



Weight stigma and eating behaviours in elementary school children: A prospective population-based study



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ABSTRACT

The relevance of weight stigma as an important factor in disordered eating has been supported by research. However, because most of the studies were cross-sectional and focussed on older children, the causal relationships could not be fully determined in childhood. The current study explores the role of weight stigma in body dissatisfaction and eating behaviours. The sample consisted of 773 girls and 713 boys, aged 6–11 years, who completed surveys assessing weight stigma experiences, body dissatisfaction and eating behaviours at two points of measurement, approximately one year apart. The children's external and disordered eating was rated via parental questionnaires. As expected, the pattern of the associations between weight status, weight stigma, body dissatisfaction and eating behaviours differed by gender. Experience of weight stigma in girls led to external and restrained eating one year later, whereas in boys no such association was observed. Body dissatisfaction mediated the association between weight stigma and restrained eating behaviours in girls, whereas in boys, body dissatisfaction directly influenced restrained eating behaviours. However, in both girls and boys weight status predicted body dissatisfaction and disordered eating, while weight stigma did not have a direct effect on disordered eating. Results suggest that interventions involving weight stigma should be a part of eating disorder prevention programmes, and gender-specific pathways should be considered.

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1. Introduction

Obese and overweight individuals are highly stigmatized because of their weight (Puhl & Brownell, 2001; Puhl & Latner, 2007). They are often perceived as lazy, unattractive, self-indulgent, stupid, and having poor self-control and will power (Brochu & Esses, 2011; Gracia-Arnaiz, 2010). This negative stereotyping leads to weight-related stigmatization, which is widespread among children and adolescents (see Puhl & Heuer, 2009; Puhl & Latner, 2007 for an overview). There is evidence that overweight adolescents are at greater risk of being teased about their weight by peers and family members compared to their normal weight peers (e.g. Brixval, Rayce, Rasmussen, Holstein, & Due, 2012; Hayden-Wade et al., 2005; Herpertz-Dahlmann et al., 2008). Frequent weight-teasing was reported by 45% of female and 50% of male overweight adolescents, compared to 19% of female and 13% of male normal weight participants (Neumark-Sztainer et al., 2002).

There is strong evidence for negative consequences of weight stigma. The experience of being teased by peers has been found to be associated with many psychosocial problems among children and adolescents (e.g. Gleason, Alexander, & Somers, 2000; Libbey, Story, Neumark-Sztainer, & Boutelle, 2008; Puhl & Latner, 2007). In particular, several cross-sectional studies have demonstrated that weight-related teasing is linked to increased body dissatisfaction (e.g. Goldfield et al., 2010a; Rojo-Moreno et al., 2013; Thompson, Covert, & Stormer, 1999) and a higher occurrence of disturbed eating behaviours such as bulimic behaviours, dietary restraint and a drive for thinness (e.g. Lieberman, Gauvin, Bukowski, & White, 2001; Muris & Littel, 2005; Sweetingham & Waller, 2008), even after controlling for weight status (Keery, Boutelle, van den Berg, & Thompson, 2005). For example, young women (aged 18–26 years) who reported being teased during childhood (either with 6, 12 or 16 years) were more likely to display restraint and binge eating than their non-weight-teased peers (Quick, McWilliams, & Byrd-Bredbenner, 2013).

The significant effect of weight stigma on disordered eating behaviours was supported in a few prospective studies. For instance, Thompson, Covert, Richards, Johnson, & Cattarin (1995)

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observed in a sample of female adolescents aged 13–18 years a positive relationship between weight-related teasing, body dissatisfaction, and disordered eating. In particular, weight-related teasing significantly influenced weight and appearance dissatisfaction as well as restrictive types of eating disturbance three years later. The effect of weight-teasing on disturbed eating was mediated by body dissatisfaction. Moreover, the association between actual weight status and body image was mediated by teasing history. This pattern of associations was replicated in other studies (Lunner et al., 2000; Thompson, Covert, & Stormer, 1999; Van den Berg, Wertheim, Thompson, & Paxton, 2002; Wertheim, Koerner, & Paxton, 2001), which, however, only included female adolescents.

Another longitudinal study, which included children of both sexes (Haines, Neumark-Sztainer, Eisenberg, & Hannan, 2006), demonstrated that weight-related teasing predicted a loss of control eating five years later in both female and male adolescents. To the extent of our knowledge, there is only one study (Gardner, Stark, Friedman, & Jackson, 2000) which has prospectively investigated potential risk factors for eating disorder tendencies among elementary school-aged children in both sexes. Gardner et al. (2000) followed a sample of children aged 6–14 for three years and found that weight-related teasing significantly predicted higher scores in the drive for thinness and bulimia in boys, but not in girls. These results suggest that teasing might be a more critical factor in young boys than in young girls.

Previous research has indicated that there are differences in the impact of weight-related teasing on body dissatisfaction and eating behaviour according to gender (e.g. Menzel et al., 2010). For example, female adolescents who were teased about their weight were more likely to become frequent dieters, whereas male peers who experienced weight-teasing were more likely to exhibit binge eating behaviours and to initiate unhealthy weight control behaviours such as using food substitutes, laxatives, diuretics, diet pills or vomiting (Haines et al., 2006). It has been also found that girls were more likely to engage in caloric restrictive dieting (Smolak, 2004) and that boys, who were dissatisfied with their current body, were more likely to engage in binge eating (Sehm & Warschburger, 2015).

These gender differences may reflect the cultural ideals of beauty in which thinness is the ideal for females, while males are encouraged to be lean and muscular. A linear relationship between body dissatisfaction and increasing BMI for girls and a U-shaped relationship for boys was observed (Austin, Haines, & Veugeler, 2009; Kostanski, Fisher, & Gullone, 2004). In line with that assumption, research has consistently shown that body dissatisfaction is higher in females than males over the life-span (O'Dea, 2005). The results from a recent meta-analysis (Menzel et al., 2010), which emphasized the association between weight-teasing and body dissatisfaction also underlines this relationship. These studies support the notion that it is important to investigate the relationships between weight stigma and both body dissatisfaction and eating behaviours separately for girls and boys.

Prior studies on weight stigma and disordered eating have often exclusively focused on female adolescents and mainly explicitly referred to risk factors for eating disorders. Although eating disorders often manifest themselves during or after puberty, it is likely that critical antecedent conditions may be established earlier (Gardner et al., 2000). Thus, while clinical eating disorders in childhood are rare (incidence 1.31/100 000 in children aged 6–11; see Nicholls, Lynn, & Viner, 2011), many children show early symptoms of eating disturbance which in turn predict the development of weight gain, obesity, body dissatisfaction and eating disorders (e.g. Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004; Parkinson, Drewett, Le Couteur, Adamson, Gateshead Millennium Study core team, 2012; Stice, 2002). For example, it has been

found that even 6-year-old children express body dissatisfaction and weight concerns (Davison, Markey, & Birch, 2000; Flannery-Schroeder & Chrisler, 1996) and that 40% of girls and 24% of boys (aged 8–12) have attempted to lose weight (Rolland, Farnill, & Griffiths, 1997). Furthermore, it has been shown that restrained eating reflecting weight/shape concerns and a drive for thinness, as well as external eating reflecting disinhibition and a tendency to overeat, was common among children (Braet & Van Strien, 1997). In particular, there is evidence that restrained and external eating are associated with overweight (Snoek, Engels, van Strien, & Otten, 2013; Snoek, van Strien, Janssens, & Engels, 2007) and indicate eating pathology (Braet & Van Strien, 1997). This is in line with a study by Braet et al. (2008) in which these eating styles were significantly correlated with indicators of eating pathology including weight and shape concerns and a drive for thinness, as well as with a prospective study by Parkinson et al. (2012) in which eating disorder symptoms were predicted by restrained eating two years earlier. These findings support the relevance of examining the early emergence of restrained and external eating behaviours. However, more longitudinal research among children is needed to provide a deeper understanding of these eating behaviours as potential risk factors for later eating disorders.

To summarize, little is known about the causal relationships of weight stigma on eating behaviours in middle childhood, especially in boys. The present study builds on previous research by examining whether weight stigma significantly influences eating behaviours in both female and male children. We investigate the role of weight stigma using longitudinal data from a school-based sample of children aged 6–11. Based on the theoretical model proposed and tested by Thompson, Covert, et al. (1995), we examine the direct influence of weight-related stigma on body dissatisfaction and of body dissatisfaction on both restrained and external eating as indicators of a disturbed eating pattern. Further, we investigate the relationship between these eating behaviours and indicators of eating disorders such as anorexia, bulimia or binge eating. It was hypothesized that children who reported weight-related stigma at the time of the first measurement would show increased signs of disordered eating behaviours one year later compared to those who were not teased about their weight. In addition, it was expected that body dissatisfaction would mediate the association between the experience of weight stigma and the higher scores of disordered eating behaviours. Furthermore, we assumed that the impact of weight stigma on body dissatisfaction and eating behaviour might differ by gender.

2. Method

2.1. Participants

Participants were recruited from 33 elementary schools in Germany. Schools were selected to represent a variety of social backgrounds, as well as both urban and rural areas. A sample of 1657 children aged 6–11 years and 1339 parents took part in the study at the first assessment (t_1) in 2012. At the second point of measurement (t_2), which took place one year later ($M_{t_1-t_2} = 272.8$ days, $SD = 55.1$), 1619 of these children and 1160 parents participated. According to national guidelines (Kromeyer-Hauschild et al., 2001), 6.0% of the children were underweight, 81.1% normal weight, 7.7% overweight and 5.2% obese. For our further analyses, underweight children were excluded due to the fact that experience of weight stigma was only assessed with respect to overweight. Thus, the final sample consisted of 86.3% of normal weight, 8.1% of overweight and 5.5% of obese children. 773 (52%) girls and 713 (48%) boys completed surveys at both measurement points. The mean age of the participants at the first point of measurement (t_1)

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