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The Role of Parental Misperception of Child's Body Weight in Childhood Obesity

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Purpose To investigate the accuracy of parental perceptions of their child's weight status and also the relationship between parental perceptions and the prevalence of childhood obesity in Mississippi.
Design and Methods: Data from multi-year surveys (2009–2012) with random samples of public school parents (N = 14,808). Descriptive statistics and multiple logistic regression were conducted with quantitative data to examine the relationship between parental perception and childhood obesity.
Results: More than 2 out of 5 parents misperceived the weight status of their child (k-12). The greatest difference occurred with kindergartners, 83.9% of parents categorized them as "healthy", when only 28.3% actually were. Parents who misperceived their child's weight were almost 12 times more likely of having an obese child.
Conclusions: Only half of the children in this study had a healthy weight (54.5%). Health care providers, nutritionists, social workers, teachers, and school health councils could play an important role in educating parents and children on how to recognize an unhealthy weight.
Practice Implications: The strongest predictor of childhood obesity was parental misperception of their child's weight status.

OVER THE LAST two decades, obesity rates across the United States have steadily increased (Centers for Disease Control and Prevention (CDC), 2012a, 2012b). In 2011–2012, more than one-third (34.9%) of American adults were obese, and 16.9% of children and adolescents were obese (Ogden, Carroll, Kit, & Flegal, 2014). Mississippi was identified as the most obese state in America in 2012 (for the eighth year in a row) with more than three out of ten adults in the state (34.9%) found to be obese (Levi, Segal, St. Laurent, Lang, & Rayburn, 2012). The obesity trend in Mississippi has steadily increased since 1995; from 1995 to 2013 adult obesity increased by 81%, from 19.5% in 1995 to 35.1% in 2013 (CDC, 2013). Leading the nation, almost four out of ten Mississippi children (40%), age 10–17 years, were found to be overweight or obese (CDC, 2013). This study examines how parents perceive their child's BMI weight category (i.e., underweight, healthy weight, overweight or obese) as compared to their child's actual BMI category.

The costs of obesity in terms of health and economics are staggering. Obese children are twice as likely to die before reaching the age of 55, compared to children with a healthy BMI (Levi et al., 2012). Childhood obesity increases the chances of a child developing cardiovascular disease, type 2 diabetes, breathing issues, joint problems, and social and psychological problems related to their obesity (CDC, 2012). Childhood obesity also sets the stage for a child to develop heart disease, diabetes, and some cancers as an adult (CDC, 2012). The economic consequences of obesity are also significant. American taxpayers paid an estimated $147

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billion dollars in 2008 for medical costs associated with obesity (CDC, 2012). The 2008 economic costs for Mississippi alone were an estimated $925 million, for health-care costs directly related to obesity (United Health Foundation, American Public Health Association, & Partnership for Prevention, 2009).

In a 2012 Gallup poll, 81% of Americans said obesity is an "extremely" or "very serious" problem to society, and see it as a more serious societal problem than cigarettes (Mendes, 2012). Yet, obesity rates continue to rise, even as the serious health risks associated with being overweight and obese, including pediatric health issues, continue to be publicized. Interventions designed to curb the rise of childhood obesity often focus on behavioral changes in diet and exercise. However, to motivate parents and children to effectively change these behaviors, parents must first be able to recognize when their child's health poses a risk. Research has begun to show that parents' perceptions of their child's weight and their child's actual weight often do not match, particularly for children who are overweight or obese.

A review by Rietmeijer-Mentik, Paulis, van Middelkoop, Bindels, and van der Wouden (2013) of 51 studies examining the disparity between parents' perceptions and the actual weight status of their children has demonstrated that parents are likely to misperceive the weight status of overweight and obese children. A study of children in Utah found that 86% of their parents misperceived their child's weight status. Obese children were misperceived as "overweight" and overweight children were misperceived as "healthy weight." The study also found that parents of obese boys were more likely to misclassify their son's weight status as "underweight" or "normal weight" compared to parents of obese girls, who were less likely to underestimate their daughter's weight (De La O et al., 2009). A study of Puerto Rican parents' perceptions of their children's weight, and the children's own perceptions, revealed that only half of the 1st–6th grade children knew their correct weight classification, and only 62.4% of the parents estimated the right classification (Rivera-Soto & Rodriguez-Figueroa, 2012). It was also more probable for higher-educated parents to recognize their child as being overweight or obese, compared to less-educated parents. Contrary to that finding, research from a similar study in Norway examining 3,770 children aged 2–19 found no influence of the educational level of the parent, but did find overweight parents more likely to perceive their child as underweight (Júlíusson et al., 2011).

A large body of research also suggests that the misperception of overweight children may be more frequent in parents with young children (Rietmeijer-Mentik et al., 2013). For instance, Juliusson et al. found that young overweight children, 2 to 5 year olds, were more likely to be considered as normal weight than older children, with 91.2% of these younger overweight children being perceived by their parents as being of "normal weight." Similarly, Towns and D'Auria (2009) conducted an integrative review of literature on parental perceptions of their child's overweight. They examined studies which used socio-demographic data to explore determinants of parents' perceptions of their child's weight. The child's age was found to be one of the most frequently occurring demographic factors influencing parents' perception. Researchers found the age of the child to be an influence on parents' perceptions; parents were more likely to underestimate the weight category of younger children than they were to underestimate the weight category of older children.

He and Evans (2007) studied 355 child–parent pairs to compare children's actual weight status with their parents' perceptions of their weight status. The study found that 38% of parents were not able to correctly classify their child's weight status. As a first step in preventing pediatric obesity, He and Evans (2007) called for effective strategies for helping health care providers to increase parents' awareness of their children's weight status and weight problems that may be associated with overweight and obesity.

While children spend a large portion of the day in school, parental influence also plays an important role in maintaining a healthy lifestyle (Jaballas, Clark-Ott, Clasen, Stolfi, & Urban, 2011; Júlíusson, Roelants, Markestad, & Bjerknes, 2011). Children typically look to their parents as role models, food providers, and for guidance on healthy actions and habits which may influence childhood obesity.

The transtheoretical (TTM) framework identifies five stages that promote the process for health behavior change, which this study recommends through educating parents via health care providers: (a) contemplation, (b) preparation, (c) action, (d) maintenance, and (e) termination. The TTM framework represents modifying behavior using organized changes that are chronological and methodical, which encourage long lasting results (Di Noia, Mauriello, Byrd-Bredbenner, & Thompson, 2012; Howard, 2007; Prochaska & Velicer, 1997). Author Kristen Howard associates combating childhood obesity with parental health change, beginning with awareness, before going through the stages of the TTM framework (2007).

Our study focuses on parents, as they are the main gatekeepers for their children's nutrition and health (Brún, McCarthy, McKenzie, & McGloin, 2013; Howard, 2007; Wansink, 2012a, 2012b). Parental contemplation (a) and preparation (b) for altering their family lifestyle are the first action steps needed for long-term change. The purpose of the current study was to examine differences between parental perceptions and actual weight status of their children and the factors that influence misperception. This research also sought to identify predictors of childhood obesity by examining parental and child characteristics of obese children in order to inform targeted interventions. For our analysis of the accuracy of parent perceptions, we hypothesized that 1) parents will be more likely to misperceive the weight status of obese children and 2) parents will be more likely to misperceive the weight status of younger children. For our analysis of the predictors of childhood obesity we hypothesized that 1) children of overweight or obese parents are more likely to be obese and 2) children who are misperceived by their parents are more likely to be obese.