



## Research report

## Child gender and weight status moderate the relation of maternal feeding practices to body esteem in 1st grade children ☆

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## ARTICLE INFO

## Article history:

Received 14 March 2014

Received in revised form 14 December 2014

Accepted 21 January 2015

Available online

## Keywords:

Controlling feeding practices

Weight status

Body esteem

Gender

School-age

## ABSTRACT

Prevention of body dissatisfaction development is critical for minimizing adverse effects of poor body esteem on eating behaviors, self-esteem, and overall health. Research has examined body esteem and its correlates largely in pre-adolescents and adolescents; however, important questions remain about factors influencing body esteem of younger children. The main purpose of this study was to test moderation by children's gender and weight status of the relation of maternal controlling feeding practices to 1st graders' body esteem. The Body Esteem Scale (BES) and anthropometric measurements were completed during one-on-one child interviews at school. Mothers completed the Child Feeding Questionnaire (restriction, monitoring, concern, self-assessed maternal weight). A total of 410 mother/child dyads (202 girls) participated. Percent of children classified as overweight (BMI-for-age  $\geq 85$ th) was: girls – 29%; boys – 27%. Gender moderated the relation between restriction and body esteem ( $\beta = -.140$ ,  $p = .05$ ), with maternal restriction predicting body esteem in girls but not boys. The hypothesized three-way interaction among gender, child weight status, and monitoring was confirmed. Monitoring was significantly inversely related to body esteem only for overweight/obese girls ( $b = -1.630$ ). The moderating influence of gender or gender and weight status on the link between maternal feeding practices and body esteem suggests the importance of body esteem interventions for girls as early as first grade.

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## Introduction

Body esteem has been strongly linked to overall self-esteem across different age groups, ranging from children to adolescents (Mendelson, Mendelson, & White, 1996; Mond, van den Berg, Boutelle, Hannan, & Neumark-Sztainer, 2011; Tiggemann, 2005; van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010). It is often referred to as the physical counterpart of self-esteem and consists of three dimensions, including self-evaluations related to

one's weight and appearance, and attributions to others of evaluations about one's body (Mendelson & White, 1985). Body esteem tends to decline during adolescence when boys and girls experience significant emotional, psychosocial, and physiological changes and thus, the time prior to adolescence is important for developing a healthy body image and maximizing body satisfaction in children (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Tiggemann, 2005).

Previous studies have linked low body esteem to a variety of negative psychological and emotional outcomes (Mond et al., 2011; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006). Findings from a large epidemiological study of adolescents, Project EAT, revealed that body dissatisfaction mediates the relationship between obesity and emotional well-being (i.e., self-esteem and depressive mood) in both younger and older adolescents (Mond et al., 2011). Adolescents with low body esteem are also more likely to engage in restrained and emotional eating, which makes them more vulnerable to the development of disordered eating compared to their peers (Flament et al., 2012). Because poor body esteem may have adverse effects on many aspects of teens' well-being, it is crucial for individuals to develop a healthy body image prior to adolescence (Mendelson, Mendelson, & White, 2001; Wardle & Cooke, 2005).

☆ Acknowledgments: This research project was funded by the Oklahoma Center for Advancement of Science and Technology (Project #HR07-044) to Amanda W. Harrist, Melanie Page, Glade Topham, Lenka H. Shriver, and Laura Hubbs-Tait and by USDA-CSREES (Grant 05545) to Amanda W. Harrist, Tay S. Kennedy, Glade Topham, Laura Hubbs-Tait, and Melanie Page. We would like to thank Dr. Jeff Labban, a statistical analyst in the School of Health and Human Sciences at the University of North Carolina Greensboro, for his consulting services in terms of data analyses and interpretation of the findings for this paper. Conflict of interest: None of the authors are aware of any financial, personal or other conflicts of interest related to this study and this manuscript.

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Correlates of body dissatisfaction in adolescents range from intra-personal characteristics and peer influences to broader family and societal contexts (Helfert & Warschburger, 2011; Murray, Rieger, & Byrne, 2013; van den Berg et al., 2010). Body weight/size appears to be one of the main correlates of body esteem in this age group, with a strong positive relation between weight and body dissatisfaction (Neumark-Sztainer, Story, Hannan, & Croll, 2002; Xanthopoulos et al., 2011). However, much less is known about correlates of body esteem in younger children. While previous studies found that weight status may be a significant correlate of body esteem even among elementary school age children (Davison, Markey, & Birch, 2003; Shriver et al., 2013), additional research on factors that influence younger children's body esteem prior to adolescence is currently needed (Davison & Birch, 2002).

Some studies point to the moderating effect of gender on the relation between body weight and body esteem (Ricciardelli & McCabe, 2001; Shriver et al., 2013; Wood, Becker, & Thompson, 1996). The period between ages 8 and 10 has been suggested as the time when gender differences in body esteem might begin to appear (Ricciardelli & McCabe, 2001; Wood et al., 1996). However, at least two previous studies with samples of 7- to 12-year-old children found no significant differences in body satisfaction between boys and girls (Hill, Draper, & Stack, 1994; Ricciardelli, McCabe, Holt, & Finemore, 2003). In contrast, Danielsen et al. (2012) found that among children between the ages of 10 and 13, lower satisfaction with physical appearance was associated with higher BMI, being female, and being evaluated by parents as overweight. Thus, there are inconsistencies in the literature on relations between body esteem and gender. Such inconsistencies are viewed as indicative of effect modification (i.e., one specific moderator) or complex interactions among variables (Baron & Kenny, 1986; Ventura & Birch, 2008).

In the case of child body esteem, high parental control over food has been linked to a variety of disinhibited eating behaviors and weight issues or concerns (Birch & Fisher, 2000; Faith et al., 2003; Joyce & Zimmer-Gembeck, 2009; Kröller & Warschburger, 2009), which have been linked to children's body esteem or body dissatisfaction in other studies (Helfert & Warschburger, 2011, 2013; Xanthopoulos et al., 2011). A handful of studies have also linked early childhood eating and controlling feeding practices to increased risk of later disordered eating (Jacobi, Hayward, De Zwaan, Kraemer, & Agras, 2004; Lev-Ari & Zohar, 2013). Taken together, these studies suggest that advancing the understanding of children's body esteem requires conceptual and statistical models of the relation of interactions among children's gender, child weight status, and parental controlling feeding practices and attitudes to children's body esteem. Thus, the purpose of the current study was to test hypotheses about interactions among parental controlling feeding practices and children's gender and weight status in predicting children's body esteem.

Controlling feeding practices typically include pressure to eat, restriction, and monitoring. Pressure to eat has very different correlates and consequences from the other two practices and is best viewed as a parental response to concern about their child's low weight (Spruijt-Metz, Lindquist, Birch, Fisher, & Goran, 2002; Webber, Cooke, Hill, & Wardle, 2010; Webber, Hill, Cooke, Carnell, & Wardle, 2010). In contrast, restriction and monitoring are moderately positively correlated but restriction is consistently found to be an authoritarian and direct strategy (Hubbs-Tait, Kennedy, Page, Topham, & Harrist, 2008; Kröller & Warschburger, 2008), whereas monitoring has been identified as a feeding practice that may be authoritative (Hubbs-Tait et al., 2008), indirect (Kröller & Warschburger, 2009), authoritarian and overtly restrictive (Birch & Fisher, 2000), or covertly restrictive (Webber, Cooke, et al., 2010).

In the case of the parental feeding practice of restriction, several different programs of research suggest that restriction should have a much more negative influence on girls' body esteem than on boys' body esteem. Fisher and Birch (1999) measured mothers' restric-

tion of 3- to 6-year-old children's access to foods and children's perceptions of restricted access at home. While there were no differences in mothers' reports of restricting foods as a function of the gender of the child, there were marked gender differences in the link between maternal restriction and children's perceptions of restricted access to foods. The correlation between girls' recognition of being restricted and mothers' reports of restriction was positive, significant, and of large magnitude (.58), whereas the correlation for boys' recognition of being restricted and mothers' reports was .02. Similarly, mothers' reports of restriction interacted with gender to predict children's consumption of restricted snacks when allowed access in a laboratory procedure. Girls did; boys did not. In a subsequent study of 197 girls between the ages of 4.6 and 6.4 years, Fisher and Birch (2000) found that girls' negative emotions about eating "too much" snack foods were linked significantly to parental restricting practices. Taken together, these two studies of child obesity and overeating suggest that restriction may have a significant negative influence on body esteem for first grade girls but not boys. In a study of eating disorder risk, Lev-Ari and Zohar (2013) reported a similar gender difference in adults' recollections of maternal feeding practices during childhood. Restriction and concern predicted body dissatisfaction in women but not in men. Furthermore, maternal restriction was positively correlated with disordered eating among women. Thus, previous research suggests the hypothesis that maternal restriction will be negatively related to body esteem in girls but not boys. Because no study to date has tested this hypothesis, we proposed to test it.

In contrast to the studies on restriction, results of research on monitoring suggest that its relation with child body dissatisfaction may be moderated by child weight status as well as child gender. Researchers have pointed out that parental concerns about child weight may be communicated indirectly by using excessive monitoring (Webber, Cooke, et al., 2010). While parental practices related to weight control are often intended to be positive and encouraging, such messages can be harmful to body image (Helfert & Warschburger, 2011). Excessive monitoring appears to be intrusive or authoritarian to the child who is the object of monitoring behaviors and comments and is linked to increased child energy intake and weight (Birch & Fisher, 2000) and, like authoritarian parenting in general, may be linked to lower esteem (Heaven & Ciarrochi, 2008), including body esteem. In adolescence, parental statements encouraging or urging teens to pay attention to body shape are inversely associated with body esteem (Helfert & Warschburger, 2011) and are more commonly directed to teens who are overweight (Helfert & Warschburger, 2013). The measurement of encouraging attention to body shape is similar to the measurement of monitoring of foods, in that statements are not negative. Statements of weight-related teasing, in contrast, are explicitly negative, predict higher body dissatisfaction (see Menzel et al., 2010 for meta-analysis), and interact with gender to predict greater body dissatisfaction in females than males (Menzel et al., 2010; Schaefer & Blodgett Salafia, 2014).

Recent research underscores that it is not the positive or negative nature of comments but the focus on weight and shape that matters. Even positive weight and shape comments were significantly correlated with body dissatisfaction in adolescent and young adult women (Herbozo, Menzel, & Thompson, 2013). Weight status also moderated the relation between positive comments and body dissatisfaction because only for obese females were such comments associated with their weight and shape concerns. We conjectured that maternal monitoring, when directed to overweight and obese children, would focus attention on child weight. Thus, we hypothesized that parental monitoring of foods would be particularly intrusive to obese and overweight children and, consistent with the findings reported above for adolescents and adults, would be more likely to influence body esteem in girls than boys,

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