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Hispanic maternal influences on daughters' unhealthy weight control behaviors: The role of maternal acculturation, adiposity, and body image disturbances

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ABSTRACT

This study examined whether maternal adiposity, acculturation, and perceived-ideal body size discrepancy for daughters were associated with daughters' engagement in unhealthy weight control behaviors. A total of 97 Hispanic mother-daughter dyads completed surveys, rated a figure scale, and had their height, weight, and adiposity assessed. Mothers (M_{age} = 39.00, SD = 6.20 years) selected larger ideal body sizes for their daughters (M_{age} = 11.12, SD = 1.53 years) than their daughters selected for themselves. Mothers had a smaller difference between their perception of their daughters' body size and ideal body size compared to the difference between their daughters' selection of their perceived and ideal body size. More acculturated mothers and those mothers with larger waist-to-hip ratios were more likely to have daughters who engaged in unhealthy weight control behaviors. These findings highlight the relevant role that maternal acculturation and adiposity may have in influencing daughters' unhealthy weight control behaviors.
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Introduction

The societal pressures to attain a thin body size may predispose girls, especially girls with obesity, to feel dissatisfied with their body size (Ayala, Mickens, Galindo, & Elder, 2007; Lawler & Nixon, 2011; Olive, Byrne, Cunningham, & Telford, 2012; Xanthopoulos et al., 2011). Increased body size dissatisfaction may also lead girls with obesity to be more likely to engage in unhealthy weight control behaviors than their normal weight counterparts (Goldschmidt, Aspen, Sinton, Tanofsky-Kraff, & Wilfley, 2008; Neumark-Sztainer et al., 2007). Indeed, evidence indicates that obesity and unhealthy weight control behaviors can co-occur (Neumark-Sztainer, Wall, Story, & Standish, 2012). Furthermore, engagement in unhealthy weight control behaviors such as dieting, fasting, skipping meals, and taking pills or laxatives (Grieve, Wann, Henson, & Ford, 2006; Matthews, Zullig, Ward, Horn, & Huebner, 2012; Matthews-Ewald, Zullig, & Ward, 2014) tend to increase in severity with age. For instance, previous research suggests that 10% of early adolescent girls have reported dieting (Westerberg-Jacobson, Edlund, & Ghaderi, 2010); by adolescence, the percentage of girls engaging in dieting increases to between 30% and 50% (Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011; Neumark-Sztainer et al., 2012).

The use of unhealthy weight control behaviors has been associated with myriad detrimental health consequences in adolescence including, but not limited to: weight gain (e.g., Neumark-Sztainer et al., 2012), inadequate dietary intake (e.g., Woodruff, Hanning, Lambraki, Storey, & McCargar, 2008), subsequent development of clinically diagnosed eating disorders (e.g., Stice, Marti, Shaw, & Jaconis, 2009), depressive symptoms (e.g., Eddy et al., 2007), and low self-esteem (e.g., Mirza, Davis, & Yanovski, 2005; Vander Wal, 2011). The harmful impact associated with the use of unhealthy weight control behaviors and increased prevalence of these behaviors in adolescent girls suggests a need for understanding the factors influencing the development of unhealthy weight control behaviors in early adolescent girls.

A growing body of literature suggests that the family environment plays an integral role in daughters' view of their own

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body size, and engagement in unhealthy weight control behaviors. Among family factors, mothers' weight-related attitudes and behaviors have been identified as contributors to unhealthy weight control behaviors in preadolescent and adolescent daughters (Cooley, Toray, Wang, & Valdez, 2008; Lombardo, Battagliese, Lucidi, & Frost, 2012; Phares, Steinberg, & Thompson, 2004). In particular, maternal weight and body talk (Neumark-Sztainer et al., 2010), negative maternal perceptions of their daughters' body size (Cooley et al., 2008), maternal criticism about daughters' weight (Libbey, Story, Neumark-Sztainer, & Boutelle, 2008), and maternal modeling of restricting her own eating (Keery, Boutelle, van den Berg, & Thompson, 2005; Lombardo et al., 2012) have been linked to an increased risk of daughters' engagement in unhealthy weight control behaviors (Francis & Birch, 2005; Haines, Neumark-Sztainer, Hannan, & Robinson-O'Brien, 2008).

Mothers' and daughters' attitudes and preferences regarding body size and weight control behaviors may also be influenced by their culture (Kumanyika, 2008); therefore, differences in acculturation might be a relevant factor to consider when studying these issues in Hispanic families (Mirza, Mackey, Armstrong, Jaramillo, & Palmer, 2011; Olvera, Suminski, & Power, 2005). Hispanic youth are of particular interest because they are exposed not only to the American culture with an emphasis on thinness, but also to the more lenient and traditional view of weight that is predominant in the Hispanic culture (Warren, Gleaves, Cepeda-Benito, Fernandez, & Rodriguez-Ruiz, 2005), which perhaps may lead to an acceptance of large body size as normal. For instance, some studies have shown that Hispanic mothers (particularly mothers with obesity) of young children and early adolescents are likely to underestimate the weight of their child or fail to identify the child as being overweight, leading to an increased acceptance of obesity in this population (Chaparro, Langellier, Kim, & Whaley, 2011; Olvera et al., 2005; Rosas et al., 2010). Furthermore, less acculturated Hispanic mothers have been observed to be less likely to associate child obesity with poor health than more acculturated mothers (Baker & Altman, 2015). Warren, Castillo, and Gleaves (2010) also reported that acculturation level among Mexican-American women moderated the relationship between awareness and internalization of a thin physique as an ideal. This study found that the relationship was strongest for those Mexican-American women who were more acculturated to the American culture than those who were less acculturated.

Some prior research has assessed the influence of maternal acculturation and maternal perception of their child's body size on their child's body size dissatisfaction level. For example, Mirza et al. (2011) found that less acculturated mothers with higher maternal dissatisfaction regarding their child's body size, had children with higher body size dissatisfaction. Olvera et al. (2005) observed an association between maternal acculturation and their daughters' selection of ideal body size. That is, more acculturated mothers had daughters (7–12 years old), but not sons (6–11 years old), who selected thinner figures as ideal body size, compared to daughters of less acculturated mothers.

Despite the influence of certain Hispanic maternal characteristics (e.g., acculturation and adiposity) on their views of their children's weight and views of ideal weight, there is currently no study that has assessed the influence of these maternal traits on their early adolescents' use of unhealthy weight control behaviors. Furthermore, no research has examined the possible moderation effect of Hispanic maternal traits on their daughters' unhealthy weight control behaviors. Supported by previous research (Warren et al., 2010), it is possible that less acculturated mothers may not internalize the American thin physique as ideal, and they, therefore, may be less likely to model unhealthy weight control behaviors for their daughters when compared to more acculturated mothers.

To address the identified gap in the literature, the purpose of this study was to examine the role that Hispanic maternal characteristics may have on the engagement of unhealthy weight control behaviors in their early adolescent daughters with obesity. Specifically, this study expands previous research (e.g., Mirza et al., 2011) by assessing: (1) the contribution of maternal acculturation, adiposity, and maternal perceived-ideal body size discrepancy for daughters and (2) the potential role of maternal acculturation as a moderator of maternal waist-to-hip ratio and the maternal perceived-ideal body size discrepancy for daughters (maternal acculturation × maternal waist-to-hip ratio; maternal acculturation × maternal perceived-ideal body size discrepancy for daughters) in predicting daughters' unhealthy weight control behaviors, after controlling for daughters' variables. It was hypothesized that the interaction of maternal acculturation with maternal waist-to-hip ratio and with the maternal perceived-ideal body size discrepancy for daughters would have a significant association with daughters' engagement in unhealthy weight control behaviors, after controlling for daughters' age, waist circumference, and perceived-ideal body size discrepancy for themselves.

Method

Participants

The sample consisted of 97 Hispanic mother-daughter dyads who were primarily overweight/obese. Mothers had a mean body mass index (BMI) of 31.53 kg/m^2 (SD = 6.93). Daughters had a mean BMI percentile of 96.07 (SD = 4.08). Participating mothers had a M_{age} = 39.00 years (SD = 6.20 years) and daughters had a M_{age} = 11.12 years (SD = 1.53 years). Data for this study were aggregated from those collected at baseline from different cohorts of mother-daughter dyads seeking participation in a healthy lifestyle summer intervention known as BOUNCE (Behavior Opportunities Uniting Nutrition, Counseling, and Exercise) during the summers of 2009, 2010, 2012, and 2014. Inclusion criteria were that: (1) mother-daughter dyads must be of Hispanic or African-American descent (for this study only Hispanic mother-daughter dyad data were analyzed); (2) mother and daughter must be free of physical conditions that could restrict their physical activity level as certified by a medical professional; (3) daughter must be between the ages of 9 and 14 years; and (4) daughter must either be overweight (BMI ≥ 85th ≤ 94th percentile) or obese (BMI ≥ 95th percentile). Participating families were recruited primarily through referrals by school nurses and teachers, and community outreach coordinators (for a complete description of recruitment efforts, see Olvera, Leung, Kellam, Smith, & Liu, 2013). Briefly, school nurses and teachers sent daughters home with flyers describing the BOUNCE intervention and an invitation to attend an orientation session. Community outreach coordinators and health professionals (e.g., school nurses and physicians) directly recommended parents of daughters with obesity to enroll their daughter in the BOUNCE intervention. Interested parents were given the BOUNCE office phone number to contact BOUNCE staff directly. The referent university's institutional review board approved all research protocols.

Procedure

Prior to the administration of the instruments, mother-daughter dyads attended an orientation at a university classroom where they received more detailed information about the study requirements including their expected involvement. At this time, they had an opportunity to ask questions. Once the mothers and daughters agreed to participate in the study, they signed consent and assent forms, respectively. At the end of the orientation, consenting moth-