Brief research report

Disordered eating behaviors and body image in a longitudinal pilot study of adolescent girls: What happens 2 years later?

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ABSTRACT

We assessed the prospective association of risk factors for eating and body image disturbances after a 2-year follow-up in a community sample of Spanish adolescent girls. The participants included 128 Spanish girls aged 12–14, who took part in a 28-month prospective study. Aspects assessed were eating attitudes (Eating Attitudes Test), influence of the body shape model (questionnaire on influences of the aesthetic body shape model), extreme weight-control behaviors (Eating Disorder Examination-Questionnaire), body image (Body Image Questionnaire) and Body Mass Index (BMI). BMI, extreme weight-control behaviors and body image problems emerged as potential predictors of an increase in eating disturbances. An increased influence of the thinness model was significantly associated with reduced body satisfaction and body image problems. Preventive programs are needed to contribute reducing the impact of sociocultural influences with regard to thinness, the use of extreme weight-control behaviors and overweight in adolescents.

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Introduction

Sociocultural pressures about being thin stem from the family, peers and media in particular. They promote the internalization of standards of female attractiveness and the overvaluation of the importance of appearance. Prospective and experimental studies suggest that sociocultural pressures about being thin and the internalization of a thin aesthetic ideal are causal risk factors of body dissatisfaction, restrictive diets and symptoms of bulimia (Stice, 2002; Thompson & Heinberg, 1999; Thompson & Stice, 2001). This aetiological model has received empirical support in adolescents (Keery, van den Berg, & Thompson, 2004; Shroff & Thompson, 2006), and has been examined in prospective studies (The McKnight Investigators, 2003).

The media has been identified as being a substantial source of dissemination of the thin beauty ideal and contributes to a generalized overvaluation of the importance given to physical appearance (Thompson & Stice, 2001). In adolescents, exposure to certain types of magazines has been associated with an increased desire to lose weight and dieting (Field, Cheung, Wolf, Herzog, Gortmaker, & Colditz, 1999; Utter, Neumark-Sztainer, Wall, & Story, 2003). Currently, dieting and unhealthy weight-control behaviors are common practices in adolescent girls (Center for Disease Control & Prevention, 2005), despite their being associated with increased risk of overweight, binge eating and eating disturbances (Neumark-Sztainer, Wall, Guo, Story, Haines, Eisenberg, & 2006).

The aim of the present study was to assess the prospective association of risk factors – sociocultural and individual – for eating and body image disturbances in Spanish adolescents. It has been expected that the influence of the aesthetic body shape model (ideal figure for women in western countries; see e.g., Toro, Salamero, & Martínez, 1994), weight-control behaviors, BMI, body satisfaction and body image problems would be associated with an increase in eating disturbances after 2 years of follow-up (Hypothesis 1). Likewise, it was expected that the influence of the aesthetic body shape model, weight-control behaviors and BMI would be associated with a reduction in body satisfaction and an increase in body image problems in the same period (Hypothesis 2).

Such information is relevant given its contribution to the assessment of risk factors, the modification of which could help prevent the development of eating and body image disturbances. Moreover, such information may help to identify sub-groups with a high risk of developing such disturbances.

Method

Participants

Participants at baseline (T1) were 128 girls aged between 12 and 14 years ($M = 13.5\text{ years}; SD = 0.4$). They were recruited from
three urban schools in Terrassa, Spain, with a primarily middle-class intake, selected by means of incidental sampling. Average BMI for the girls at T1 was 21.5 (SD = 3.9) and 32.3% of the girls met the criteria for being overweight or obese (Cole, Bellizzi, Flegal, & Dietz, 2000). The sample size in the 28-month follow-up (T2) was 79, the drop in sample size being due to absences on the day of testing. Table 1 shows the sample characteristics for T1 and T2.

**Measures and instruments**

**Socio-biographic data and dieting**
A questionnaire on developmental and personal details was administered at T1 and T2, including a question about the frequency of dieting (0: never; 6: every day).

**Weight and height**
Weight and height measurements at T1 and T2 were carried out in situ and the Body Mass Index (BMI = weight[kg]/height[m]^2) was calculated. Weight status was estimated in accordance with the international criteria proposed by Cole et al. (2000). Overweight and obese participants were classified as “overweight” (Neumark-Sztainer et al., 2006).

**Eating Disorder Examination-Questionnaire (EDE-Q)**
“Extreme weight-control behaviors” at T1 were examined with the Spanish version of the EDEQ-4 (Fairburn & Beglin, 1994), adapted by Villarroel, Penelo, Portell, & Raich (2009). They were assessed through three items referring to the use of laxatives, diuretics and the presence of self-induced vomiting. The adolescents could respond yes or no to these questions. Percentages were calculated on the basis of at least one of the three behaviors being admitted.

**Eating Attitudes Test (EAT-40)**
We used the total score of the EAT-40 (Garner & Garfinkel, 1979) to rate disturbance of eating attitudes and behaviors at T1 and T2. The EAT-40 contains 40 questions that measure attitudes, feelings and behaviors that are characteristic of individuals with disordered eating. The items provide 6 response options ranging from never to always. Higher scores indicate more disordered eating. We applied the Spanish adaptation, which has adequate psychometric characteristics (Castro, Toro, Salamero, & Guimerà, 1991), with 91% sensitivity and 69.2% specificity for a cut-off point of 20.

**Body Image Questionnaire/Quèstionari d’Imatge Corporal (QUIC)**
We used the original Spanish version of QUIC, developed by Gaspa and García-Tornel and validated by Miró (2006), to assess body image satisfaction and body image problems in adolescents at T1 and T2. On the basis of the figure of a girl, the participants rate the level of satisfaction for themselves of each of the 18 parts of the body that appear in the drawing (0–10) and whether each of these parts of the body constitutes a problem (yes/no). In the present study we used a global body image problems score, corresponding to the sum of the number of body parts that are considered a problem by the respondent. We also used the two scales of body satisfaction derived from a prior factor analysis (Espinoza, Penelo, & Raich, 2009): satisfaction with head/chest (eyes, nose, mouth, lips, neck and breast) and satisfaction with trunk/extremities (arms, abdomen, waist, buttocks, hips, thighs, legs and feet). In the validation studies (Espinoza et al., 2009; Miró, 2006) the internal consistency reliability was high (Cronbach’s α from .76 to .90) and the test–retest reliability was satisfactory (Pearson’s correlation .81 in a period of 15 days).

**Design and procedure**
The design of this study is longitudinal and it is based on information collected by means of self-administered questionnaires. T1 for this study was during the academic year 2005–2006 and T2 during that of 2007–2008. This study was approved by the City of Terrassa Institute of Health and Social Welfare, the Ethics Committee of the CIMEC-26 (Toro et al., 1994). This instrument includes 26 items to which the person responds on a Likert-type scale with 3 response alternatives, ranging from never to always. It has satisfactorily psychometric properties, with values of 83.1% sensitivity and 64% specificity. Initially we included the five scales proposed by the authors after a Principal Components Analysis was conducted: F1-Distress about Body Image: anxiety and discomfort with body image (e.g., “Do you envy ballet girls’ bodies or gymnasts’ bodies?”); F2-Influence of Advertising: interest in and acceptance of advertising for slimming products (e.g., “Are you very interested in slimming products advertised on TV?”); F3-Influence of Verbal Messages: interest in articles, books and conversations about slimming (e.g., “Are you attracted by books, magazine articles, adverts, etc., about calories?”); F4-Influence of Social Models: interest in body dimensions of models and other women in the public eye (e.g., “When you are watching a movie are you especially interested in the actress’s body?”); F5-Influence of Social Situations: social acceptance attributed to thinness and concerns about food in social situations (e.g., “Do you think slim girls and young women are better accepted by others than those who are not slim?”).
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