

Early Childhood Measurement and Evaluation Tool Review

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Brief Infant-Toddler Social and Emotional Assessment (BITSEA)

Measurement Areas and Purpose:

The Brief Infant-Toddler Social and Emotional Assessment (BITSEA) is a standardized norm referenced instrument designed to assess the social emotional problems and competencies of children aged 12 to 35 months 30 days. The BITSEA is a brief, screening tool drawn from the longer ITSEA and is designed for use mostly in early intervention settings (Briggs-Gowan and Carter, 2007). It may be used as a first – or second- stage screening tool to identify children that may need more in-depth assessment or referral. The BITSEA measures the same areas as ITSEA, however is mostly used in situations that limited time and/ or resources don't allow use of longer tools such as ITSEA. The BITSEA has items that measure certain areas such as externalizing problems, internalizing problems, dysregulation, maladaptive behaviors and atypical behaviors as well as competence. These areas combine to form two scales on the measure: the Problems scale and the Competencies scale.

The authors note that the BITSEA can be used in a variety of settings such as pediatric primary care, early intervention, and visits with at-risk children and families. It can also be used with non-clinical children or clinical groups of children who may be or are at-risk for social-emotional problems or deficits in order to:

- evaluate a parent's perception of a child's behavior in order to guide further discussion
- identify children that may need further assessment for social or emotional issues or referral.

Length and Structure:

The BITSEA has two forms: a parent rating form and a childcare provider form. Each of the Parent Form and Childcare Provider Form contain 42 items that were drawn from ITSEA questions. The respondent rates each item on a 3 point scale (0=not true/rarely, 1=somewhat true/sometimes, 2=very true/always). For certain items a respondent may also respond "N" which means "no opportunity". A parent or childcare provider can complete the measure in approximately 5-7

minutes independently or 7 to 10 minutes as part of a structured interview. If both parents fill out self-administered questionnaire, it is important that they do so independently.

Materials:

The publisher classifies the BITSEA as a “B-level” qualification. The publisher requires the purchaser to fit into one of the following categories: (a) trained and certified by a recognized institution in a relevant area of assessment (with or without a Master’s degree), (b) a member of a Speech-Language-Hearing Association or an Occupational Therapy Association, or (c) possess a Master’s (or Doctorate) degree in psychology, education, or relevant field with training in assessment. In addition the person’s interpreting the result need to understand that follow up is required to decide whether or not problems/ delays that are determined by the BITSEA are clinically significant.

The BITSEA kit is available for \$110.25 USD. The kit includes the BITSEA manual and 25 parent record forms and 25 childcare provider record forms. The scoring assistant software is available for \$92.50 USD. Additional record form packs are available from the publisher.

Accessibility:

The BITSEA is available in English and Spanish. The BITSEA is a standardized instrument and therefore normative data are provided in the manual.

Administration, Scoring, and Interpretation:

The instrument is usually used as a self-administered instrument; however, it can also be used as a structured interview. The BITSEA can be scored by hand, following the instructions outlined in the examiner’s manual. Scoring is simply done by obtaining Problem and Competence Total scores through adding up response ratings within the Problem and Competence items and comparing them with the cut scores provided in the manual. Both Parent and Childcare Provider forms are scored in the same manner, but the Childcare Provider forms do not have their own separate norms. Special considerations are used for calculating the score of infants who were born prematurely. According to the examiner’s manual, on Problems scales, a percentile rank of 25 or higher are termed “**possible** problem”. Similarly, percentile rank of 15 or lower on the Competence scale are termed “**possible** deficit/delay range”. It is emphasized that the possible problem/ delay determined by the BITSEA should never be considered diagnostic and follow up is always required. The examiner’s manual devotes a chapter to score interpretation and includes steps for interpretations of scores.

Subscales:

The BITSEA has items that measure two types of behaviors; social emotional problems and social emotional competencies. The 31 items on the Problem scale cover areas such as externalizing problems (e.g. overactivity, aggression, and defiance), internalizing problems (e.g. anxiety and depression), problems of dysregulation (e.g. negative emotionality, and eating and sleeping problems) maladaptive behaviors, and atypical behaviors. The 11 items on the Competence scale of the measure cover social-emotional abilities such as sustained attention, compliance, mastery motivation, prosocial peer relations, empathy, imitation/play skills, and social relatedness.

Documentation:

The manual for the BITSEA contains procedures for administration, scoring, as well as a chapter on interpretation. The manual also has an extensive technical section discussing the instrument's psychometric properties and various forms of validity and reliability. Information on the standardization sample is also included in the technical section of the manual.

Norming Sample:

The BITSEA was standardized using a U.S. sample of 600 children ranging from age 12 months to 35 months 30 days. Four age bands of 150 children each (75 males and 75 females) were represented: 12 to 17 months, 18 to 23 months, 24 to 29 months and 29 to 35 months 30 days. The sample was stratified according to the 2002 U.S. census and included demographic variables such as sex, ethnicity, geographic region and parents' education level. The sample consisted of 5 race/ethnic backgrounds: Asian (5%), Black (16.2%), Hispanic (20%), Caucasian (57.8%), and Other (1.2%). The manual contains detailed information regarding demographic information of the standardization sample.

Reliability:

Test-retest Reliability: According to the manual, test-retest reliability data was compiled using the responses of 84 parents on two administrations of the BITSEA. The average duration between the two administrations of the BITSEA reported to be 6 days. For the total sample, the Pearson correlations were .92 for the Problem Total score and .82 for the Competence Total score.

Interrater Reliability: In order to determine the degree to which two parents rate the same child similarly, data were gathered from 94 pairs of parent across the age samples. The interrater reliability was determined using Intraclass Correlations Coefficients. Inter-rater reliability coefficients for the Problem Total score ranged from .70 for boys to .78 for girls, which is considered to be in the good to excellent range. Interrater reliability coefficients for the Competence Total scores ranged from .58 for girls to .67 for boys, which is considered to be in the adequate to good range.

Test Score Stability: Briggs-Gowen, Carter, Irwin, Wachtel and Cicchetti. (2004) examined one-year stability of the BITSEA in 1112 parents and reported that both Problem Total score ($r = .65$) and the Competence Total score ($r = .53$) have strong one year stability. The authors also noted that 59% of children who were rated as having a possible problem or possible delay deficit retained the same rating one year later.

Validity:

The BITSEA manual includes data on test validity. Types of validity evidence reported includes: validity based on the relationship to the ITSEA Parent Form, evidence based on relationships to other scales and evidence based on special group studies.

Evidence of Validity Based on the relationship to the ITSEA: The relationships between the BITSEA and ITSEA parent forms were investigated and the correlations between BITSEA Problem Total score and the ITSEA Problem domain scores reported to be from $r = .57$ to $.77$. The BITSEA Competence Total score and the ITSEA Problem domain score was found to be $.69$ for girls and $.77$ for boys.

Construct Validity: Construct validity was examined by comparing the BITSEA with other standardized measures of development. The correlation between the BITSEA scores and other measures were as follows:

- *The Ages and Stages Questionnaires: Social Emotional* - The BITSEA Problem Total score ($r = .55$) and Competence Total score ($r = -.55$) were strongly correlated with ASQ: SE total scores.
- *The Child Behavior Checklist 1.5-5* -The BITSEA Problem Total score correlated positively ($r = .46$ to $.60$) and the Competence Total score correlated negatively ($r = -.30$ to $-.42$) with the CBCL Internalizing composite score, Externalizing composite score and Total score.
- *The Adaptive Behavior Assessment System, Second Edition (ABAS II)*- The BITSEA Problem Total score correlated negatively with ABAS II Practical, Social Skills and Conceptual composites ($r = -.31$ to $-.36$) and the BITSEA Competence Total score correlated positively with ABAS II Practical, General Adaptive, and Social composite ($r = .39$ to $.56$).
- *Bayley Scales of Infant and Toddler Development-Third Edition* - The BITSEA Problem Total score ($r = -.28$ to $-.19$) and Competence Total score ($r = .25$ to $.32$) demonstrated small to modest correlations with Bayley III Cognitive Assessment and Language Scale.

Validity Evidence based on Studies with Special Groups: Another way to demonstrate validity, is to demonstrate that the instrument produces distinctive score profiles for special populations [i.e. developmentally delayed ($N=93$), language delayed ($N=56$), premature birth ($N=46$), autistic disorder ($N=33$) and those with mental health issues ($N=22$)]. Each of these groups was matched with a non-clinical control group and their BITSEA Problem and Competence Total scores were compared. The results demonstrated significant differences between the autistic disorder, the developmentally delayed, and the mental health groups and matched control group for both the Problem and Competence Total score. Whereas differences between Language delay group and matched control were significant on Competence score only and no significant differences were found between the premature and matched control group.

Sensitivity and Specificity of the BITSEA

In order to analyze the sensitivity and specificity of the BITSEA, a sample of children with normal development and a sample with autistic disorder was tested with the BITSEA. The BITSEA Competence demonstrated adequate sensitivity to 100% of those with autistic disorder. 9.1% of the normal developing children were misidentified as having autism. With the Problem scores, 97% of normally developing children were identified as normally developing whereas 63.3% of children with autism were correctly identified as having autistic disorder. According to authors, this would suggest that the BITSEA demonstrates excellent **sensitivity** and good **specificity** in distinguishing children diagnosed with autistic disorder from a control group.

Publication Information:

The Brief Infant-Toddler Social and Emotional Assessment was developed by Margaret J. Briggs-Gowan and Alice S. Carter. This review is based on the 2006 edition published by PsychCorp: A Brand of Harcourt Assessment.

References:

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