Male body dissatisfaction and eating disorder symptomatology: Moderating variables among men

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Abstract
Body dissatisfaction is recognized as a robust risk factor for eating disorders. Despite over 80% of college men are body dissatisfied, not all men report several levels of eating disorder symptoms. In this study, we examined poor impulse control, social anxiety and internalization of media ideals as potential moderators. Data collected from 405 college-aged men were analysed, using latent variable structural equation modelling approach. All variables investigated have been found to moderate the body dissatisfaction–eating disorder symptomatology, such that male body dissatisfaction was strongly related to men's eating disorder symptomatology when each moderator was at its highest level. Practical implications are discussed.

Keywords
body image, eating disorders, men's health, moderator, risk factors

In recent years, several studies showed that men and women are more similar than dissimilar in terms of core eating disorder (ED) behaviours. For instance, there is a comparable rate of binge eating between women and men, but lower levels of purging among men (Lavender et al., 2010). The gender differences on purging rates may be viewed as the result of the perception among men who desire to increase their muscle mass as counterproductive to muscle gain (Dakanalis and Riva, 2013), whereas binge eating and weight gain may not be viewed as troublesome (Lavender et al., 2010). Like the well-established female drive for thinness, the male preoccupation with enhancing musculature

('drive for muscularity') reflects the modification in cultural body shape ideals and increasing societal pressure that assumes men should possess a muscular body (Yanover and Thompson, 2010) and is associated with low self-esteem,

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depression, social anxiety (SA) and maladaptive attitudes and behaviour attempts to alter the body shape (Chittester and Hausenblas, 2009; Dakanalis et al., in press-a; Thompson and Cafri, 2007). <mark>[AQ: 2]</mark>

An extreme psychological outcome of the drive for muscularity has been termed muscle dysmorphia (MD), a relatively recently identified psychiatric condition that, since its inception, has been variously conceptualized as a (male) ED ('reverse anorexia') and subsequently as a type of body dysmorphic disorder within the somatoform disorders (see Murray et al., 2010). Men with MD believe that they look 'puny' or 'small' when in reality they look normal or may even be unusually muscular (Murray et al., 2012). As a consequence, they may neglect important occupational and/or social activities because of anxiety and shame over their perceived appearance flaws or their excessive need to adhere to rigid dietary regimes (i.e. taking a meal every couple of hours regardless of whether they are hungry) and time-consuming workout schedules (Murray et al., 2010). Some damage their health by using anabolic-androgenic steroids in an attempt to achieve a hyper-muscular body (Dakanalis and Riva, 2013).

As argued by Thompson and Cafri (2007), one means of producing either an objective change in body appearance or a subjective change in one's body image is to modify eating patterns or the consumption of particular types of foods and nutrients. Despite the ongoing debate regarding the diagnostic placement of MD within the somatoform spectrum (see Murray et al., 2010), there is accumulated empirical evidence that the drive for muscularity, in addition to over-exercise and use of appearance-enhancing substances, is closely associated with dysfunctional eating patterns (see Dakanalis and Riva, 2013). Furthermore, recent studies have indicated that men with elevated scores on the Eating Attitudes Test (i.e. cut-off $\geq$ 20)[1] report significantly greater drive for muscularity than those with non-elevated scores (<20) on the Eating Attitudes Test (Dakanalis et al., in press-a). Indeed, several

scholars and clinicians suggest that it is essential to focus on those cardinal features of EDs, which differentiate men from women, such as the preoccupation with enhancing muscularity (Stanford and Lemberg, 2012) in addition to binge eating issues (Lavender et al., 2010) in men's disordered eating investigations, as well as in clinical settings.

Virtually, all multivariate aetiological models of EDs (Dakanalis and Riva, 2013) as well as the current *Diagnostic and Statistical Manual of Mental Disorders* criteria (see Penelo et al., 2012) make reference to body dissatisfaction (BD), which according to meta-analytic data is the most robust causal risk factor for ED symptomatology in both genders (Stice, 2002) despite men's body concerns being qualitatively different from those of women (see Dakanalis et al., in press-a; McCabe et al., 2012). Over the past 25 years, paralleling the rise in frequency of images showing muscled male bodies in the visual media, the prevalence of BD has dramatically increased (Dakanalis and Riva, 2013). Despite over 80% of young men (Thompson and Cafri, 2007) are dissatisfied with their overall body size and particular upper body parts (i.e. chest, arms, shoulders), not all men report several levels of ED symptoms, and in fact, the actual incidence and prevalence of full-blown clinical EDs remain relatively low (Stanford and Lemberg, 2012). This discrepancy raises the question of why only a minority of men report severe levels of ED symptomatology when so many are body dissatisfied?

It seems reasonable to argue that additional variables may interact with BD to influence its relation to ED symptoms (Tylka, 2004). The understanding of specific variables affecting the strength of the primary BD-ED symptomatology relationship would be useful for clinicians and health psychologists. They could better understand how multiple factors interact to predict men's ED symptomatology, as well as under which conditions men with substantial BD could also report high levels of ED symptomatology. Similarly, for preventive and treatment goals, it is essential to be aware of the

variables able to intensify this relationship (Juarascio et al., 2011).

As with the majority of research in the field of body- and eating-related disturbances, the identification of the variables that exacerbate the relationship between BD and ED symptomatology has occurred in college-aged women (see Dakanalis et al., in press-a). For instance, Tylka (2004) and Juarascio et al. (2011) identified poor impulse control (PIC) as an exacerbating factor of the relation between BD and ED symptomatology within two samples of college women. [AQ: 3] However, contrary to their expectations, Juarascio et al. (2011) did not find any moderating effect, whereas the moderated effect found by Tylka (2004) was in an opposite direction. Nevertheless, both BD and PIC as independent predictors were found to predict higher levels of drive for thinness and bulimic behaviours (Tylka, 2004). These findings were particularly surprising given that impulsivity is recognized as an important element of ED symptomatology (see Waxman, 2009). It is possible that the lack of findings for poor impulse regulation as a potential moderator among female undergraduates (Juarascio et al., 2011; Tylka, 2004) may be due to the fact that this construct is more related to young adult men rather than women. Support for this comes from recent meta-analytic data according to which males are more impulsive and engage in behaviours (i.e. substance and supplement use; Murray et al., 2012) without contemplating the risks and potential consequences before acting more frequently than females (Cross et al., 2011). Furthermore, an increasing body of studies indicates that men with MD are significantly more impulsive than men without MD (see Murray et al., 2010). In addition to PIC, it is possible that two additional theoretically relevant variables may exacerbate the effects of BD and thus increase the levels of ED symptoms among young adult men – SA and internalization of media ideals.

SA is a fear of negative evaluation by others and includes anticipatory anxiety, cognitive and somatic symptoms in performance or social situations, in which embarrassment or humiliation may occur, and avoidance behaviours when distress is chronic (Swinbourne et al., 2012). Individuals with diagnosable EDs have been found to score significantly higher than people without EDs on SA, which is likely to precede the onset of an ED (Swinbourne et al., 2012). Researchers have also showed that SA accounted for 77% of the variance in MD symptomatology, and men who reported higher levels of SA also reported higher levels of the drive for muscularity (Chandler et al., 2009). As physical appearance is of primary importance in the evaluations of others (Peat and Muehlenkamp, 2011), several scholars argued that BD coupled with higher levels of SA may cause individuals to seek out methods of coping with their negative feelings and thoughts or avoiding their fear of negative evaluation by others and the anticipatory or accompanied symptoms in social contexts (Levinson and Rodebaugh, 2012). One way that this may manifest itself is through harmful eating and appearance-enhancing behaviours (Thompson and Cafri, 2007). However, no study to date has tested this moderating hypothesis in both male and female samples.

Of the variables thought to promote and maintain EDs, sociocultural factors are not only considered paramount in scientific literature but have also received strong empirical support from meta-analytic review of prospective and experimental studies (Stice, 2002). Even though virtually all individuals are exposed to idealized media images, it is clear that not everybody experiences negative feelings about the physical body and only a minority of women and men develop clinically diagnosable EDs (Dakanalis and Riva, 2013). Internalization, which refers to the extent to which individuals endorse societal standards of beauty and attractiveness as their own personal standards, is recognized as a causal risk factor for MD and ED symptoms (Chandler et al., 2009; Stice, 2002). Recently, Dakanalis et al. (in press-b) found that thin-internalization exacerbates the relation between BD and a composite measure of ED

symptomatology (i.e. drive for thinness and bulimia) in college women. Although men's body shape ideals are different from those of women (Yanover and Thompson, 2010), the internalization of media ideals may also serve as a moderator variable in men (Dakanalis and Riva, 2013). In fact, attempts at altering the body and bringing it more in line with the male social ideal through maladaptive eating and muscle-oriented behaviours are strongly predicted by the internalization of general and athletic ideals (e.g. Dakanalis et al., in press-a). Similar to SA, men and women with EDs tend to have higher scores on measures of internalization of gendered body ideals (i.e. the body portrayed in the media as ideal for their gender) as compared to those without EDs (see Nerini et al., 2011). Furthermore, interventions designed to reduce internalization through a cognitive dissonance programme produced reductions in levels of ED symptoms (Stice et al., 2007).

This study aimed at examining whether PIC, SA and internalization of media ideals moderated the BD-ED symptomatology relationship among college men, who are recognized as a 'high'-risk group for the onset of behavioural ED symptoms (Lavender et al., 2010) through latent moderated structural (LMS) equation modelling.[2] We expected that those who report higher levels of PIC among body dissatisfied men may be more prone to engage in behavioural features of men's EDs, as these men are more likely to attempt self-destructive behaviours (i.e. harmful eating and body shape control techniques) to change their body shape (Murray et al., 2012; Waxman, 2009). We also expected that among body dissatisfied men, those who display greater SA and internalization of media ideals may be more likely to engage in maladaptive eating and body-related behaviours in an attempt to ameliorate negative feelings and thoughts or secure a positive judgment by others (Chandler et al., 2009; Levinson and Rodebaugh, 2012; Peat and Muehlenkamp, 2011), and approximate the male sociocultural standard of beauty and attractiveness (Dakanalis and Riva, 2013), respectively.

Method

Participants

In total, 409 Italian men, aged 18–31 years (M_{age} = 23.1, standard deviation (SD) = 3.5) took part in this study. Participants were recruited via advertisements posted in the Departments of Communication, Behavioural, Social and Humanistic Studies of four large universities in Southern, Central and Northern Italy. Most participants were freshmen (36%), heterosexual (92%) and unmarried (74% single). The racial/ethnic background of participants was 96.5% white and 3.5% multi-racial; these percentages are comparable to the ethnic makeup of the institutions from which the samples were drawn.[3] Approximately half of the sample (45%) was from North Italy, whereas 26% and 29% of participants were from Central and South Italy, respectively. In terms of socioeconomic family status, most participants reported were middle class (65%), whereas 16% and 19% reported were upper class and working class, respectively.

Measures

BD. The Italian validated version of the Hallsworth, Wade and Tiggemann's Male Body Dissatisfaction Scale (HWT-MBDS; Dakanalis et al., in press-a) was used to assess men's dissatisfaction with overall body shape and specific upper body parts (e.g. 'I think my chest is too small'). Items are rated on a 6-point Likert scale (ranging from 1 '*never*' to 6 '*always*'), with higher scores indicating higher BD. For this sample, alpha was .91.

PIC. The 11-item Impulse Regulation Scale of the Italian validated version of Eating Disorder Inventory-2 (EDI-IR; Garner, 1995) was used to measure impulsivity (e.g. 'I am prone to outbursts of anger or rage'). Items are rated and scored in the same way as HWT-MBDS, with higher scores reflecting poorer impulse control. Alpha was .89 in this sample.

SA. The Italian validated version of the Social Phobia Scale (SPS) and the Social Interaction Anxiety Scale (SIAS) were used (Sica et al., 2007) to assess two main domains of SA (Swinbourne et al., 2012): fear of being scrutinized by others (e.g. 'I feel awkward and tense if I know people are watching me') and fear of interacting in dyads and groups (e.g. 'I am nervous mixing with people I don't know well'). Both scales consist of 20 items, rated on a 5-point Likert-type scale (0 = *not at all*; 4 = *extremely*), with higher scores indicating higher manifestation of the specific variable measured. In this sample, alphas were .90 for SPS and .89 for SIAS.

Internalization of media ideals. The 9-item General Internalization (GI) and the 5-item Athletic Internalization (AI) sub-scales of the Italian validated version of the Sociocultural Attitudes towards Appearance Scale-3 (rated on a 5-point scale, ranging from '*definitely disagree*' to '*definitely agree*'; Nerini et al., 2011) were used to assess the endorsement and acceptance of the norms for body shape portrayed in the media (e.g. 'I would like my body to look like the people who are on TV') and the degree to which men desire and strive to achieve the bodies of athletes portrayed in the media (e.g. 'I wished I looked as athletic as sports stars'). Both GI and AI are critical in defining men's internalization of media ideals (Dakanalis et al., in press-a). In this sample, alphas were .89 for GI and .90 for AI.

ED symptomatology. In this study, ED symptomatology was operationalized as bulimic behaviours and drive for muscularity, as these components are critical in defining men's ED symptomatology (Dakanalis and Riva, 2013). The 7-item Bulimia Scale of the Italian validated version of EDI-2 (EDI-B; Garner, 1995) was used to assess the tendency to engage in binging behaviours (e.g. 'I stuff myself with food'). The Italian validated version of the 7-item Yelland and Tiggemann's Drive for Muscularity Scale (YT-DMS; Dakanalis et al., in press-a) was used to assess drive for muscularity

(e.g. 'I think about building up my muscles'). Items are rated and scored in the same way as HWT-MBDS, with higher scores indicating higher manifestation of the specific variable measured. In this sample, alphas were .91 for YT-DMS and .93 for EDI-B.

Creation of measured/observed variables. The YT-DMS and the EDI-B were used as indicator variables for the ED symptomatology latent factor. The SPS and the SIAS were used as indicator variables for the SA latent factor, whereas the GI and the AI were used as indicator variables for the internalization latent factor. For each of the remaining latent variables (BD, PIC), the procedure outlined by Byrne (2011) was followed to create three measured indicators or parcels (see Figure 1(a) to (c)): (a) for each of the measures, an exploratory factor analysis using the maximum likelihood (ML) method with a single factor extraction was performed; (b) items were rank-ordered according to the magnitude of the factor loadings and consecutively assigned to one of three parcels; and (c) for each parcel, items were averaged to arrive at a total-parcel score, used to estimate the respective latent variable within the structural equation modelling analyses.

Procedure

Participants were recruited via advertisements asking for Italian volunteers for an online survey on the association between eating habits and other psychological variables. The research advertisements directed interested participants to the survey web page, where the measures were hosted.[4] The presentation format of self-report questionnaires (online versus paper and pencil) does not change the quality of results (Gabbiadini et al., 2011). After reading an introductory information page online about the study's purpose, participants indicated their consent, provided demographic information and completed the survey instruments described in the following, which were counterbalanced and formatted so that participants could not skip
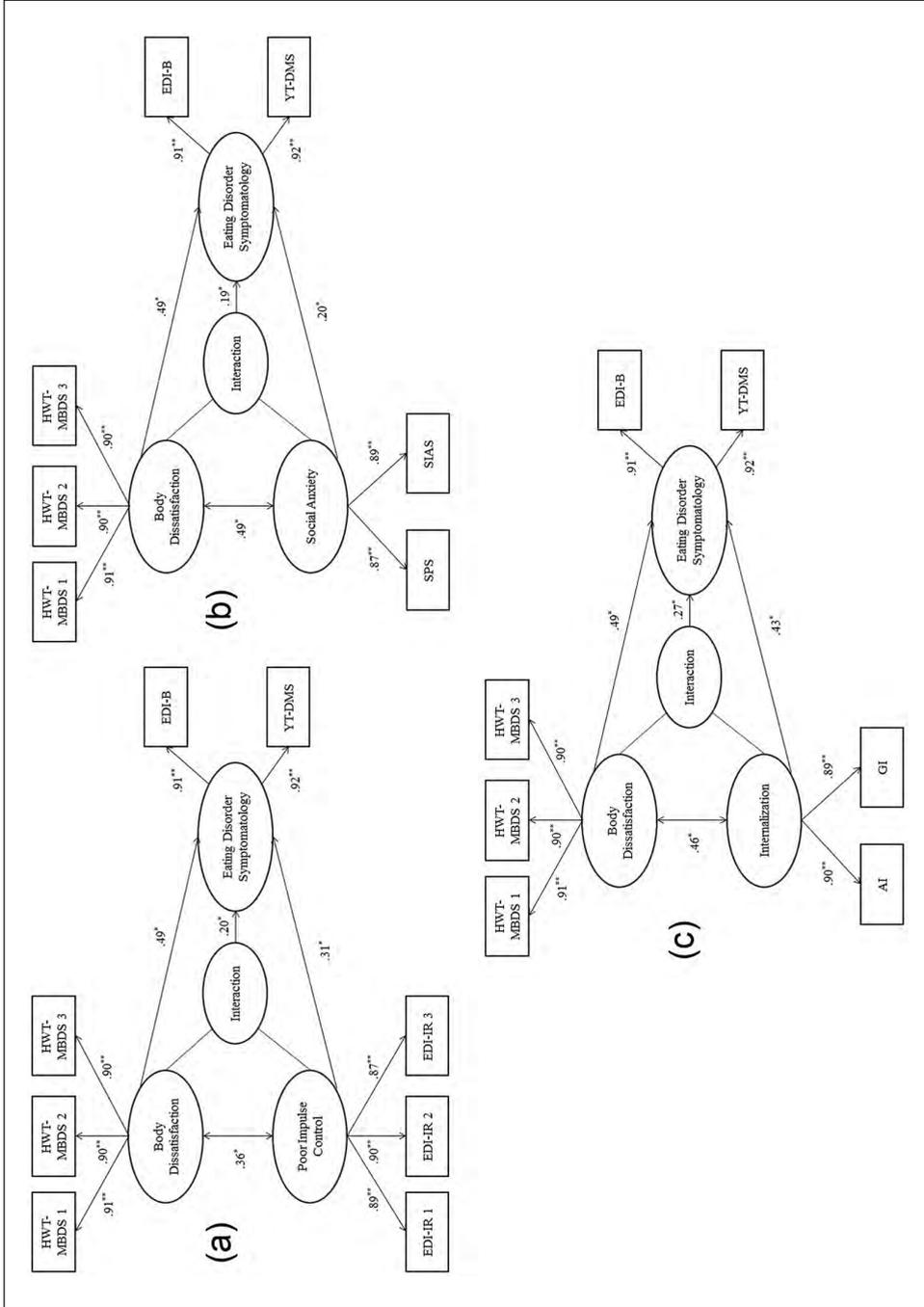
Figure 1. [AQ: 10] HWT-MBDS: Hallsworth, Wade and Tiggemann's Male Body Dissatisfaction Scale; EDI: Eating Disorder Inventory; IR: Impulse Regulation; YT-DMS: Yelland and Tiggemann's Drive for Muscularity Scale; SPS: Social Phobia Scale; SIAS: Social Interaction Anxiety Scale; AI: Athletic Internalization; GI: General Internalization.

individual items; thus missing data there were not an issue in this study (Gabbiadini et al., 2011). Finally, in order to detect duplicate and erroneous data (a) a validity question was embedded into each of the survey measures, each of which instructed participants to choose certain responses (Dakanalis et al., in press-a); (b) the Internet Protocol (IP) address of every participant was examined; and (c) an outlier analysis was performed. Four cases were excluded and data from 405 men were analysed. All procedures were approved by the appropriate ethics board.

Analytic strategy

The measurement model was first evaluated to ensure an acceptable fit to the sample data using confirmatory factor analysis and then the structural moderated model was examined (Byrne, 2011). Mplus version 6.1 with an ML method was used to analyse the data, as pre-analysis of the data did not reveal any evidence for non-normality (Byrne, 2011). Criteria for good measurement model fit were as follows: comparative fit index (CFI) and Tucker–Lewis Index (TLI) values $\geq$ .95, standardized root mean square residual (SRMR) values $\leq$ .08 and root mean square error of approximation (RMSEA) values $\leq$ .06 (Byrne, 2011).

LMS equation modelling (Kelava et al., 2011) method implemented in Mplus was used to estimate the main and interaction effects of male BD and each potential moderator on ED symptoms. This novel approach directly estimates the interaction latent variable without requiring manual specification of product terms of the indicators. Three separate structural moderated models – one for each proposed moderator variable – were examined (see Figure 1(a) to (c)) in order to avoid biases on parameter estimations due to the significant increase of multicollinearity and its effects when more than one interaction term is specified simultaneously (see Kelava et al., 2011). The log-likelihood difference test ($\Delta - 2LL$; Kelava et al., 2011)

was used to validate the improvement in model fit of the structural moderated model in comparison to a linear structural equation model (i.e. main linear latent effects). A post hoc analysis of simple slopes was performed, by using factor scores (Byrne, 2011), in order to facilitate the interpretation of the LMS findings and further explore the form of the significant interaction effects.

Results

The examination of the measurement model provided a good fit to the data: CFI = .98, TLI = .97, SRMR = .06 and RMSEA = .05. For all latent variables, the factor or parcel–factor loadings were statistically significant (see Figure 1(a) to (c)). Thus, all latent variables were adequately measured by their respective indicators. The associations between the predictor latent variable (BD) and each latent moderator variable were positive and statistically significant (see Figure 1(a) to (c)), as were the associations between the predictor latent variable and the outcome latent variable (i.e. ED symptomatology: $r = .49$), and between the outcome latent variable and each latent moderator variable, r ranges between .42 and .47 (all ps < .001).[5]

The LMS parameter estimates of each potential moderator on ED symptoms are presented in Table 1. Consistent with expectations, after controlling for the main latent effects, internalization, SA and PIC strengthened the BD-ED symptomatology relationship; the interactions accounted for an additional 5%, 3% and 4% of variance in ED symptomatology, respectively. The $\Delta - 2LL$ test showed that the three nonlinear structural equation models had a significant improvement in data approximation compared to the respective linear structural equation models (see Table 1).

A post hoc analysis was performed using the method outlined by Byrne (2011): for each latent criterion variable, the BD × Moderator(s) interactions were plotted by inserting high (1 *SD* above the mean) and low (1 *SD* below the mean) values for the two latent predictors into

Table 1. Summary of latent moderated structural equation modelling analyses predicting eating disorder symptomatology ($N = 405$).

Latent variable/interaction	Main (γ)/interaction effects (ω)	Cumulative R^2	Incremental R^2	$\Delta - 2LL$ (df$_{diff}$)
Body dissatisfaction (BD)[a]	.49*	.22	.22	
Internalization (I)	.43*	.32	.11	
BD × I	.27*	.37	.05	9.03(1)*
Social anxiety (SA)	.20*	.25	.03	
BD × SA	.19*	.28	.03	6.44(1)*
Poor impulse control (PIC)	.31*	.31	.08	
BD × PIC	.20*	.35	.04	7.32(1)*

[a]The main effects (values) of BD are the same for each latent moderated structural equation model and thus are not presented for subsequent model within the table.
*$p < .01$.

the respective structural equations. Testing the significance of the simple slopes indicated that the relation of BD-ED symptomatology was stronger with higher levels of internalization ($\beta = .28$, $t(404) = 5.48$, $p < .001$), SA ($\beta = .24$, $t(404) = 4.07$, $p < .001$) and PIC ($\beta = .22$, $t(404) = 3.43$, $p < .001$) than when levels of each moderator were lower (internalization: $\beta = .59$, $t(404) = 8.60$, $p < .001$; SA: $\beta = .48$, $t(404) = 5.45$, $p < .001$; and PIC: $\beta = .50$, $t(404) = 6.40$).

Discussion

The purpose of this study was to examine whether SA, PIC and internalization of media ideals intensify the BD-ED symptomatology relationship in young adult men through LMS. We hypothesized that men who internalize Western-oriented values and ideals of beauty and attractiveness as communicated through various media forms (Nerini et al., 2011), and who are body dissatisfied, may minimize the dangers of eating and body shape regulation behaviours and use these strategies in an attempt to change their body shape and approximate the male body ideal (Dakanalis and Riva, 2013). Findings supported our hypothesis. Interestingly, in this study, the effects of the BD × internalization interaction are similar to that observed in college women (Dakanalis et al., in press-b). This highlights the stable key role of

internalization of the gendered body shape ideal as moderator.

For some men, complying with cultural ideals of attractiveness may be perceived as being important to avoid negative judgements (Peat and Muehlenkamp, 2011). For these men in particular, SA may moderate the BD-ED symptomatology relationship. Our hypothesis was supported and deserves further study given the role that interpersonal factors are believed to play in maintaining some forms of ED behaviours (Cooper and Fairburn, 2011). Men who fear negative evaluation by others are more likely to engage in behavioural features of EDs in order to ameliorate the experienced negative feelings and thoughts and/or to secure a positive judgment from others by changing their outward appearance (Chandler et al., 2009; Levinson and Rodebaugh, 2012).

Consistent with the literature (Waxman, 2009) and our hypothesis, PIC has been found to exacerbate the deleterious effects of BD and thus increase the levels of ED symptoms among men. Previous studies have failed to demonstrate the role of this construct as potential moderator of BD-ED symptoms in college women (Juarascio et al., 2011; Tylka, 2004). Although further studies are needed to replicate our findings (by using different measures to assess the predictor, moderator and criterion variable), the divergence may be due to the possibility that

males engage in impulsive behaviours more frequently than female counterparts (Cross et al., 2011); therefore, when men are highly dissatisfied with their overall body size and particular upper body parts, they are more likely to engage in risky and dangerous eating and body shape control behaviours to change their physical body (Murray et al., 2012).

Although this study was the first to evaluate potential moderators of the BD-ED symptomatology in undergraduate men, who are at increased risk of eating disturbances (Lavender et al., 2010), there are limitations that should be acknowledged. First, the focus on continuous scaled symptom scores and the assessment of the hypothesized moderated models in a non-clinical sample of men limits our ability to extrapolate findings from this research to men with full-blown EDs since taxometric investigations supported a categorical view of the ED behaviours (see Miller and Vaillancourt, 2011). Second, the sample mainly consisted of white heterosexual college-aged men, potentially impacting results' generalizability. Third, although only self-report measures with established psychometric properties were used, the findings of this study are susceptible to fallacious reporting. Future research should ascertain whether these results could be replicated in a male clinical sample and in men of different sexual orientation and various ethnicities (Barroso et al., 2010). In addition, the use of other methods of data collection (such as semi-structured interviews) would be also beneficial. Four, not all potential moderators were included in this study; thus future research may focus on other potential risk and protective factors (i.e. coping skills, interpersonal difficulties, perfectionism, self-esteem; Cooper and Fairburn, 2011).

In terms of practical implications, the results suggest that during screening programmes, it may be particularly useful to professionals to assess males' levels of PIC, internalization of media ideals and SA, in order to identify those men, out of the many body dissatisfied men, who are more likely to report disordered eating. In fact, these constructs intensify the primary BD-ED symptomatology relation, such that BD is strongly related to men's ED symptomatology when each moderator is at its highest level. Many extant ED prevention programmes focus on lowering levels of BD and factors associated with it (i.e. thin-ideal internalization; Stice et al., 2007). In order to use these cognitive dissonance–based educational approaches that have demonstrated efficacy with young women (see Stice et al., 2007), they should be designed to address the male body shape ideals and specific body areas of concerns (see Dakanalis and Riva, 2013). Furthermore, our findings suggest that such interventions might be even more efficient if they also focused on preventing high levels of poor impulse regulation and SA.

Notes

1. Individuals who score ≥ 20 on this measure are considered to be at risk of or likely to have clinical levels of eating disorder (ED) symptoms.
2. Compared to the traditional hierarchical moderated regression analysis used by previous research, examining moderators of the body dissatisfaction (BD) women's ED symptomatology (e.g. Dakanalis, et al., in press-b; Juarascio et al., 2011; Tylka, 2004), the approach used in this study has a number of advantages, including its ability to simultaneously estimate a 'measurement model' (specifying relationships between a set of latent variables and a set of observed variables) and a 'structural moderate model' (specifying the relations among the latent constructs, main and interaction effects included), while accounting for measurement error (Kelava et al., 2011).
3. www.istat.it
4. Online studies have two main options for the availability of a study for participants: open accessibility and invited accessibility through providing a unique access code for each

participant (Gabbiadini et al., 2011). Although the first option was used in this study, the targeted advertising in the selected university departments helped to increase our control over who hears about the study and how the study is described (Gabbiadini et al., 2011). In addition, the check on the Internet Protocol (IP) address allowed us to verify that each participant engaged in the study on only one occasion (Dakanalis et al., in press-a).

5. The correlations among the proposed moderator variables were statistically non-significant.

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