci and Dettore, 2012). Cronbach’s alpha in this study was .82.

2.2.3. Symptom Checklist 90- Revised (SCL-90-R; Prunas et al., 2012)

The Italian version of SCL-90-R is a 90-item self-report tool designed to assess psychological symptoms in an adult population. SCL-90-R includes 9 dimensions (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid-ideation, and psychoticism) and 3 global indexes (Global Severity Index, Positive Symptom Distress Index, and Positive Symptom...
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