

APPLYING THE INFANT-TODDLER SOCIAL & EMOTIONAL ASSESSMENT (ITSEA) AND BRIEF-ITSEA IN EARLY INTERVENTION

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ABSTRACT: To examine the internal consistency and validity of the Infant-Toddler Social and Emotional Assessment (ITSEA) and Brief-ITSEA (BITSEA) parent-report questionnaires in an early intervention sample. A sociodemographically diverse sample of 192 parents of 11- to 36-month-old children referred to early intervention programs completed surveys containing the ITSEA, BITSEA, and Child Behavior Checklist (CBCL). Parents were interviewed with the Vineland Adaptive Behavior Scales. Evaluators blind to children's status on the ITSEA and BITSEA rated child behavior during developmental assessments. Finally, a subsample of 71 children was administered the Mullen Scales of Early Learning. Findings support the internal consistency of the ITSEA and BITSEA, with the majority of Cronbach's alphas above .70. Supporting validity, ITSEA and BITSEA problem scores correlated significantly with CBCL Internalizing and Externalizing scores ($rs = .28$ to $.78$), as well as with observational ratings of problem behaviors on constructs paralleling the ITSEA domains ($rs = .21$ to $.45$). In contrast, ITSEA Competence and BITSEA Competence demonstrated moderate negative associations with CBCL scores ($rs = -.39$ to $-.43$). Finally, ITSEA Competence and BITSEA Competence correlated significantly with developmental level on the Mullen, Vineland Socialization, and observational ratings of competence ($rs = .25$ to $.43$). Emphasizing the importance of addressing social-emotional issues in early intervention settings, 58.6% of children had high social-emotional/behavioral problems and/or low competence on the ITSEA; 39.8% had high ITSEA Problems and 38.5% had low ITSEA Competence. Results indicate the need to assess social-emotional adjustment in early intervention settings and support the use of the ITSEA and BITSEA for this purpose.

RESUMEN: Resumen Este estudio examina la validez y consistencia internas de la Evaluación Social y Emocional de los Pequeños Infantes (ITSEA) y los cuestionarios de reportes de los padres de la Breve ITSEA (BITSEA) en un grupo muestra de intervención temprana. El socio-demográficamente diverso grupo muestra de 192 progenitores de niños de 11 a 36 meses de edad, los cuales fueron referidos a programas de intervención temprana, completaron encuestas que contenían la ITSEA, BITSEA, y la

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Lista de Comprobación de la Conducta del Niño (CBCL). Los progenitores fueron entrevistados con las Escalas de Adaptación de Conducta de Vineland. Los evaluadores, que desconocían la condición de los niños según ITSEA y BITSEA, les dieron sus puntuaciones a la conducta de los niños durante las sesiones de evaluación del desarrollo. Finalmente, se administró a un subgrupo muestra de 71 niños las Escalas Mullen de Temprano Aprendizaje. Los resultados apoyan la consistencia interna de ITSEA y BITSEA, con la mayoría de las alphas de Cronbach por encima de .70. En apoyo de la validez, los puntajes problemáticos de ITSAE y BITSEA se correlacionaron significativamente con los puntajes de internalización y externalización de CBCL ($r_s = .28$ a $.78$), así como con relación a los puntajes de observación de conductas problemáticas sobre construcciones que van paralelas a los dominios de ITSEA ($r_s = .21$ a $.45$). En contraste, tanto la competencia de ITSEA como la de BITSEA demostraron asociaciones negativas moderadas con los puntajes de CBCL ($r_s = -.39$ a $-.43$). Finalmente, tanto la competencia de ITSEA como la de BITSEA se correlacionaron significativamente con el nivel de desarrollo de las Escalas Mullen, la Socialización de Vineland, y las observaciones de puntajes de competencia ($r_s = .25$ a $.43$). Al enfatizar la importancia de asuntos socio-emocionales en los ambientes de intervención temprana, el 58% de los niños presentó altos problemas socio-emocionales y de conducta y/o baja competencia en la ITSEA; 39.8% presentó altos problemas en la ITSEA y 38.5% tuvo baja competencia en la ITSEA. Los resultados indican la necesidad de evaluar los ajustes socio-emocionales en la temprana intervención, y de apoyar el uso de ITSEA y BITSEA para este propósito.

RÉSUMÉ: Résumé: Le but de cet article était d'examiner la cohérence interne et la validité de l'Évaluation Emotionnelle et Sociale du Nourrisson et du Petit Enfant (abrégé ITSEA en anglais, pour *Infant-Toddler Social and Emotional Assessment*) et la Brève ITSEA (abrégé BITSEA, pour *Brief-ITSEA*) en examinant des questionnaires parentals chez un échantillon d'intervention précoce. Un échantillon, varié du point de vue sociodémographique, consistant en 192 parents d'enfants de 11 à 36 mois envoyés dans des programmes d'intervention précoce ont rempli des sondages contenant la ITSEA, la BITSEA et la Checklist de Comportement de l'Enfant (*Child Behavior Checklist*, abrégé CBCL). Les parents ont eu un entretien avec l'Echelle d'Évaluation du Comportement Adaptif Vineland. Les évaluateurs, sans connaître le statut des enfants concernant l'ITSEA et la BITSEA ont évalué le comportement de l'enfant durant des évaluations de développement. Enfin, un sous-échantillon de 71 enfants a reçu les Echelles Mullen d'Apprentissage Précoce. Les résultats soutiennent la cohérence interne des ITSEA et BITSEA, avec la majorité des alphas de Cronbach au dessus de .70. Soutenant la validité, les problèmes de scores ITSEA et BITSEA étaient en grande corrélation avec les scores d'Internationalisation et d'Externalisation CBCL ($r_s = -.39$ à $.78$) ainsi qu'avec les cotes d'observation de comportements à problèmes sur des concepts parallèles aux domaines ITSEA ($r_s = .21$ à $.45$). Par contre, la Compétence ITSEA et la Compétence BITSEA ont fait montré des associations négatives avec les scores CBCL ($r_s = -.39$ à $-.43$). Enfin, la Compétence ITSEA et la Compétence BITSEA étaient en grande corrélation avec le niveau de développement sur l'Echelle Mullen, la Socialisation Vineland, et les évaluations observationnelles de compétence ($r_s = .25$ à $.43$). Cela met en évidence l'importance qu'il y a à aborder les problèmes socio-émotionnels dans l'intervention précoce: 58,6% des enfants avaient des problèmes socio-émotionnels et des problèmes de comportement et/ou une faible compétence à la ITSEA; 39,8% avaient des Problèmes ITSEA élevés et 38,5% avait une compétence ITSEA basse. Les résultats indiquent le besoin qui existe d'évaluer l'ajustement socio-émotionnel dans l'intervention précoce et soutiennent l'utilisation des ITSEA ET BITSEA dans ce but.

ZUSAMMENFASSUNG: ZUSAMMENFASSUNG Um die interne Konsistenz und die Validität des Fragebogens für Kleinkinder im Bezug auf Soziales und Emotionales (ITSEA) und des Kurzfragebogens (BITSEA) bei einer Frühförderungsgruppe zu testen. Eine Stichprobe mit unterschiedlichem soziodemografischem Herkommen, die aus 192 Eltern von 11 – 36 Monate alten Kindern bestand, die zu einem Frühförderungsprogramm geschickt worden waren, füllten den ITSEA und den BITSEA und den Kinderverhaltensbeobachtungsbogen (CBCL) aus. Die Eltern wurden mittels des Vineland Anpassungs-

verhaltenfragebogens befragt. Die Auswerter kannten nicht die Ergebnisse des ITSEA und des BITSEA während der Entwicklungsuntersuchung. Zuletzt wurde bei einer Stichprobe von 71 Kindern der Mullen Fragebogen zum frühen Lernen angewandt. Die interne Konsistenz des ITSEA und des BITSEA wurden mehrheitlich mittels des Cronbach $\alpha > .70$ gefunden. Die Validität wurde mittels des Vergleichs des ITSEA und des BITSEA erhoben und es korrelierten die Problemergebnisse des CBCL signifikant bei den internalisierenden und externalisierenden Ergebnissen ($r_s = .28$ bis $.78$), als auch bei den Ergebnissen der Beobachtung oder Konstrukten, die die ITSEA Fragestellungen parallelisierten ($r_s = .21$ bis $.45$). Demgegenüber zeigten ITSEA und BITSEA Kompetenz mittelstarke negative Assoziation mit CBCL Ergebnissen ($r_s = -.39$ bis $-.43$). Zuletzt korrelierte die ITSEA und BITSEA Kompetenz signifikant mit dem Entwicklungsstand der Mullen und der Vineland Sozialisation und den Beobachtungsergebnissen bezüglich Kompetenz ($r_s = .25$ bis $.43$). Wenn man auf die Bedeutung der Wahrnehmung sozialer, emotionaler, und Verhaltensproblemen bei der Frühförderung eingeht, so hatten 58,6% der Kinder starke sozial-emotionale Verhaltensprobleme und/oder eine geringe ITSEA Kompetenz; 39,8% hatten starke ITSEA Probleme und 38,5% hatten geringe ITSEA Kompetenz. Die Ergebnisse weisen auf die Notwendigkeit hin die sozial-emotionale Anpassung bei frühen Interventionen zu untersuchen und unterstützen die Verwendung des ITSEA und des BITSEA zu diesem Zweck.

抄録：早期介入プログラムの参加者を対象として、親の報告する質問紙である乳幼児社会情緒的評価the Infant-Toddler Social and Emotional Assessment (ITSEA)とその短縮版Brief-ITSEA (BITSEA)が、内的一貫性と妥当性を検証するために実施された。早期介入プログラムに紹介された、社会人口統計学的に多様な対象である192人の11から36か月児の親は、ITSEA, BITSEAと子どもの行動チェックリスト(CBCL)を含む調査を終えた。親たちはバインランド適応的行動尺度the Vineland Adaptive Behavior Scalesを用いて面接された。評価者は、発達評価の間、ITSEAとBITSEAでの子どもの状態の予備知識を持たなかった。最後に、対象の中の71人の子どものために、ミューレン早期学習尺度the Mullen Scales of Early Learningを実施した。結果から、ITSEAとBITSEAの内的一貫性は、クローンバックの α の大多数が.70以上で、支持された。妥当性を支持する所見として、ITSEAとBITSEAの問題評価点は、CBCLの「内在化」および「外在化」評価点に有意に相関していた($r_s = .28$ から $.78$)。また、理論構成上ITSEAの領域と同等である問題行動の観察評価とも、相関していた($r_s = .21$ から $.45$)。それに対して、ITSEAの「能力Competence」とBITSEAの「能力」は、CBCLの評価点と中等度の逆相関を示した($r_s = -.39$ から $-.43$)。最後に、ITSEAの「能力」とBITSEAの「能力」は、ミューレン、バインランドの「社会化 Socialization」の発達レベルと、能力の観察評価に有意に相関していた($r_s = .25$ から $.43$)。早期介入の設定における社会—情緒的問題に注目することの重要性を強調して、58.6%の子ども達がITSEAにおいて社会—情緒的／行動上の問題が高く、そして／あるいは能力が低かった。また、39.8%の子どもはITSEA「問題」評価点が高く、38.5%の子どもはITSEA「能力」評価点が低かった。結果から、早期介入の設定で社会情緒的適応能力を評価する必要性が示され、この目的のためにITSEAとBITSEAを使うことが支持される。

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In the past two decades, there has been a marked increase in the recognition that mental health problems are present in early childhood and warrant intervention (Zeanah, 2000). Notably, the Individuals with Disabilities Education Act (National Dissemination Center for Children with Disabilities, 1997) mandates early intervention services for children from birth to 3 years of age who have developmental delays or are considered to be at risk for developmental delays. In addition to increasing awareness of the presence of social-emotional/behavioral problems in young children are new methods for the assessment of these problems in young children (DeCarmen & Carter, 2004) and a growing recognition of the importance of employing comprehensive multidomain assessments (e.g., Carter, Briggs-Gowan, & Davis, 2004). Comprehensive assessment is essential for identifying all areas in which intervention is warranted, as well as for documenting the efficacy of intervention. Knowledge of a child's overall social-emotional adjustment can have important implications for treatment planning and approach. Addressing social-emotional and behavior problems and delays in the acquisition of competence may improve the early intervention provider's ability to meet a child's needs in other domains of functioning. For example, oppositional and socially withdrawn children may be less amenable to intervention (Carter & Briggs-Gowan, 2006). In addition, by assessing competencies, it may be possible to identify strengths that can be capitalized on during the treatment process (Carter et al., 2004). However, there is substantial variability across state early intervention systems in the assessment tools employed, needs identified, and services delivered (Hebbeler & Mallik, 2005). Consequently, infants and toddlers receiving early intervention services may have social-emotional/behavioral problems or delays in the acquisition of social competencies that are either not identified or not addressed therapeutically (Horwitz, Gary, Briggs-Gowan, & Carter, 2003; Hebbeler & Mallik, 2005).

Until relatively recently, progress in identifying and treating early social-emotional problems was impeded by a lack of measures of social-emotional adjustment in infants and toddlers. In the past decade or so, several measures of social-emotional adjustment have been developed and may be incorporated into assessment protocols used by early intervention systems. Measures may function differently, however, when used with children with developmental delays than when used with children without delays. Social-emotional/behavioral problems may manifest differently in children with developmental delays than in typically developing children. For example, Irwin, Carter, and Briggs-Gowan (2002) found that toddlers with expressive language delays evidenced greater depression/withdrawal, lower social relatedness, and lower imitation/play and compliance than mental age matched controls. Thus, it is important that tools demonstrate acceptable reliability and validity, not only when used in normative populations, but also when used with children enrolled in early intervention systems. In this paper, the reliability and validity of two related tools, the Infant-Toddler Social and Emotional Assessment (ITSEA, Carter, Briggs-Gowan, Jones, & Little, 2003; Carter & Briggs-Gowan, 2006) and the Brief-ITSEA (BITSEA, Briggs-Gowan, Carter, Irwin, Wachtel, & Cicchetti, 2004; Briggs-Gowan & Carter, 2006), are examined in a diverse sample of children from early intervention settings.

The ITSEA and the BITSEA were developed as developmentally sensitive tools to measure social-emotional and behavioral problems in children ages 12–36 months (Briggs-Gowan & Carter, 1998; Carter et al., 2003; Carter & Briggs-Gowan, 2006). The ITSEA is designed as a comprehensive, multidomain, adult-report assessment of social-emotional/behavioral problems and competencies. It is comprised of 169 items that fall along three broad problem domains (Internalizing, Externalizing, and Dysregulation) and a Competence domain. Mul-

multiple subscales are included within both the problem and competence domains, which are intended to provide insight into a child's functioning within specific areas of functioning. In addition, there are three item clusters—Maladaptive, Atypical, and Social Relatedness—which are comprised of relatively rare, but clinically significant problem behaviors. In contrast to the comprehensive ITSEA, the BITSEA is designed as a brief, time-efficient screening tool and comprises 42 problem and competence items from the ITSEA. The BITSEA is intended as a first-stage screen for identifying children who, according to parental reports, exhibit elevated levels of problem behaviors or low levels of competence, and may benefit from additional follow-up assessment to determine whether clinically significant difficulties are present.

Two types of problem behaviors are included in the ITSEA and BITSEA (Briggs-Gowan & Carter, 2006; Carter & Briggs-Gowan, 2006). The first type comprises those behaviors that occur as part of typical development, such as aggression, fear, or sadness. These behaviors can be problematic when they are exhibited very frequently or with great intensity, or on the contrary, when the frequency or intensity of the behavior is much less than would be expected. The second type of problem behavior is comprised of behaviors that are never developmentally appropriate, such as those seen in children with autism (e.g., hand flapping or odd hand movements).

In addition to social-emotional and behavior problems of frequency, intensity, and deviance, children may be at risk because of developmental delays in the social-emotional domain (Briggs-Gowan & Carter, 1998; Carter et al., 2003; Carter & Briggs-Gowan, 2006). An understanding of a child's social-emotional competencies is crucial because children who lack mental-age appropriate social-emotional skills may have greater difficulty meeting new developmental demands (Cicchetti, 1993), and may also be at elevated risk for social-emotional problems (Cicchetti & Cohen, 1995; Denham & Holt, 1993; Denham, McKinley, Couchoud, & Holt, 1990; Hay, Castle, Stimson, & Davies, 1995). For these reasons, the ITSEA and BITSEA also were designed to measure children's competence and allow the identification of children with delays in acquiring social-emotional competencies or abilities. In the ITSEA and BITSEA, "social-emotional competence" refers to behaviors that reflect the achievement of mental-age appropriate milestones in social-emotional development. Thus, competencies include a range of abilities that have been identified in young children, such as sustained attention, compliance, empathy, mastery motivation, and prosocial peer interactions (Eckerman, Davis, & Didow, 1989; Eisenberg & Mussen, 1989; Radke-Yarrow & Zahn-Waxler, 1984; Ruff, Lawson, Parrinello, & Weissberg, 1990; Saarni, 1988; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992).

Several sources informed the development of the ITSEA and BITSEA, including developmental and psychopathology literature reviews, evaluations of measures available for older children, and diagnostic systems available for both older and younger children, including the Diagnostic and Statistical Manual–IV (American Psychiatric Association, 1994) and the Diagnostic Classification System for 0–3 (DC: 0–3, Zero to Three, National Center for Infant, Toddlers, and Families, 1994). These comprehensive reviews of literature and theory for younger and older children were undertaken in order to ensure that the measures would include behaviors that might indicate early psychopathology or be markers for later psychopathology. On the basis of these reviews, the following three problem domains were identified for inclusion: *Internalizing*, *Externalizing*, and *Dysregulation* (Briggs-Gowan & Carter, 1998; Carter et al., 2003; Carter & Briggs-Gowan, 2006). The inclusion of the Internalizing and

Externalizing domains was founded in Achenbach's (1966) extensive work with older children and on a growing consensus that problems in these domains are present in early childhood. The Internalizing domain is intended to capture symptoms of anxiety and depression, as well as more temperamentally based difficulties with inhibition to novelty. The Externalizing domain is designed to address behaviors that may be early manifestations of disruptive behavior disorders and thus includes overactivity, aggression, and defiance. The Dysregulation domain was developed to provide coverage of symptoms addressing eating and sleeping problems, negative emotionality, and sensory activities, providing coverage of symptoms included in the criteria for regulatory disorders in the DC:0-3, such as sleep and feeding disorders and regulatory disorders involving problems in mood regulation.

The reliability and validity of the ITSEA, and more recently the BITSEA, have been examined in several prior studies (Briggs-Gowan & Carter, 1998; Briggs-Gowan et al., 2004; Briggs-Gowan & Carter, 2006; Carter et al., 2003; Carter & Briggs-Gowan, 2006; Carter, Little, Briggs-Gowan, & Kogan, 1999). The first study conducted in developing the ITSEA was a small nonreferred sample of children from a sociodemographically diverse pediatric sample (Briggs-Gowan & Carter, 1998). In this sample, the ITSEA demonstrated acceptable internal consistency and test-retest reliability, as well as validity when compared with results on parent-report measures of parenting stress and problem behaviors. In a second study, which focused on a sample of 12-month-olds, mothers' reports on the ITSEA were significantly associated with several observed indices of social-emotional functioning, such as attachment security, mastery motivation, and emotion regulation (Carter et al., 1999). The most comprehensive of these studies (Carter et al., 2003) demonstrated that the ITSEA has acceptable factor structure, test-retest reliability, inter-rater reliability, and validity when used in a representative, sociodemographically diverse birth cohort sample of approximately 1200 children residing in urban and suburban areas (for specifics on reliability and validity, please see Measures section). It was in this birth cohort sample that the BITSEA screener was first developed (Briggs-Gowan et al., 2004). Similar to the ITSEA findings, results indicated that the BITSEA has appropriate reliability and validity (see Measures section). Recent research have provided national norms for these measures. And finally, very recent research has provided national norms for these measures (Briggs-Gowan & Carter, 2006, Carter & Briggs-Gowan, 2006.)

Although these past studies provided consistent support for the reliability and validity of the ITSEA and BITSEA, they did not address the appropriateness of these measures when employed with children who have been referred for early intervention services. Given that the ITSEA and BITSEA were explicitly designed for use in early intervention settings, it is essential to examine whether they are appropriate for use with children who have been referred to the early intervention system for developmental assessment. The aims of this study are to examine whether, when used in early intervention, these tools (1) are acceptable to parents, (2) have acceptable factor structure, and (3) have acceptable validity. A final aim is to examine the rates of social-emotional/behavioral problems and delays in competence in a sample of children referred for early intervention services. Acquisition of evidence confirming that these tools are psychometrically sound will support their use in early intervention settings and provide tools that may be integrated into screening and assessment protocols in early intervention programs.

METHOD

Participants

Subjects in this study were parents of 11- to 36-month-old children who had been referred for evaluation to one of several state early intervention programs, which provide evaluation and intervention services to an urban and suburban region of a Northeastern state. Children referred to early intervention were eligible for the study, provided that they did not have known global cognitive delays and their parent was able to complete the ITSEA in English. A total of 312 subjects were invited into the study. Of these, 236 participated (75.6%). After participation, 37 participants were excluded: 1 due to global cognitive delays, 4 due to sibling participation in the sample, and 32 due to the presence of autism spectrum disorders. Finally, 7 subjects were excluded because the child was older than 36 months of age at the time of participation.

The final sample comprised 49 girls (25.52%) and 143 boys (74.5%). Sixty-eight children (35.4%) were 11- to 23-month-olds and 124 (64.5%) 24- to 36-month-olds. The mean child age was 26.1 months ($SD=6.1$). In all, 38.0% were first born, 9.4% were middle children, and 52.6% were the youngest. Most respondents were mothers (84.9%) and most were married (74.5%). The mean age of mothers was 32.9 years ($SD=8.7$), while that of fathers was 35.5 years ($SD=7.4$). The sample was ethnically heterogeneous, with 56.3% Caucasian, 21.9% African-American, 16.15% Hispanic, and 5.72% Other Minority. In all, 43.1% of mothers had a high school diploma or less, while 37.1% of fathers had a high school diploma or less. Annual household income ranged from \$2,940 to \$274,000 ($MN=\$46,430$, $MD=\$31,350$); approximately 12% had incomes below \$10,000. The highest income quartile was above \$63,000 and the lowest was below \$16,000. In all, 27.7% of families were poor, 23.9% of families were borderline poor, and 48.4% were nonpoor.

Results on the Vineland Adaptive Behavior Scales Composite indicate that the mean standard score in this sample was 83.8 ($SD=11.6$). Scores ranged from 54.0 to 118.0 and only 13 children had standard scores of 100 or higher. In addition, 114 (62.3%) of children had productive vocabulary scores in the lowest 10th percentile on the MacArthur Communicative Development Inventory (MCDI).

Procedure

Early intervention providers introduced the study to families and, with parental permission, provided contact information to the research staff. Research staff then formally invited families to participate in the study via telephone and mail. When telephone contact was not possible, families were contacted in person by research staff who visited their homes. Parents who declined participation were not contacted further. Participation involved completing a parent survey booklet and an interview about the child's adaptive behavior (the Vineland Adaptive Behavior Scales). The interview was conducted either in person or by telephone. Early intervention providers completed rating forms summarizing the child's problems and competencies, based on their own observations of the child and independent of parental ratings of child behavior. For a subsample of children ($n=71$), in-person visits were con-

ducted, which involved developmental assessments of the child. Informed consent procedures were followed with all families. All procedures were approved by the institutional human subjects review board.

MEASURES

ITSEA

The ITSEA questions are rated on the following scale: (0) Not true/rarely, (1) somewhat true/sometimes, and (2) very true/often. A *No opportunity* code allows parents to indicate that they have not had the opportunity to observe certain behaviors (e.g., peer interactions). The ITSEA is written at about a sixth-grade reading level (Flesch, 1974). Completion requires approximately 30 minutes. To minimize response set biases, problem and competence items are interwoven throughout the ITSEA. As reported by Carter and her colleagues (Carter et al., 2003; Carter & Briggs-Gowan, 2006), the ITSEA subscales and domains have established acceptable internal consistency (Cronbach's alphas from .59 to .90, $MN=.75$) as well as test-retest reliability (*Intraclass Correlation Coefficients [ICCs]* = .69 to .90) and mother-father agreement ($ICCs=.43$ to .79). The ITSEA Problem domains and subscales have been shown to have low to moderate correlations with parental reports of social-emotional/behavioral problems on the Child Behavior Checklist (CBCL), as well as with independent observational ratings of problem behaviors. The ITSEA Competence domain and subscales have been shown to increase with child age and to correlate with children's language level, adaptive functioning, and observed social-emotional competence. For the four broad domains, *T* scores were initially developed in the birth cohort sample and are now available from the national standardization sample (Carter & Briggs-Gowan, 2006). *T* scores ≥ 63 are interpreted as *of concern*, indicating the presence of problems that warrant additional clinical follow-up and may be of clinical concern. At the subscale level, cutpoints have been established that indicate scores that are in the top 10% of problems or lowest 10% of competence scores in the birth cohort. *T* scores and cutpoints are set within 6-month age bands by child's sex.

BITSEA

The BITSEA comprises 42 items that are drawn from the longer ITSEA (Briggs-Gowan et al., 2004; Briggs-Gowan & Carter, 2006). The BITSEA comprises a 31-item Problem Scale and an 11-item Competence Score. The BITSEA has moderately acceptable internal consistency (Cronbach's $\alpha=.79$ for Problems and .65 for Competence), and very good test-retest reliability ($ICC=.87$ and .85) and inter-rater agreement between parents ($ICC=.68$ and .61, respectively). Similar to the findings for the ITSEA, BITSEA Problem scale and Competence scales have demonstrated validity relative to parental reports of problems on other measures, as well as in relation to independent ratings of child problems and competencies. BITSEA screening cutpoints are designed to broadly capture children with potential problems that merit additional follow-up and/or assessment. The Problem cutpoint is designed to identify children with scores at or above the 75th percentile in the normative birth cohort. The Competence cutpoint is designed to identify children with scores in the lowest 10th–15th percentile relative

to the birth cohort. These cutpoints have demonstrated very good sensitivity and specificity relative to other measures of child problems, such as the CBCL (Briggs-Gowan et al., 2004).

Acceptability of the ITSEA

To assess parents' experiences of the ITSEA, parents indicated which of a list of mood states they had experienced while answering the ITSEA (e.g., interested, calm, happy, pleased with their child, bored, tired, anxious, etc.). Parents also were asked to indicate whether they would consider recommending the ITSEA to a friend and ease of question comprehension (on a 5-point scale from "very easy" to "very hard").

Child Behavior Checklist for 1½-5

The CBCL 1½-5 (Achenbach & Rescorla, 2000) is comprised of 113 items and consists of Internalizing, Externalizing, and Total Problem domains. This measure has demonstrated very good 8-day test-retest reliability ($r=.68$ to $.92$, mean $r=.84$), cross-informant agreement (mean mother-father $r=.61$, mean parent-child care $r=.65$), and success in discriminating between referred and nonreferred children. The CBCL 1½-5 was completed by parents of children who were 18 months or older. Cutpoint scores, reflecting T scores at or above 63 in the published norm sample, were employed in categorical analyses.

Parenting Stress Index Short Form (PSI/SF)

The 12-item Difficult Child (DC) domain of the PSI/SF (Abidin, 1990) taps whether a child is easy versus difficult to manage, and has been linked to behavior problems in 2-year-olds. It has shown high internal consistency ($\alpha=.85$) and good test-retest reliability ($r=.78$).

Vineland Adaptive Behavior Scales for Children: Expanded Form

The Vineland Adaptive Behavior Scales (Sparrow, Balla, & Cicchetti, 1984) measures personal and social sufficiency across four domains, including Communication, Daily Living Skills, Socialization, and Motor Skills. This semistructured interview was normed in a carefully selected national standardization sample and has excellent levels of internal reliability for each domain ($ICC > .95$). The Vineland Socialization, Communication, and Daily Living Skills domains were included to evaluate the validity of ITSEA and BITSEA Competencies. Standard scores, which have a mean of 100 and standard deviation of 15, were calculated using published norms. T scores below 78 are 1.5 standard deviations below the mean.

The Infant Mullen Scales of Early Learning

The Infant Mullen Scales of Early Learning ([Infant MSEL] Mullen, 1995) is a comprehensive scale of early mental and motor ability for children. It has a strong theoretical base in neurodevelopment and intrasensory and intersensory learning and assesses both visual and language abilities at both receptive and expressive levels. The Infant MSEL is divided into the following five scales: Gross Motor Base, Visual Receptive Organization, Visual Expressive

Organization, Language Receptive Organization, and Language Expressive Organization. The MSEL also provides a composite score that is based on the four mental scales. The MSEL was standardized on a nationally representative sample and psychometric properties are adequate. *T*-scores, which have a mean of 50 and standard deviation of 10, were calculated using norms available from the publisher.

MacArthur Communicative Development Inventory Short Form (MCDI-SF)

This parent-report vocabulary checklist was developed from the longer MCDI, which has shown excellent reliability and good validity relative to standardized assessments (Fenson et al., 1993). Three age-based levels of the MCDI-SF (Dale, Reznick, & Thal, 1998; Fenson et al., 2000) were used (12–17 months, 18–29 months, >30 months). The two younger levels have correlated highly with the full MCDI ($r=.97, .98$) and have excellent reliability ($r=.97-.99$) (Fenson et al., 2000). The oldest level has correlated moderately ($r=.63$) with standardized language assessments. Scores below the 10th percentile by age and sex reflect delayed productive vocabulary.

Evaluator Ratings of Child Problems and Competencies

The rating system employed was reported in detail by Carter and colleagues (2003). Evaluators rated the presence of problem behaviors on a 4-point scale from 0=No Problem to 3=Definite Problem. Nine competencies were rated along a 7-point scale, from 1=Definite Problem to 7=Definite Competence. Ratings were averaged within the Externalizing, Internalizing, Dysregulation, and Competence areas. The Externalizing score was computed as the mean of ratings on the following behavior problem descriptions: Overactivity, Peer Aggression, Aggression/Defiance, and Behavior Problems. The Internalizing score was based on ratings of Depression/Social Withdrawal, Inhibition/Extreme Shyness, and Anxiety/Fears. Dysregulation was comprised of ratings of Negative Emotionality, Unusual Sensory Sensitivities, and Eating. The Competence score was the mean of ratings on Compliance, Attention Skills, Persistence/Enjoyment of Challenging Activities, Imitation/Pretend Play, Prosocial Peer Interactions, Empathy, and Awareness of Others' Emotions. Inter-rater reliability in 40 children referred for early intervention over a period of approximately 5 weeks ($MN=35.7$ days, $SD=48.5$ days) was good ($r=.56$ for Internalizing to $.72$ for Dysregulation, Mean $r=.66$).

Analytic Plan

The internal consistency (or "internal reliability") of a scale reflects how well items cluster together in measuring a latent construct. Cronbach's alpha was examined in the overall sample, using Confirmatory Factor Analysis, which provides a method for testing *a priori* hypotheses about the content of scales. Confirmatory Factor Analysis requires five subjects per item in a scale, thus, power constraints prevent examination of factor structure within individual age or sex groupings (Marsh, Hau, & Balla, 1997; Marsh & Hau, 1999). A Cronbach's alpha (Cronbach, 1951) of .70 or higher is considered to reflect acceptable internal consistency (Nunnally, 1978). Alphas of .60–.69 are "marginally acceptable." Item factor loadings of .30 or greater are considered acceptable. Analyses were conducted using the

reliability component of SAS.

To test the validity of the ITSEA and BITSEA, several approaches were employed. First, correlations between domains and scales of the ITSEA and BITSEA were examined to test whether the domains were relatively independent of one another, which would support the validity of the factor structure. Second, associations between ITSEA domains and scales and other measures of problems and competencies, such as the CBCL 1.5-5, independent ratings of problems and competencies, and results of developmental assessments, were examined. Specifically, the CBCL and evaluator ratings of problem behaviors are both included as measures of emotional/behavioral problems. The Vineland Adaptive Behavior Scales Socialization domain is included as a measure of social skills, with the expectation that children with greater social skills will have higher scores on the ITSEA and BITSEA Competence measures. Another means of validating the ITSEA and BITSEA Competence constructs is through associations with evaluator ratings of observed child competence. In addition, child temperament is included as a validating construct, with the expectation that children with more difficult temperaments, measured with the PSI Difficult Child, will tend to have greater problems on the ITSEA and BITSEA.

Finally, rates of problems will be examined. The cutpoints employed to define presence of problems follow guidelines recommended by the authors of the CBCL and ITSEA (i.e., *T* scores of 63 or higher), as described in the Measures section. Delay on the Vineland was defined as 1.5 standard deviations below the mean in order to mirror eligibility criteria often employed in early intervention settings, namely, delay or deviance at 1.5 standard deviations below the mean in two or more areas.

RESULTS

In most analyses, a significance level of .01 was used to minimize the likelihood of chance findings. Analyses were conducted in Statistical Analysis System (SAS) software VERSION 9.1 (SAS Institute Inc., 2003).

Acceptability

The majority of parents (84.3%) found the ITSEA questions *easy* or *very easy* to understand. Very few (0.5%) felt the questions were *hard* or *very hard* to understand. Nearly all parents (96.9%) reported one or more positive mood(s) while answering the ITSEA. The most commonly reported positive moods were *Interested* (81.8%), *Calm* (60.9%), and *Proud* (57.3%). Approximately one-third of the parents (33.9%) endorsed one or more negative mood. The three most commonly endorsed negative moods were *Worried about this child* (15.6%), *Tired* (10.9%), and *Anxious* (8.9%). Notably, most parents (69.1%) indicated they would recommend the ITSEA to a friend, 24.1% “might” recommend it, and relatively few (6.8%) would not recommend the ITSEA.

Factor Structure

Examination of the internal consistency of the ITSEA subscales revealed that all of the overall domains had high internal consistency and the majority of the subscales had good or very

TABLE 1. Internal Consistency and Factor Loadings of the ITSEA Scales (N=192)

	# Items	Cronbach's alpha	Loadings mean	(SD)
Internalizing domain	30	.82	.33	(.11)
Depression/withdrawal	9	.70	.37	(.11)
General anxiety	10	.70	.36	(.09)
Inhibition to novelty	5	.68	.44	(.08)
Separation distress	6	.71	.45	(.15)
Externalizing domain	24	.90	.49	(.09)
Activity/impulsivity	6	.75	.49	(.07)
Aggression/defiance	12	.82	.48	(.11)
Aggression with peers	6	.79	.54	(.09)
Dysregulation domain	34	.87	.38	(.12)
Eating problems	9	.82	.52	(.09)
Sleep problems	5	.71	.47	(.15)
Negative emotionality	13	.87	.55	(.14)
Sensory sensitivities	7	.62	.33	(.11)
Competence domain	37	.92	.47	(.07)
Attention	5	.73	.49	(.09)
Compliance	8	.78	.48	(.09)
Empathy	7	.81	.55	(.05)
Imitation/play	6	.68	.41	(.06)
Mastery motivation	6	.73	.46	(.09)
Prosocial peer relations	5	.70	.46	(.09)
BITSEA problems	30	.84	.36	(.10)
BITSEA competence	11	.70	.35	(.11)

good internal consistency (Table 1). The internal consistency of the Inhibition to Novelty, Sensory Sensitivities, and Imitation/Play subscales was in the marginal range.

Examination of item factor loadings revealed that most factor loadings were acceptable. However, some loadings were below .30. In some cases, these lower loadings appeared to be related to the fact that the items were of relatively infrequent occurrence (occurring in less than 5% of the sample). In the Internalizing domain, most items had acceptable factor loadings on their respective subscale ($r_s = .31$ to $.63$). However, lower loadings were observed for three Depression/Withdrawal items ($r_s = .21$ to $.27$), three General Anxiety items ($r_s = .24$ to $.29$), and one Separation Distress item ($r = .24$). Some of these low loadings are likely due to the fact that the items were endorsed infrequently (e.g., *Feels bad about him/herself* and *Seems to have no energy*). However, the General Anxiety items with low loadings were not rare in occurrence. In the Externalizing domain, all but one item had acceptable factor loadings ($r_s = .35$ to $.69$). This item, *Hurts animals on purpose* ($r = .21$), was relatively rare in occurrence, which may account for its low loading. In the Dysregulation domain, most items had acceptable loadings on their respective subscales ($r_s = .30$ to $.71$). However, one Sleep Problems item had a low loading: *Wants to sleep in someone else's room or bed* was lower ($r = .29$). In addition, several Sensory Sensitivities had low loadings: *Is bothered by loud noises* ($r = .28$), *Dislikes some foods because of how they feel* ($r = .28$), and *Is bothered by being in motion* ($r = .16$).

TABLE 2. Correlations between ITSEA Domains, Item Clusters, and BITSEA Scores

	N	MN (SD)	ITSEA domains and item clusters						BITSEA	
			Ext.	Dys.	Mal.	Atyp.	Soc rel.	Comp.	Prob.	Comp.
ITSEA intern.	191	0.58 (0.26)	.43 [†]	.57 [†]	.35 [†]	.25 ^{***}	.03	-.08	.66 [†]	-.04
ITSEA extern.	191	0.58 (0.36)		.54 [†]	.41 [†]	.20 ^{**}	-.15*	-.22 ^{**}	.76 [†]	-.20 ^{**}
ITSEA dysreg.	191	0.55 (0.28)			.42 [†]	.21 ^{**}	-.09	-.17 [*]	.81 [†]	-.14
ITSEA mal.	191	0.14 (0.16)				.34 [†]	-.11	-.04	.58 [†]	-.10
ITSEA atypical	190	0.37 (0.26)					-.29 [†]	-.25 ^{***}	.35 [†]	-.34 [†]
ITSEA social relate.	191	1.61 (0.27)						.50 [†]	-.10	.61 [†]
ITSEA competence	192	1.17 (0.34)							-.22 ^{**}	.89 [†]
BITSEA problems	190	12.5 (7.8)								-.19 ^{**}
BITSEA competence	191	15.1 (3.7)								-

* $p < .05$. ** $p < .01$. *** $p < .001$. [†] $p < .0001$.

The Competence domain evidenced generally very good internal consistency for both the subscales and the overall domain. All factor loadings in all subscales were acceptable (r s = .33 to .63).

The Maladaptive, Atypical, and Social Relatedness item clusters are not expected to have high internal consistency, because they are comprised of problem behaviors that are both rare in occurrence and often not expected to co-occur with one another. This expectation was supported (α s = .61, .39, and .64, respectively).

The BITSEA Problem and BITSEA Competence scales had acceptable internal consistency. The majority of items had acceptable factor loadings on their respective scale. In addition, the mean of the factor loadings of all items on each of the two scales was acceptable. Eight problem items and two competence items had loadings below .30; several of these items were low base rate (e.g., *Does not make eye contact* and *Gags or chokes on food*).

Validity

The pattern of correlations between the ITSEA domains and BITSEA scales provided support for their validity by showing relative independence of most domains and scales (Table 2). The ITSEA Internalizing, Externalizing, and Dysregulation domains evidenced low to moderate correlations with one another, and nonsignificant or low negative correlations with the Competence domain. Similarly, there was a low negative correlation between the BITSEA Problem and BITSEA Competence scales.

In addition, correlations with other measures consistently supported the validity of the ITSEA and BITSEA (Table 3). ITSEA and BITSEA Problems correlated significantly with measures of child emotional/behavioral problems. ITSEA and BITSEA Competence were significantly associated with measures of social skills, developmental level, and child age. The ITSEA Internalizing, Externalizing, and Dysregulation domains and BITSEA Problem scale all correlated significantly with CBCL 1.5-5 Internalizing, Externalizing, and Total Problem scores, with correlations ranging from .28 to .78. Notably, the pattern of findings suggested some specificity in the constructs measured by the ITSEA, where there was a significantly stronger correlation between ITSEA Externalizing and CBCL Externalizing than between

TABLE 3. *Validity of ITSEA Domains and BITSEA Scales*

Measure	N	MN (SD)	ITSEA domains			BITSEA scales		
			Int.	Ext.	Dys.	Comp.	Prob.	Comp.
CBCL/1.5-5 internalizing	164	8.1 (6.6)	.52 [†]	.46 [†]	.50 [†]	-.39 [†]	.63 [†]	-.41 [†]
CBCL/1.5-5 externalizing	167	12.0 (8.1)	.28 ^{***}	.78 [†]	.49 [†]	-.42 [†]	.68 [†]	-.41 [†]
CBCL/1.5-5 total score	168	30.9 (19.5)	.44 [†]	.72 [†]	.58 [†]	-.42 [†]	.75 [†]	-.43 [†]
PSI – difficult child	191	25.3 (10.1)	.35 [†]	.56 [†]	.58 [†]	-.30 [†]	.63 [†]	-.29 [†]
Evaluator ratings intern.	162	0.22 (0.44)	.25 ^{**}	.09	.19 [*]	-.12	.21 ^{**}	-.14
Evaluator ratings extern.	160	0.67 (0.84)	.07	.39 [†]	.18 [*]	-.14	.32 [†]	-.14
Evaluator ratings dysreg.	112	0.39 (0.59)	.14	.22	.45 [†]	-.16	.37 [†]	-.14
Evaluator ratings comp.	144	0.15 (1.14)	-.15	-.38 [†]	-.23 ^{**}	.25 ^{**}	-.38 [†]	.30 ^{***}
Mullen composite	71	85.0 (18.3)	.01	-.31 ^{**}	-.01	.38 ^{**}	-.20	.36 ^{**}
Vineland comm. (raw)	148	72.9 (31.9)	-.12	-.04	-.09	.41 ^{***}	-.12	.41 ^{***}
Vineland social. (raw)	148	66.5 (17.1)	-.12	-.04	-.09	.41 [†]	-.11	.43 [†]
Vineland daily living (raw)	148	64.0 (24.7)	-.05	.05	-.13	.49 [†]	-.13	.48 [†]

Note. Child age was covaried from validity correlations whenever both variables also correlated with child age, thus testing the association between the two variables controlling for child age.

* $p < .05$. ** $p < .01$. *** $p < .001$. † $p < .0001$.

ITSEA Internalizing and CBCL Externalizing ($r = .78$ vs. $r = .28$, $z = 6.84$, $p < .01$). The ITSEA Internalizing, Externalizing, and Dysregulation domains and BITSEA Problem scale also correlated significantly with the PSI DC scale ($r = .35$ to $.63$).

The ITSEA problem domains also demonstrated low to moderate correlations with independent observational ratings. Moreover, the pattern of correlations further supported the validity and independence of the ITSEA problem domains. In nearly every comparison, a given ITSEA domain correlated significantly more strongly with the parallel construct of the Evaluator Ratings than with other constructs of the Evaluator Ratings. For example, the ITSEA Externalizing domain was significantly more strongly associated with Evaluator Ratings of Externalizing Problems than with Evaluator Ratings of Internalizing Problems or Dysregulation Problems ($r = .39$ vs. $.09$ and $.22$, $z = 1.50$ to 2.85 , $p < .05$). This pattern held for all correlations between the ITSEA problem domains and Evaluator Ratings of Problems ($z = 1.65$ to 2.85 , $p < .05$), except for the correlation between the ITSEA Internalizing Domain and Evaluator Ratings of Internalizing and Dysregulation Problems, which were comparable to one another.

The results further supported the validity of ITSEA Competence and BITSEA Competence. Both competence variables correlated significantly with Evaluator Ratings of Competence ($r = .25$ and $.30$, respectively). In addition, parent-reported ITSEA Competence and BITSEA Competence correlated moderately with children's abilities on the Vineland Socialization, Communication, and Daily Living Skills domains ($r = .41$ and $.49$). And finally, in the subgroup of children who were assessed with the Mullen Scales of Early Learning, ITSEA and BITSEA Competence correlated significantly with children's overall developmental level ($r = .38$ and $.36$, respectively).

TABLE 4. Rates of Social-Emotional/Behavioral Problems and Low Competence

	<i>N</i>	Problems identified <i>N</i> (%)
Vineland		
Socialization domain	148	54 (36.5%)
Adaptive behavior composite	148	45 (30.4%)
Socialization and/or adaptive behavior	148	46 (41.9%)
CBCL 1.5-5		
Internalizing	164	15 (9.2%)
Externalizing	167	17 (10.2%)
Total score	168	16 (9.5%)
Any domain	168	26 (15.5%)
ITSEA		
Internalizing	191	42 (22.0%)
Externalizing	191	40 (20.9%)
Dysregulation	191	33 (17.3%)
Any problem domain	191	73 (39.8%)
Competence	192	74 (38.5%)
Any problem and/or competence	191	112 (58.6%)
BITSEA		
Problems	190	83 (43.7%)
Competence	191	74 (38.7%)
Problem and/or competence	190	117 (61.6%)

Rates of Social-Emotional Adjustment Problems

In the sample overall, 58.6% of children had high ITSEA Problems (39.8%) and/or low ITSEA Competence (38.5%) (Table 4). When rates on the CBCL were examined, only 15.5% of children had high scores on any CBCL domain. Notably, 100% of children who had high scores on the CBCL also were identified by the ITSEA. Within the 148 children with complete data on both the Vineland and ITSEA, 62 (41.9%) were identified as having low Vineland Socialization and/or low Vineland Adaptive Behavior. When results on the Vineland and ITSEA were examined jointly, 35 children (23.6%) were identified as having problems on both the Vineland and the ITSEA, 26 (17.6%) were identified as having delays in Vineland Socialization/Adaptive Behavior only, and 47 (31.8%) were identified as having high ITSEA Problems and/or low ITSEA Competence only. Overall, 73.0% of children had low scores on the Vineland and/or high problems or low competence on the ITSEA.

DISCUSSION

This study provided an important opportunity to examine the psychometric properties of the ITSEA and BITSEA in an early intervention sample. Establishing the extent to which these measures are appropriate for use in early intervention settings is important, as both measures may be adopted by early intervention providers or other professionals who are working with young children with developmental delays to screen for or describe social-emotional problems

and delays in the acquisition of competence. Consistent with the results obtained in a diverse birth cohort sample (Briggs-Gowan et al., 2004; Carter et al., 2003) and in the national standardization sample (Briggs-Gowan & Carter, 2006; Carter & Briggs-Gowan, 2006), the findings obtained in the early intervention sample supported the acceptability, reliability, and validity of the ITSEA and BITSEA.

Of clear relevance to the appropriateness of these tools for early intervention settings, the questions in the ITSEA (and hence the BITSEA) appear to be very acceptable to parents in this early intervention sample. The majority of parents (84%) reported that the questions were “easy” or “very easy” to understand, and only a small minority (0.5%) found the questions “hard” or “very hard” to understand. Further supporting the acceptability of the measures, 97% of parents reported one or more positive mood while answering the questions. One-third of parents endorsed one or more negative mood. However, given that the most commonly reported negative feelings were “worried about my child,” “tired,” and “anxious” these negative feelings also may be related to having a child in early intervention. And finally, the majority of parents indicated that they “might” or “would” recommend the ITSEA to a friend. Thus, the questions in the ITSEA appear to be well received by parents.

The results supported the factor structure of both the ITSEA and BITSEA. First and foremost, as in the birth cohort sample, all of the ITSEA domains and most of the subscales had acceptable internal consistency and most factor loadings were in the acceptable range. In addition, also consistent with prior work, the BITSEA Problem and Competence scales had acceptable internal consistency. Some of the BITSEA items did have low loadings, but the finding is expected, because both the problem and competence scales include a comprehensive array of behaviors that are not expected to co-occur with one another consistently (Briggs-Gowan et al., 2004).

Although the results for the ITSEA are very consistent with prior work, one finding merits discussion. Specifically, Sensory Sensitivities had marginal internal consistency and three items with low loadings. This mirrors results from the birth cohort sample and indicates that the items do not consistently cluster together. This finding may arise because Sensory Sensitivities addresses several different senses (e.g., motion, sound, light, touch, and taste), yet children may evidence disruptions in some, but not all, areas. Thus, when interpreting results, examining responses to individual questions may help to identify the presence of specific sensitivities, even when the overall subscale score is not especially elevated.

The results consistently supported the validity of the ITSEA and BITSEA. The pattern of correlations between the ITSEA domains indicates that although the Internalizing, Externalizing, and Dysregulation domains correlate with one another, the associations are generally moderate and support the independence of the domains. Moreover, it is apparent that problems and competencies are distinct constructs, as nonsignificant or low negative correlations are consistently observed. This pattern held for the BITSEA as well, with a low negative correlation between the problem and competence scales.

Validity was further supported by strong same-domain correlations between the ITSEA and BITSEA Problem domains and parent report of problems on the CBCL, and modest same-domain correlations with independent observational ratings. Further, evidence of moderate correlations between ITSEA and BITSEA Competence and children’s adaptive behavior on the Vineland and overall developmental level on the Mullen supports their validity in measuring social-emotional competencies that increase with development and with the acquisition of communication and socialization skills. These findings suggest that ITSEA and

BITSEA competence, while associated with communication and socialization skills, as well as with developmental level, also measure aspects of development that are different from those measured by these other tools.

Examination of the rates of problems in the domain of social-emotional functioning in this sample strongly supported the need for comprehensive assessment in early intervention. Nearly 60% of children had high problems and/or low competence according to parent reports on the ITSEA. This is in contrast to 31% with high problems and/or low competence that was observed in the birth cohort sample that was gathered at the same time and in the same region as this early intervention sample. Further, among children with both Vineland and ITSEA data, 73% were identified as having low scores on Vineland Socialization/Adaptive Behavior, high ITSEA social-emotional/behavioral problems, and/or low ITSEA competence. Overall, 40% were identified by the Vineland, leaving the ITSEA to uniquely identify 33% of the children as having social-emotional problems. Results also indicated that a relatively small percentage of children (15%) were identified by the CBCL and that all of those children were also detected by the ITSEA. These findings suggest that a large percentage of children in early intervention settings may exhibit high levels of social-emotional/behavioral problems or delays in social-emotional competence that should be addressed in treatment planning and approach. It also suggests that many parents may be struggling to cope with their children's emotional and behavioral problems, as well as their developmental delays. Addressing the burden and strain that parents are experiencing may enable them to engage more effectively in their children's treatment.

The availability of developmentally appropriate measures for examining early emerging social-emotional and behavior problems and competencies among children who are evidencing developmental delays in cognition, language, and motor functioning hopefully will promote research that will ultimately improve early intervention efforts. Comprehensive and longitudinal assessments of the social-emotional functioning of children with different types of developmental delays may provide important insights into the etiology, course, and response to treatment of social-emotional/behavioral problems and delays in competence. Such insights are likely to have important implications for efforts to intervene effectively with children with cognitive, language, and/or motor delays, as well as with children with problems in social-emotional functioning.

Limitations

This study relied upon a convenience sample of children from early intervention settings. Replication of this study with a representative sample of children in early intervention would be beneficial to ensure that findings from this study are robust. In addition, although the age and sex distribution of children in this study appears similar to the children referred for early intervention in general, replication in a sample that included a greater number of 1-year-olds and girls would strengthen results. Finally, although the ITSEA and BITSEA demonstrated good validity relative to multimethod approaches, the findings cannot address the clinical validity of the ITSEA and BITSEA. Thus, additional work is needed to determine the extent to which children identified by the statistical cutoffs recommended for the ITSEA and BITSEA exhibit clinically significant problems, emotional disturbance, or delays in the acquisition of social-emotional competence.

CONCLUSIONS

The results supported the acceptability, reliability, and validity of the ITSEA and BITSEA for measuring social-emotional/behavioral problems in early intervention settings. Perhaps even more importantly, the results document substantial problems in social-emotional adjustment in an early intervention sample. Unidentified social-emotional/behavioral problems may impede therapeutic progress and place children at risk for persistent and more entrenched social-emotional and behavior problems. These findings highlight the importance of identifying and treating social-emotional/behavioral problems and delays in competence in children receiving early intervention services.

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