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Research report

Parents' perceptions of preschool children's ability to regulate eating. Feeding style differences ☆

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ABSTRACT

Parent feeding styles have been associated with children's eating behaviors and weight status across multiple studies. However, little is known about the mechanism through which parent feeding styles influence child weight status. Children's ability to self-regulate their eating may be the mechanism that links these two constructs. This study examined the relationship between parent feeding styles, child self-regulatory ability, and weight status to determine whether self-regulatory ability mediated the relationship between parent feeding styles and child weight status in a group of 296 parents and their preschool aged children. Indulgent feeding style was related to children having lessened satiety responsiveness and higher enjoyment of food (two components of self-regulation around eating) compared to other parent feeding styles. Children of parents with an indulgent feeding style were also higher in weight status compared to other feeding styles. Mediation analyses revealed that satiety responsiveness and enjoyment of food mediated the relationship between parent feeding style and child BMI *z*-score such that children of parents with indulgent feeding styles had lessened ability to self-regulate around eating and higher BMI *z*-scores. Findings from this study suggest that children's ability to self-regulate eating might be an important mechanism by which parent feeding style and child weight are related to each other.

Introduction

Obesity is increasing at epidemic rates in the United States with more than a threefold increase since the 1970s (Ogden, Carroll, Kit, & Flegal, 2012). Currently among preschoolers, 26.7% are overweight or obese (Body Mass Index ⩾85%) and 12.1% are obese (Body Mass Index ⩾95%) (Ogden et al., 2012). These percentages are even higher among minorities with 33.1% of Hispanic preschool children and 28.9% of black preschool children above the 85th percentile for Body Mass Index (BMI) (Ogden et al., 2012). Overweight status in childhood is associated with chronic health problems including Type 2 diabetes (Dietz, 1998; Klein et al., 2007) and cardiovascular disease (Lloyd-Jones et al., 2009; National Heart & Blood, 1998). Due to the high rates of pediatric obesity, it is important to better understand factors that may impact children's energy intake and thereby their weight status, especially among minorities who are at a higher risk for becoming overweight.

Feeding styles of parents represent the larger context within which feeding practices are embedded (Hughes, Power, Orlet Fisher, Mueller, & Nicklas, 2005). Feeding styles are a balance between responsiveness and demandingness, similar to general parenting styles, but in the context of feeding (Hughes et al., 2005). Parents can be categorized into four types of feeding styles: authoritative, authoritarian, indulgent and uninvolved based on high or low scores on responsive and demanding feeding dimensions. Across a series of studies, indulgent feeding style has been linked to higher child BMI *z*-scores and eating behaviors in low-income samples (Fisher, Birch, Zhang, Grusak, & Hughes, 2013; Hennessy, Hughes, Goldberg, Hyatt, & Economos, 2010,

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2012; Hoerr et al., 2009; Hughes, Shewchuk, Baskin, Nicklas, & Qu, 2008; Hughes et al., 2005, 2011; Tovar et al., 2012). Parents with an indulgent feeding style are overly responsive to their child in the feeding context but do not use appropriate levels of control around food and feeding (Black & Aboud, 2011). The indulgent parent feeding style has been theorized to inhibit children's ability to self regulate eating (Frankel et al., 2012; Hughes et al., 2008). However, the link between the indulgent parent feeding style and child self-regulation of eating has not been examined. This link could provide valuable information as to why children of parents with indulgent feeding styles are at higher risk for overweight and obesity.

It is known that children with poor self-regulation are at an increased risk for the development of obesity (Francis & Susman, 2009). Within the eating domain, self-regulation refers to the starting and stopping of eating in response to hunger and satiety cues (Baumeister & Vohs, 2004) and is measured by examining individual responsiveness to the energy content of foods consumed. Early experimental studies on preschool children's ability to self-regulate their eating intake were conducted by assessing food intake at a meal in response to covert changes in the energy density of a first course or preload (Birch & Deysher, 1985, 1986). These experiments suggested that preschool children were able to reduce their energy intake at a lunch meal served 25 min after the first course in response to calories in the preload (Birch & Deysher, 1985).

As children age, their ability to self-regulate their eating becomes more influenced by the external environment (Birch, Fisher, & Davison, 2003). The impact of portion sizes on consumption has been well documented (Fisher, Arreola, Birch, & Rolls, 2007; Fisher & Kral, 2008; Fisher, Liu, Birch, & Rolls, 2007; Rolls, Morris, & Roe, 2002; Rolls, Roe, Kral, Meengs, & Wall, 2004; Rolls, Roe, Meengs, & Wall, 2004; Wansink & van Ittersum, 2007). However, the research on parenting practices associated with child self-regulation of eating has been somewhat narrow and overly focused on parent restriction and control. Specifically, parental restriction of foods and pressure to eat have been linked to lower self-regulation in eating and higher weight status among children across laboratory, cross-sectional, and longitudinal studies (Clark, Goyder, Bissell, Blank, & Peters, 2007; Faith, Scanlon, Birch, Francis, & Sherry, 2004). For example, restriction of children's highly preferred food led to increases in selection, intake, and positive comments about that food when the food became freely available (Fisher & Birch, 1999). Similarly, children who were pressured to eat were less responsive to energy density cues than children who were taught to focus on their hunger and fullness (Birch, McPhee, Shoba, Pirok, & Steinberg, 1987). This series of studies has focused on individual dimensions of feeding while failing to consider the broader context within which these highly controlling practices were used. Examining the link between parent feeding style and self-regulation as opposed to specific feeding practices provides a more complete picture of the parent–child feeding dynamic within the family eating environment.

The aim of this study was to examine differences in child satiety responsiveness, food responsiveness and enjoyment of food across feeding styles among low-income Hispanic and black parents and their preschool aged children, especially focusing on the link between indulgent feeding and child appetitive traits. More specifically, this study assessed the mediating effects of children's self-regulatory ability on the relationship between parent feeding style and child body weight because the mechanism through which parent feeding styles influence child weight status has not been well delineated. Our hypothesis was that parents with an indulgent feeding style would have children with lower ability to self-regulate energy intake and thus, higher weight status, compared to children whose parents had other feeding styles.

Methods

Participants

Questionnaires were completed by 296 Hispanic and non-Hispanic black parents whose children attended Head Start centers in Houston, TX. Participants were part of a larger cross-sectional study to examine parenting influences on children's dietary intake. In addition to completing questionnaires, parent–child interactions were also observed over two or three dinner meals in their homes (Hughes, Power, et al., 2011). Demographic characteristics of the sample are presented in Table 1. Head Start is a federally funded comprehensive child development program aimed at preparing low-income preschool children for school entry. Ninety percent of Head Start families have incomes at or below the US poverty threshold (Foster, 2002).

Procedures

Parents were recruited to participate in the study at parent meetings, through flyers posted at the Head Start centers, and during the Head Start registration process. Parents were asked to complete questionnaires in their preferred language (English or Spanish). In order to ensure integrity of the translated measures, all measures not already available in Spanish were translated into Spanish and then back-translated into English by a second fluent Spanish speaking staff member to ensure content consistency across the questionnaires. Any differences in translations were discussed and consensus was achieved. Questionnaire packets were given to the parents at the end of each observation and returned to staff members at the subsequent observation. Families were provided with graduated incentives upon completion of each observation. Consent for participation in the study was obtained at the beginning of the first home visit. Confidentiality was

Table 1
Characteristics of the sample by (n = 296).

Race/ethnicity	
Black	46.8%
Hispanic	53.2%
Parent age (yrs) [*M* (SD)]	31.75 (7.80) Range 19.51–67.11
Parent BMI [*M* (SD)]	31.72 (7.85) Range 17.76–59.91
Caregivers	
Mothers	284 (96%)
Fathers	6 (2%)
Grandparents	6 (2%)
Maternal education	
At least high school diploma	55.2%
Marital status	
Married	45.8%
Feeding styles	
Authoritative	58 (19.6%)
Authoritarian	81 (27.4%)
Indulgent	93 (31.4%)
Uninvolved	64 (21.6%)
Child BMI category	
Underweight/healthy weight (<85th percentile)	62.5%
Overweight (⩾85th and <95th percentile)	18.6%
Obese (⩾95th percentile)	18.9%
Child age (yrs) [*M* (SD)]	4.42 (.71) Range 2.79–5.82
Child sex	
Female	51.0%
Male	49.0%