

A. Brytek-Matera¹, C. Gramaglia^{2,3},
E. Gambaro², C. Delicato²,
P. Zeppegno^{2,3}

¹ SWPS University of Social Sciences and Humanities, Katowice Faculty of Psychology Katowice, Poland; ² Institute of Psychiatry, Università degli Studi del Piemonte Orientale, Novara, Italy; ³ S.C. Psychiatry, Azienda Ospedaliero Universitaria Maggiore della Carità, Novara, Italy

The psychopathology of body image in orthorexia nervosa

Summary

The human body has a complex meaning and role in everybody's life and experience. Body image has two main components: body percept (the internal visual image of body shape and size) and body concept (the level of satisfaction with one's body), whose specific alterations may lead to different conditions, such as overestimation of one's own body dimensions, negative feelings and thoughts towards the body, body avoidance and body checking behavior. Moreover, body dissatisfaction can be associated with a variety of other mental health and psychosocial conditions, but only a few studies have explored the body image construct in orthorexia nervosa (ON). ON is a condition characterized by concern and fixation about healthy eating, with mixed results available in the literature about the presence of body image disorders. The aim of this manuscript is to present the main findings from the literature about the psychopathology of body image in ON. Summarizing, while theoretically the presence of body image disturbances should help clinicians to differentiate ON from eating disorders, further research is needed to confirm this finding. It is not clear whether the body image disorder in ON depends on an altered body percept or body concept, and the relationship between the disordered eating behavior and body image disorder still needs to be disentangled. Further studies regarding the relationship between ON and body image could be helpful to better understand the relevance of body image as a transdiagnostic factor and its potential value as target for treatment interventions.

Key words

Orthorexia nervosa • Eating disorders • Body image

Introduction

The human body has a complex meaning and role in everybody's life and experience. Our bodily being-in-the-world describes an existential position, where the body is both object and subject, and represents a subjective and intersubjective ground of and for experience. The complexity inherent the meaning and role of the human body mirrors itself in the complexity of defining constructs in this field. For instance, the term "body image" is and has been widely used, often in a rather unspecific manner, with a poor discrimination among different dimensions of embodiment, such as body schema, body image and lived body ¹, with a consensus still lacking on terminology ². Body image should be differentiated from body schema, which is an unconscious model or representation of one's own body that constitutes a standard along which postures and body movements are judged, "a system of sensory-motor capacities that function without awareness or the necessity of perceptual monitoring" ²⁻⁴. The lived body is a phenomenology-derived concept addressing the body experienced from within, the direct experience of one's own body in the first-person perspective, as a spatio-temporal embodied agent in the world ⁴⁻⁸. According to Schilder, body image can be defined as "the picture of our own body which we form in our mind, that is to say, the way in which the body appears to ourselves" ³. Allamani and Allegranzi ⁹ refer to body image as "a complex psychological organization which develops through the

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Correspondence

Patrizia Zeppegno
Institute of Psychiatry, Università degli Studi del Piemonte Orientale, via Solaroli 17,
28100 Novara, Italy • Tel./Fax +39 0321
390163/+39 0321 3733121
• E-mail: patrizia.zeppegno@med.uniupo.it

bodily experience of an individual and affects both the schema of behavior and a fundamental nucleus of self-image". Subsequently, Shontz¹⁰ integrated theory and data about cognitive and perceptual aspects of body experience (such as body size estimation) and was the first to consider the body experience as multidimensional. Afterwards, Cash and Pruzinsky¹¹ defined body image as a multifaceted psychological experience of embodiment, a construct encompassing body-related self-perceptions and self-attitudes, including thoughts, beliefs, feelings, and behaviors. The same authors later conceptualized embodiment beyond body appearance and dissatisfaction, including in the construct body functionality and positive body image, as well¹².

Interestingly, the terminological confusion described above can be found even within the body image research community, where the definition of the construct fluctuates depending on the aim of the researcher¹²⁻¹⁵.

Psychopathology of body image

Body image can be defined as the internal representation of one's physical appearance; it is a multidimensional, socio-culturally dependent construct encompassing perceptual, cognitive, affective and behavioral issues¹⁶⁻¹⁸. At a broad level, body image has two main components¹⁹: body percept and body concept. The former is the internal visual image of body shape and size, while the latter refers to the level of satisfaction with one's body^{19,20}.

The specific psychopathology of body image can thus span from disorders in body perception to the consequences of alterations in its cognitive-affective dimensions. Dysfunction in one or more of the body image components can lead to specific problems, such as: overestimation of one's own body dimensions²¹⁻²⁴, negative feelings and thoughts towards the body²⁵, body avoidance and body checking behavior^{26,27}. All these problems can be described with the definition of "body image distortion", which means a disturbed pattern of individuals' experience of their own body weight or shape. As body image, its distortion is a multifaceted construct including cognitive and affective components (concerns and feelings about the body), perception (estimation of body size) and body perception-related behaviors².

Experience of own body, together with body attitude, mirrors the individuals' feelings about themselves as persons or social participants. Therefore, an altered body size perception may express people's sense of self-worth; for instance, a sense of body smallness could express a sense of loss of worth and status²⁸. Moreover, body concept and the related construct of body dissatisfaction depend on the continuous comparison between one's own body and an "ideal" body, as well as on vulner-

ability and sensitivity to judgment. Hence, the term "body dissatisfaction" refers to the negative emotions and thoughts elicited by the perceived discrepancy between ideal and current body shape and weight^{15,29}. Even though in the last years there has been such a steady increase of female body dissatisfaction that there seems to exist a "normative discontent"³⁰, body dissatisfaction is generally related to body shape and weight³¹, possibly leading to eating disorders (EDs)³². Moreover, body dissatisfaction can be associated with a variety of other mental health and psychosocial conditions, including low self-esteem³¹, emotional distress³³, depression³⁴, cosmetic surgery and steroid use³⁵, social anxiety, and sexual difficulties³².

The specific abnormalities in lived corporeality described in patients with full-blown EDs, including anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED), have been linked to the individuals' experience of their own body first and foremost as an object being looked at by other people, rather something lived and experienced from a first-person perspective¹. ED patients may feel alienated from their body, do not 'feel' themselves, and especially they do not feel their own body and emotions³⁶⁻⁴². Troubles in developing their personal identity may lead to the attempt of trying to define their own selves in terms of the way they are evaluated by others. From this viewpoint, EDs are considered a maladaptive "search for self-hood and a self-respecting identity"⁴³. The key role of feeding in the construction of the self, via the phenomenon of "affective attunement" with the caregiver, is an essential step toward the development of a narrative self and a sense of identity⁴⁴.

Orthorexia

In 1997, Steven Bratman introduced the term "orthorexia nervosa" (ON) and coined the phrase "health food junkies" to indicate individuals following strict dietary rules intended to promote health, but eventually leading to possible health-detrimental consequences⁴⁵. The term "orthorexia" is a neologism deriving from the Greek *ὀρθός*, right, and *ὄρεξις*, appetite; even though literally meaning "correct appetite", it is used to designate an "obsession for healthy and proper nutrition"⁴⁵. Typically, individuals with orthorexic behaviors follow a very rigid diet and reject many foods, due to their composition or elaboration (including those containing significant amounts of fat, sugar, salt, or other undesired components). They may be vegetarians, vegans, frugivores (i.e., eat only fruit) or crudivores (i.e., eat only raw food), and usually refuse to eat away from home, due to lack of trust in food preparation procedures. Such a restrictive dieting attitude may lead to several nutritional deficits and medical complications (e.g. osteopenia, anaemia,

pancytopenia, hyponatraemia, metabolic acidosis and bradycardia), which closely resemble the qualitative and quantitative malnutrition status typical of AN⁴⁶. In addition, individuals with orthorexic behaviors may show feelings of moral superiority and self-righteousness related to their eating patterns and are at risk of social isolation⁴⁷.

The prevalence of ON is about 7% in the general population, while higher rates (up to 50%) have been found in “high-risk groups”, including healthcare professionals, dietitians or artistic performers^{48,49}. According to Dunn et al.⁵⁰, the variability in prevalence rates of ON is due to cultural issues or to diagnostic procedures (e.g., ORTO-15 test). Based on proxy categories for ON (seriousness of engagement about healthful eating and medical or social problems secondary to dieting), less than 1% of the US sample could be labeled as suffering from ON, and about 10% could be considered at risk for ON, even though the ORTO-15 scores suggest a prevalence rate of 71%.

It should be noted that despite having often been dubbed as “a disease disguised as a virtue”, ON is currently not recognized as an “official” mental disorder⁵¹. According to the DSM-5, ON would be most appropriately categorized as a distinct subtype of “avoidant/restrictive food intake disorder” (ARFID)⁵². In ON it is not the healthy eating habit per se to be worrisome or pathological, but rather the excessive preoccupation about consuming healthy food, as well as an excessive amount of time spent on food thoughts⁴⁸. Mounting evidence shows that ON shares some clinical features with other mental disorders including AN, obsessive-compulsive disorder, obsessive-compulsive personality disorder, somatic symptom disorder, illness anxiety disorder and psychotic spectrum disorders⁵³.

Regarding the overlap between ON and EDs, shared features include lack of pleasure about food and eating, perfectionism, anxiety, and the displacement onto food of the sense of control one is not able to achieve with own life. Despite these shared features, ON individuals focus on quality and purity of food, while EDs patients focus on food quantity. The first strive for a pure body, while the latter strive for a body matching an “ideal” of extreme thinness; nonetheless, the literature suggests a much more complex relationship between ON and EDs. Segura-Garcia et al.⁵⁴ reported a common comorbidity between ON and EDs (including AN and BN), whose frequency increased over time during a 3-year follow-up study. Another study involving ED patients found that orthorexic behavior was negatively predicted by eating pathology, weight concern, health orientation and appearance orientation⁵⁵. Briefly, ON may precede the onset of a full-syndrome ED, coexist with it, or it may represent its evolution during remission and recovery phases⁵⁵.

From a psychopathological viewpoint, orthorexia has been also closely linked to obsessive-compulsive personality/disorder⁵⁶ (Fig. 1). Shared features with the obsessive-compulsive disorder spectrum include the presence of recurrent, intrusive thoughts about food and health, related to strong preoccupations with food contamination and purity, as well as the overwhelming need to investigate source, processing and packaging of foods and to arrange food and to eat in a ritualized manner. These behaviors are usually experienced as ego-syntonic in ON⁵⁷.

Whether ON is a unique disorder or just a variant of anorexia or obsessive-compulsive disorder is still open to debate⁵³. A more thorough understanding is needed about the motivations underlying the behaviors and body perception (e.g., pursuit of an ideal body shape vs. a healthy, pure body), ideation toward eating and food (e.g., worries about quantity vs. quality of food), insight/awareness (subjects with AN try to hide their habits whereas individuals with orthorexic tendencies allegedly show off their behavior) and socio-demographic characteristics (e.g., sex distribution, level of education, access to food-related information). This knowledge will help shedding light on the actual psychopathology at the root of ON⁵⁷.

Body image in ON

Due to similarities between ON and EDs, those factors which are widely acknowledged to play a role in the vulnerability, onset and maintenance of EDs (including body image, perfectionism, attachment style, self-esteem ecc.)^{58,59}, could be implicated also in ON.

A study investigating whether perfectionism, body image, attachment style and self-esteem predicted ON found that higher orthorexic tendencies significantly correlated with higher scores on perfectionism (self-oriented, others-oriented and socially prescribed), appearance orientation, overweight preoccupation, self-classified weight, fearful and dismissing attachment styles⁶⁰. As suggested above, perfectionism could be a potential risk factor for ON, just as it is for the development and maintenance of EDs^{58,61}. Interestingly, perfectionism may have an impact on adherence to strict food and dietary rules^{45,58}, which are shared key features of ON and EDs, but may also lead to a perfectionistic attitude towards one’s own body and appearance. Moreover, overweight preoccupation, appearance orientation and the presence of an ED history were identified as significant predictors of ON, with the last one being the strongest predictor. Previous research involving ED patients and healthy controls⁵⁴ found that the prevalence of ON is higher in the patients’ groups, and more recent studies do not yet allow to exclude that ON belongs to the same spectrum of AN and BN, with patients shifting between these conditions^{62,63}.

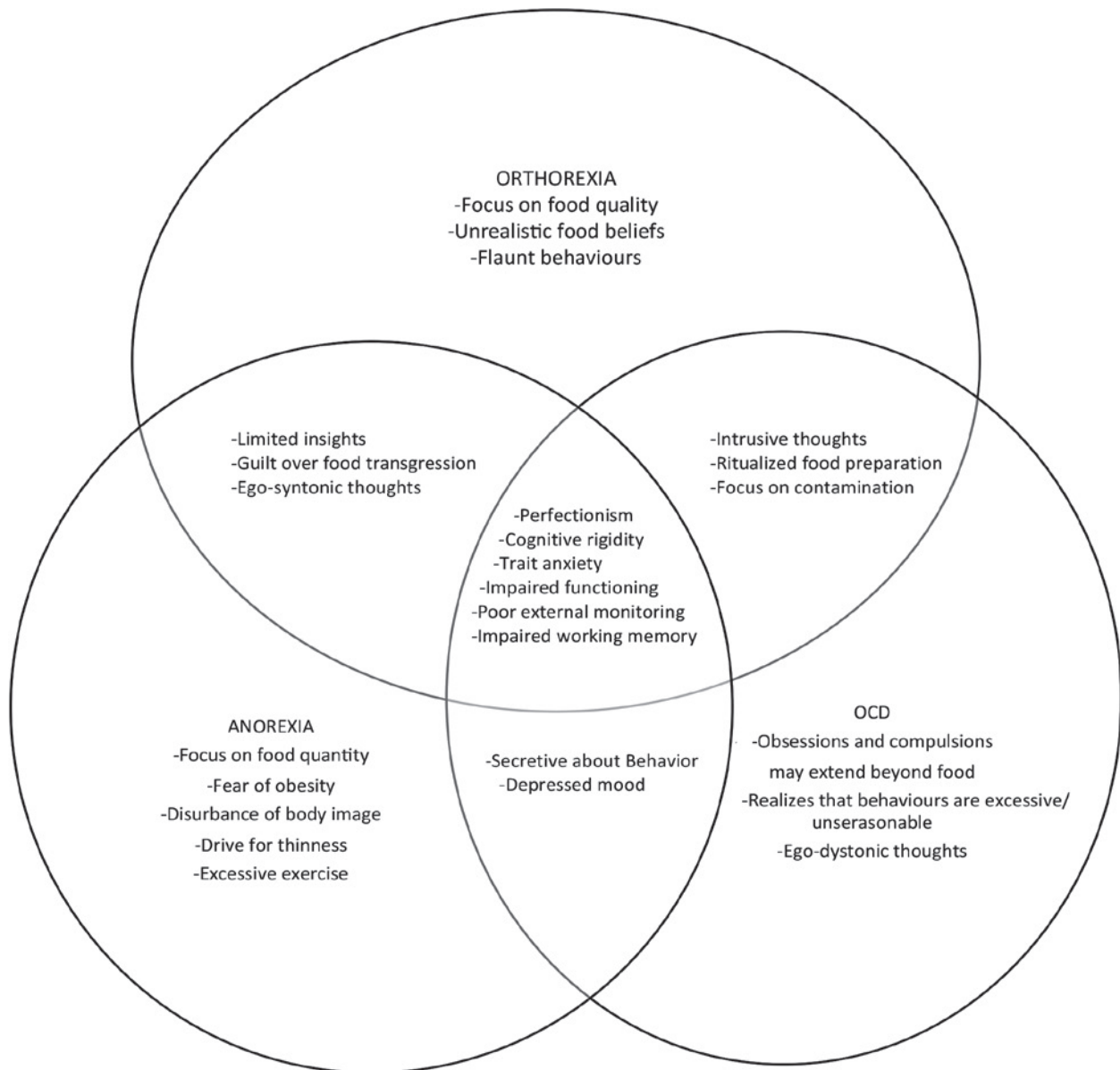


FIGURE 1. Venn diagram representing the possible relationships between Anorexia Nervosa, Obsessive-Compulsive Disorder (OCD) and Orthorexia (from Vandereycken, 2011, mod.)⁵⁶.

Considering the shared core similarities between AN and BN⁵⁷, an interesting perspective about ON is that the strenuous pursuit of a healthy diet may serve as a socially acceptable alternative for the unhealthy drive for thinness. Anyway, a discrepancy seems to exist between some preliminary clinical observations and the theoretical knowledge about ON. Regarding body image, ON individuals should not be concerned with weight loss, and they should not display the negative body image attitudes which are typical of AN and BN

patients⁴⁵. Dunn and Bratman's proposed diagnostic criteria identify ON as an independent pathological entity⁶⁴ (Tab. I), and do not include features such as body uneasiness, general body/weight dissatisfaction, avoidance and compulsive body-checking behavior, feelings of disconnection from one's own body and concerns about specific body parts. Even though ON may sometimes be associated with weight loss ensuing because of dietary choices, this is not likely the direct consequence of a desire to lose weight as the primary goal

TABLE I. *Dunn & Bratman criteria for orthorexia nervosa (from Dunn, Bratman, 2016, mod.)* ⁶⁴.

Criterion A. Obsessive focus on “healthy” eating, as defined by a dietary theory or set of beliefs whose specific details may vary; marked by exaggerated emotional distress in relationship to food choices perceived as unhealthy; weight loss may ensue as a result of dietary choices, but this is not the primary goal as evidenced by the following:
A1. Compulsive behavior and/or mental preoccupation regarding affirmative and restrictive dietary practices believed by the individual to promote optimum health
A2. Violation of self-imposed dietary rules causes exaggerated fear of disease, sense of personal impurity and/or negative physical sensations, accompanied by anxiety and shame
A3. Dietary restrictions escalate over time, and may come to include elimination of entire food groups and involve progressively more frequent and/or severe “cleanses” (partial fasts) regarded as purifying or detoxifying. This escalation commonly leads to weight loss, but the desire to lose weight is absent, hidden or subordinated to ideation about healthy eating
Criterion B. The compulsive behavior and mental preoccupation becomes clinically impairing by any of the following:
B1. Malnutrition, severe weight loss or other medical complications from restricted diet
B2. Intrapersonal distress or impairment of social, academic or vocational functioning secondary to beliefs or behaviors about healthy diet
B3. Positive body image, self-worth, identity and/or satisfaction excessively dependent on compliance with self-defined “healthy” eating behavior

of the eating behavior, but rather seems the indirect one of an excessive preoccupation with eating healthy food. Even if the literature on orthorexia nervosa is until now mainly represented by descriptive and anecdotal data and focused primarily on measuring the prevalence of the condition in different countries ^{48 65 66} and in at-risk groups ^{48 49 67 68}, a few studies are available about ON and body image ⁶⁹⁻⁷¹.

A study involving male and female university students and examining the predictive model of ORTO-15 in both groups found that in female students lower ORTO-15 scores (greater severity of orthorexic behaviors) were related to a less pathological body image discomfort, while in male students lower ORTO-15 scores were related to less pathological eating patterns ⁷⁰.

Another study reported that university students with ON were more likely to be engaged in regular physical exercise, more “health conscious”, trying to live a healthy routine, afraid of gaining weight and more likely to follow diets, compared to healthy controls. Moreover, they were more likely to monitor their body weight and overestimate their body size ⁷². Regarding gender differences, females with orthorexic tendencies were less likely to pay attention to their appearance, while they were more likely to classify themselves as less fit and less healthy than males with orthorexia. Moreover, females with orthorexic preoccupations seemed to have higher fat anxiety, to pay more attention to their body weight and to control their eating behavior more than males.

Contrarily to what described above, a few studies are available suggesting body image concerns and disorders in ON. A positive relationship between ON and body image disturbance has been suggested: Varga

and Máté reported that body image disturbances are more severe when more ON features are present ⁶⁸. Similarly, an association between orthorexic tendencies and an increased preoccupation with appearance and fears of becoming overweight has been supported by the finding of a negative correlation between the ORTO-15 scores and appearance orientation and overweight preoccupation ⁴⁸. Moreover, orthorexic behaviors are also associated with an unhealthy or negative body image among students, regardless of their concern about healthy and appropriate food choices ^{70 71}.

A cross-sectional study investigating the prevalence of ON and EDs in dietitians ^{73 74} found that about 50% is at risk for ON, and 12.9% for an ED. ON symptoms are associated with eating disturbances as well as with shape and weight concerns ⁷³. Another study involving nutrition and dietetics students found orthorexic behaviors in 68.2% of them, who had an increased Body Mass Index (BMI), reduced saturated fatty acid intake, increased waist circumference and energy intake ⁷⁵. Contrary to this study, Oberle and Lipschuetz ⁷⁶ found no significant relationship between BMI and ON symptoms among students, while a positive correlation was found between ON symptoms and perceived muscularity, and a negative one between ON symptoms and perceived body fat. In addition, Bundros et al. ⁷⁷ found a positive association between ON and body dysmorphic disorder among college students; this finding is consistent with a study involving fitness participants with orthorexic tendencies, who showed internalization of the thin ideal, social physique anxiety, body image dissatisfaction and disordered eating ⁷⁸. According to Featherstone ⁷⁹, a slim, muscular body can be regarded as an evidence

that the individual is adhering to an ideal lifestyle; therefore, the failure in matching this body ideal and expectation can give rise to appearance-related anxiety. This anxiety may lead individuals to exert greater control over their diets, to contrast the inner fear of becoming unattractive, being regarded as unhealthy, and losing the opportunity to enjoy an ideal life.

Use of social media has negative effects on body image, depression, social comparison, and disordered eating. For example, a more frequent use of Instagram is associated with a greater tendency to develop ON⁸⁰. An analysis of the #fitspiration tag on Instagram, used to denote images intended to inspire people to become fit and healthy, found that most images of women showed thin and toned bodies with objectifying elements, with negative effects on body image and self-esteem⁸¹.

Conclusions

According to the currently available diagnostic criteria^{52 64}, ON is an emergent condition that stands out from other EDs for lack of concern with body weight and shape. Further studies on the relationship between ON and nosographically recognized EDs are needed to better understand the correlation among healthy eating, pathologically healthful eating and EDs development. Currently, it cannot be excluded that, at least in some cases, an exaggerated focus on appearance and a fear of becoming overweight might be hidden behind the preoccupation with a healthy diet. Follow-up studies have suggested that ON symptoms may worsen following treatment for other EDs^{54 55}, suggesting that, for former ED patients, ON may be a compromise to continue controlling food and their body shape and weight, although to a lesser degree than in AN⁶¹.

Summarizing, while theoretically body image discomfort should be able to differentiate ON from other EDs,

further research is needed to confirm this finding. At present, some studies^{68-70 72-74 82-85} revealed a correlation between ON and body image concerns, in contrast to other studies^{45 68 77 86 87} reporting the absence of body image or weight-related concerns in ON subjects. However, one of the limitations of available studies is the difficult assessment of the still uncategorized construct of ON. Indeed, most studies in the field of ON have adopted the ORTO-15 questionnaire, whose possible limitations in detecting the severity of orthorexic behaviors and attitudes have been suggested⁸⁸, hence leading to the recommendation of being cautious when interpreting its results as a reliable measure of the prevalence of ON⁸⁹. The ORTO-15 40-points threshold value has a notable predictive capability concerning healthy eating behavior, while it seems less efficient in discriminating the other typical components of ON, that is the presence of obsessive traits⁸⁹, suggesting that the ORTO-15 is probably not likely to distinguish between healthy eating and pathologically healthful eating⁶⁵.

Future research could potentially benefit from investigations involving larger and more heterogeneous samples to gain more insight into the concept of body image and its association with ON⁹⁰. Some issues deserve to be deepened: from a psychopathological standpoint, it would be interesting to better understand whether the possible body image disorder in ON depends on an altered body percept or body concept; moreover, disentangling the relationship between disordered eating behavior and body image disorders would be helpful also from a clinical standpoint. Addressing these topics would improve knowledge about the relevance of body image as a transdiagnostic factor⁹¹ and its potential value as target for treatment interventions.

Conflict of Interest

The authors have no conflict of interests.

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