

This is the accepted version of the following article: Perry, A., Taheri, A., Ting, V., & Weiss, J. A. (2015). The GO4KIDDS Brief Adaptive Scale. *Journal of Applied Research in Intellectual Disabilities*, 28(6), 594-597, which has been published in final form at <http://dx.doi.org/10.1111/jar.12143>. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for self-archiving.

The GO4KIDDS Brief Adaptive Scale

Running head: Brief Adaptive Scale

Authors: Adrienne Perry

Azin Taheri

Victoria Ting

Jonathan Weiss

Key words: adaptive behaviour

survey

psychometric properties

The GO4KIDDS Brief Adaptive Scale

Abstract

Background. Accurate measurement of adaptive behaviour is important in both clinical and research contexts. While several good clinical measures exist, as well as brief research measures for adults with ID, there is need for a brief and efficient measure for research with children and youth. We present preliminary psychometric properties of a new scale we developed for such purposes, the GO4KIDDS Brief Adaptive Behaviour Scale. *Materials and Methods.* A large sample ($n=432$) of parents of youth (aged 3 to 20) with ID and/or ASD completed an online survey that included the new scale. A subsample of these parents ($n=204$) also completed the Scales of Independent Behavior-Revised Short Form (Bruininks et al., 1996). *Results.* The new scale has good internal consistency and correlates strongly with the Scales of Independent Behavior, thus supporting its reliability and validity. *Conclusions.* Although we do not recommend its use for clinical purposes, the GO4KIDDS Brief Adaptive Behaviour Scale may be useful for survey research with parents of children and youth with developmental disabilities.

Introduction

Adaptive behaviour is usually defined as everyday life skills appropriate to the person's environment, age, and culture (Borthwick-Duffy, 2007). Together with intellectual deficits, adaptive behaviour limitations are a defining feature of individuals with Intellectual Disability (ID). Further, adaptive behaviour or skill level is an essential factor that accounts for a substantial amount of the variability seen in many different types of

academic, occupational, and quality of life outcomes in children and adults with ID. Thus, the measurement of adaptive behaviour is of considerable importance in the field.

Information regarding a person's adaptive behaviour is typically based on reports from others who know the person well, such as parents, teachers, or support staff. A variety of adaptive behaviour measures exist for use with adults and/or children in clinical settings, such as the AAMD Adaptive Behaviour Scale (Nihira, Lambert, & Leland, 1993), the Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 2005), the Adaptive Behavior Assessment System (ABAS; Harrison, & Oakland, 2003) and the Scales of Independent Behavior-Revised (SIB-R; Bruininks, Woodcock, Weatherman, & Hill, 1996).

There are a number of advantages and disadvantages to commonly used measures, depending on the purposes, populations or age groups in question (Tassé et al., 2012). For clinical purposes, detailed and lengthy interviews or surveys may be important, providing valuable information of relevance to diagnosis, treatment, education, and support. However, these measures all require considerable time on the part of the respondent and are quite complex to score. For research purposes, the time required to interview parents, or for a teacher to complete a lengthy questionnaire, and the financial costs associated, may be a significant hindrance.

What is often needed for research is a brief adaptive measure, with demonstrated reliability and validity, and with some ease to administration and scoring. Two brief research measures have been developed and used in research with adults with ID. Hatton et al. (2001) derived a short form of Part 1 of the earlier AAMD

residential and community adaptive measure (Nihira et al., 1993). Emerson, Malam, Davies, and Spencer (2005) developed an 11-item scale for adults with ID, called the Support Needs Scale, often used in British and European research. A recently developed measure called the Waisman Activities of Daily Living Scale (Maenner, Smith, Hong, Makuch, & Greenberg, 2013) shows promise for younger individuals. Designed for adolescents and adults with ID, this 17-item measure has good psychometric properties, is freely available, and may be suitable in some contexts. However, its items are not designed for younger children with ID, and possibly not for individuals with severe/profound levels of impairment.

The GO4KIDDS Canadian project (Great Outcomes for Kids Impacted by Severe Developmental Disabilities) includes a series of studies on the health, well-being, and social inclusion of children and youth with severe and/or multiple disabilities. These include a Basic and an Extended version of a nationwide parent survey (Perry & Weiss, 2008). As part of the Basic Survey, we developed a simple, brief measure of adaptive behaviour for children and adolescents with severe developmental disabilities. The Extended Survey, completed by a subset of parents, who had already completed the Basic, included a standardized adaptive measure, the SIB-R Short Form (Bruininks et al., 1996). In this brief report, we describe the GO4KIDDS Brief Adaptive Scale and provide evidence supporting its reliability and validity for survey research. Actual scale items are provided in the Appendix.

Materials and Methods

The GO4KIDDS study received ethical approval from the host University's Human Participants Review Committee, as well as the research ethics boards of various other agencies from whom parents were recruited.

Participants

The reliability portion of the study was based on data from the total sample of 432 parents who completed the GO4KIDDS Basic survey online or by paper and pencil. Parents provided consent (either online or on a paper consent form) before completing the survey. Of these, 11% completed the survey in French; the remainder in English. Participants were recruited via invitations sent to 512 agencies (social service and health-based) across the country, and through online postings to parent organizations. Relevant demographic variables regarding the respondents are presented in Table 1. The children were reported to have a developmental disability by their parents (an Intellectual Disability and/or Autism Spectrum Disorder). They ranged in age from 3 to 20 years and 71% were boys.

[insert Table 1 about here]

The validity portion of the study included a subset of 204 parents (those who completed both the Basic and the Extended Survey). Sample characteristics were very similar (see Table 1). Although no standardized cognitive test data were available, 92% of the validity sample scored below a standard score of 70 on the SIB-R-Short Form, indicative of the Intellectual Disability range; and 47% scored at the floor of the SIB-R, indicative of very severe levels of ID.

Measures

GO4KIDDS Brief Adaptive Scale. The measure was developed based on our knowledge of other adaptive measures and clinical experience, especially for children and adolescents with ID who have more severe needs. It has eight items covering support needs, communication, socialization, and self-help skills (see Appendix). Each item is rated on a 5-point scale (with responses, in plain English, customized for each question) with higher scores indicating greater skill level and greater independence. For each question, option a) is scored as 1, option b) as 2, and so on, ending with option e) scored as 5. These 1 to 5 scores are summed to get an overall Adaptive Behaviour score. Actual total scores ranged widely in our sample, from the minimum possible score of 8 to 39 (maximum possible score is 40).

Scales of Independent Behavior-Revised Short Form (SIB-R Short Form; Bruininks et al., 1996). The SIB-R is a well known, standardized measure of adaptive and maladaptive behaviour, which has several forms and results in various derived scores. In the present study, we used the first 35 items (each rated on a 4-point scale from 1=*never or rarely* to 4=*does very well*) from the SIB-R Short Form in an online survey (with permission of the publisher).

Results and Discussion

The internal consistency of the GO4KIDDS Brief Adaptive Scale was very high (Cronbach α =.87), with item-total correlations ranging from .44 to .73. There were moderate inter-item correlations, with 13 of 28 correlations over .50, nine in the .30 to .49 range, and six less than .30. Taken together, these results suggest that all items are relevant and none is redundant and that the scale measures a unidimensional

construct , i.e., adaptive behaviour. Thus, it seems that the GO4KIDDS Brief Adaptive Scale has excellent scale reliability for such a brief measure.

Criterion-related validity of the scale was evaluated by comparing it to the SIB-R Short Form measure in the subset of 204 respondents. The correlation of the total GO4KIDDS Brief Adaptive Scale total score with the SIB-R Broad Independence W score was very high ($r=.81$, $p<.001$), suggesting good validity of the new measure.

In summary, the GO4KIDDS Brief Adaptive Scale is a very brief measure that is easy to administer and score, with preliminary evidence of good psychometric properties, that is high levels of reliability and validity. Future research could examine test-retest and inter-rater forms of reliability as well as the relationship of the new scale to other established adaptive measures and possibly cognitive measures.

We emphasize that this measure is not intended for and not validated for use in a clinical context. It is limited for clinical purposes by its brevity and also because the child's age is not taken into account in scoring. A goal for future research would be to develop age-based norms. Scores should be treated like ordinal raw scores on any measure. However, we do hope that the GO4KIDDS Brief Adaptive Scale may be helpful for use in future research, particularly survey research, where very efficient measures are needed. It may be particularly useful for individuals aged 3 to 20 including those with very low levels of adaptive skills.

References

- Borthwick-Duffy, S.A.(2007). Adaptive behavior. In J.W. Jacobson, J.A. Mulick, & J. Rojahn (Eds.). *Handbook of intellectual and developmental disabilities* (pp. 279-293). New York: Springer.
- Bruininks, R.H., Woodcock, R.W., Weatherman, R.F., & Hill, B.K. (1996). *Scales of Independent Behavior—Revised Comprehensive Manual*. Itasca, IL: Riverside Publishing.
- Emerson, E., Malam, S., Davies, I., & Spencer, K. (2005). *Survey of adults with learning difficulties in England 2003/4: Final and summary reports*. London: The Stationary Office.
- Harrison, P., & Oakland, T. (2003). Adaptive Behavior Assessment System (ABAS-II). *San Antonio, TX: The Psychological Corporation*.
- Hatton, C., Emerson, E., Robertson, J., Gregory, N., Kessissoglou, S., Perry, J., ... & Hillery, J. (2001). The adaptive behavior scale-residential and community (part I): towards the development of a short form. *Research in Developmental Disabilities, 22*(4), 273-288.
- Maenner, M.J., Smith, L.E., Hong, J., Makuch, R., & Greenberg, J.S. (2013). Evaluation of an activities of daily living scale for adolescents and adults with developmental disabilities. *Disability and Health Journal, 6*, 8-17.
- Nihira, K., Lambert, N. M., & Leland, H. (1993). *Adaptive Behavior Scale: Residential and Community. Examiner's Manual*. Pro-ed.

Perry, A. & Weiss, J. (2008). *GO4KIDDS Basic Survey*, Unpublished Survey Instrument, York University, Toronto, ON, Canada.

Tassé, M.J., Schalock, R.L., Balboni, G., Bersani, H., Borthwick-Duffy, S.A., Sprent, S....Zhang, D. (2012). The construct of adaptive behavior: Its conceptualization, measurement, and use in the field of Intellectual Disability. *American Journal of Intellectual and Developmental Disabilities*, 117, 291-303.

Table 1. Sample Characteristics

	% or <i>M</i> (<i>SD</i>)	Range
Total Sample (<i>n</i> =432)		
<i>Children</i>		
Age	11.25 (3.96)	3 - 20
Sex	71% M	
Diagnosis	42% ID 55% ASD 3% other	
<i>Parents</i>		
Age	42.50 (6.93)	24 - 64
Sex	90% F	
Marital status	75% married/common-law	
Neighbourhood income	\$62,293 (17,043)	\$19,112 - 109,302
Subgroup for Validity Analysis (<i>n</i> =204)		
<i>Children</i>		
Age	10.85 (3.53)	3 - 19
Sex	71% M	
Diagnosis	40% ID 58% ASD 2% other	
<i>Parents</i>		
Age	42.18 (6.92)	25 - 58
Sex	91% F	
Marital status	76% married/common-law	
Neighbourhood income	\$65,568 (17,204)	\$37,140 - 109,302

Appendix

The GO4KIDDS Brief Adaptive Scale

1. What level of help or support is needed for your child (e.g., toileting, dressing, eating, etc.)?
 - a. requires support for almost all aspects of life
 - b. requires support for most, but not all, aspects of life
 - c. requires support for some aspects of life
 - d. requires support for only a few aspects of life
 - e. does not require support

2. How much does your child understand spoken language?
 - a. able to understand very little spoken language
 - b. able to understand some basic language and simple instructions in familiar contexts (e.g., sit down)
 - c. able to understand most basic instructions and questions
 - d. able to understand most routine everyday language
 - e. able to understand complex language about a wide range of topics

3. How much does your child use spoken language to communicate?
 - a. able to use very little meaningful speech
 - b. able to communicate basic needs and wants
 - c. able to communicate needs, wants, and some ideas
 - d. able to communicate about a limited range of topics in a meaningful way
 - e. able to communicate about a wide variety of topics in a meaningful way

4. How much does your child engage in social interactions with familiar adults?
 - a. shows little or no interest in social interactions with familiar adults
 - b. shows limited social interest but will sometimes respond to familiar adults
 - c. shows some interest, responds to others, but does not initiate social interactions with familiar adults
 - d. shows clear social interest, responds to others, and sometimes initiates social interactions with familiar adults
 - e. engages in a wide range of social interactions involving both responding and initiating social contact with familiar adults

5. How much does your child engage in social interactions with other children?

- a. shows little or no interest in social interactions with other children
 - b. shows limited social interest but will sometimes respond to other children
 - c. shows some interest, responds to others, but does not initiate social interactions with other children
 - d. shows clear social interest, responds to others, and sometimes initiates social interactions with other children
 - e. engages in a wide range of social interactions involving both responding and initiating social contact with other children
6. Please select the most accurate description of your child's skills in eating:
- a. needs complete assistance with eating
 - b. eats with fingers
 - c. can use spoon but may be messy
 - d. uses spoon and fork
 - e. eats completely independently with proper use of all cutlery
7. Please select the most accurate description of your child's skills in toileting:
- a. wears diapers day and night
 - b. wears diaper but indicates when needs changing
 - c. indicates or asks to use toilet, but does not go independently
 - d. toilet trained in daytime (occasional accidents); wears diaper or pull-up at night
 - e. completely toilet trained day and night
8. Please select the most accurate description of your child's skills in dressing:
- a. needs complete assistance dressing and undressing
 - b. cooperates with dressing (e.g., raising arms, etc.)
 - c. can remove or pull on/up clothes
 - d. can dress self quite well but needs help with buttons, zippers, etc.
 - e. can dress and undress self completely