Perceptions of self in 3–5-year-old children: A preliminary investigation into the early emergence of body dissatisfaction

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ABSTRACT

The main objective of this study was to investigate normal weight and overweight preschool children’s ability to understand conceptualizations of body image and their association with parental perceptions of their child’s body. One hundred and forty-four children aged 3–5 years were interviewed (68 girls and 76 boys) regarding their body image and their satisfaction with such. Parents completed a questionnaire that probed socio-demographic characteristics as well as their perceptions of their child’s body image. Results showed that (1) children’s misperceptions corresponded to those held by their parents. Specifically, overweight children and their parents underestimated the child’s body size. (2) Gender differences in body dissatisfaction were consistently observed and were similar to those seen in adolescents and adults. It was determined that children’s inaccuracies were not a result of developmental limits, that is, the participants’ inability to understand the concepts measured.

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Introduction

Disturbances in body image, inaccurate estimates of actual body size and the degree of satisfaction with one’s body have been listed as diagnostic features in a number of psychopathologies including anorexia nervosa and bulimia nervosa (Bell, Kirkpatrick, & Rimm, 1986; Cash & Pruzinsky, 2004; Farrell, Shafran, & Lee, 2006; Williamson, Muler, Reas, & Thaw, 1999). The perceptions of one’s morphology and the dissatisfaction related to such are often found among those who are affected by obesity (Schwartz & Brownell, 2004) but are also observed in non-clinical populations (Farrell et al., 2006).

In their review of the literature, Tremblay and Limbos (2009) presented evidence that dissatisfied body image occurs long before the onset of puberty and can be observed in children as young as 5–7 years. It was found that young children can demonstrate negative stereotypes toward obesity, and internalize the thin ideal body image presented by the media. Also, research findings as well as clinical case reports suggest that young children can perceive their body image as accurately as adults, can show body dissatisfaction, and that this understanding is likely to appear as early as the preschool years. Although very limited, there are case reports of Body Dysmorphic Disorders (BDD) in children as young as 5 years suggesting that young children can hold false beliefs and display cognitive biases similar to those of adults (Albertini & Phillips, 1999; Albertini, Phillips, & Guevermont, 1996). In their retrospective study of 200 adults with BDD, Ruffolo, Phillips, Menard, Fay, and Weisberg (2006) found that more than one-third of their participants had a current or a lifetime history of ED and among those, the majority had developed a body image disturbance before or the same year of the onset of their ED. These findings are supported by Davison, Markey, and Birch (2003) longitudinal study in which it was reported that body weight and shape concerns at 5 years of age predicted body image concerns at 7 and 9 years and body image dissatisfaction at 5 and 7 years predicted restrictive eating behaviors and attitudes toward eating at 9 years of age. The findings strongly suggest that disturbances in body image are an important risk factor in the development of psychopathology including the prevalent issue of eating disorders (ED) in adolescence.

Regrettably, there are few studies of this kind with samples of young children. This situation likely stems from the difficulties associated with measuring body image in this population. Certainly, preschoolers cannot articulate their representations as adults can. The concrete reasoning style that tends to characterize this age group likely requires the presentation of visual stimuli in order to generate more meaningful data (Tremblay & Limbos, 2009). Among the many methods used to estimate body size and satisfaction in adolescent and adult populations, silhouette drawings are often the only effective methods with children (Collins, 1991; Truby & Paxton, 2002). Perceived current and ideal body size in children are typically measured by asking them to identify the shape most like their own. Perceived ideal body size is often assessed by asking the child to identify the size which he or she aspires to. Body

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dissatisfaction is defined as the discrepancy between the perceived current and ideal body size (Collins, 1991; Truby & Paxton, 2002).

The accuracy of a child’s perception is measured by comparing actual weight (e.g., the Body Mass Index – BMI) with the perception of body size.

A second possible explanation for the paucity of research on young children is that researchers may assume that their level of cognitive development prevents them from being reliable assessors of their own body. The inconsistencies found in the few research findings in this area tend to support this view. For example, Mushzer-Eizenman, Holub, Edwards-Leeper, Persson, and Goldstein (2003) found no significant correlation between BMI and body perception in their 4–7-year-old children. On the other hand, Truby and Paxton (2002) found a moderate but significant correlation between current BMI and perceived body size in girls and a small correlation in boys. Gardner, Friedman, Stark, and Jackson (1999) and Holub (2008) contend that mixed results in children do not stem from inaccuracies caused by developmental limitations but rather because the silhouette method is not valid or appropriate for this age group.

There are a number of findings that challenge both interpretations. First, some studies have shown that silhouette methods have good psychometric properties in older children and adults (Yanover & Thompson, 2009). To our knowledge, there are no studies that validate these measures in young children, despite the fact that qualitative studies demonstrate that children as young as 4 years of age can provide important and accurate information about their health (Irwin & Johnson, 2005). Second, research findings consistently show that parents tend to underestimate their child’s weight; in particular if the child is overweight or obese (Carnell, Edwards, Croker, Boniface, & Wardle, 2005; Chaimowitz, Issenman, Moffat, & Persad, 2008; Eckstein, Mikhail, Ariza, Thomson, Millard, & Binn, 2006; Kilion, Hugues, Wendt, Pease, & Nicklas, 2006; West, Racynski, Phillip, Bursac, Gaus, & Montgomery, 2008). Moreover, poor body size estimates also occur with pediatricians (Smith, Gately, & Rudolf, 2008; Spurrier, Magarey, & Wong, 2006). Finally, the under or over estimation of self or someone else’s body size does not appear to be explained by sensory deficits but rather is associated with non-sensory related factors including motivation, attitude, and cognitive biases (Gardner et al., 1999; McCabe, Ricciardelli, Sitaram, & Mikhail, 2006).

With this in mind, the objectives of this study were to determine whether inaccurate self-perceptions in children are explained by developmental limitations, and to identify whether body size perceptions impact on children’s satisfaction with their body image.

Method

Participants

This study is part of a larger project approved by the authors’ University’s Research Ethics Board in which 150 families (parent-child dyads) consented to participate. Four families were excluded because the target child weight (one girl and three boys) was classified at the 5th percentile of weight distribution (underweight category). Two other children did not respond to our interview questions and were therefore not included in the analyses. Preliminary analyses showed no significant differences in their socio-demographic characteristics compared to the rest of the sample. Statistical analyses (Mahalanobis distance) for outlier effects did not reach statistical significance. The final sample of 144 families included 48% (n = 68) girls and 52% (n = 76) boys from 3 to 5 years of age (M = 51 mo, SD = 11 mo). The child’s mother completed the questionnaires in 92% of cases. Most of the children were living in two-parent households, 77% (n = 111). About one-third, 32% (n = 46) of families had annual incomes lower than $44,999, 32% (n = 46) earned between $45,000 and $59,999, and 36% (n = 52) earned more than $60,000. Fifteen percent of the parents (n = 22) reported having completed high school, 50% (n = 72) had some college or university, and 35% (n = 50) reported having a university degree.

Procedure

Each child interview was conducted at a daycare by two trained female graduate students. Children received a toy at the conclusion of the interview for participating. The interview protocol was developed in order to establish good rapport with the child, to encourage dialogue and also to standardize procedures. For example, exact wording was used and questions were repeated only twice to the child with only specific help (e.g., pointing out the visual stimuli) from the interviewer to encourage the child to respond without influencing the response of the child (Christensen & James, 2002). The interview was divided into three parts, which were always presented in the same order: (1) introducing the concepts of body image, (2) the animal task, and (3) the child body image perception and satisfaction task. The introduction part consisted of asking the child to nominate his/her body parts and those of a silhouette figure (the same gender as the child’s). The animal task was used as a practice task for the body image perception task. The child was presented with a picture of an average cat and asked to nominate which from a series of figures of cats (thin, average, and big) was similar (“which one looked like the target cat”).

For the body image task, we utilized a three silhouette method similar to that developed by Cramer and Steinwert (1998) for the same age group. A three silhouette scale constitutes an effective differential rating that is more appropriate for young children (Cramer & Steinwert, 1998; Feldman, Feldman, & Goodman, 1988). The pictures were created to match the three weight status categories (underweight, normal and overweight) that served as proxies for the child’s current weight/body size. Two series of pictures were created (a boy and a girl) representing three weight categories (underweight, normal, and overweight). To create these pictures, digitized photos of a 3.5-year-old boy and a 5-year-old girl, who were classified as having a normal Body Mass Index (BMI in the 50th percentile), were employed. These two normal-weighted male and female child models were chosen because their somatotypes were similar (Sheldon, Stevens, & Tucker, 1940); they were good representations of average body sizes for this age group and they showed very similar physical features (although they were not siblings). The photos were transformed by a graphic artist to produce an approximate representation of the child’s body size if they were underweight and overweight (respectively, at the 5th and 95th percentiles, see Appendix A). These silhouettes were printed on a large cardboard format and presented simultaneously to the child. The child was asked to indicate which among the three figures, “looked like her/him” and “which one she/he would like to look like” (figures were coded 1 ‘underweight’; 2 ‘normal weight’; 3 ‘overweight’). The two research assistants coded the child’s level of understanding for the two first tasks as follows: 2 for a correct answer with no help offered by the experimenter; 1 for a correct answer that was provided with help from the experimenter (this which consisted in repeating the question and pointing out each figure saying “which one among those looks the same like as...”); and 0 for a non-response or incorrect answer. The level of help required for the child body image tasks was also recorded.

Measures

Children’s perception and satisfaction. The accuracy of body image was computed using the difference between the child’s current weight status and her choice of a silhouette (the one “that
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