

# Parent and Child Self-Reports of Dietary Behaviors, Physical Activity, and Screen Time

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**Objective** To determine differences between children and their parents' perceptions regarding dietary behaviors, physical activity (PA), and screen time.

**Study design** This study included 292 children in the 3rd and 4th grades (mean age 8.48 years) and their parents/guardians. Eighty-eight parent/guardian-child pairs completed a modified version of the Centers for Disease Control and Prevention Youth Risk Behavior Survey that specifically asked parents about their child's health behaviors. A similar version of the survey was also given to their children to answer questions regarding their personal health behaviors. A paired t test was performed to assess the difference in parent-child responses. An independent t test was performed to assess the sex and age difference in nutritional habits, amount of screen time, and PA among children.

**Results** Of 88 parent-child dyads, there was no single dyad that provided the same answers to all the questions. There are differences between children's and parent's perception of average food consumption, amount of screen time, and PA. Fourth graders reported higher number of PA days than did 3rd graders (4.65 vs 5.57,  $P < .05$ ).

**Conclusions** The discrepancies found between parents and their children concerning food choices, juice and soft drinks, screen time, and PA are all troubling, particularly in a community where obesity risk is high. The findings indicate a continued need for information about parent and child perceptions of diet behaviors and PA. (*J Pediatr* 2013;162:557-61).

In 2009 it was estimated that overweight and obesity among adults cost the US \$270 billion.<sup>1</sup> These costs were the result of increases in medical care associated with loss of worker productivity due to rates of death, loss of productivity due to disability of active workers, and loss of productivity due to total disability.<sup>2</sup> This cost is of particular concern given the current trends in overweight and obesity among children and youth. According to The Maternal Health Bureau Data Resource Center on Child and Adolescent Health, 70% of children whose parents are overweight have a high probability of becoming overweight themselves, particularly among those in low-income homes, those in single-parent homes, and children who are minorities.<sup>1</sup>

Overweight and obesity among children have increased >3-fold since 1980, with current estimates indicating that 19.6% of children aged 6-11 and 18.1% of children aged 12-19 are overweight or obese.<sup>3</sup> Given the cost of overweight and obesity and the known benefits of a healthy lifestyle, research that seeks to slow or change this trend among children and youth is of importance.

The purpose of this study was to determine the match/disparity between parent and child responses to a modified Centers for Disease Control and Prevention Youth Risk Behavior Survey (YRBS) concerning diet and physical activity (PA) among children 8-10 years old. Survey questions asked for number of servings of specific categories of food and drink, amount of time spent in PA and in screen activities (ie, television [TV] and computer/video games), number of times per week of physical education (PE), and number of sports teams each child had joined.

## Methods

Two hundred ninety-two 3rd- and 4th-grade children (mean age 8.48 years) and their parents were recruited from 2 central Michigan elementary schools to participate in a modified version of the modified YRBS.<sup>3</sup> Participants were recruited from one of the lowest socioeconomic counties in Michigan.<sup>4</sup> Parent and child perceptions of children's nutritional choices and amount of PA were identified. Our university's institutional review board and the superintendent of a local school district granted permission to conduct a survey involving 3rd- and 4th-grade students and their parents.

At the beginning of the 2011-2012 school year, 3rd- and 4th-grade students and their parents were asked to complete a modified version of the YRBS.<sup>3</sup> To obtain informed consents of the parent, 292 forms along with the description of the study and contact information were sent to the parents of elementary school 3rd- and 4th-grade students; 130 parents provided the informed consent and

PA	Physical activity
PE	Physical education
TV	Television
YRBS	Youth Risk Behavior Survey

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completed surveys (response rate 44.5%) at home. However, 3rd- and 4th-grade students completed only 96 surveys (response rate 33%) during the course of 2 weeks at participating schools.

The YRBS is a school-based survey that monitors priority health-risk behaviors primarily in youth and young adults.<sup>3</sup> This study used a modified version of the YRBS that targeted dietary behaviors, screen time, PA participation, and days spent in a PE program for elementary children. A similar modified version of the YRBS was given to their parents to obtain knowledge of the parent's perception of their child's dietary behaviors and PA levels.

The modified YRBS for parents consisted of 20 questions focusing on the following categories: nutrition, PA, screen time, and PE. Questions were subjective (exception: height and weight) and used the following format: During the past 7 days, how many times did your child eat fresh fruit or fruit cups? (Do not count fruit juice, fruit roll-up.): (1) my child did not eat fruit during the past 7 days; (2) 1 to 3 times during the past 7 days; (3) 4 to 6 times during the past 7 days; (4) 1 time per day; (5) 2 times per day; (6) 3 times per day; or (7) 4 or more times per day.

The same question format was provided in the modified YRBS Elementary Questionnaire, but "you" replaced "your child" and "I" replace "My child" for all questions and answers. The modified YRBS Survey Instrument for both Parent and Child is available on request.

### Statistical Analyses

The data were entered, coded, and analyzed using PASW/SPSS 18 software (SPSS, Chicago, Illinois). All items from the survey could be combined into 4 groups: demographic (age, sex, grade, and school), biometric (reported weight and height), nutrition (consumption of juice, fruit, green salads, potato, other vegetables, soda drinks, fast food, and milk), PA time (PA per week, PE, and sport teams). An additional variable (Screen time) was calculated as a sum of TV and computer time for each survey, under the assumption that these activities are not performed simultaneously. Several items of the survey were recoded in an attempt to assign quantitative values to a categorical response. For instance, to assess the amount of time a child spends watching TV, item 15 ("On an average school day, how many hours do you watch TV?"), offered responses such as: (1) I do not watch TV on an average school day; (2) Less than 1 hour per day; (3) 1 hour per day; and so on, which were recoded as "0," "0.5 hour," and "1," respectively. A similar recoding method was applied to items measuring food consumption, where responses such as "1 to 3 times during the past 7 days" were recoded as "0.3" and responses such as "4 to 6 times" were recoded as "0.6." Assuming a common source of variance for the responses, a paired t test was performed to assess the difference in parent-child responses. An independent t test was performed to assess the sex and age differences in nutritional habits, as well as in screen time and PA time reported among children.

## Results

In total, 88 parent-child dyads were identified and available for analysis from both participating schools. In the surveys, 18 children indicated their age as 8 years old, 47 as 9 years old, and 14 as 10 years old, with the average age of participating children being 8.5 years. Among the completed survey dyads there were 52 girls and 36 boys (compared with the population of 3-4th-graders, the sample had higher representation of girls: 59% in the survey vs 55.5% in the population). Of the total 88 participating pairs, 59 (67%) were 3rd-graders and 29 (33%) were 4th-graders compared with 50% of each grade in the total number of children.

The data were compared for each parent-child dyad. **Table I** provides a comparison of the child's response to the parent's response. For each question, only completed answers were counted and compared. The number of same answers provided by parents and children ranged from 10 for screen time to 48 for green salad. Additional analysis was performed to assess the magnitude of difference in responses in reported screen time: 48% of the answers were within 30 minutes difference between parent and child response. There was no single dyad that provided the same answers to all the questions.

The comparison of average responses provided by parents and children revealed that for most of the questions children and parents provided different answers. For all nutrition-related questions, children's responses were higher than those provided by parents with the exclusion of milk. However, only 5 items produced statistically significant differences ( $P < .05$ ): consumption of juice, green salads, potatoes, soda, and milk.

As expected, fast food had the lowest difference between parent/child responses because children at this age are unable to make independent trips for fast food. The highest difference was observed in number of days with at least 60 minutes of PA; children reported significantly lower values, compared with their parent's reports (3.95 vs 5.5;  $P < .01$ ). **Table II** also provides maximum values for each item. According to school-provided information, both grades participating in the survey had two 30-minute classes of PE per week, which corresponds with 83% of correct responses from parents (8 parents reported PE being once a week and 4 being 5 days a week). Among children, 64.8% identified PE as twice a week, and 24 surveys indicated 3-5 PE classes per week. The number of PE classes per week was reported lower by parents compared with their children (2.05 vs 2.73;  $P < .01$ ).

For 2 items (milk consumption and PA), children reported lower numbers than the parents. For the rest of the nutrition-related items, children reported higher consumption: the responses did not differ statistically for fruit, vegetables other than green salad, and fast food consumption.

The ability of children to assess their consumption or time spent on certain activities may improve with age. To take into account that possibility, an independent t test was performed

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