

# Test-Retest Reliability of a Short Form of the Children's Social Desirability Scale for Nutrition and Health-related Research

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## ABSTRACT

**Objective:** To examine test-retest reliability and internal consistency of the Children's Social Desirability Short (CSD-S) scale, consisting of 14 items from the Children's Social Desirability scale.

**Methods:** The previously validated CSD-S scale was classroom administered to 97 fourth-grade children (80% African American; 76% low socioeconomic status) in 2 sessions a month apart. Each classroom administration lasted approximately 5 minutes.

**Results:** The CSD-S scale showed acceptable levels of test-retest reliability (0.70) and internal consistency (.82 and .85 for the first and second administrations, respectively). Reliability was adequate within subgroups of gender, socioeconomic status, academic achievement, and body mass index percentile. Levels of social desirability did not differ across subgroups.

**Conclusions and Implications:** Social desirability bias is a potential source of systematic response error in children's self-report assessments of nutrition and health-related behaviors. The CSD-S scale may be used with diverse groups of children to reliably and efficiently assess social desirability bias.

**Key Words:** social desirability, child, test-retest reliability, assessment, health (*J Nutr Educ Behav.* 2014;46:423-428.)

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## INTRODUCTION

A challenging methodological issue for nutrition and health researchers is to ascertain whether research participants provide accurate answers rather than those that they think they should provide. In particular, some participants may tend to answer questions about sensitive topics, such as eating unhealthy foods or overeating, in a socially desirable way. Social desirability is defined as reporting that one never performs a behavior that most people perform at least occasionally or always performs a behavior that most people usually

perform but omit occasionally.<sup>1</sup> Questionnaires—most notably the Marlowe-Crowne Social Desirability scale—have been developed to detect social desirability response bias in adults.<sup>2</sup> Social desirability, assessed in this way, was correlated positively with dietary reporting errors in adults.<sup>3</sup> Children may also exhibit social desirability bias, which could affect their self-reports about what they have eaten recently and how much they have eaten.<sup>4,5</sup> In fact, programs to improve child nutrition and reduce obesity that may promote children's awareness of less nutrient-dense food could encourage

socially desirable answers from children concerning their food intake.

The Children's Social Desirability (CSD) scale, with slightly different versions for younger (grades 3–5) and older (grades 6–12) children, was developed in the 1960s.<sup>6</sup> The CSD scale for grades 3–5 has 46 yes/no items<sup>6</sup>; examples of items are, “Do you always listen to your parents?” and “Do you ever get angry?” with a “yes” and “no” response, respectively, on these items keyed as the socially desirable response. Internal consistency, measured with Spearman-Brown-corrected split-half reliability, for the CSD scale ranged from 0.82 to 0.95 for subsamples of boys and girls in various grades, and 1-month test-retest reliability was 0.90.<sup>6</sup> At the time it was developed, the CSD scale exhibited some interesting correlations with personal attributes and behaviors. Social desirability scores were higher, indicating a greater tendency to answer in a socially desirable manner, for younger children than for older children, for girls than for boys, for lower-intelligence quotient children than for higher-intelligence quotient children, for African

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American children than for European American children, and for children with lower than with higher academic achievement scores.<sup>6,7</sup>

In school-based research, limits on how long children can be removed from instructional class time, as well as children's limited patience or attention, may constrain the amount of data that nutrition and health researchers can collect. Thus, it may not be possible to administer the full CSD scale. Consequently, there is a need for a short scale with adequate psychometric properties. Short forms of the Marlowe-Crowne Social Desirability scale have been developed for adults.<sup>8</sup> Short forms based on the version of the CSD scale for older children (grades 6–12) and younger children (grades 3–5) also have been developed using samples from grades 6–9<sup>9</sup> and grade 4,<sup>10</sup> respectively. A short form for younger children is particularly important because they tend to have higher social desirability scores,<sup>7,9</sup> may have more trouble than older children maintaining their attention for long forms, and are the target of many contemporary health intervention programs. External validity of the short form for younger children in nutrition research was shown in a 2010 publication in which fourth graders' social desirability scores were inversely related to their dietary reporting accuracy for energy intake at school meals (compared with direct observations of those meals).<sup>5</sup> This short form for younger children was developed in 2004 by drawing 14 items from the long form of the 46-item CSD scale.<sup>10</sup> However, because these 14 items were not administered by themselves in the 2004 study, but as part of the full 46-item scale, the short form's test-retest reliability as a standalone scale is unknown.

The long form of the Children's Social Desirability (CSD) scale has 46 items; the Children's Social Desirability Short (CSD-S) scale is a 14-item subset of the 46 items.

The short form in the 2004 study<sup>10</sup> was developed as follows: First, the full 46-item CSD scale was administered individually by telephone to 100 fourth-grade children in a school district in Georgia. Internal consistency (Cronbach alpha) was .88 and .93 for the first and second administrations, respectively, and 1-month test-retest reliability of 0.79 (Pearson correlation coefficient) was adequate. Then, a factor analysis of the 46-item CSD scale data showed that the proportion of common variance accounted for by the first factor was vastly greater than that of subsequent factors. Thus, the 46-item scale had a common construct from which one could select items for a short scale measuring the same construct. Next, items were selected for the short form that had high loadings on the first factor during both administrations and had non-extreme endorsement rates (required for an item to contribute to differentiation among children). Moreover, the set of items had the same proportion of items keyed "yes" for social desirability as in the full scale. The 14 items selected, when administered within the full 46-item CSD scale, had a test-retest reliability of 0.83. No gender differences were found in social desirability, and 56.9% and 56.7% of responses on the first and second administrations, respectively, were keyed as socially desirable. The current study was the next step in the development of the short form.

The main purpose of the current study was to assess test-retest reliability and internal consistency (Cronbach alpha) of the 14 items as a standalone Children's Social Desirability Short (CSD-S) scale. A new sample of fourth-grade children was tested. The current study examined the sample overall and subgroups of children to determine whether social desirability scores and test-retest reliability vary by gender, socioeconomic status (SES), child academic achievement, or body mass index (BMI) percentile. It is useful to know, for example, whether test-retest reliability is adequate for subgroups of children who may be of particular interest to nutrition and health researchers. In addition to requiring less time to complete than the full scale, this CSD-S form contributes

several other important advances. In the current study, the short form was administered to children in a group (a class in a classroom) rather than individually, which increased the efficiency of collecting social desirability information in a school-based project. Moreover, the sample of children was more diverse than the Midwest 1960s sample on which the CSD scale was developed, which was mostly European American, of middle to upper-middle SES, and from a set of schools that included no large metropolitan schools.<sup>6</sup> In contrast, the current sample was predominantly African American, of lower to middle SES, and from schools in a large Southern metropolitan school district. This point is important because such populations typically are overrepresented for nutrition- and health-related problems, including obesity, and thus are the focus of much research on health disparities. The authors know of few published studies about children's social desirability biases in these populations.<sup>5</sup> It is important to know whether test-retest reliability pertains to a broad spectrum of children in society. Finally, because the many social and health changes since the 1960s could affect children's social desirability scores, it is important to examine social desirability in a contemporary sample.

## METHODS

### Participants

The children were from all 6 fourth-grade classrooms from 2 schools in a large metropolitan school district in South Carolina. This age was appropriate for several reasons. By this age, children can read well enough to complete a questionnaire (although research staff read the items to the children). Also, by this age, children are aware of social attitudes about many health-related topics, such as which foods are considered "good" and "bad."<sup>11</sup> Finally, this is generally the youngest age at which children are asked to provide self-reports of their dietary intake.<sup>12</sup> The study had University of South Carolina Institutional Review Board approval. Parents and children provided written consent and assent, respectively.

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