Author's response to reviews

Title: Accuracy of Parent-Reported Information for Estimating Prevalence of Overweight and Obesity in a Race-Ethnically Diverse Pediatric Clinic Population Aged 3 to 12

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Author's response to reviews: see over
Dear Editor:

We are re-submitting a revised version of our manuscript titled “Accuracy of Parent-Reported Information for Estimating Prevalence of Overweight and Obesity in a Race-Ethnically Diverse Pediatric Clinic Population Aged 3 to 12”. This manuscript was originally submitted on 8 January 2014 and a first revision was submitted on August 28, 2014. We want to thank you and the reviewers for their timely second review and recommendations.

Per your (Editor’s) request, we had a statistician review the manuscript. She agreed that chi-square test was the preferred method for assessing statistical significance between two groups on categorical variables, so we re-did all the analyses with categorical variables. We also re-did the comparison of the EHR-based and parent report based prevalence of overweight/obesity and obesity using two-sided z-tests for proportions. None of the original results changed. The use of these statistical tests is noted in the Statistical Analysis section under Methods. The statistician judged all of the other statistical methods to be appropriate.

Also, in response to your (Editor’s) comment, the category “overweight” was meant to include any child with a BMI-for-age percentile $\geq 85$, while “obese” children were $\geq 95^{th}$ BMI-for-age percentile. To make this clearer, we have replaced the term “overweight” with “overweight/obese” in the text and tables. The reason we evaluated accuracy of parent-reported based estimates for both of these categories is that some ongoing surveys report prevalence of overweight (i.e., $\geq 85^{th}$ BMI-for-age percentile), while others report prevalence of obesity. We also have replaced the term “BMI percentile” with “BMI-for-age percentile” in the text and tables.

In response to Reviewer #1’s request, in the text and tables we have changed how we refer to the length of time since the child was last weighed and measured to “within past 7 days, > 7 days but within past month, > 1 month but within past 6 months, and more than 6 months ago”.

The CDC program for calculating BMI-for-age percentile flags calculated BMI-for-age percentiles $<1$ as biologically implausible values (likely due to errors in reporting or data entry), and standardly, data for children below the $1^{st}$ percentile are not used by survey researchers for estimating prevalence of childhood overweight/obesity. In our study 11 children were immediately eliminated from the sample because their EHR-based BMI-for-age percentile was $<1$, suggesting a data entry error on the part of clinic staff for that child. Of the 1053 remaining children, 35 who had a parent report-based BMI-for-age percentile $<1$ were excluded from the comparisons of BMI-for-age percentile accuracy and estimates of overweight/obesity and obesity given that in surveys and clinical practice these values would have been considered...
biologically implausible and therefore not used. However, these children are included in the evaluation of accuracy of parent-reported height and weight.

We know that Reviewer #2 is not happy about our decision to define accuracy of parent-reported height and weight as +/- 1 inch and +/- 2 lbs. regardless of child's age or size. Before deciding to use these cut-points, we reviewed the existing literature and talked with health survey researchers who were tracking pediatric overweight/obesity. Most published studies did not use cut-points at all, but rather just evaluated mean differences between parent-reported measurements and study/clinical measurements, which made it impossible to interpret level of accuracy at less than the group level. The one study that did use cut-points used the measures ±2.5 cm and ±1 kg, which convert to approximately the values we chose. Our decision to use age-independent cut-points for measuring accuracy rather than differences in BMI-for-age percentiles-for-age might not yield the kind of information that would be most valuable to clinicians who want to know how parent inaccuracy would affect plotting values on a growth chart. However, we think presenting accuracy in this way will be of more valuable to survey and health policy researchers studying prevalence of pediatric overweight and obesity.

Reviewer #2 also questioned our use of ≥90th percentile rather than ≥85th percentile (cut-off for “overweight”) when reporting the percentages of parents who thought their child was overweight, suggesting we use the cut-off of ≥85th percentile (overweight) instead. The use of 85th percentile to <95th percentile makes sense in that it is the cut-off for “overweight.”. However, we found that 6.9% (5/67) of children with a BMI-for-age percentile of 85-<90, 19.5% (17/87) of children with a BMI-for-age percentile of 90-<95, 13.8% (22/159) of children with BMI-for-age percentile 85-<95, and 61.4% (121/197) of children with a BMI-for-age percentile ≥95 were considered by their parents to be overweight with the difference between the 85th-<90th and 90th-<95th percentile groups being statistically significant (p=.022). In the interest of space, we have decided only to report on parent perception of overweight for the children who would be considered overweight or obese (BMI-for-age percentile ≥95) by both CDC and international definitions. The sentence now reads “Only 61.4% (121/197) of children classified as obese (EHR BMI-for-age percentile ≥95) were considered by their parent to be overweight, with children in the older age group significantly more likely (OR=5.38, CI 2.75-10.52) to be considered overweight than the younger children and no significant difference by child race/ethnicity or sex.”

Reviewer #2 also asked what parents were told when they were being recruited for the survey. We have added some more information about what parents were told about the study in the Methods section (see italicized text): “The receptionists asked parents of age-eligible patients if they would be willing to fill out a very short questionnaire about their child’s height and weight and mentioned a small thank-you gift they would receive.” and “Parents were informed at the top of the questionnaire that the study was being done to learn how accurate parents are when they are asked to report their child’s height and weight in surveys and to medical staff during phone consults, and that their answers would be linked to their child’s height and weight measured by the medical assistant. “

If Reviewer #2 is interested in any specific analyses regarding the association of parent confidence in the accuracy of reporting their child’s height and weight, I would be happy to
share data with her outside the scope of this article if she gets in touch with me at the email address below.

We hope that the reviewers and editors will find this revised manuscript acceptable for publication and look forward to hearing your back from you.

Sincerely,

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