



Original article

The Association Between Exposure to Mass Media and Body Dissatisfaction Among Spanish Adolescents

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ABSTRACT

Objectives: Correlational research has found associations between magazine and television exposure and body dissatisfaction. However, this relation is not direct, and various psychological variables may moderate and/or mediate this relation, such as awareness and internalization of the thin ideals, comparing oneself with ideal body image or self-esteem, as well as the patient's body mass index (BMI). The aim of this study was to assess the association between magazine and television exposure and body dissatisfaction among Spanish adolescents by gender. A second aim was to determine the predictors of body dissatisfaction by gender.

Methods: A cross-sectional national survey of 1,165 Spanish secondary students aged 14 to 16 years was conducted. Frequency exposure and type of TV program/magazine as well as other psychological variables, such as thin-ideal internalization and self-esteem, were associated with high levels of body dissatisfaction (BD) based on a cutoff point of 16 or above on the Eating Disorder Inventory (EDI) by gender. Multiple linear regressions were used to examine associations between body dissatisfaction, mass media topic exposure, BMI, and psychological variables.

Results: Mass media exposure to a specific kind of content, rather than to total exposure frequency, was more associated with body dissatisfaction in females versus males. In males, five factors accounted for 35% of the total variance of body dissatisfaction and were associated with lower TV and magazine exposure to fitness topics and lower self-esteem and with greater BMI, disordered eating behaviors, and awareness of the thin ideal. For females, high body dissatisfaction was associated with greater internalization of the thin ideal, disordered eating behaviors, BMI, and lower self-esteem (54% of total variance explained).

Conclusion: There does not seem to be a clear association between media exposure and body dissatisfaction. Further research is necessary to enhance our understanding of how the media's role affects adolescents' awareness and internalization of the thin ideals, which may in turn lead to the development of body dissatisfaction and unhealthy weight control behaviors.

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Introduction

Body image dissatisfaction seems to be not only a widespread phenomenon among teenage girls (Baile, Raich, & Garrido, 2003; Hill & Pallin, 1998; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006) and among adult women (Jaeger et al., 2002;

Lameiras, Calado, Rodríguez, & Fernández, 2003; Sepulveda, Carrobes, & Gandarillas, 2010; Wiseman, Gray, Mosimann, & Ahrens, 1992), but has also been found to be an independent predictor of disordered eating as reported in several meta-analytic reviews (Grabe, Ward, & Hyde, 2008; Stice, 2002). This association between body dissatisfaction and eating disorders has led to an extensive body of research over the last 20 years that has attempted, among other aims, to address the factors that may contribute to the development of body dissatisfaction, such as the importance of sociocultural influences (Cafri, Yamamiya, Brannick, & Thompson, 2005; Grogan, 2006). More specifically, Cafri et al. (2005) reported the salience of three constructs that seem to be frequently implicated in the development of body

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image dissatisfaction: Awareness of a thin ideal, internalization of a thin ideal, and perceived pressures to be thin. On the other hand, although findings continue to report greater dissatisfaction among women (Knauss, Paxton, & Alsaker, 2007; van den Berg et al., 2007), research that has examined body dissatisfaction and pressure toward thinness has concluded that these associations also seem to be present, albeit less markedly, in male populations (Hatoum & Belle, 2004; McCabe & Ricciardelli, 2004).

Although sociocultural factors associated with body image are generated by a wide range of socialization agents, such as family, friends, and peers, it seems that the mass media arguably play a decisive role as a vehicle for female body objectification (Wiederman, 2000) through the exposure to consistent, reiterative, and persuasive thin-ideal images (Blaine & McElroy, 2002; Brown & Witherspoon, 2002; Cusumano & Thompson, 1997; Field et al., 1999; Hill, 2006; Hogan & Strasburger, 2008; Wiseman et al., 1992). An example of this phenomenon can be found in the objectification of women's bodies by advertising and consumerist agents who seem to show an interest in sustaining a vicious cycle that both addresses and reinforces the thinness ideal (Blaine & McElroy, 2002; Crandall & Martínez, 1996). In this line, Wolf (1991) argues that beauty ideals are not only subject to changeable definitions, but that the images generated by advertising agencies that strive to engage women in consumptive practices, may also seek to divert their attention from established power structures (Wolf, 1991). Likewise, Ventura (2000) has explored the relationship between women and our current Western standards of beauty. The author found a strong association between beauty, thinness, and health and argued that these categories were usually jointly marketed through the mass media (Ventura, 2000). Thus, it seems that a significant proportion of the general population is led to believe that ideals of beauty and thinness can not only be obtained through the consumption of cosmetic and dietetic products, but that this is also socially acceptable (Castillo, 2006). Women are therefore led to believe that failure to attain these goals is owed to a lack of will or the need to increase goods consumption (Calado, 2010). Thus, it seems that body dissatisfaction and unhealthy weight-control behaviors among women are acquired through social learning and consolidated through cognitive and behavioral processes (Blowers, Loxton, Grady-Flessner, Occhipinti, & Dawe, 2003; Groesz, Levine, & Murnen, 2002; Stice, Schupak-Neuberg, Shaw, & Stein, 1994).

It is, however, debatable whether these forms of mass media imply a cause-and-effect relationship or if they are simply correlation. In any case, the evidence available by correlation studies in the scientific literature reflects a complex reality. The majority of findings provided by correlational research are on the relationship between exposure frequency to the thin ideal and body dissatisfaction (Cusumano & Thompson, 1997; Field et al., 1999; Tiggemann & Pickering, 1996), mainly carried out with magazines (Abrason & Valene, 1991; Botta, 2003; Cusumano & Thompson, 1997; Field et al., 1999; Hatoum & Belle, 2004) and television (Borzekowski, Robinson, & Killen, 2000; Tiggemann & Pickering, 1996; Van den Bulck, 2000) or both types (Harrison, 2000; Harrison & Cantor, 1997). Regarding magazines, Field et al. (1999) analyzed how the consumption of magazines to obtain information on beauty and weight was associated with body dissatisfaction in primary and secondary school students. The study reported that 69% of the students believed that fashion magazine images influenced their concept of ideal body image and that 47% of the students expressed the desire to lose weight

because of this influence. Similarly, in a recent study by Botta (2003), the author found that exposure to sports and fitness magazines was associated with body dissatisfaction in both female and male students. Regarding television exposure, Tiggemann and Pickering (1996) found that female students who spent more time watching films and series and less time watching sports programs presented greater body dissatisfaction. Likewise, Borzekowski et al. (2000) found that exposure to music videos was associated with higher concerns regarding perceived appearance and weight among females. In an adolescent sample, Van den Bulck (2000) reported an association between the exposure to ideal images portrayed on television and the self-assessment of weight and body shape.

On the other hand, it seems that muscle bulk is relevant to the masculine body ideal, and that exposure to the muscular ideal has been associated with greater body dissatisfaction in male adolescents, whereas females have reported the desire to be thinner (Hatoum & Belle, 2004; McCabe & Ricciardelli, 2004). Hence, it seems that sociocultural factors may affect female and male adolescents differently or, in other words, male adolescents tend to be less likely to engage in weight loss behaviors than females, and are less likely to internalize media body ideals (Knauss et al., 2007).

However, current psychological theories have provided important insight on the impact of ideal body images: Social comparison and the previously mentioned awareness or internalization of the body ideal. Thus, body comparison with media images has been proposed as a mediator between mass media exposure and body dissatisfaction in female samples (van den Berg et al., 2007). On the other hand, it appears that females with less self-esteem were more sensitive to social comparisons (Stice, Spangler, & Agras, 2001) which could possibly lead to greater probabilities of internalizing images of excessively thin women (Stice, 1994).

Nevertheless, it seems that body dissatisfaction and eating disorders, which were normally associated with Western cultures, are now present among women across cultures. Perhaps the most well-known investigation of the impact of mass media exposure is the Fiji islands study, which documented the effect of beauty standards and attitudes associated with body image on the islands' adolescents who had previously not reported these problems (Becker, 2004). The reason for this change could be explained by the recent access on the island at the time to American, British, and Australian television programs. Thus, it seems that, through the mechanics of globalization, Western values regarding body image have been able to permeate the majority of non-Western cultures.

Previous Spanish research in this field has departed from the premise that the Spanish media present similar characteristics to mainstream Western media culture, such as those of the United States and Canada. Spanish television is awash with dubbed American sitcoms, documentaries, and films; rights to successful reality shows, such as *Big Brother* and *American Idol* have been acquired and Spanish versions produced. Likewise, advertising agencies for large corporations, such as *Chanel* or *Nike*, tend to dub and use spots produced and aired in other Western European countries. Furthermore, Spanish adolescents seem to present similar television exposure, around 2 hours daily, to other Western countries (Devis-Devis, Peiro-Velert, Beltran-Carrillo, & Tomas, 2009). Like television, Spanish printed media can also be seen as analogous to Western printed media with magazines such as *Cosmopolitan* or *Elle* that are published in Spanish but follow similar trends in content. Thus, it is not

surprising that as early as 1988, [Toro, Cervera, and Pérez \(1988\)](#) reported increased advertising pressure in favor of thinness in Spanish society, which not only seems to have increased even further, as other studies suggest, but has also endorsed negative attitudes toward body image and psychological well-being ([Raich et al., 2001; Toro et al., 2006](#)).

The Current Study

Our study has attempted to add on to the growing body of literature that investigates the relationship between media exposure and disordered eating attitudes by replicating some of these findings in a Spanish setting. Thus, the general aim of this study was to examine the association between body dissatisfaction (reaching a cutoff point of ≥ 16 on the Eating Disorder Inventory Body Dissatisfaction [EDI-BD] subscale) and mass media exposure in Spanish adolescents by addressing the following specific aims: (1) To evaluate whether higher frequency exposure to TV programs or magazines is associated with body dissatisfaction by gender; (2) to assess what kind of TV programs or magazines exposure are associated with body dissatisfaction by gender; (3) to examine whether disordered eating, social comparison, awareness and internalization of a thin ideal, and self-esteem are associated with body dissatisfaction scores by gender; and, finally, (4) to associate these variables to media use and body dissatisfaction by examining body dissatisfaction predictors by gender. Hence, we hypothesized that greater total frequency of media exposure during the entire week among adolescents would correlate with body dissatisfaction. Likewise, we expected greater exposure to specific kinds of media topics related to body image, such as dieting, fashion, and fitness, to be associated with adolescents with greater body dissatisfaction. Finally, we expected that higher levels of disordered eating, social comparison, awareness and internalization of a thin ideal, and lower self-esteem would be associated with adolescents with greater body dissatisfaction. Regarding adolescents with greater body dissatisfaction, we expected in all cases more marked differences in the female sample compared with the male sample.

Methods

Subjects and Sampling Method

The sample was made up of male and female third and fourth year students enrolled in compulsory secondary education (E.S.O.) courses in either public (government-run) or private schools. The survey was carried out during the 2004 and 2005 academic year. Given the complexity of the design, a minimum number of students for a valid study was calculated. A cross-sectional design was used for the study. The objective was to obtain at least 1,200 valid questionnaires, which would guarantee a 95.5% confidence interval with a $\pm 2.88\%$ sample error assuming a theoretical (expected) prevalence for eating disorders of 5%. Students between 14 and 16 years of age made up 95.5% of the sample. The first stage of selection is a probability sample of the number of schools for each region. The second stage is the selection the students enrolled in these centers. Sample units were chosen by simple random sampling, without replacement by classes. Two strata were established, taking into account the type of school (public or private).

This sampling design ensured that the E.S.O. student sample was an adequate geographical and sociodemographic representation of Spain as a whole, and included 15 regions from all 17

Spanish autonomous regions. Fifty-three schools were selected and were contacted by letter requesting their participation. A total of 30 schools participated (56.6%) with between 19 and 99 participants for each Spanish region. Reasons for schools' nonparticipation were past participation in other similar studies, current participation in a study, and time constraints. The survey was completed by 1,165 secondary school students, representing 88.7% of the total targeted sample. Questionnaire nonresponse by students was due to school absenteeism. However, only 1,115 students were included for statistic analyses, of whom 547 (49.1%) were males and 568 (49.9%) were females, owing to the exclusion of students who did not complete more than three items in the questionnaire battery (2% of the sample) as well as the students that presented illegible answer sheets (2.5% of the sample).

Procedure

Electronic spreadsheets listing the names of schools, directors, and contact information were obtained from the Ministry of Education. Ethics approval to conduct the study was granted by the Educational Sciences School Ethics Committee at the University of Vigo, the National Spanish Women's Institute (Exp. N° 58/03) and regional school authorities. Once the random selection was completed, the selected schools were invited to participate in the study. Furthermore, the research team visited each school to discuss in person the intervention, including informed consent procedures with the head teacher, convenient dates, as well as other information as requested by the schools. Classrooms were selected through a stratified random sampling method from each center. Hereby, we assumed that the random selection of classes resulted in a gender distribution similar to that in the general population. Students were also informed that participation in the study was voluntary and completed and signed an informed consent form allowing the anonymous use of their data. The students were not reimbursed for their participation. The battery of questionnaires required an average of 50 minutes to complete.

Instruments

The survey included six questionnaires that were administered consecutively and are described below. Students also completed several questions that included information on the student's age, gender, height, and current weight. Their body mass index ($BMI = \text{weight [kg]} / \text{height [m]}^2$) was calculated.

Mass media exposure measured by the sociomediatic questionnaire

We used the Sociomediatic Questionnaire (SQ; developed by [Calado, 2008](#)) to measure mass media exposure. This self-report questionnaire was designed ad hoc and based on data available in Spain on mass media and a literature review of the available scientific literature. The instrument was designed to obtain descriptive data of secondary school student usage of the mass media and information associated with unhealthy weight control practices.

To ensure that students were able to understand the questions and identify program and magazine types, each category was briefly described and written examples of popular television programs and magazines were provided for each described category. The questionnaire included three subscales, described below.

1. *Television watching frequency:* This subscale is comprised of 22 items assessing the frequency of exposure to different types of programs during the week (Monday to Sunday). Following the model of [McCreary and Saldava \(1999\)](#), responses are provided on a 9-point scale from 0 (have not watched any television), 1 (<1 hour), 2 (1–3 hours), 3 (4–6 hours), 4 (7–9 hours), 5 (10–12 hours), 6 (13–15 hours), 7 (16–18 hours), to 8 (>18 hours; [McCreary & Saldava, 1999](#)). Two items were calculated for the total exposure time to TV during weekdays and the weekend. The classification by [Palacios \(2004\)](#) was used to categorize the programs viewed and includes 20 items (categories), such as films, situation comedies (e.g., “Sex in the City”) and cartoons (e.g., “The Simpsons”). Principal components analysis with Varimax rotation revealed a 4-factor structure of 20 items accounting for 48% of the variance. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.87, exceeding the recommended 0.6, and Bartlett’s test of sphericity reached significance ($p < .01$), supporting the factorability of the correlation matrix. These factors were interpreted as themes of fictional programs ($\alpha = .89$), tabloids and programs centered on celebrities ($\alpha = .89$), music video programs ($\alpha = .87$), and game shows/news programs without celebrities ($\alpha = .90$). These four scores indicated total frequency of watching specific kinds of TV content. Another two scores indicated TV watching frequency during weekdays and frequency during the weekend.
2. *Magazine exposure frequency:* Similar to the first subscale, this 12-item subscale assesses the total amount of exposure time to different types of magazines during the week (Monday to Sunday). Categories provided by the ([Oficina para la Justificación de la Difusión, 2003](#)) were used to classify different magazine publications, with examples of magazines published between January 2002 and December 2003 with a circulation of at least 30,000 copies provided for each category. Two items were calculated for the total exposure time to magazines during weekdays and the weekend. Principal components analysis revealed a two-factor structure of 10 items accounting for 38% of the variance. The Kaiser-Meyer-Olkin and test of sphericity were also adequate. These factors were interpreted as themes of women and music ($\alpha = .84$), and hobbies and information ($\alpha = .88$). These two scores indicated total frequency of reading specific kinds of magazine content. Another two scores indicated magazine exposure frequency during weekdays and frequency during the weekend.
3. *Watching and reading frequency, television and magazine topics:* The third subscale aims to assess total television and magazine exposure frequency with eight topics (categories) related to body image (e.g., beauty, sports, and health). Participants mark the amount of time usually spend watching the following topics on TV or reading the following topics in magazines using a 5-point Likert scale ranging from 0 (never) to 5 (always). We used each item directly as a continuous score. Higher scores indicated higher TV and magazine exposure to each kind of topic: Sport, dieting, fitness, beauty, health, fashion, music videos, and sexuality.

Body dissatisfaction measured by the EDI-BD subscale of the eating disorder inventory

The EDI-BD ([Garner, 1998](#)) assesses, through nine items, discontent with the overall shape and size of specific body

regions, such as “I think my hips are too big,” using a scale ranging from 1 to 6, where 1 = never and 6 = always. Previously, [Baile et al. \(2003\)](#) found that the version administered (alone, full EDI-2, or in combination with the EAT-40) did not offer significantly different scores in a Spanish adolescent sample. The Cronbach’s alpha was 0.89 for females and 0.88 for males; and an optimal cutoff point of 16 or above on the EDI-BD was used to indicate adolescents with high body dissatisfaction (suggested by [Garner, 1998](#)). This cutoff point has been used in a previous Spanish study ([Gandarillas et al., 2004](#)).

Disordered eating patterns measured by eating attitudes test-26

The EAT-26 ([Garner, Olmsted, Bohr, & Garfinkel, 1982](#)) measures a broad range of symptoms and concerns and provides a total score for disturbed eating attitudes and behavior. Participants specify how often they feel or engage in terms of “Avoid eating when I am hungry” or “Vomit after I have eaten,” using a 6-point Likert scale ranging from “never” to “always.” The Spanish version adapted by [Gandarillas, Zorrilla, Sepulveda, and Munoz \(2003\)](#) was used. The Cronbach’s alpha for the current study was 0.90 for females and 0.88 for males. Higher scores indicated disordered eating attitudes and behaviors.

Social comparison measured by physical appearance comparison scale

The Physical Appearance Comparison Scale (PACS; [Thompson, Heinberg, & Tantleff, 1991](#)) is a short scale consisting of five items such as “At parties or other social events, I compare my physical appearance to the physical appearance of others,” which assesses the degree to which an individual tends to compare his or her appearance with others. Response options ranged from 0 (never) to 5 (always). A Spanish version of the PACS was not available. Consequently, it was translated, examined psychometrically, and validated among Spanish adolescents. Reliability for our study was 0.89 for females and 0.88 for males. Calado (2008) has validated this scale for a Spanish population. Higher scores indicated a higher tendency to compare one’s own appearance with others.

Internalization of thin ideal measured by sociocultural attitudes toward appearance questionnaire-review

The Sociocultural Attitudes Toward Appearance Questionnaire-Review (SATAQ-R; [Cusumano & Thompson, 1997](#)) consists of 21 items on two subscales (internalization and awareness) that assess a person’s awareness and internalization of body stereotypes in popular media (e.g., magazines) with items such as “I believe that clothes look better on thin models” or “I tend to compare my body to people in magazines and on TV.” Responses range from 1 (completely in disagreement) to 5 (totally in agreement). A Spanish version of the SATAQ-R was not available. Consequently, it was translated, examined psychometrically, and validated (Cronbach’s alpha was .89 for overall score of SATAQ-R in females and .85 for males) among Spanish adolescents ([Calado, 2008](#)). Higher scores indicate higher awareness and internalization of thin ideal standards.

Self-esteem measured by Rosenberg’s Self-Esteem Scale

The Rosenberg Self-Esteem Scale (RSE; [Rosenberg, 1979](#)) was used to assess the level of self-esteem. The RSE consists of 10 statements assessing a person’s general beliefs about him/herself. Each item is measured on a 4-point scale—from strongly agree (3) to strongly disagree (0) to questions such as “On the whole, I am satisfied with myself.” The Spanish version of the RSE has a high reliability (Cronbach’s alpha = .93; [Banos & Guillen, 2000](#)). The

reliability for the current sample was 0.83 for females and 0.78 for males. Lower scores indicate lower self-esteem.

Statistical Analysis

Data were processed with the statistical software package SPSS 15.0 for Windows (SPSS, Inc., Chicago, IL). The results were analyzed in terms of frequency distributions by gender. Student data were *t*-tested for continuous variables for mass media and chi-square tests were used for each categorical variable by gender. Pearson correlations (*r*) were used to examine the strength of association between total EAT-26 scores and the other measures. Multiple linear regression analyses with the EDI-BD total score as the dependent variable and mass media exposure and psychological factors as independent variables were conducted to predict disordered eating behaviors by gender. The following independent variables were included: BMI, hours per week dedicated to watching TV during the week, hours per week dedicated to reading magazines during the week, exposure frequency to TV and magazine content (eight categories), disordered eating (EAT-26 score), social comparison scores (PACS), awareness of the thin-ideal scores (A), internalization scores (I), and self-esteem scores. A partitioning of explained variance (r^2) was then conducted to ascertain the unique variance that could be attributed to each of the variables. All *p* values were two-tailed and statistical significance was set at $p < .05$.

Results

Demographic Data

The mean age of the 1,115 students included for analyses was 14.9 years ($SD = 0.9$). There was no significant difference by gender. Based on self-reported height and weight, the mean BMI for males was 21.40 ($SD = 3.3$) and 20.6 ($SD = 2.9$) for females. Difference by gender was significant ($t = 3.9$; $p < .001$).

On the body dissatisfaction (EDI-BD) scale, 11.2% of the students ($n = 117$) scored above the cutoff point. Of these students, 24% were males ($n = 27$) and 76% were females ($n = 90$). Hence, male students (5.4%) presented lower levels of body dissatisfaction than female students (16.5%). The difference between the number of female and male students who reported body dissatisfaction was of statistical significance ($\chi^2 = 32.6$, $df = 1$, $p < .001$).

Body Dissatisfaction by Gender for Mass Media Variables

Mass media exposure and its association with the presence of body dissatisfaction by gender are presented in Table 1. There were very few differences between students with body dissatisfaction compared with those without body dissatisfaction regarding exposure frequency to different kinds of TV and magazine content and total frequency exposure to mass media.

Male and female students with body dissatisfaction did not view more TV programs or read more magazines during weekdays and weekends than male and female students without body dissatisfaction. Regarding exposure to television programs, male students without body dissatisfaction were only more frequently exposed to news programs and game shows without celebrities (without BD mean = 2.27 vs with BD mean = 1.82; $t = 2.91$; $p = .006$). Regarding magazines, there were hardly any differences for high body dissatisfaction for types of magazine content. Male

students without body dissatisfaction were only more frequently exposed to hobbies and information magazines (without BD mean = 1.52 vs with BD mean = 1.06, $t = 2.07$; $p = .039$).

Regarding the kinds of TV programs and/or magazines, only female students with body dissatisfaction reported greater exposure to TV and magazine topics related to body image, in particular to dieting topics ($t = -5.57$; $p = .001$), fitness ($t = -2.03$; $p = .01$), beauty topics ($t = -2.90$; $p = .02$), health ($t = -2.12$; $p = .03$), and music videos ($t = -2.32$; $p = .02$).

Body Dissatisfaction by Gender for Psychological Variables

Differences in psychological variables among students with body dissatisfaction by gender are presented in Table 2. Male and female students with body dissatisfaction presented significantly higher mean scores for disordered eating with the EAT-26 ($t = -4.90$, $p < .001$; and $t = -12$, $p < .001$, respectively), awareness of the thin ideal measured by the SATAQ ($t = 5.03$, $p < .001$; and $t = 7.35$, $p < .001$, respectively), internalization of the thin ideal measured by the SATAQ ($t = 4.11$, $p < .001$; and $t = 9.8$, $p < .001$, respectively), and physical appearance comparison measured by the PACS ($t = 3.97$, $p < .001$; and $t = 6.5$, $p < .001$, respectively). Furthermore, students with body dissatisfaction presented lower self-esteem ($t = -4.1$, $p < .001$; and $t = -6.9$, $p < .001$, respectively) compared with those without body dissatisfaction.

Model of Associated Factors for Students With Body Dissatisfaction

Correlations between the EDI-BD and the rest of the subscale scores were high and significant. Significant correlations were found between the EDI-BD subscale and EAT-26 scale ($r = 0.51$, $p = .01$), for physical appearance comparison ($r = 0.34$, $p = .01$), awareness ($r = 0.30$, $p = .01$), and internalization of the thin ideal ($r = 0.46$, $p = .01$) and a negative correlation was found with the self-esteem scale ($r = -0.42$, $p = .01$). Table 3 illustrates the model of body dissatisfaction, mass media, and other psychological variables by using multiple linear regressions for the total sample and by gender.

Multiple regression analysis revealed satisfactory prediction accuracy with the model accounting for 50% of the variance in EDI-BD total scores for the whole sample. Body dissatisfaction was associated with higher disordered eating behaviors and attitudes and higher levels of media exposure to TV and magazine dieting, fitness and beauty topics, as well as greater awareness and internalization of the thin ideal, and lower self-esteem ($F(2,989) = 79.2$, $p = .001$).

For males, the model accounted for 35% of the variance in EDI-BD total scores ($F(2,531) = 37.8$, $p = .001$). As shown by the beta weights, first, body dissatisfaction was significantly associated with lower self-esteem ($\beta = -0.33$, $p < .001$), higher BMI ($\beta = 0.30$, $p < .001$), greater disordered eating behaviors and attitudes ($\beta = 0.22$, $p < .001$), awareness of the thin ideal ($\beta = 0.15$, $p < .001$), and lower levels of media exposure to TV and magazine fitness topics ($\beta = -0.11$, $p < .05$).

For females, the model accounted for 54% of the variance in EDI-BD total scores ($F(2,540) = 111.6$, $p = .001$). The results showed that disordered eating behaviors and attitudes were associated among females with body dissatisfaction ($\beta = 0.29$, $p < .001$); in addition, internalization of the thin ideal was linked with greater body dissatisfaction ($\beta = 0.28$, $p < .001$), higher BMI ($\beta = 0.28$, $p < .001$), and lower self-esteem ($\beta = -0.23$, $p < .001$).

Table 1T-Student of Weekly Exposure of Mass Media in Males and Females Stratified by Low and High Levels of Body Dissatisfaction (Who Score at ≥ 16 on the EDI-BD)

	EDI-BD < 16			EDI-BD ≥ 16			t
	N	Mean	SD	N	Mean	SD	
TV content exposure							
Males							
Fiction programs (e.g., “Charmed” or “Buffy”)	473	2.62	1.12	27	2.48	0.74	0.66
Celebrity programs (e.g., “Survivor” or “I’m a celebrity”)	473	1.47	1.18	27	1.12	0.85	1.51
Music video programs (e.g., “Latino music”)	473	1.73	1.25	27	1.45	0.86	1.12
News programs and game shows without celebrities (e.g., “Saber y ganar” or “Mastermind”)	473	2.27	1.14	27	1.82	0.75	2.91*
Females							
Fiction programs	454	2.47	1.08	90	2.69	1.26	−1.72
Celebrity programs	454	1.79	1.35	89	1.96	1.55	−1.07
Music video programs	454	2	1.30	90	2.16	1.41	−1.08
News programs –game shows without celebrities	450	1.40	1.26	90	1.60	1.56	−1.17
TV frequency exposure							
Males							
Monday to Friday (hours/day for TV exposure)	460	5.21	1.98	26	5.23	2.08	−0.55
Weekend	460	4.10	1.86	27	3.85	1.43	0.87
Females							
Monday to Friday	443	4.87	2.04	86	5.21	2.01	−1.41
Weekend	442	4.13	1.91	88	4.48	1.97	−1.55
Magazines content exposure							
Males							
Women–Music (e.g., <i>Cosmopolitan</i> , <i>Super-Pop</i> , <i>Vogue</i>)	472	0.83	0.90	27	0.69	0.68	0.85
Hobbies–Information (e.g., <i>Motor</i> ; <i>Maxi tuning</i> ; <i>Sport Life</i> ; <i>Internet</i>)	472	1.52	1.12	27	1.06	0.85	2.07 [†]
Females							
Women–Music	450	1.15	0.85	90	1.23	1.17	−0.60
Hobbies–Information	450	0.83	0.68	90	0.95	1.11	−0.98
Magazine frequency exposure							
Males							
Magazines– Monday to Friday (hours/day magazine exposure)	444	2.39	1.62	27	2.70	2.00	−0.96
Magazines–Weekend	445	1.95	1.55	27	2.19	1.82	−0.75
Females							
Magazines– Monday to Friday	430	2.06	1.37	88	2.31	1.54	−1.53
Magazines–Weekend	439	1.87	1.49	86	2.01	1.55	−0.79
Exposure to TV and magazine topics related body image							
Males							
Sports	470	3.32	1.21	27	3.09	1.38	0.85
Dieting	470	1.22	0.53	27	1.42	0.63	−1.61
Fitness	470	1.93	1.02	27	1.87	1.02	0.33
Beauty	470	1.23	0.50	27	1.20	0.35	0.50
Health	469	1.46	0.70	27	1.62	0.78	−1.08
Fashion	470	1.50	0.819	27	1.57	0.76	−0.49
Music videos	470	2.56	1.10	27	2.94	1.35	−1.41
Sexuality	469	2.30	1.21	26	2.61	1.51	−1.02
Females							
Sports	453	2.13	1.07	90	2.13	1.11	0.01
Dieting	452	1.75	0.96	90	2.51	1.23	−5.57*
Fitness	452	2.06	1.01	89	2.30	1.07	−2.03 [†]
Beauty	452	2.41	1.15	90	2.80	1.16	−2.90 [†]
Health	451	2.05	1.00	90	2.30	1.01	−2.12 [†]
Fashion	452	3.05	1.20	90	3.30	1.25	−1.69
Music	453	3.70	1.06	90	3.97	1.01	−2.32 [†]
Sexuality	451	2.13	1.12	90	2.35	1.17	−1.67

* $p < .01$.† $p < .05$.

Surprisingly, none of the eight topics of media exposure to TV and magazine were salient in the female model.

Discussion

This cross-sectional study has assessed the association between media exposure, frequency of exposure, and specific media content and the presence of body dissatisfaction among adolescents in a representative Spanish sample, replicating previous studies in Western countries (Harrison, 2000; Harrison & Cantor, 1997). Following a cutoff point on the EDI-BD subscale, results indicated that 5.4% of males and 16.5% of females in the

secondary school population reported the presence of body dissatisfaction. Females tended to have higher body dissatisfaction scores than male students and it was comparable to findings found in national studies (Baile et al., 2003; Garner, 1998; Raich et al., 2001; Sepulveda et al., 2010; Toro et al., 2006) as in international studies (Jaeger et al., 2002; Neumark-Sztainer et al., 2006). Thus, the sociocultural context may influence men and women differently as social and cultural messages regarding men's and women's bodies may lead men and women to assess their body image differently. Furthermore, Knauss et al. (2007) have reported that a greater endorsement of media ideals and perceived pressure to conform in girls may contribute to the

Table 2

Student Comparison of Scales and Subscales Stratified by Low and High Levels of Body Dissatisfaction (Who Score at ≥ 16 on the EDI-BD)

	EDI-BD < 16			EDI-BD ≥ 16			t
	N	Mean	SD	N	Mean	SD	
Males							
Social comparison (PACS)	467	2.25	0.64	26	2.76	0.68	3.97*
Awareness sociocultural (A)	419	3.21	0.72	25	3.95	0.69	5.03*
Internalization thin ideal (I)	440	2.45	0.71	25	3.05	0.84	4.11*
Disordered eating (EAT-26)	422	6.32	6.81	26	15.85	9.76	-4.90*
Self-esteem (SES)	450	21.75	4.97	26	17.62	5.13	-4.12*
Females							
Social comparison (PACS)	450	2.49	0.73	87	3.06	0.80	6.49*
Awareness sociocultural (A)	411	3.35	0.73	76	4.02	0.70	7.35*
Internalization thin ideal (I)	421	2.63	0.73	81	3.51	0.80	9.84*
Disordered eating (EAT-26)	405	7.72	7.72	81	20.75	13.4	-12.0*
Self-esteem (SES)	427	20.74	5.17	83	16.41	5.66	-6.87*

* $p < .001$.

greater body dissatisfaction they experience. However, and although boys perceived less pressure from the mass media than girls, perceived pressure continued to be the strongest unique predictor of body dissatisfaction for boys as well. Nevertheless, specific muscularity factors in males were not examined in our study and these could perhaps explain in part possible underestimations in male body dissatisfaction rates.

The first hypothesis was not supported. Findings indicated that there did not seem to be an association between the total exposure frequency of reading magazines or watching TV programs and the impact on adolescents' body dissatisfaction. Similarly, Field et al. (1999) found that only the total frequency of

reading fashion magazines was positively associated with the prevalence of having dieted to lose weight because of a magazine article. Tiggemann and Pickering (1996) also found no correlation between the total amount of television viewing and body dissatisfaction, but did find a correlation with the program genres, specifically total exposure to soaps, movies, and (negatively) sport programs predicted body dissatisfaction. Borzekowski et al. (2000) also found no relation between total media use and weight concerns, although when media genres were separated, total exposure to music videos was related to the importance of weight concerns. In this manner, one direction for future research could be to examine whether specific psychological variables can moderate or exacerbate the relation between mass media exposure and body dissatisfaction.

In turn, the second hypothesis was partly supported. Female students with body dissatisfaction presented more exposure to dieting, fitness, beauty, health, and music video topics in comparison with female students without body dissatisfaction. In contrast, male students did not present any association with specific media exposure topics. These findings are in line with other correlational studies that have reported mass media exposure to a specific type of content, rather than to total exposure frequency, to be more associated with body dissatisfaction (Borzekowski et al., 2000; Cusumano & Thompson, 1997; Field et al., 1999; Hatoum & Belle, 2004; Tiggemann & Pickering, 1996). Thus, it seems that females with body dissatisfaction tend to be more interested in dieting, fitness, and beauty topics because these may offer tools and knowledge with which to lose weight or shape their bodies according to the thin-ideal socio-cultural model (Blaine & McElroy, 2002; Castillo, 2006; Wolf, 1991).

Similarly, the third hypothesis was supported. Male and female adolescents with higher body dissatisfaction presented stronger associations with higher levels of disordered eating, social comparison, awareness and internalization of the thin ideal, and lower self-esteem. We found slightly marked differences between gender in which the female sample scored higher in these psychological variables and lower in self-esteem compared with the male sample. However, the psychological process through which the mass media is associated with body image is not completely clear. Psychological theories, such as social comparison, along with awareness and internalization of the thin ideal seem to explain how idealized messages are associated with women's relations with their bodies. The internalization of the thin ideal is associated with body dissatisfaction in women and men (Cusumano & Thompson, 1997; Harrison & Cantor, 1997; Hatoum & Belle, 2004; Stice, 1994). Internalized beauty ideals may cause discrepancy between the person's body and his or her ideal body image that may in turn lead to negative self-esteem (Blowers et al., 2003; Stice et al., 2001).

Finally, in terms of gender, the fourth hypothesis was supported differently. A multiple regression of body dissatisfaction in males predicted by lower frequency of TV and fitness magazine topic exposure, greater disordered eating behaviors, higher BMI, and awareness of the thin ideal accounted for 35% of the explained variance. Findings have shown that low self-esteem was a significant predictor of body dissatisfaction, and it is clearly linked to weight and shape concerns among men (Hatoum & Belle, 2004), and possibly thin-ideal awareness may mediate the relation between self-esteem and body dissatisfaction. Similarly, a multiple regression of body dissatisfaction in females accounted for a greater proportion of the variance (54%), and revealed a significant positive relationship with disordered

Table 3

Multiple Regression Analyses Predicting Body Dissatisfaction Taking the EDI-BD Total Scores as Dependent Variable

DV: EDI-BD Score	F	Beta	t	R ²
Total sample	79.2 [‡]			0.50
Disordered Eating (EAT-26)		2.42	7.41 [‡]	
Self-esteem (SES)		-0.25	-8.63 [‡]	
BMI		0.27	10.1 [‡]	
Internalization (I)		0.12	3.46 [‡]	
Gender		0.14	4.16 [‡]	
Awareness (C)		0.11	3.36 [‡]	
Dieting topic		0.22	5.31 [‡]	
Fitness topic		0.11	3.47 [‡]	
Beauty topic		-0.12	-2.87 [†]	
Males				
DV: EDI-BD score	37.8 [‡]			0.35
Self-esteem (SES)		-0.33	-7.20 [‡]	
BMI		0.30	6.76 [‡]	
Disordered Eating (EAT-26)		0.22	4.71 [‡]	
		0.15	3.44 [‡]	
Awareness (C) fitness topic		-0.11	-2.40*	
Females				
DV: EDI-BD score	111.6 [‡]			0.54
Disordered Eating (EAT-26)		0.29	6.77 [‡]	
Internalization (I)		0.28	6.44 [‡]	
BMI		0.28	8.01 [‡]	
Self-esteem (SES)		-0.23	-5.94 [‡]	

Abbreviations: BD, body dissatisfaction from EDI-BD; Beauty, content about TV and magazine beauty topics; BMI, body mass index; C, awareness from SATAQ-R; Dieting, content about TV and magazine dieting topics; DV, dependent variable; Fitness, content about TV and magazine fitness topics; I, internalization from SATAQ-R.

* $p < .05$.

† $p < .01$.

‡ $p < .001$.

eating behaviors and attitudes, internalization of the thin-ideal, and lower self-esteem.

Unexpectedly, none of the mass media topic exposure was significantly related to body dissatisfaction. It seems that not only should the messages conveyed through the mass media be addressed, but also the individual variables associated with body dissatisfaction development, that is, how the individuals in the specific social context process, interpret, and react to these variables. In our study, more importance is given to the psychological variables in the relation between psychological variables and the social context (mass media). Mass media pressure may be present, but without mediating or moderating psychological variables there probably would not be a clear association with body dissatisfaction.

All of the students with higher BMI reported significant body dissatisfaction. These results are in line with other Spanish findings (Baile et al., 2003; Calado, 2008; Raich et al., 2001) as well as other Western studies (Jaeger et al., 2002; Neumark-Sztainer et al., 2006). Higher BMI and eating disordered attitudes and practices are two strong predictors of body dissatisfaction for men and for women (Knauss et al., 2007; van den Berg et al., 2007). Motivation directed at obtaining a specific physical appearance, which tends to lead to the objectification of the body has also been associated with body dissatisfaction (Farquhar & Wasylikiw, 2007).

In general, evidence from media psychology or mass communication indicates that mass media are an extremely important source of information and reinforcement in relation to the nature of the thin beauty ideal, its importance, and how to attain it (López-Guimera, Levine, Sánchez-Carracedo, & Fauquet, 2010). Thus, sociocultural influences seemed to be strong contributors in both gender models (Cafri et al., 2005; Grogan, 2006). Thus, awareness of a thin ideal seems to be implicated in the development of body image in males in contrast with females. In turn, the internalization of thinness seems to play a more significant role among women, suggesting different mechanisms that may lead to body dissatisfaction. Nevertheless, both samples engaged with unhealthy weight-control practices and this finding is more salient when a higher BMI is present, possibly because of weight and shape concerns. Grogan (2006) indicated that, although objective body size and shape do not necessarily have a straightforward relationship with body image, there is some evidence that females who are objectively heavier tend to be less satisfied with their bodies, and also have lower global self-esteem than thinner females.

Thus, individual vulnerabilities to mass media influence seem to be based on selective and repetitive exposure to contents (Grabe et al., 2008; Grogan, 2006), although these associations remain unclear (Brown & Dittmar, 2005; Dittmar, 2009; Dittmar, Halliwell, & Stirling, 2009; Hill, 2006). Body images and current research trends are attempting to link self-concept and low self-esteem to this selection process. Some authors have already argued that media images may be processed very differently depending on which self-related standpoint women or men adopt with respect to the thin ideal during exposure (Blond, 2008; Brown & Dittmar, 2005).

Prevention and Clinical Implications

Several training programs in schools have been successful in preventing high levels of body dissatisfaction among students and it appears to be possible to modify internalization; changes in this risk factor seem to be related to body dissatisfaction

(Levine & Piran, 2004; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). Other programs based on media literacy interventions have demonstrated that it is possible to increase women's skepticism about the desirability of media ideals, thus provoking more critical views that can have some effect on internalization (Levine & Piran, 2004; Yamamiya et al., 2005). Nevertheless, short-term media literacy interventions alone may not suffice to neutralize massive media exposure to the thin ideal (Levine & Piran, 2004). In the last decade, there have been two ambitious programs supported by regional and local Spanish governments that have aimed at promoting eating disorder awareness, prevention, media literacy, and healthy life skills (Rojo, Bataller, & Tena, 2008; Ruiz, 2009). These programs have provided promising results and provide the necessary stepping stones for future interventions as well as helping to develop a general social awareness that has led health authorities to adopt arguably surprising policies that promote positive body images of men and women, such as excluding excessively thin models from fashion shows. On the other hand, there have also been several initiatives that have achieved interesting results in the eating disorder prevention field and psychoeducation, and which have added to the growing awareness of this problem throughout Spain (Calado, 2010; Petit, de la Corte, & Astray, 2002; Sepulveda, Carrobles, Gandarillas, Poveda, & Pastor, 2007).

Limitations

Despite the sample size, sampling type, and wide spectrum of assessed behaviors, there are several shortcomings. First, the study is cross-sectional; thus, we are unable to infer causality. With regard to this limitation, which is inherent in all correlational designs, it is impossible to specify the direction of causality between the association of mass media exposure to ideal body representations and body image. The second limitation relates to the assessment instruments that are centered on female body dissatisfaction and weight concerns. Indeed, as indicated in the findings, body concerns and sociocultural pressure are not the same for men as for women. Therefore, it is necessary to include other factors, such as drive for muscularity, in the study of male body dissatisfaction that may allow a better understanding of those factors that interact to construct a male body image (i.e., obtaining a muscular body; Hatoum & Belle, 2004; McCabe & Ricciardelli, 2004). A third limitation is related to pubertal development that differs for males compared with females; thus, the self-reported height and weight measure could be a confusing variable for some students. It would be desirable to use reliable measures obtained at school during the questionnaire administration.

The fourth limitation is that current questionnaires do not take into account new technologies such as Internet websites. Our own questionnaire has focused primarily on television and magazines, as does much of the existing research (Grabe et al., 2008; Groesz et al., 2002). Television may not be the most important medium for many adolescents, and studies rarely take into account the extent, degree and nature of internet, which has an apparently unlimited number of media materials available and has given adolescents much more control over when and where they will use them (Brown & Witherspoon, 2002). Furthermore, the Internet allows immediate access to specific content, such as music videos or the sharing of common social network sites, such as Facebook or Twitter, where adolescents can upload, alter, and compare desired images of themselves (Cusumano & Thompson, 1997; Hatoum & Belle, 2004; Hill, 2006; Hogan & Strasburger, 2008). Finally, we acknowledge that the media is not the sole

cause for body dissatisfaction, and a range of other factors, such as gender, developmental patterns, personality characteristics, and family relationships may be just as important.

Conclusion

Overall, the results of this study provide new information on the relationship of mass media and body dissatisfaction among adolescents and on the relationship between higher BMI, eating disordered behaviors, and lower self-esteem. The results also support the inclusion of these variables in the gender model. Thus, further research is warranted, aimed at understanding the mechanisms of how the media's role affects adolescents' awareness and internalization of thin ideals, which may in turn lead to the development of body dissatisfaction and may be critical in preventing unhealthy weight-control behaviors.

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