

## Book Review / Évaluation de ressource écrit

*KiddyCat : Communication Attitude Test for  
Preschool and Kindergarten Children Who Stutter*  
Martine Vanryckeghem and Gene J. Brutton (2007)

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Reviewer: Marilyn Langevin, PhD., R. SLP, S-LP(C), CCC-SLP,  
ASHA SID 4 Recognized Fluency Specialist

**Affiliation:** Assistant Professor, Fluency Disorders  
(Research), Institute for Stuttering Treatment & Research,  
Faculty of Rehabilitation Medicine, University of  
Alberta.

The KiddyCat comprises a 12-item Communication Attitude Test for Preschool and Kindergarten Children who Stutter, a test instruction and scoring sheet that facilitates administration, and a manual. The purpose of and rationale underlying the development of the KiddyCat are addressed in the Preface, the Introduction and Rationale sections and in other sections of the manual. The manual also describes the normative sample and addresses reliability, validity, test administration, scoring, normative data and related age and gender analyses, and test interpretation. In this review I will discuss the stated purpose and rationale, test format, psychometric properties, administration, scoring, and interpretation of scores, and potential uses of the KiddyCat.

### Purpose

The authors indicate that the KiddyCat provides the clinician with information about the speech-associated attitudes of preschool and kindergarten children. They state, “the information that it reveals about a child’s speech-associated attitude adds direction and power to the procedures and actions of the therapist. In doing so it serves to enhance the process of improvement among preschool and kindergarten children who stutter” (p. vii), that the KiddyCat can “serve as a useful means of validly distinguishing between” (p. 3) children who do and do not stutter, and that a child’s answer to particular items on the test can “help guide client-specific treatment in reducing the negative speech-related beliefs that impede the instatement of fluency” (p. 11). It appears that the authors developed the KiddyCat because they believe that it is necessary to assess speech-associated attitudes to identify and effectively treat preschool and kindergarten children who stutter, that the linguistic and reading level and delivery system of the Communication Attitude Test (Brutton, 1984) developed for school-age children is not appropriate for these younger children, and that the “reliability and validity of parental observations are not convincing” (p. 3). In support of the latter statement and with respect to research in stuttering, the authors refer to a study of the concordance of stuttering and non-stuttering school-age children and their parents

(Vanryckeghem, 1995) that used the Communication Attitude Test (Brutton, 1984). The authors state: “They [parents of school-age children] often appear to reflect their own attitude about their offspring’s speech disorder rather than one that is in keeping with that of their child” (p. 3).

In the preface the authors state that “reactivity, such as a negative attitude toward one’s speech, is a fundamental aspect of the identification of a child who stutters” and that the KiddyCat test procedure “highlights the importance of a speech-associated attitude as a behavioural dimension that is a *necessary* supplement” to the use of dysfluency in the identification of children who stutter” (p. vi-vii). However, it is notable that, as shown in Figure 1, page 8 (also reported in Vanryckeghem, Brutton, & Hernandez, 2005), approximately 13% of the participants who stutter in the normative sample had KiddyCat scores of 0. That is, their KiddyCat score suggests that they did not have any negative speech-associated attitudes; however, they had been diagnosed as children who stutter. These data do not support the assertion that the presence of a negative attitude is fundamental or necessary to the identification of stuttering in preschool and kindergarten children.

The authors also state that “successful therapy requires attention to more than a child’s speech disruption” and “[inner] reactions need to be addressed if treatment is to be successful and if the changes are to be maintained” (p. vii). There is no evidence to support this position. In contrast, there is a large literature that gives substantial evidence of the long term effectiveness (e.g., Jones et al., 2005) of the Lidcombe Program (Onslow, Packman, & Harrison, 2003), a behavioural treatment program in which stuttering in preschool children is directly consequated by parents under the supervision of the clinician and speech-associated attitudes are not addressed. Also, the evidence for the effectiveness of the Lidcombe Program does not support the statement that “negative speech-related beliefs...impede the instatement of fluency” (p. 11) in preschool children.

### Test Format

As the authors point out, a simple downward extension of the Communication Attitude Test (Brutton, 1984) for school-age children would not be appropriate for the target age group. In the KiddyCat the authors use a question format (e.g., Do you like to talk?) which is more appropriate for preschool and kindergarten children than are declarative statement formats (e.g., I like to talk.) (e.g., Chapman & Tunmer, 1995). As well, an interview format is appropriately used.

### Normative Sample

In discussing the normative sample, the authors state that the KiddyCat is based on a representative sample of 63 children who do not stutter (36 boys; 27 girls) and 45 preschool and kindergarten children who stutter (30 boys; 15 girls) from four geographical sections of the United States

and from rural and urban areas. The reported age range for both groups is 3 to 6 years. To evaluate the adequacy of the normative sample, the Agency for Healthcare Research and Quality Report No 52, Criteria for Determining Disability in Speech-Language Disorders (AHRQ; Biddle, Watson, Hooper, Lohr, & Sutton, 2002), was consulted. In terms of the representativeness of the sample, information regarding sex, geographic region, and residence (urban or rural) has been provided. It is notable that the proportions of boys to girls who stutter in the normative sample is representative of the 2:1 ratio of male to female children who stutter in this age group (Yairi & Ambrose, 1992). However, no information regarding race, family income, or educational attainment of parents has been provided. Also, the sample size falls short of the AHRQ recommended minimum of 100 per group. This recommendation appears to be consistent with Altman's (1991) suggestion that a total sample size of 200 is needed for diagnostic tests.

### Psychometric Properties

In the sections related to reliability and validity, the authors provide evidence of reliability of the KiddyCat in terms of internal consistency and content validity. Internal consistency was reported to be .75 and .72 for children who do and do not stutter respectively; according to Jackson (1988) these are acceptable estimations of reliability. Evidence of test-retest reliability is needed to establish stability of scores over time.

Regarding content validity, the authors indicate that test items were developed from statements that preschool and kindergarten children who stutter made about their speech that were recorded in their clinical files. Determining content validity is a subjective process; however, evidence of content validity could have been strengthened by having a panel of judges experienced in diagnosing stuttering in preschoolers review the items and determine if the questions satisfy the content domain. It is still possible to do a post hoc evaluation of face validity (see Portney & Watkins, 2000).

Evidence of construct validity is indicated by the statistically significant differences in the KiddyCat scores of children who do and do not stutter that is reported in the Normative Data section. That is, the KiddyCat has the ability to differentiate between children who do and do not stutter. The reported effect size of 1.44 is large. Although the authors discuss criterion-related validity of the Communication Attitude Test for school-age children they have not provided evidence of criterion-related validity of the KiddyCat.

### Test Administration, Scoring, and Interpretation of Scores

The instructions for test administration, scoring, and interpretation of scores appear to be clear overall. The authors report that differences between girls and boys for both groups of children were not statistically significant; thus they state that gender differences do not need to be considered when interpreting KiddyCat scores. Similarly, the authors also report that differences between younger

(3- and 4-year-olds) and older (5- and 6-year-olds) children who stutter were not statistically significant; however, differences for the non-stuttering groups were statistically significant. Means, standard deviations, and a cutoff score to determine atypical speech-associated attitudes are provided. The authors also discuss clinical implications for test results. Specifically, they suggest that the "clinician should attend to the attitudinal reaction to specific test items" (p. 11).

### Potential Uses of the KiddyCat

From a clinical perspective the KiddyCat test can be a useful adjunct to the clinical assessment protocol for clinicians who wish to use a measurement tool to better understand the speech-associated attitudes of preschool and kindergarten children who are being assessed for stuttering. Judicious use of the KiddyCat in clinical work seems to be more appropriate than use with all preschool and kindergarten children who are brought in for a stuttering assessment given that there is as yet no evidence to support the authors' opinion that assessing speech-associated attitudes or addressing them in therapy is necessary to diagnose or successfully treat stuttering in these young children. From a research perspective, the KiddyCat has value as a research tool to better understand the impact of stuttering on preschool children. At present, evidence of internal consistency, content validity, and construct validity in terms of the ability of the KiddyCat to differentiate preschoolers who stutter from those who do not has been presented for one sample of preschool and kindergarten children. This is laudable and a good start to establishing the scale's reliability and validity; however, until psychometric testing is more complete, results of test use for clinical or research purposes must be viewed with this limitation in mind. Perhaps further psychometric testing is already underway.

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