

# Parental Predictions and Perceptions Regarding Long-Term Childhood Obesity-Related Health Risks



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The authors declare that they have no conflict of interest.

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Received for publication November 5, 2015; accepted February 6, 2016.

## ABSTRACT

**OBJECTIVE:** To assess how parents perceive long-term risks for developing obesity-related chronic health conditions.

**METHODS:** A Web-based nationally representative survey was administered to 502 US parents with a 5- to 12-year-old child. Parents reported whether their child was most likely to be at a healthy weight or overweight, and the probability that their child would develop hypertension, heart disease, depression, or type 2 diabetes in adulthood. Responses of parents of children with overweight and obesity were compared to those of healthy-weight children using multivariate models.

**RESULTS:** The survey had an overall response rate of 39.2%. The mean (SD) unadjusted parent predicted health risks were 15.4% (17.7%), 11.2% (14.7%), 12.5% (16.2%), and 12.1% (16.1%) for hypertension, heart disease, depression, and diabetes, respectively. Despite underperceiving their child's current body mass index class, parents of children with obesity estimate their children to be at greater risk for obesity-related

health conditions than parents of healthy-weight children by 5 to 6 percentage points. Having a family history of a chronic disease, higher quality of care, and older parent age were also significant predictors of estimating higher risk probabilities.

**CONCLUSIONS:** Despite evidence that parents of children who are overweight may not perceive these children as being overweight, parents unexpectedly estimate greater future risk of weight-related health conditions for these children. Focusing communication about weight on screening for and reducing the risk of weight-related diseases may prove useful in engaging parents and children in weight management.

**KEYWORDS:** cardiovascular disease; childhood obesity; diabetes; mental health; risk assessment; risk communication; risk perception

**ACADEMIC PEDIATRICS** 2016;16:475–481

## WHAT'S NEW

Although most parents think their children are unlikely to become obese adults, parents of children with obesity estimate their children to be at higher risk for developing obesity-related comorbidities in adulthood relative to parents of healthy-weight children.

ONE-THIRD OF US children are overweight or obese.<sup>1</sup> Early obesity increases children's risk for many chronic health conditions throughout their life span, including type 2 diabetes, cardiovascular disease, and depression.<sup>1,2</sup>

In spite of the high prevalence and serious consequences of obesity, there is strong evidence that many parents do not recognize and/or express concern about obesity in their own families.<sup>3–5</sup> Moreover, parents do not think their children will become obese adults.<sup>3,6,7</sup> A 2013 poll found that only 15% of American parents were concerned about

their child's current weight, and of those concerned parents, 40% believed their child would "grow out of it."<sup>3</sup>

Despite the robust evidence base around this topic, a key gap in the literature remains. While parents may construe the term "obesity" as a vague health state without tangible consequences, no studies have examined parent predictions that their child will develop specific obesity-related chronic health conditions.

Focusing pediatric clinical conversations on obesity-related health conditions in addition to obesity in general may change parents' perceptions of their child's health risks. Using chronic disease risk prediction tools (eg, Framingham risk score) has been shown to motivate behavior change in adults.<sup>8,9</sup> Accordingly, belief that a child is at risk for adverse chronic health effects in adulthood could be an important motivator for a parent to initiate healthful lifestyle behavior changes. Conversely, parents who see their child as immune to adverse health effects may be unlikely to engage in behavior changes.

The objective of this study was to assess parent predictions that a child will be obese and/or develop obesity-related comorbidities in adulthood using a nationally representative survey of parents. A secondary objective was to identify factors that were associated with higher parental chronic disease predictions, which may be future targets for health education and risk communication efforts.

## METHODS

### STUDY POPULATION

GfK Custom Research was hired to administer an Internet survey to members of their KnowledgePanel, a nationally representative panel recruited via probability sampling that covers 97% of the US adult population and has been used to field many national surveys.<sup>10–13</sup> Panel participants were identified using random digit dialing and address-based sampling. GfK provided participants with a computer and Internet access if these were unavailable. Panel participants received a small incentive payment (<\$5) from GfK for completing the survey. Parents with at least one child aged 5 to 12 years old were invited to complete the survey.

### SURVEY

A 15- to 20-minute survey was administered in December 2014. Approximately 80% of surveys were administered in English, and 20% of surveys were administered in Spanish. If a parent had more than one 5- to 12-year-old child, one child was randomly selected to be the focus of the survey. Parents were asked a series of questions about the child's health, followed by questions about their level of numeracy, the family's health, their assessments of the child's long-term health risks, and the child's quality of health care.

### SURVEY MEASURES

#### OUTCOMES

Parents were asked whether they thought their child was most likely to be underweight, about the right weight, or overweight in adulthood (the parent's age at the time of the survey). Parents were then asked to predict the chances that their child would develop clinical depression, type 2 diabetes, heart disease (congestive heart failure, coronary heart disease, angina, or heart attack), and hypertension in adulthood quantitatively on a visual analog scale ranging

from 0 to 100% (Fig. 1) and qualitatively on a 5-point Likert scale ranging from very likely to very unlikely.

#### DEMOGRAPHICS

Data on the respondent's race/ethnicity, family income, education, gender, age, household size, marital status, residence in a metropolitan statistical area (MSA), and census region were obtained from GfK KnowledgePanel profile data (Table).

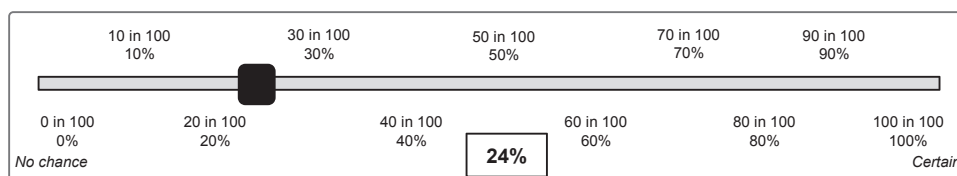
#### NUMERACY

Parents were asked a series of 4 validated questions<sup>16–18</sup> (Online Appendix A) to assess whether they could correctly interpret proportions and percentages. Parents were given 1 point for each correct answer, and the points were summed to create a continuous health numeracy scale ranging from 0 (no correct answers) to 4 (all answers correct) (Table).

#### HEALTH AND HEALTH CARE

Parents reported whether they considered their child to be currently underweight, about the right weight, or overweight (Table). Parents were asked to report the child's birth date, height, and weight, the last time the child had their height and weight measured, whether the child had personal or family history of any of the 4 health conditions, and child health care coverage information. Parents self-reported their own health conditions, height, and weight in the KnowledgePanel profile data. Parents and children were classified as healthy (ie, normal) weight, overweight, or obese by the study authors using the Zanthro package in Stata<sup>19</sup> and in accordance with Centers for Disease Control and Prevention guidelines.<sup>20,21</sup> Self-reported height and weight can be biased due to lack of knowledge, recall error, rounding, or social desirability; parents often underreport child height.<sup>14</sup> Potential biases in adult and child height and weight were corrected using factors from the published literature.<sup>14,15,22,23</sup>

Questions from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey were used to assess parent perceptions of their child's current health and future health prospects, as well as the child's frequency of health care utilization.<sup>24</sup> CAHPS measures were also used to determine the quality of a child's health care, defined as the number of best practice recommendations the usual care provider adhered to, ranging from 0 to 6 (Online Appendix B).



**Figure 1.** Visual analog scale. Parents were asked, “What do you think the chance is that [CHILD] will have [DISEASE] at age [PARENT’S CURRENT AGE]?” for each of the 4 health conditions on a visual analog scale (pictured). The scale reported numbers in terms of percentages and proportions, and parents were able to see exactly what number they had chosen using the slider (any integer from 0 to 100) in the box underneath the scale.

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