

## ORIGINAL ARTICLE

# Dysfunctional eating behaviors, anxiety, and depression in Italian boys and girls: the role of mass media

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**Objective:** Extensive research has implicated identification with characters in mass media in the emergence of disordered eating behavior in adolescents. We explored the possible influence of the models offered by television (TV) on adolescents' body image, body uneasiness, eating-disordered behavior, depression, and anxiety.

**Methods:** Three hundred and one adolescents (aged 14-19) from southern Italy participated. They completed a questionnaire on media exposure and body dissatisfaction, the Eating Disorder Inventory-2, the Body Uneasiness Test, the Beck Depression Inventory, and the State-Trait Anxiety Inventory – Form Y.

**Results:** The main factors contributing to females' eating-disordered behaviors were their own desires to be similar to TV characters, the amount of reality and entertainment TV they watched, and the discrepancy between their perceptions of their bodies and those of TV characters. Friends' desire to be similar to TV characters contributed most to depression, anxiety, body uneasiness, and eating disorders for both males and females.

**Conclusion:** Our data confirm that extensive watching of reality and entertainment TV correlates with eating-disordered behavior among females. Moreover, the well-known negative effects of the media on adolescents' eating-disordered behaviors may also be indirectly transmitted by friends who share identification with TV characters.

**Keywords:** Adolescents; eating disorders; child psychiatry; women; gender differences

## Introduction

Adolescents constitute one-fifth of the world's population.<sup>1</sup> The World Health Organization calculated that over 50% of mental disorders begin in adolescence,<sup>2,3</sup> although they are often detected later in life.<sup>4</sup> A 2015 systematic review and meta-analysis on the worldwide prevalence of psychiatric disorders in children and adolescents indicated a pooled estimate of 13.4% of youth affected by any mental disorder, showing that around 241 million youngsters in the world are affected by a psychiatric disorder.<sup>5</sup> Moreover, among youngsters, psychiatric disorders account for 15-30% of the disability-adjusted life years lost during the first 30 years of life<sup>6</sup>; thus, it seems reasonable to both study and invest in research and intervention targeting the mental health of adolescents.<sup>7</sup>

Eating disorders (EDs) are among the most pernicious mental illnesses beginning in adolescence.<sup>8,9</sup> The mortality rate for anorexia nervosa (AN) is much higher than for other psychiatric disorders: the standardized mortality

ratios are 5.86 for AN, 1.93 for bulimia nervosa (BN), and 1.92 for EDs not otherwise specified (EDNOS). Technology and mass media may be putting greater proportions of adolescents at risk of developing EDs, which can be exacerbated by idealistic body images presented in the media. In fact, it has been suggested that the glamorization of specific body shapes fomented by the fashion world, for which youngsters represent a core market, can account for the high prevalence of EDs in developed countries. Furthermore, media globalization is correlated to an increased prevalence of EDs in developing countries.<sup>4</sup> A recent longitudinal study<sup>10</sup> conducted with 2,287 participants found that, once dysfunctional ED behaviors start, they become extremely difficult to stop: adolescents with more severe symptomatology continued to belong to the pathological eating behaviors group at 10-year follow-up, indicating the importance of early detection and appropriate intervention.

Patients with AN, BN, and binge-eating disorder (BED) present with disturbed body image and eating and/or weight loss behaviors, leading to severe impairment of quality of life and to high personal and social costs.<sup>11,12</sup> There are also other nonspecific feeding and eating-related maladaptive behaviors, which do not meet all diagnostic criteria for a specific ED, that are very common in community samples, such as chronic dieting, fasting,

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bingeing, purging, and abuse of laxatives and/or diuretics. These symptomatic behaviors increase the risk of "subsequent development of a specific ED."<sup>13</sup> They also dangerously increase the risk of both physical pathological conditions, such as delayed puberty, digestive/urinary abnormalities, and mouth ulcers, and psychological conditions, such as depression, suicide attempts, anxiety, and substance abuse.<sup>14-16</sup> In a systematic review<sup>12</sup> of a large number of community-based studies, the authors highlighted the robust associations between ED prevalence and female sex, younger age cohort, and a history of abuse (particularly physical or sexual). In another review of the literature on the incidence, prevalence, and mortality rates of EDs,<sup>17</sup> AN was found to be on the rise among 15-to-19-year-old girls. BED has been found to be more common among males and older individuals than other EDs.<sup>17</sup>

In a study on the epidemiology of EDs in six European countries (Belgium, France, Germany, Italy, the Netherlands, and Spain), the lifetime prevalence of AN, BN, binge-ED, subthreshold binge-ED, and any binge eating was 0.48, 0.51, 1.12, 0.72, and 2.15%, respectively.<sup>18</sup> Lifetime prevalence was consistently three to eight times as high among women as men for all EDs, except subthreshold BED. Moreover, EDs showed high levels of comorbidity with other mental disorders.<sup>18</sup> Despite the high presence of comorbid disorders in this sample, which should theoretically increase the likelihood of seeking treatment, very few individuals sought contact with mental health services for psychological problems. Among other reasons, the ego-syntonic and reinforcing nature of symptoms in EDs (e.g., anxiolytic, anesthetic, or reward-inducing effects of fasting, bingeing, purging, and excessive exercise) may explain the low motivation of these patients to seek professional help.<sup>19</sup>

EDs comprise a variety of symptoms that severely impair physical, mental, and social aspects of everyday life, perhaps more so than other common psychiatric disorders.<sup>20</sup> EDs are associated with mood and anxiety problems, substance use, and impulse control disorders, contributing to overall impairment and decreased quality of life.<sup>21</sup>

In particular, adolescence represents a developmental period when weight-related teasing by peers and other environmental risk factors, such as the exposure to unattainable thinness ideals, can negatively affect boys' and girls' lives.<sup>22</sup> For these reasons, adolescence represents a critical target period for prevention programmes.<sup>22,23</sup>

It is well established that prolonged direct exposure to media pressure towards thinness, as well as indirect exposure through the media's effects on peers and significant others, represent important risk factors for body dissatisfaction and dysfunctional eating behaviors in adolescents and young adults.<sup>24</sup> Objectification theory<sup>25</sup> contends that women in Western culture are constantly objectified and that their bodies are used by others as a way of assessing their personal worth. Through socialization, women internalize the idea that their self-worth is largely based on the way other people view them. This, in turn, leads to their own continual comparisons of their body images to others.<sup>25</sup>

Interestingly, self-objectification has been found to play a role in depression, which is frequently comorbid with

EDs. In a systematic review of research,<sup>26</sup> a hypothesized causal link between self-objectification and depression was tested. There was clear support for this causal link in the data from female participants, but mixed support for males, indicating a potentially more complex etiology of male EDs.<sup>26</sup> Self-objectification can also be derived from the media, in addition to perceived body idealization resulting from conversations with peers and friends.

In a study<sup>27</sup> focused on the relationship between drive for thinness, self-esteem, and media influence, women were found to be more significantly influenced than men by the media in terms of drive for thinness. Models in the media were perceived to have ideal bodies, which led to an internalization of the media message that affected the body image of the viewers, both male and female.<sup>27</sup>

Media effects may not be limited to North America, where most of the research has been conducted. The global access to mass media, including television (TV) and film, creates an international dilemma, as seen in a study of adolescents in Fiji whose body image was negatively affected by gaining access to social networks.<sup>28</sup> The desire for approval, which has been identified as a leading cause of EDs, can stem from comparisons made to characters and figures in the media.<sup>29</sup> The ideal of feminine beauty is portrayed as something impossible to attain, but important to work towards. The media presents unattainable ideals to adolescents (see, e.g., Miotto et al.<sup>30</sup>), but does not disseminate information regarding the dangers and prevalence of the EDs that come as negative consequences of striving for thinness. Nevertheless, the key element may be not mere exposure to media, but exposure without critical consideration: adolescents spend an average of 7 or more hours/day with media, which is more than they do on any other activity except sleeping.<sup>31</sup> Although adolescents have access to several media, TV remains predominant and, when a TV is in the bedroom, parents are less capable of monitoring adolescents' viewing habits<sup>31</sup> by co-viewing and discussing the characters' appearance or choices and behavior. Therefore, a passive, uncritical, and unquestioning stance may contribute to the strong impact these images have on adolescents' thoughts and feelings.

The objective of the present study was to evaluate the influence of models offered by the mass media (TV) on adolescents' perceptions of their own body image and on psychopathology. We hypothesized that: i) exposure to TV would correlate positively with susceptibility to distorted bodily perceptions, disordered eating behavior, anxiety, and depression; ii) the participants' distorted perception of their own bodies compared to those of TV characters would correlate positively with body uneasiness, disordered eating behavior, anxiety, and depression; and iii) participants' and their friends' desire to be similar to models of TV characters would correlate positively with disordered eating behavior.

## Methods

### *Study design and participants*

Three hundred and one male and female adolescents between the ages of 14 and 19, recruited from 13 high

school classes across southern Italy, participated in the study. The sample was made up of 148 females (49.17%, mean age 17.136, standard deviation [SD] = 1.3) and 153 males (50.83%, mean age 17.176, SD = 1.2), an almost equal distribution of sex and age.

#### *Ethics committee approval and informed consent procedure*

This study was carried out after approval by the ethics committee of Dipartimento di Psicologia dei Processi di Sviluppo e Socializzazione, Sapienza Università di Roma. Assessment was conducted during one session lasting around 1 hour, which took place in the participants' classrooms. The study was introduced to the participants and a set of questionnaires was administered under the supervision of a proctor capable of providing clarification. Administration was carried out in a manner that ensured anonymity. Before administering the test, the participants were asked to read and sign an informed consent form where the study and Italian Law 675/96, which guarantees the privacy of personal information, were explained. Parents signed the informed consent form for underage participants, whereas those who were of legal age signed the form themselves. The consent rate was 94%. Participants were not given any incentive to participate in the study, and their involvement was voluntary. To ensure the participants' anonymity, no names were identified on the questionnaires.

Respondents were asked to indicate the average daily time spent watching TV and the name and type of their favorite TV programs. In addition, participants specified the body type of their favorite TV character (both male and female), how similar to these characters they perceived themselves to be, and whether they or their friends would like to resemble these characters physically.

#### *Instruments*

##### Eating Disorder Inventory-2 (EDI-2)

The EDI-2 is a self-report measure<sup>32,33</sup> used to assess ED psychopathology (i.e., attitudes and behaviors relevant to bulimia and AN) in both males and females over the age of 12. This second version contains 91 items and 11 subscales that measure: 1) drive for thinness; 2) bulimia; 3) body dissatisfaction; 4) ineffectiveness; 5) perfectionism; 6) interpersonal distrust; 7) interoceptive awareness; 8) maturity fears; 9) asceticism; 10) impulse regulation; and 11) social insecurity. Participants rated their level of dissatisfaction on a letter scale from A (never) to F (always), and were also asked to indicate their weight in kilograms and height in centimeters. This instrument has shown to be reliable for the assessment of EDs, with highly stable test-retest reliabilities over time. Previous research has shown significant test-retest correlations ranging from 0.81-0.89 in the ED group and from 0.74-0.95 in the group with other diagnoses, such as depression and obsessive-compulsive disorder.<sup>34</sup> In this study, Cronbach's alpha was 0.71.

##### Body Uneasiness Test (BUT)

The BUT is a 71-item self-report questionnaire divided into two parts.<sup>35</sup> BUT-A consists of 34 statements and measures weight phobia, body image concerns, avoidance, compulsive self-monitoring, detachment, and estrangement feelings towards one's own body (depersonalization). Sample items include: "Eating in the presence of others causes anxiety"; "I avoid mirrors"; and "I compare my appearance with that of others." On the other hand, the 37-item BUT-B examines specific worries about particular body parts, features (e.g., odor), or functions (e.g., sweating). Response options for all items were based on a six-point scale, ranging from 0 (never) to 5 (always). BUT-A scores were averaged in a Global Severity Index (GSI) and five subscales: Weight Phobia (fear of being or becoming fat); Body Image Concerns (worries related to physical appearance); Avoidance (body image-related avoidance behavior); Compulsive Self-Monitoring (compulsive checking of physical appearance); and Depersonalization (detachment and estrangement feelings toward the body). BUT-B scores were combined in two measures (Positive Symptom Total and Positive Symptom Distress Index) and in eight subscales related to specific worries about particular body parts or functions. Higher scores indicate greater body uneasiness. Research on the validity of the BUT indicates that this questionnaire has satisfactory internal consistency ( $\alpha > 0.7$ ) and strong test-retest reliability (correlation coefficients  $> 0.7$ ). It has been shown to be a valuable instrument for screening and clinical assessment of abnormal body image attitudes, AN (restrictive and binge-purging types), and BN (purging type).<sup>35</sup> In this study, Cronbach's alpha for this measure was 0.91.

##### Beck Depression Inventory (BDI-II)

The BDI-II is a 21-item self-report inventory used to measure characteristic attitudes and symptoms of depression, such as hopelessness, irritability, and feelings of guilt.<sup>36,37</sup> Participants are asked to indicate which statement best describes their feelings over the past 7 days. Each item has between four and six choices, ranging in intensity. Sample items include: "I don't enjoy things the way I used to"; "I feel the future is hopeless and that things cannot improve"; and "I blame myself all the time for my faults." Scores are combined and compared to a key to determine the presence and severity of depression, ranging from "normal ups and downs" to "extreme depression." Previous studies on the psychometric properties of the BDI-II have demonstrated high internal consistency, with alpha coefficients of 0.86 and 0.81 for psychiatric and non-psychiatric populations, respectively.<sup>38</sup> In this study, Cronbach's alpha for this measure was 0.82.

##### State-Trait Anxiety Inventory – Form Y (STAI-Y)

The STAI-Y is a self-report inventory that measures state and trait anxiety.<sup>39,40</sup> Form Y contains 20 items that assess state anxiety and 20 for trait anxiety. Sample state anxiety items include: "I feel worried" and "I feel secure." Trait anxiety items include: "I worry too much over

something that really doesn't matter" and "I am content." For the items on state anxiety, participants are asked to indicate whether the statement describes their current mood state. Responses are based on a four-point scale ranging from "not at all" to "extremely." For the items on trait anxiety, participants indicate whether the statement describes how they feel most of the time. Responses are based on a four-point scale ranging from "almost never" to "almost always." Previous research has demonstrated a high internal consistency, with alpha coefficients ranging from 0.86-0.95 and test-retest coefficients from 0.65-0.75 over a 2-month interval.<sup>39</sup> In this study, Cronbach's alpha was 0.84 for the trait scale, which was used in the regression analyses.

### Statistical analysis

We conducted a series of initial analyses to determine the viability of pooling data from male and female participants into a single set of multiple-regression analyses, thus maximizing statistical power. First, we determined that the participants' gender was the strongest predictor of eating-disordered behavior and body uneasiness in our data. Furthermore, many of the interactive effects of gender and the other predictors were significant. Because we did not have the statistical power to enter all of these interactions into a single equation, we opted to compute separate regression equations for male and female participants.

## Results

Table 1 displays the standardized beta coefficients separately by gender. Male friends' desire to physically resemble TV characters was the only statistically significant factor contributing to the criterion measures. Notably, that variable emerged as a significant predictor of all four dependent variables: depression, anxiety, eating-disordered behavior, and body uneasiness.

As shown in the table, several significant predictors emerged in the regressions computed with data obtained from female participants. Consequently, the overall variance explained for females was greater than for males, especially for the more proximal criterion variables of eating-disordered behavior and body uneasiness. As in the results obtained for males, friends' desire to be similar to media characters emerged as a significant predictor of all four criterion variables, making this the most consistent predictor in the entire data set. However, some additional predictors were significant only for females, including some significant findings for females' own desire to be similar to media characters and the discrepancy they perceived between their own body image and that of the character. These results suggest that Italian female adolescents internalize media messages about the ideal body to some extent, which was not evident in the data obtained from males.

## Discussion

Our results highlight the difference between male and female adolescents in terms of susceptibility to misperception of their

**Table 1** Multiple regression summary for males and females: standardized beta coefficients and significant *t* values

Predictor variable	Males	Females (beta)
<b>Depression</b>		
Hours watched	0.127	0.384
Idolization of characters	-0.558	0.957
Desire to be similar	1.221	0.751
Friends' desire to be similar	0.218/2.650 <sup>†</sup>	2.013
Discrepancy from ideal	0.111	0.539
Cumulative R <sup>2</sup>	0.07	0.05
<b>Anxiety</b>		
Hours watched	0.072	-0.046
Idolization of characters	0.079	0.032
Desire to be similar	0.010	0.121
Friends' desire to be similar	0.183/2.184*	0.286/2.329 <sup>†</sup>
Discrepancy from ideal	-0.009	0.949
Cumulative R <sup>2</sup>	0.04	0.11
<b>Eating disordered behavior</b>		
Hours watched	-0.046	0.004
Idolization of characters	0.032	-0.083
Desire to be similar	0.121	0.211/2.611 <sup>†</sup>
Friends' desire to be similar	0.286/3.556 <sup>†</sup>	0.110
Discrepancy from ideal	0.005	0.310
Cumulative R <sup>2</sup>	0.12	0.19
<b>Body uneasiness</b>		
Hours watched	0.022	0.036
Idolization of characters	-0.048	0.031
Desire to be similar	0.143	0.214/2.726 <sup>†</sup>
Friends' desire to be similar	0.213/2.613 <sup>†</sup>	0.194/2.415*
Discrepancy from ideal	0.117	0.332/4.292 <sup>‡</sup>
Cumulative R <sup>2</sup>	0.09	0.24

\*  $p < 0.05$ ; <sup>†</sup>  $p < 0.01$ ; <sup>‡</sup>  $p < 0.001$ .

body caused by the mass media. The stronger prediction of outcome for females corroborate previous findings,<sup>27</sup> showing that females were influenced by the media in terms of drive for thinness significantly more than males were. A higher prevalence of ED symptoms has been found in women as compared to men. Thus, women may be more susceptible than men to body misperceptions caused by the media.

Objectification theory states that, in Western culture, women are specifically objectified and their body is used to measure their self-worth. Through the perception that their self-worth is mainly based on how people view them, women subconsciously tend to compare their body image to others' more than men do.<sup>25</sup> According to objectification theory, women already have a stronger propensity to being swayed by the media and, in turn, viewing their body in a negative way as compared to the "ideal body" that is represented in TV or in other media. Our data indicate that women are much more susceptible to the mass media through direct comparisons. Men may have a different etiology in regards to the effect of mass media and ED behaviors, or may simply not be as sensitive to media influences as are females. One possible explanation is that females may be more sensitive to these issues than males because they watch more entertainment and image-focused TV.<sup>41</sup> With respect to TV viewing time, women of all ages spend more time watching TV than their male counterparts.<sup>42</sup> This could explain the more direct effect on dysfunctional EDs. On the other hand,

men spend more than twice as much time as women using gaming consoles, so one may infer that they are less directly influenced by TV watching.<sup>43</sup>

One interesting finding of our study is the very consistent strength of the vicarious influence of friends, specifically of friends' perceptions of media characters. This emerged as a significant predictor for both males and females, but stands out as the only significant predictor in our data set for males. While both males and females appear to be sensitive to the influences of friends, it is commonly held that females are more invested in relations than are males.<sup>44</sup> This does not preclude the possibility of boys being influenced very strongly by their friends in this particular way, especially in the Italian culture, where boys and men do interact socially to a considerable extent.<sup>45</sup>

Our findings should be viewed while taking certain limitations into consideration. First, the correlational nature of our data. Although we did obtain statistically significant correlations in our sample, we cannot determine whether the mass media caused the psychological problems or only contributed to them. Therefore, we are unsure whether the initial presence of depression and/or anxiety might have made the participants more susceptible to EDs or if instead those factors were a consequence of EDs. Second, all measures were self-reported and may thus have been affected by self-report bias. Also, we did not account for genetic factors. If any of the participants had a genetic predisposition toward ED behavior, exposure to the mass media may have had a stronger effect on them than on others without such predispositions.

Though not all of our hypotheses were confirmed, our data revealed interesting information about the differences in male and female susceptibility to the mass media. Although no direct causal relationships can be drawn from this study, our data show a relationship whereby women are more susceptible to ED behaviors, distorted perception of their own bodies, and depression through direct comparisons to the mass media. On the other hand, males are more susceptible to distorted perception of their body, state and trait anxiety, and depression using indirect comparisons to the mass media through their friends. We suggest that future studies should explore the etiology of EDs in men and the indirect influence of mass media characters.

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## Disclosure

The authors report no conflicts of interest.

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