



## Internalization of the thin and muscular body ideal and disordered eating in adolescence: The mediation effects of body esteem

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### ABSTRACT

This study investigates body esteem factors (weight-esteem and appearance-esteem) as mediators of the relationship between 'internalization of the ideal body figure' and disordered eating behaviors (restrained, emotional and external eating) in a community sample of adolescent males ( $n=810$ ) and females ( $n=1137$ ) from the Ontario Research on Eating and Adolescent Lifestyles (REAL) study. Mediation models were examined using a bootstrapping approach to test indirect effects and indirect contrasts. In males, weight-esteem partially mediated the relationship between muscular ideal and restrained eating; appearance-esteem partially mediated effects in the emotional and external eating regressions. In females, both weight-esteem and appearance-esteem partially mediated the relationship between thin ideal and all three forms of disordered eating; weight-esteem was a stronger mediator for restrained eating, and appearance-esteem a stronger mediator for emotional and external eating. Body esteem is important to consider for prevention and treatment of disordered eating in both genders.

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### Introduction

'Internalization of the ideal body figure' has been suggested as a major risk factor in the development of body image disturbance and disordered eating behaviors (Low et al., 2003; Stice, Schupak-Neuberg, Shaw, & Stein, 1994; Thompson & Stice, 2001). Exposure to 'ideal body' images depicted in the media has been blamed for the pursuit of thinness in girls and muscularity in boys (Ricciardelli & McCabe, 2004; Smolak & Stein, 2006; Thompson & Stice, 2001), as the standards for the ideal body figure portrayed in the media represent unattainable standards for most people (Jones, 2004; Thompson & Stice, 2001). Therefore, when an individual internalizes the prevalent idealized body figure and adopts it as his or her own personal standard, he or she becomes at risk for body dissatisfaction, a precursor to a wide range of disordered eating behaviors (Grabe, Ward, & Hyde, 2008; Stice & Shaw, 2002; Thompson & Stice, 2001).

Body dissatisfaction and a major risk factor for the development of eating disorders (Gilbert, Crump, Madhere, & Schutz, 2009; Polivy & Herman, 2002; Shisslak & Crago, 2001; Stice et al., 1994),

tends to increase with age, and peaks during the adolescent years, especially in females (Littleton & Ollendick, 2003). Compared to girls, adolescent boys have a lower risk of developing eating disorders (Ricciardelli & McCabe, 2004). While approximately 60% of girls report being dissatisfied with their body, only about 30% of boys report similar concerns (McCabe & Ricciardelli, 2001; Wood, Becker, & Thompson, 1996). However, Labre (2002) suggests that problems associated with the pursuit for muscularity are increasing in males.

Boys not only report a wish to develop more muscle tone (Jones, 2004; Labre, 2002; McCabe & Ricciardelli, 2001), but they also express concerns about thinness (Stanford & McCabe, 2005). It could be that boys wish to pursue both muscularity and thinness simultaneously in order to achieve a lean, toned look. Indeed, in their study of middle school boys and girls, Smolak, Levine, and Thompson (2001) found that, even after controlling for body mass index (BMI), internalization of the muscular ideal in boys was associated with the use of weight loss techniques.

Popular weight loss strategies among adolescents include dieting and calorie restriction (Paxton, Schutz, Wertheim, & Muir, 1999; Valois, Zullig, Huebner, & Drane, 2003). However, these weight loss techniques put individuals at risk for eating disorders including anorexia nervosa and bulimia nervosa (Stice, Presnell, Groesz, & Shaw, 2005). In addition to dietary restraint, external and

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emotional eating have also been identified as forms of disordered eating behaviors (van Strien, Frijters, Bergers, & Defares, 1986). External eating involves reacting to external cues for food intake (e.g., eating because other people are eating, eating during meal preparation or in response to the sight or smell of food) rather than relying on internal cues, such as hunger. Emotional eating refers to excessive eating in response to emotional experiences such as anxiety or anger (van Strien et al., 1986). This pattern, linked to attempts to improve one's mood through the consumption of food, has been identified as a precursor to binge eating in a longitudinal study of adolescent girls (Stice, Presnell, & Spangler, 2002).

Much of the research on body dissatisfaction and disordered eating has focused on adult and adolescent females (e.g., Durkin & Paxton, 2002; Gilbert et al., 2009; Groesz, Levine, & Murnen, 2002; Harrison & Cantor, 1997; Stice et al., 1994), and only recently have researchers begun to draw their attention to body image concerns in males (e.g., McCabe & Ricciardelli, 2001; Stanford & McCabe, 2005). At this point, relatively little is known about the specific pathways that link internalization of the muscular ideal and disordered eating in adolescent males. Further, much of the disordered eating literature focuses on restraint. While restraint certainly appears to be a major factor in the development of anorexia and bulimia (Ricciardelli, Tate, & Williams, 1997; Stice & Shaw, 2002), emotional and external eating are also important patterns to examine in relation to disordered eating in non-clinical samples, especially given their association with binge eating episodes.

In an attempt to further understand the development of disordered eating among adolescent males and females, the present study investigates body esteem factors as mediators in the relationship between internalization of the ideal body figure and disordered eating behaviors in a large school-based sample. Body esteem is similar to body dissatisfaction in that it refers to self-evaluations of one's body appearance (Mendelson, Mendelson, & White, 2001), but body esteem scores reflect the degree of satisfaction rather than dissatisfaction with one's body appearance. Two body esteem factors are of particular interest in the present study, namely weight satisfaction and general feelings about one's appearance, herein referred to as weight-esteem and appearance-esteem, respectively. We investigate the extent to which the relationship between internalization of the ideal body figure and eating behaviors is mediated by body esteem. Specific hypotheses were generated based on previous research findings. We propose that weight-esteem in girls will mediate the relationship between internalization of the thin ideal and restrained eating. This pathway is hypothesized based on the strong link established between weight dissatisfaction and dieting, among other forms of restrained eating (Ricciardelli et al., 1997; Stice & Shaw, 2002). In males, we hypothesize that appearance-esteem will mediate the relationship between internalization of the muscular ideal and restrained eating. Boys also seem to be concerned about thinness, although to a lesser extent than girls (McCabe & Ricciardelli, 2004; Stanford & McCabe, 2005; Wood et al., 1996); this concern is likely related to the toned and lean look promoted in the muscular ideal. Therefore, we propose that appearance-esteem will be a more important consideration than weight-esteem in males in the restrained eating model. Pathways across the other forms of disordered eating, i.e., emotional eating and external eating, are also explored.

## Method

### Participants

Participants were 1947 adolescents involved in a larger study – the Ontario Research on Eating and Adolescent Lifestyles (REAL) study. English-speaking students in grades 7–12 were recruited

during the academic years of 2004 through 2008 from public and private schools in Ottawa, Canada, and the surrounding area. Participating schools came from three School Boards, were geographically dispersed in order to obtain participants from rural (12.4%), suburban (17.6%) and urban settings (70%), and were located in neighbourhoods of diverse socioeconomic levels. The overall sample included 810 (41.6%) males and 1137 (58.4%) females, with a mean (*SD*) age of 14.12 (1.64) years (range, 9.5–20.7 years). Participants described their ethnic origin as: North America (50.9%), Europe (26.3%), Asia (8.6%), Middle-East (3.4%), Africa (2%), Aboriginal (1.3%), Central or South America (1.7%), Caribbean (1.5%), or Oceania (0.5%). Regarding parental education, 64.4% of fathers and 65.7% of mothers were reported to have a College or University degree. These figures for ethnicity and education are close to the figures reported by Statistics Canada in the 2006 census of the Ottawa area (Statistics Canada, 2007), which indicate that 78.2% of the population displayed 'no visible minority characteristics,' while 1.5% reported characteristics of Aboriginal origin, 4.8% of Black origin, 9.6% of Asian origin, 3.0% of Middle Eastern origin, and 2.6% of other ethnic origins. Also similar to the study population, 64.3% of adult males and 62.5% of adult females residing in Ottawa have had post-secondary education (Statistics Canada, 2007).

The research program was approved by Research Ethics Boards of the Royal Ottawa Health Care Group and the Children's Hospital of Eastern Ontario, as well as the research advisory committees of the Ottawa-Carleton District and Catholic School Boards and the Upper Canada District School Board.

### Procedure

Prior to data collection, members of the research team went to the participating schools and provided the students with information about the study and a consent form for them to take home to their parents or guardians to sign. Researchers returned to the school one to two weeks later, and students who had returned their signed parental consent form and their own assent form (approximately 45% of the whole student population approached) were allowed to participate.

Participants completed the questionnaire at school in a classroom or library during regularly scheduled class time. They had approximately 60–75 min to complete the questionnaire, and research personnel were present to supervise completion and answer any questions. Upon completing their questionnaire, participants had their weight and height measured by a member of the research staff in a private area of the school to ensure confidentiality.

### Measures

**Internalization of the ideal body figure.** The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ; originally developed by Heinberg, Thompson, & Stormer, 1995), as modified by Smolak et al. (2001), was utilized to assess the impact of sociocultural influences in shaping the ideal body figure among adolescent girls and boys. The SATAQ, initially designed for females, includes 14 items that document an individual's recognition of the sociocultural expectations for thinness as the standard for attractiveness, along with the endorsement of this prevailing message (Heinberg et al., 1995). Smolak et al. (2001) developed a modified 14-item version for males, in which an emphasis on muscularity replaced the original focus on thinness in the body ideal. An example question from the male version is 'Photographs of muscular men make me wish I were muscular', which parallels the statement 'Photographs of thin women make me wish I were thin' in the female version. Other items that applied to both males and females were kept unchanged, e.g., 'I tend to compare my body to people in magazines

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