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Evidence Base Update for Measures of Social Skills and Social Competence in Clinical Samples of Youth

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Social skills and social competence are key transdiagnostic processes in developmental psychopathology and are the focus of an array of clinical interventions. In this Evidence Base Update, we evaluated the psychometric properties of measures of social skills and social competence used with clinical samples of children and adolescents. A systematic literature search yielded eight widely used measures of social skills and one measure of social competence. Applying the criteria identified by Youngstrom et al. (2017), we found that, with some exceptions, these measures had adequate to excellent norms, internal consistency, and test-retest reliability. There was at least adequate evidence of construct validity and treatment sensitivity in clinical samples for nearly all measures assessed. Many of the scales included items assessing constructs other than social skills and competence (e.g., emotion regulation). Development of updated tools to assess youth's effectiveness in key interpersonal situations, including those occurring online, may yield clinical dividends.

Youth experiencing many forms of psychopathology – from explosive externalizing difficulties to internalized worry and sadness – have difficulty in their interpersonal relationships. These poor social outcomes are often due, at least in part, to difficulties interacting with others effectively, making it vital that both clinicians and researchers have valid and reliable tools for assessing social skills and social competence. In this paper, we review the evidence base for the measures of these constructs that have been used most widely with clinical samples of children and adolescents, with the goals of (a) helping practitioners identify measures that could be used for treatment planning and progress monitoring; (b) informing researchers of the strengths and limitations of available tools; and (c)

highlighting gaps between theory and assessment in the measurement of social skills and competence.

Social Skills and Social Competence: Theory and Measurement

All the major psychological disorders of childhood and adolescence are linked to poor social adjustment, making interpersonal functioning a key transdiagnostic process. It is a potential mechanism for the development and maintenance of different forms of emotional and behavioral dysfunction, and a critical target in an array of interventions, such as Interpersonal Psychotherapy (IPT) for major depressive disorder (MDD; Mufson et al., 2004) and friendship coaching for youth with attention-deficit hyperactive disorder (ADHD; Mikami et al., 2010). The broad construct of interpersonal functioning might be usefully parsed into interpersonal outcomes and interpersonal processes. Outcomes reflect youths' success or struggle in their relationships, and poor adjustment on these indicators may

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confer risk for subsequent maladjustment. Key positive outcomes for youth include having high-quality relationships with friends and siblings (Bagwell & Bukowski, 2018; Dirks et al., 2015) and being well liked or accepted by peers (Prinstein et al., 2018). Negative outcomes include being rejected or disliked by peers (Prinstein et al., 2018), and experiencing victimization or interpersonal stress, such as fights with friends (Juvonen & Graham, 2014; Rudolph et al., 2000). It is these outcomes that clinicians are ultimately trying to change; they want to help youth make friends or end their experience of victimization.

To improve youth's social adjustment, clinicians typically target interpersonal processes, or factors contributing to interpersonal outcomes. Social skills are widely acknowledged as a critical interpersonal process. Although definitions of social skills vary considerably (see Dirks et al., 2007), there is broad consensus that they are interpersonal behaviors associated with positive social outcomes (e.g., McFall, 1982; Nangle et al., 2010). Here, we limit our definition of social skills to behavior, excluding upstream processes that may facilitate positive actions; for example, we do not include social-cognitive or emotional skills (e.g., recognition or regulation).

Assessments used to measure social skills typically take one of two approaches. First, they may cover a variety of behaviors that contribute to positive social interactions. For example, the widely used Social Skills Improvement System (SSIS; Gresham & Elliot, 2008) includes items assessing several types of behavior, such as assertion and cooperation. Alternatively, researchers and clinicians may focus on one type of positive behavior. For example, the Strengths and Difficulties Questionnaire (Goodman, 1997) has a Prosocial subscale, which assesses the extent to which youth help, share, and are considerate of others. Behaving prosocially with peers is associated with many positive interpersonal outcomes (see Dirks et al., 2018), and as such, knowing how frequently youth engage in prosocial actions might be considered an index of social skill. Similarly, there are measures such as the Child Assertive Behavior Scale (Michelson & Wood, 1982) that focus on assertive behaviors (e.g., denying an unreasonable request), which have also been linked to positive interpersonal adjustment (e.g., Hopmeyer & Asher, 1997).

Measuring social skills will provide important information about youth's abilities; however, knowing how often youth engage in specific behaviors may be insufficient to affect meaningful change in their interpersonal lives. Behaviors are not uniformly efficacious; rather, the effectiveness of a given behavior will depend on the situation in which it occurs. For instance, prosocial behaviors are often effective; if a friend is crying, many would agree that comforting them is the best response. But in other circumstances, a prosocial strategy may not be competent. For example, in situations in which a peer has made an unreasonable request, youth judge resistance more positively than compliance (Shaw & Wainryb, 2006). Thus, it is not necessarily the case that

engaging in prosocial behavior frequently will be associated with interpersonal success. In addition, the efficacy of a behavior will depend, in part, on the person who is acting. For example, assertive strategies are viewed by youth and teachers as an effective way to respond to peer provocation (Dirks et al., 2010); however, these responses do not work as well for youth who are seen as aggressive (Dirks et al., 2017). For these reasons, knowing about the behaviors in which youth engage will not necessarily provide insight into their social competence.

Like social skills, social competence has many definitions; there is, however, consensus that the term refers to efficacy in interpersonal interactions (see Dirks et al., 2016; Rose-Krasnor, 1997). As such, social competence links social skills and social outcomes; social skills are behaviors that contribute to interpersonal efficacy, and this efficacy, in turn, predicts social success. It is now recognized that social competence is usefully measured with respect to key social tasks, such as responding to peer provocation or managing conflict with friends (e.g., Dirks et al., 2007; Dirks et al., 2016; Nangle et al., 2010; Rose & Asher, 2017). This approach provides at least two important advantages. First, the behavior of children and adolescents shows marked situational specificity, such that knowing how youth respond in one situation may not tell us how they will respond in different circumstances (see Dirks et al., 2007; Dirks et al., 2016). For this reason, mapping how youth respond in key interpersonal situations will provide the most useful information about social performance. Second, obtaining detailed information about youths' management of specific scenarios will provide precise targets for intervention. Measures like the Taxonomy of Problematic Social Situations (TOPS; Dodge et al., 1985) assess youth's effectiveness in interpersonal situations.

Given the well-documented role of social skills and social competence in the maintenance of psychopathology, there is a basic need for valid and reliable tools assessing these constructs. Recent reviews of assessments of social functioning have focused on typically developing samples (e.g., Cordier et al., 2015; Crowe et al., 2011; Humphrey et al., 2011; Matson & Wilkins, 2009). In this paper, which is part of the assessment-focused Evidence Base Update Series (De Los Reyes & Langer, 2018), we evaluated the evidence base for measures of social skills and social competence in clinical samples. We first identified the most commonly used measures of social skills and social competence, then applied the criteria developed by Hunsley and Mash (2008) and subsequently extended by Youngstrom et al. (2017) to evaluate each measure (see Table 1).

METHOD

Measure Identification

To identify measures of social skills and competence used in clinical samples, we utilized a two-part search strategy.

TABLE 1
Criteria for evaluating norms, reliability, validity, and utility (Hunsley & Mash, 2008, extended by Youngstrom et al., 2017)

<i>Criterion</i>	<i>Adequate</i>	<i>Good</i>	<i>Excellent</i>
Norms	<i>M</i> and <i>SD</i> for total score (and subscores if relevant) from a large, relevant clinical sample	<i>M</i> and <i>SD</i> for total score (and subscores if relevant) from multiple large, relevant samples, at least one clinical and one nonclinical	Same as “good,” but must be from representative sample (i.e., random sampling, or matching to census data)
Internal consistency (Cronbach’s alpha, split-half, etc.)	Most evidence shows alpha values of 0.70–0.79	Most reported alphas 0.80–0.89	Most reported alphas ≥ 0.90
Test–retest reliability (stability)	Most evidence shows test–retest correlations ≥ 0.70 over period of several days or weeks	Most evidence shows test–retest correlations ≥ 0.70 over period of several months	Most evidence shows test–retest correlations ≥ 0.70 over a year or longer
Content validity	Test developers clearly defined domain and ensured representation of entire set of facets	Same as “adequate,” plus all elements (items, instructions) evaluated by judges (experts or pilot participants)	Same as “good,” plus multiple groups of judges and quantitative ratings
Construct validity (e.g., predictive, concurrent, convergent, and discriminant validity)	Some independently replicated evidence of construct validity	Bulk of independently replicated evidence shows multiple aspects of construct validity	Same as “good,” plus evidence of incremental validity with respect to other clinical data
Discriminative validity	Not assessed	Not assessed	Not assessed
Prescriptive validity	Not assessed	Not assessed	Not assessed
Validity generalization	Some evidence supports use with either more than one specific demographic group or in more than one setting	Bulk of evidence supports use with either more than one specific demographic group or in multiple settings	Bulk of evidence supports use with either more than one specific demographic group AND in multiple settings
Treatment sensitivity	Some evidence of sensitivity to change over course of treatment	Independent replications show evidence of sensitivity to change over course of treatment	Same as “good,” plus sensitive to change across different types of treatments
Clinical utility	After practical considerations (e.g., costs, respondent burden, ease of administration and scoring, availability of relevant benchmark scores, patient acceptability), assessment data are likely to be clinically actionable	Same as “adequate,” plus published evidence that using the assessment data confers clinical benefit (e.g., better outcome, lower attrition, greater satisfaction), in areas important to stakeholders	Same as “good,” plus independent replication

Table reproduced from De Los Reyes and Langer (2018).

First, we searched for peer-reviewed journal articles using the databases PsycINFO and Web of Science using the following keywords: “*social adjustment*,” “*social competence*,” “*social functioning*,” “*social skills*,” or “*prosocial behavior**” AND “*assessment*” or “*test*” or “*measure*” or “*scale*” AND “*youth*” or “*child**” or “*adolescen**”. After limiting the results to journal articles published in English describing studies with youth, we retrieved 9505 articles. These articles were reviewed to identify measures of social skills or competence. In addition, we reviewed four recent reviews of measures of social skills or social competence (Cordier et al., 2015; Crowe et al., 2011; Humphrey et al., 2011; Matson & Wilkins, 2009). Together, these search strategies led to the identification of 272 independent measures.

We then assessed each identified measure for inclusion in the review (see Figure 1 for an outline of the evaluation process). To be included, the measure had to meet five criteria: (1) Assess social skills, defined broadly as interpersonal behaviors that contribute to positive social outcomes, or social competence, defined here as effectiveness in interpersonal interactions. Measures that operationalized these constructs differently were excluded. For example, the social subscale of the original Self-Perception Profile for Children/Adolescents (Harter, 1982, 1985, 1988) is

often used as a measure of social competence. However, most items on this measure assess social outcomes (e.g., “have a lot of friends,” “popular with kids”), not interpersonal effectiveness. We included relevant subscales of broader measures (e.g., the Social Skills subscale of the Behavior Assessment System for Children-2, Reynolds & Kamphaus, 2004). (2) Be used with children and adolescents ages 3–18 years. We excluded measures used only with preschool-aged children. (3) Not have been developed for or used exclusively with a specific clinical population. As our focus is on social skills and competence as transdiagnostic processes, we excluded measures designed for use with specific populations such as youth with autism or intellectual disabilities (e.g., the Social Communication Questionnaire, Rutter et al., 2003; the Vineland Adaptive Behavior Scales, Sparrow et al., 2016) or that have been used almost exclusively with one clinical group (e.g., the behavioral coding system for social skills, which has been used primarily with youth with social anxiety; Beidel et al., 2000). Table S1 in online supplementary materials documents measures excluded for this reason. (4) Be used with more than three independent clinical samples. This criterion, which is consistent with previous evidence base updates (Holly et al., 2019), was applied because measures that have not received widespread use may receive low

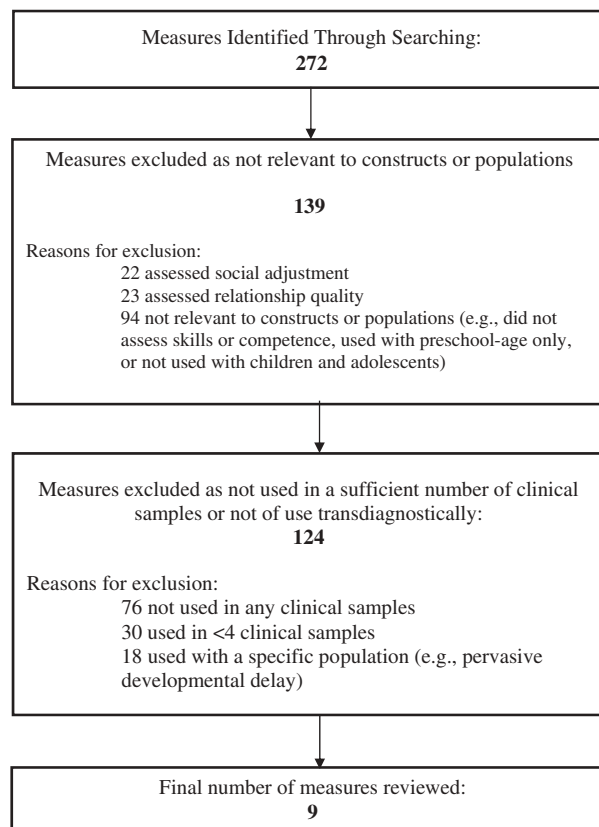


FIGURE 1 Overview of evaluation process for determining measures to include in review.

ratings because there are not enough data available. Following Holly et al. (2019), we defined clinical sample broadly as youth who (a) are diagnosed with a clinical disorder; (b) score over a clinical threshold on a psychological symptom scale, or (c) are seeking or referred to treatment, including social skills training programs. Table S2 in online supplementary materials details measures excluded based on this criterion. (5) Due to potential cultural differences in what constitutes socially skilled behavior (Chen & French, 2008), we only included samples recruited in North America, Australia, New Zealand, or Western Europe.

Applying these criteria yielded a final set of nine measures (see Table 2). If multiple versions of a scale existed, we rated the most recent version that was used in a sufficient number of clinical samples. Many of the measures have versions for different informants (e.g., self-, parent-, and teacher-report); we reviewed each of these forms separately. When information was available, we reviewed relevant subscales.

Measure Evaluation

To inform the ratings for each measure, we performed an additional search for papers in which the measure was used with a clinical sample. To do so, we searched the PsycINFO and Web of Science databases for the measure name and abbreviation (e.g., “Taxonomy of Problematic Social Situations” OR “TOPS”), and performed citation searches of the original measure development papers. For highly used measures we first identified the 20 most relevant articles (i.e., based on the number of citations, journal quality, sample size, and whether the sample was more diverse with respect to gender, ethnicity, or socioeconomic status) and prioritized these articles when rating. If the measure did not achieve a rating of excellent in any category after these top articles were reviewed, we searched for additional information in the full sample of identified papers.

To evaluate the psychometric properties of each measure, we followed the guidelines put forth by Youngstrom et al. (2017; see Table 1). These requirements were developed for measures of psychopathology and psychological diagnoses and some adaptations are necessary when evaluating measures of other constructs (see Holly et al., 2019). First, we typically report on the reliability and validity of the measures in clinical samples, with two exceptions. To achieve a rating of excellent for norms, there must be data from a population-representative sample. In addition, we found that test-retest reliability was almost never assessed in clinical samples; thus, our ratings in these categories were informed by data from non-clinical samples. Note that we conducted additional targeted searches for the measure name and 1) “Test-retest,” and 2) “Norms” or

“Representative” or “Probability sampling.” Second, we did not evaluate inter-rater reliability or discriminative validity. Inter-rater reliability is not relevant for the types of measures we evaluated (e.g., behavior rating scales completed by parents and teachers) and given that research has established that youth experiencing different types of psychopathology may all have poor interpersonal adjustment, we did not expect that measures of social skills or competence would discriminate between diagnostic groups. Third, for ratings of validity generalizability, our emphasis was on the extent to which there was evidence for validity across different types of psychopathology, balancing that with evidence across demographic groups and settings.

Finally, a challenge of reviewing measures of social skills and competence is the pronounced variability in definitions of these constructs. In some cases, measures described as assessing social competence actually measured social skills, following our definitions. For example, the Social Competence Inventory (Rydell et al., 1997) asks about specific behaviors, rather than effectiveness, and thus we considered it to be a measure of social skills. In addition, measures of social skills often included items assessing other constructs, such as emotion regulation. When we assessed content validity – the extent to which the measure captures the domain of interest – we used the construct definition provided by the authors; however, we have also categorized measures based on the definitions of social skills and social competence provided here and highlighted for readers whether the measure assesses additional constructs.

RESULTS

The results of our review of each measure are described below. Table 2 provides details on each measure, including the construct definition provided by the authors, and Table 3 provides a summary of our ratings. Two ratings were consistent across measures and are not described further. Prescriptive validity was typically not investigated or reported and was therefore rated as *not established* across measures. Clinical utility was rated as *adequate* for all measures. All tools assessed were feasible for use in clinical settings and could generate information that would be clinically actionable. We did not find empirical evidence of clinical utility for any of the measures, which is required for a *good* rating.

Social Skills Improvement System (SSIS)

The SSIS (Gresham & Elliot, 2008) is a widely used measure of social skills for youth ages 3–18 years. There are parent and teacher forms, and a self-report form for youth ages 8–18 years. We evaluated psychometric evidence for the total score, which is comprised of seven

TABLE 2
Summary information for measures of social skills and social competence included in review

<i>Measure Name (Citation)</i>	<i>Relevant Scales and Subscales</i>	<i>Construct Identified by Developers</i>	<i>Definition</i>	<i>Construct Identified by Review Authors</i>	<i>Informant/Age Range In Years</i>	<i>Number of Items /Response Scale</i>
Social Skills Improvement System (Gresham & Elliot, 2008)	Social Skills	Social Skills	“Class of behaviors that an individual exhibits to complete a meaningful social task”	Social Skills	Parent/3 to 18 Teacher/3 to 18 Self/8 to 18	46/4-point scale from never to almost always 46/4-point scale from not true to very true
Strengths and Difficulties Questionnaire (Goodman, 1997)	Prosocial	Prosocial Behavior	None provided	Social Skills	Parent/2 to 17 Teacher/2 to 17 Self/11 to 17	5/3-point scale from not true to certainly true
Social Skills Questionnaire (Spence, 1995)	Total Score	Social Skills	“Specific behavioral responses during interaction with another person, that have been suggested by researchers, practitioners, parents or teachers to lead to positive outcomes from social interaction”	Social Skills	Parent/8 to 18 Teacher/8 to 18 Self/8 to 18	30/3-point scale from not true to mostly true
Matson Evaluation of Social Skills with Youngsters (Matson et al., 1983)	Total Score, Appropriate Social Skills	Social Skills	“Verbal and non-verbal behaviors demonstrating interpersonal effectiveness without harm to others”	Social Skills	Parent/4 to 18 Teacher/4 to 18 Self/4 to 18	64/5-point scale from not at all to very much 62/5-point scale from not at all to very much
Social Competence Inventory (Rydell et al., 1997)	Prosocial Orientation	Social Competence	“Children’s adaptive functioning in their social environment”; “Social style that seemed to promote smooth social interactions”	Social Skills	Parent/6 to 18	17/5-point scale from doesn’t apply at all to applies very well to the child
Home and Community Social Behavior Scales (Merrell & Caldarella, 2002)	Social Competence	Social Competence	“External judgments regarding how adequately or competently a person is able to perform a social task”	Social Skills/Social Competence	Parent/5 to 18	32/5-point scale from never to frequently
Taxonomy of Problematic Social Situations (Dodge et al., 1985)	Total Score	Social Competence	“Social tasks in which the child’s response to the task is assessed as either competent or incompetent” “Situational contexts that lead incompetent children to experience social difficulties”	Social Competence	Teacher/2 to 18	44/5-point scale from not at all to very much
Fast Track Social Competence (Conduct Problems Prevention Research Group, 1995)	Prosocial behavior/communication	Social Competence	None provided	Social Skills	Parent/3 to 12	6/5-point scale from not at all to very well
Behavior Assessment System for Children, Second Edition (Reynolds & Kamphaus, 2004)	Social Skills	Social Skills	“Skills necessary for interacting successfully with peers and adults in home, school, and community settings”	Social Skills	Parent/2 to 18 Teacher/2 to 18	6 to 8/4-point scale from never to almost always

The “construct identified by review authors” column identifies whether the measure assesses social skills, defined as interpersonal behaviors associated with positive social outcomes, or social competence, defined as effectiveness in interpersonal interactions. Age ranges were those identified by the developers of the test or, when not available, the ages of the samples reviewed here.

TABLE 3
Ratings of norms, reliability, validity, and utility for measures of social skills and social competence included in review

Measure	Informant	Norms	Internal Consistency	Test-retest Reliability	Content Validity	Construct Validity	Treatment Sensitivity	Validity Generalization	Clinical Utility
SSIS	Parent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Adequate
SSIS	Teacher	Excellent	Excellent	Good	Excellent	Good	Adequate	Excellent	Adequate
SSIS	Self	Excellent	Excellent	Good	Excellent	Excellent	Good	Excellent	Adequate
SDQ	Parent	Excellent	Adequate	Adequate	Not established	Good	Excellent	Excellent	Adequate
Prosocial	Teacher	Excellent	Good	Good	Not established	Good	Not established	Excellent	Adequate
SDQ	Self	Excellent	Not established	Not established	Not established	Good	Good	Excellent	Adequate
SSQ	Parent	Good	Excellent	Not established	Good	Good	Excellent	Good	Adequate
SSQ	Self	Adequate	Good	Not established	Good	Adequate	Excellent	Good	Adequate
MESSY	Parent	Good	Excellent	Not established	Adequate	Adequate	Adequate	Excellent	Adequate
Total Score	Parent	Good	Good	Not established	Adequate	Adequate	Not established	Excellent	Adequate
MESSY	Teacher	Not established	Excellent	Not established	Adequate	Adequate	Good	Excellent	Adequate
MESSY	Teacher	Not established	Adequate	Not established	Adequate	Adequate	Not established	Excellent	Adequate
MESSY	Self	Adequate	Excellent	Adequate	Adequate	Adequate	Good	Excellent	Adequate
MESSY	Self	Not established	Excellent	Adequate	Adequate	Adequate	Not established	Excellent	Adequate
Social Skills	Parent	Not established	Good	Excellent	Adequate	Good	Adequate	Good	Adequate
Social Skills	Parent	Excellent	Excellent	Adequate	Good	Good	Good	Excellent	Adequate
Social Skills	Teacher	Excellent	Too good	Good	Excellent	Adequate	Excellent	Good	Adequate
Social Skills	Parent	Good	Adequate	Not established	Not established	Excellent	Excellent	Adequate	Adequate
Social Skills	Parent	Excellent	Good	Adequate	Excellent	Adequate	Adequate	Adequate	Adequate
Social Skills	Parent	Not established	Good	Excellent	Adequate	Good	Adequate	Good	Adequate
Social Skills	Parent	Excellent	Excellent	Adequate	Good	Good	Good	Excellent	Adequate
Social Skills	Teacher	Excellent	Too good	Good	Excellent	Adequate	Excellent	Good	Adequate
Social Skills	Parent	Good	Adequate	Not established	Not established	Excellent	Excellent	Adequate	Adequate
Social Skills	Parent	Excellent	Good	Adequate	Excellent	Adequate	Adequate	Adequate	Adequate
Social Skills	Parent	Excellent	Good	Adequate	Excellent	Adequate	Adequate	Not established	Adequate
Social Skills	Child	Excellent	Good	Adequate	Excellent	Adequate	Adequate	Not established	Adequate

SSIS = Social Skills Improvement System; SDQ = Strengths and Difficulties Questionnaire; MESSY = Matson Evaluation of Social Skills with Youngsters; SCI = Social Competence Inventory; SSQ = Social Skills Questionnaire; HCSBS = Home and Community Social Behavior Scales; TOPS = Taxonomy of Problematic Social Situations; BASC-2 = Behavior Assessment System for Children, Second Edition. SCI is the Prosocial Orientation Subscale. Fast Track is the Fast Track Social Competence Prosocial Behavior/Communication Scale.

subscales (e.g., assertion, self-control). Not enough information was available on the subscales to support evaluating them individually.

Norms were deemed *excellent* for all three forms. The original norms were derived from large samples ($N \geq 800$) of youth matched demographically to US population estimates (Gresham & Elliot, 2008). Descriptive statistics are available in several large samples ($N > 100$) of youth with ADHD (e.g., parent and teacher, Pfiffner et al., 2016; parent and self-report; Bunford et al., 2015, 2018) and autism spectrum disorder (ASD; e.g., parent and teacher, Zeedyk et al., 2016). Age-specific norms are available for three age groups (3–5 years, 5–12 years, and 13–18 years). The **internal consistency** of all three forms was *excellent*, with alphas typically exceeding .90. **Test-retest reliability** was *good* for each form, with correlations $> .80$ over intervals exceeding 1 month in community samples (Gresham & Elliot, 2008).

Content validity was rated as *excellent* for all three forms. The SSIS is a revision of the Social Skills Rating System (SSRS). Prior to revising the measure, all aspects of the SSRS were reviewed by focus groups comprised primarily of school psychologists and social workers who made suggestions for additional content. New items were developed based on a review of the literature, following content guidelines and key terms developed by the authors. Additionally, teachers, parents, and youth rated the importance of each item (Gresham & Elliot, 2008). Note that the SSIS includes items that are not behavioral (e.g., “I feel bad when others are sad”) or not strictly social (e.g., “I follow school rules”). **Construct validity** was rated as *good* for the teacher form and *excellent* for the parent and self-report forms. In community samples, report of social skills on the parent and teacher forms of the SSIS is correlated as expected with other measures of social skills (e.g., the BASC-2 Social Skills scale, Gresham & Elliot, 2008; the HSCBS, Merrell et al., 2001) and self-report correlates with related constructs (e.g., quality of interpersonal relationships; Gresham & Elliot, 2008). Teacher- and parent-reported social skills differ between typically developing youth and youth with ASD, ADHD, developmental delays, and emotional and behavioral problems (Gresham & Elliot, 2008; Kofler et al., 2018), and self-reported social skills differ between typically developing youth and those with ADHD and emotional and behavioral problems (Gresham & Elliot, 2008). Greater teacher-reported social skills have been associated with lower inattentiveness and better working memory in a sample of youth with ADHD (Kofler et al., 2018), and better quality teacher–child relationships in a sample of youth with ASD (Losh et al., 2019). Parent- and self-reported social skills are correlated as theoretically expected with a variety of constructs in clinical samples (e.g., Dvorsky et al., 2018; Haack et al., 2017; Zeedyk et al., 2016). Further, there is evidence for the incremental

validity of these assessments. In a sample of youth with ASD, self-reported social skills predicted self-perceived social acceptance after controlling for internalizing symptoms (Viecili et al., 2010). Greater parent-reported social skills predicted decreased loneliness of children with ASD after accounting for teacher-reported behavior problems and social isolation (Zeedyk et al., 2016).

Treatment sensitivity of the parent form was judged *excellent*. Change in parent-reported social skills has been documented following social skills training for youth with ASD and learning disabilities (McVey et al., 2017; Milligan et al., 2016), as well as programs combining parent training and social skills training for youth with ADHD (Haack et al., 2017; Pfiffner et al., 2016), and a social skills training program administered to youth of mixed diagnoses seeking services in an outpatient clinic (Goolsby et al., 2019, 2018). Treatment sensitivity of the self-report form was deemed to be *good*. Self-reported social skills have shown change in response to two different interventions for youth with ASD (Reid et al., 2019; Vernon et al., 2018). Teacher-reported social skills have shown change in response to a mindfulness-based intervention for parents of preschoolers with developmental delays (Lewallen & Neece, 2015), and treatment sensitivity of this form was judged to be *adequate*. **Validity generalizability** was *excellent* for all three forms. The SSIS has been used with multiple clinical groups, in different settings (e.g., research labs, outpatient clinics), and with youth of different ethnicities.

Summary. The SSIS has been widely used with many clinical samples and in general, the parent, teacher, and self-report forms demonstrate strong psychometric properties.

Strengths and Difficulties Questionnaire (SDQ)

The SDQ (Goodman, 1997) is a measure of adjustment for youth ages 2–17 years, although it has been used most extensively with children older than 4 years. It includes a five-item Prosocial subscale assessing youth’s engagement in prosocial behaviors that is used as an index of social skills. There are parent and teacher forms, and a self-report form for youth ages 11–17 years.

Norms for all forms were rated as *excellent*. Data are available from multiple representative samples (e.g., Bratsch-Hines et al., 2015), with the exception of teacher-report for children younger than 4 years, and normative information is available for different age groups (see <https://www.sdqinfo.com/g0.html>). Means and standard deviations are available in many large clinical samples ($N > 100$) including youth referred to outpatient services (parent; Andrade & Wade, 2016; Smits et al., 2016); adolescents on a psychiatric inpatient unit (parent and self-

report, McLaren et al., 2019); children referred to treatment for social and emotional problems (parent, teacher, and self-report, Essau et al., 2019), and youth receiving inpatient or outpatient services (parent and teacher, Becker et al., 2004). The SDQ is brief and as such, *internal consistencies* vary across samples. The parent form was deemed *adequate*, with alphas largely ranging from .70 to .79, although it should be noted that others have reported average alphas below .70 (e.g., Stone et al., 2015), and the teacher form was *good*, with alphas between .80 and .89. A number of studies documented alphas on the self-report below .70 (e.g., Brann et al., 2018; Cooper et al., 2010; Wadman et al., 2011), thus, we rated internal consistency of this form as *not established*. Research has documented *test-retest* correlations $< .70$ for the self-report (*not established*); $> .70$ over intervals from 2 to 6 weeks for the parent form (*adequate*); and $> .70$ over intervals from 2 weeks to 4–6 months for the teacher report (*good*; Goodman, 2001; Lundh et al., 2008; Mellor, 2004; Muris et al., 2003; Stone et al., 2015).

Content validity was judged to be *not established*. The Prosocial subscale was included in the SDQ to provide an index of children's strengths (Goodman, 1994, 1997). The author chose some items from an existing measure of prosocial behavior (Weir & Duveen, 1981) and developed others. No construct definition is provided in the initial development papers. The five items are face valid and cover the three subtypes of prosocial behavior: comforting, helping, and sharing (Dunfield & Kuhlmeier, 2013). *Construct validity* was *good* for all informants. Many studies have demonstrated multiple aspects of validity in clinical samples. We did not find evidence of incremental validity. *Treatment sensitivity* was judged *excellent* for the parent form, with documentation of change in response to many different treatments including school-based mental health services (Ballard et al., 2014), parent management training for young children with disruptive behavior disorders (DBD; Griffin et al., 2010), behavior modification for oppositional defiant disorder (ODD) and conduct disorder (CD; Nitkowski et al., 2009), and psychodynamic therapy in an outpatient clinic (Nemirovski Edlund et al., 2014). The self-report was deemed *good*, with change reported in response to humanistic counseling for emotional distress (Cooper et al., 2010) and to Acceptance and Commitment Therapy with youth with ASD (Pahnke et al., 2014). Treatment sensitivity of the teacher-report is *not established* in clinical samples. *Validity generalizability* is *excellent* for all three forms; each has been used with many different clinical samples and in a variety of settings (e.g., inpatient and outpatient services, schools, university labs). Samples are ethnically diverse.

Summary. The SDQ Prosocial scale has been widely used in clinical samples and there is good evidence for the

validity of the parent, teacher, and self-reports. It is brief, and correspondingly, internal consistency may not be high, particularly for the self-report, for which test-retest reliability has also not been established. It only measures prosocial behavior and thus is not a comprehensive measure of social skills.

Social Skills Questionnaire (SSQ)

The SSQ (Spence, 1995) is a measure of social skills appropriate for use with youth ages 8–18 years. There are parent, teacher, and self-report forms. The teacher form has only been used in clinical samples of youth with ASD and thus is not reviewed here. Note that the psychometric properties of the teacher report are promising: It shows excellent internal consistency and there is evidence of construct validity and treatment sensitivity (e.g., Beaumont et al., 2015; Beaumont & Sofronoff, 2008; Butterworth et al., 2014; Sauvé et al., 2018).

The original *norms* for the SSQ were derived from a non-representative sample of 376 youth aged 8–17 years in Australia. The authors report that scores on the parent- and self-report did not vary as a function of age; however, age-specific norms are presented for the teacher form (Spence, 1995). Norms for the parent form were rated as *good*, as further descriptive statistics are available in large samples of youth with ASD ($Ns > 90$, Begeer et al., 2015; Sofronoff et al., 2011), and social anxiety ($N = 125$; Spence et al., 2017). Descriptive statistics for the self-report form are also available in this sample, leading us to a rating of *adequate*. *Internal consistency* was *excellent* for the parent form, with most published alphas $> .90$, and *good* for the self-report form (alphas $> .80$). We did not find published evidence of *test-retest reliability*, and therefore a rating of *not established* was given.

Content validity was rated as *good*. To produce items, the authors reviewed previous research and interviewed parents and teachers. These groups rated the importance of the items; however, no quantitative information is reported. Note that this measure contains many items indexing emotion skills (e.g., “the emotion on my face is usually right,” “I control my temper when ...”). We evaluated the *construct validity* of the parent and self-report forms as *good* and *adequate*, respectively. Spence (1995) documented that in a community sample, sociometrically rejected children were rated as less skilled by parents than were accepted children. Self-report ratings did not differ across the groups. In samples of youth with ASD, it correlates as expected with another measure of social skills (e.g., Beaumont & Sofronoff, 2008; Butterworth et al., 2014) and with measures of how affectionate the child is (Sofronoff et al., 2014), as well as vulnerability with peers (Sofronoff

et al., 2011) and behavior problems (Sofronoff et al., 2017). Scores on the parent form also differ between typically developing youth and those with MDD (Spence et al., 2016) and social anxiety (Spence et al., 2000). Scores on the self-report of the SSQ also differ between these two groups.

Treatment sensitivity of the parent and self-report forms was rated as *excellent*. Research has shown changes from pre- to post-treatment for a variety of interventions, including IPT for adolescents with depression (Spence et al., 2016), cognitive-behavioral therapy (CBT) for social anxiety (Spence et al., 2000, 2017) and a number of interventions for youth with ASD (Ke & Im, 2013; MacKay et al., 2007; Sauvé et al., 2018). Additional papers report evidence of change in the parent form following social skills training for autism (Beaumont et al., 2015; Beaumont & Sofronoff, 2008) and combined medication/psychoeducational treatment for social anxiety (Chavira & Stein, 2002). **Validity generalization** for the parent and self-report forms was rated as *good*, as they have been used with multiple clinical groups (i.e., ASD, social anxiety, depression) and in different settings (e.g., community clinic, university laboratory, school). For the parent and self-report forms, the samples are largely non-Hispanic white, frequently recruited in Australia, and comprise more males (reflecting the inclusion of samples with ASD).

Summary. There is significant evidence for the psychometric strength of the parent-report of the SSQ. The self-report has been used less, but it also demonstrates acceptable psychometric properties. We did not find documentation of test-retest reliability for either form. Both measures have been shown to be sensitive to change in response to different types of treatment and with different clinical populations.

Matson Evaluation of Social Skills with Youngsters (MESSY)

The MESSY (Matson et al., 1983) is a measure of social skills for youth aged 4–18 years. The authors originally developed a 64-item teacher form and a 62-item self-report form; subsequently, the teacher form was adopted for use with parents (Bell-Dolan & Allan, 1998; Matson et al., 2010). The MESSY was originally normed in a sample of 744 children (Matson et al., 1983). The parent and teacher forms were later administered in a new normative sample and renamed the MESSY-II (Matson et al., 2010), which contains the same items as the MESSY. The MESSY assesses both positive and negative behaviors. Positive behaviors form an Appropriate Social Skills subscale. A total score is calculated by reverse coding the positive items and summing them with the negative items. We do not review the subscales comprised of the negative items.

Norms for the total and subscale scores of the parent form were evaluated to be *good*, as descriptive statistics are

available in large samples ($N > 100$) of youth with ASD (Matson et al., 2013) and youth clinically referred for developmental or psychoeducational evaluation (Cervantes et al., 2013). Norms for the self-report total score were deemed to be *adequate*, as means and standard deviations are available in a large ($N = 97$) sample of boys seeking outpatient treatment for DBD (Van Manen et al., 2004). Note that a 92-item version of the self-report form was administered to several large clinical samples (e.g., Kazdin, 1989, 1990). Norms for the self-report subscale score, as well as both scores on the teacher form, are *not established*. All three forms have been used in additional, moderate-sized clinical samples (e.g., $N = 42$ girls with ADHD, Ohan & Johnston, 2011; $N = 47$ youth seeking outpatient treatment, Strauss et al., 1989).

Internal consistency was not reported in most of the studies that we reviewed. *Excellent* alpha values ($> .90$) have been documented for self-report, parent, and teacher total scores. (Cervantes et al., 2013; Kalyva, 2010), and the self-report Appropriate Social Skills score (Ohan & Johnston, 2011). Internal consistency of this subscale score is *good* for the parent form (.76, Ohan & Johnston, 2011; .88; Weeland et al., 2017) and *adequate* for the teacher form (.78, Ohan & Johnston, 2011). The self-report total and subscale score show *test-retest* correlations $> .70$ over 2 weeks in a typically developing sample, which supports a rating of *adequate* (Spence & Liddle, 1990). Test-retest of the parent and teacher forms is *not established*. In the original development paper (Matson et al., 1983), the authors examined the test-retest reliability of individual items on the teacher form, but not the scales.

Content validity was rated as *adequate*. Items were chosen based on a review of existing standardized assessments of children's behavior. Children provided feedback on the child-report instructions. The MESSY contains items that do not assess social skills, such as “thinks good things are going to happen,” and “feels good if he/she helps others.” In general, we rated the **construct validity** of the MESSY as *adequate*, because there is some evidence for all informants that both the total and Appropriate Social Skills subscale scores differ across clinically meaningful groups, including youth with bipolar and healthy controls (self-report total and subscale score; parent total and subscale score; Goldstein et al., 2006); youth who do or do not set fires (parent subscale score; Kolko & Kazdin, 1991); youth seeking treatment for anxiety, a clinic control group, and non-referred youth (self-report, parent, and teacher subscale scores; Strauss et al., 1989); youth with ASD, ADHD, and no diagnosis (parent subscale score; Cervantes et al., 2013), and youth with ASD and healthy controls (parent, teacher and self-report, total scores; Kalyva, 2010).

Researchers using the MESSY to evaluate treatment outcome have typically used the total score, so there is not yet evidence for the treatment sensitivity of the

subscale score in clinical samples. **Treatment sensitivity** of the self-report and teacher forms was *good*. Self-report scores have been shown to change in response to social cognitive and social skills interventions for boys with DBD (Van Manen et al., 2004), and to multi-modal and psychodynamic day treatment programs for youth with DBD (Grizenko et al., 1993; Grizenko & Sayegh, 1990), and teacher report has been shown to change following a psychodynamic day program for youth with DBD (Grizenko & Sayegh, 1990) and a group social skills intervention for children referred to treatment (Steerneman et al., 1996). Parent report also changed following this intervention, and so treatment sensitivity was evaluated as *adequate*. We rated the **validity generalizability** of all three forms as *excellent*, as evidence has been obtained with multiple clinical groups (e.g., bipolar disorder, anxiety, ASD, ADHD) and in multiple settings, including outpatient and inpatient clinics (e.g., Cervantes et al., 2013; Grizenko & Sayegh, 1990; Kolko & Kazdin, 1991). The MESSY has been used with ethnically diverse samples.

Summary. Good normative data is available for the parent form, but more evidence is needed for the self-report and teacher forms. All three forms show good to excellent internal consistency; we only found evidence of test-retest reliability for the self-report. For all three forms, there is less evidence for construct validity and treatment sensitivity than for other measures reviewed.

Social Competence Inventory (SCI)

The SCI (Rydell et al., 1997) was created as a parent- and teacher-report measure of interpersonal functioning and comprises two subscales: Prosocial Orientation and Social Initiative. Review of the items indicates that in general, they measure engagement in behaviors, rather than efficacy; thus, we have categorized the SCI as a measure of social skills. Only the parent-reported Prosocial Orientation subscale is reviewed here; the Social Initiative subscale and the teacher-report version have not been used widely enough with clinical samples. **Norms** for the Prosocial Orientation subscale were rated as *not established*, as the largest clinical sample with which this measure has been used consists of 77 youth (Dimitropoulos et al., 2013). The **internal consistency** of the Prosocial Orientation scale was rated as *good*, with reported alphas of .88 (Rydell et al., 1997) and .84 (Schuck et al., 2015). **Test-retest reliability** was rated as *excellent*, with a correlation $> .70$ over a 1-year interval (Rydell et al., 1997).

Content validity was rated as *adequate*. Items were taken from several prior measures of social competence and reflect a mix of skills such as prosocial behavior and the capacity for being generous or helpful. Note that the

scale contains items assessing constructs other than social skills, such as emotion identification. **Construct validity** was rated as *good*. Higher scores are associated with lower report of autism symptoms (White et al., 2010; White & Roberson-Nay, 2009), as well as decreased social responsiveness in a sample of youth with Prader-Willi syndrome (Dimitropoulos et al., 2013). Scores also differ among youth with Prader-Willi syndrome and those with ASD (Dimitropoulos et al., 2013). **Treatment sensitivity** was rated as *adequate*: Schuck et al. (2015) reported that scores on this subscale improved over the course of a cognitive-behavioral intervention with canine assistance for ADHD. **Validity generalization** was rated as *good*. The scale has been used with youth diagnosed with ADHD (Schuck et al., 2015), intellectual disability, and pervasive developmental disorders (Dimitropoulos et al., 2013; Koenig et al., 2010) and in several different settings (e.g., university clinic, outpatient clinic). In general, samples are ethnically homogeneous.

Summary. The SCI is less widely used than other measures reviewed (e.g., SSIS, MESSY). Norms have not been established, but there is evidence of good internal consistency and excellent test-retest reliability. Construct validity is good and there is some evidence that the SCI is sensitive to change in treatment.

Home and Community Social Behavior Scales (HCSBS)

The HCSBS (Merrell, 2008; Merrell & Caldarella, 2002) is a parent-report measure of the social strengths and difficulties of children and adolescents ages 5–18 years. The Social Competence scale comprises two subscales: Peer Relations, which assesses positive skills with peers, and Self-Management Compliance, which captures responses to adult expectations. The total score is reviewed here. **Norms** were *excellent*. The measure was originally normed with a US-representative sample of 1,562 5–18-year-olds (Merrell & Caldarella, 2002). Separate norms are available for children (ages 5–11 years) and adolescents (ages 12–18 years). Descriptive statistics are also available in a number of large ($N > 100$) clinical samples, including more than 500 3–12-year-olds receiving treatment for behavior problems (Hukkelberg & Ogden, 2016), and 160 11–16-year-olds referred to a prevention program for at-risk youth (Merrell & Caldarella, 1999). **Internal consistency** was rated as *excellent*, with alphas between .93 and .95 reported in clinical samples (Kjøbli & Bjørnebekk, 2013; Kjøbli & Ogden, 2014; Merrell & Caldarella, 1999). **Test-retest reliability** was rated as *adequate*, with Merrell and Caldarella (1999) reporting correlations $> .80$ over a two-week interval.

Content validity was evaluated as *good*. The items on the HCSBS were adapted from the School Social Behavior Scales

(Merrell, 1993), with minor changes to wording to reflect home and community settings (Lund & Merrell, 2001). Items were identified based on review of the literature on social competence as well as the content of social skills training programs and existing measures of social skills. Potential items were then reviewed by teachers, parents, and graduate students in psychology and education. The measure contains items capturing several facets of social functioning. Many items assess specific social skills, such as “notices and compliments others” and “cooperates with peers.” Some items assess efficacy in specific tasks, which indexes social competence; for example, “is good at initiating or joining conversations with peers,” and “enters appropriately into ongoing activities with peers.” Others assess social outcomes; for example, “invited by peers to join activities,” and “is looked up to.” The Self-Management/Compliance subscale contains items assessing constructs other than social functioning, such as emotion regulation (e.g., “remains calm when problems arise” and “controls temper when angry”).

Construct validity was evaluated as *good*. Scores on the Social Competence scale have been shown to differ between typically developing youth and different clinical groups, including youth with emotional and behavioral disorders, learning disabilities (Lund & Merrell, 2001), and ADHD (Merrell & Boelter, 2001). In a large sample of youth receiving inpatient treatment for emotional and behavioral problems, greater scores on the social competence scale were associated with greater social skills and adaptability and lower externalizing symptoms (Merrell et al., 2001). Higher ratings are also associated with lower inattentiveness and hyperactivity (e.g., Merrell & Boelter, 2001) and antisocial behavior (Hukkelberg & Ogden, 2016). **Treatment sensitivity** was judged to be *good*, with change documented in response to a parenting skills intervention for youth with conduct problems (Kjøbli & Bjørnebekk, 2013) and a psychosocial family treatment for a 10-year-old with schizoaffective disorder (Klaus et al., 2008). **Validity generalizability** was judged to be *excellent*; the measure has been used with many types of clinical samples and in multiple settings. Many of the large samples with which the measure has been used are non-Hispanic white (e.g., Hukkelberg & Ogden, 2016).

Summary. The evidence for the norms and internal consistency of the Social Competence scale is excellent, and test-retest reliability is adequate. There is also good evidence for the validity of this scale.

Taxonomy of Problematic Social Situations (TOPS)

The TOPS (Dodge et al., 1985) was designed as a teacher-reported scale of elementary-school-aged children’s effectiveness at managing specific, challenging social situations. Subsequently, it has been adapted for use as a self-report

instrument (Van der Helm et al., 2013), which has not been used with enough clinical samples to be reviewed here, and as an assessment for preschoolers (Blankemeyer et al., 2002).

Norms for the TOPS were rated as *excellent*. Means and standard deviations are available in large samples ($N > 96$) of youth with ADHD (Abikoff et al., 2004) and boys with CD and ODD (Van Manen et al., 2004), as well as a large, representative sample of elementary school students in the Netherlands (Matthys et al., 2001). **Internal consistency** of the TOPS has rarely been reported in clinical samples; however, Hurt et al. (2007) reported $\alpha = .97$, which is consistent with work in non-clinical samples (e.g., Dodge et al., 1985; Matthys et al., 2001), leading us to a rating of *too good*. Very high internal consistency indicates the measure could be shortened. In the original sample, the **test-retest** correlation was .79 from fall to spring in a school year, leading to a rating of *good* (Dodge et al., 1985).

Content validity was rated as *excellent*. The TOPS assesses children’s ability to respond effectively to key social tasks; thus, we classified it as a measure of social competence. To identify the situations, the authors asked elementary school teachers and clinical child psychologists to generate social situations that were frequently occurring and likely to cause difficulties in children’s peer relationships. Undergraduate students reliably sorted the situations into broader categories, and situations not classified were discarded. Twenty-three teachers used the TOPS to rate children in their classes. The **construct validity** of the TOPS was judged to be *adequate*. Scores on the TOPS differ between youth with and without ODD/CD (Matthys et al., 2001), ADHD (Kaiser et al., 2008), and clinically significant depressive symptoms (Shah & Morgan, 1996). Note that work with non-clinical samples has documented that scores on the TOPS are associated as expected with indicators of social adjustment, such as peer rejection (e.g., Dodge et al., 1985; Nangle et al., 1994). **Treatment sensitivity** was judged to be *excellent*. Change on the TOPS has been documented in response to medication, both alone and combined with psychosocial treatment, for youth with ADHD (Abikoff et al., 2004), social skills and social cognitive interventions for boys with CD/ODD (Van Manen et al., 2004), and a peer-mediated social skills training program with girls referred to an outpatient clinic for social problems (Guevremont et al., 1989). **Validity generalizability** was *good*; the TOPS has been used with youth experiencing different types of psychopathology (i.e., ADHD, CD/ODD, clinically significant depressive symptoms) and in different settings (e.g., summer camp, academic medical center, research lab). Samples have largely been non-Hispanic White and predominantly male, reflecting use primarily with samples experiencing externalizing problems.

Summary. The norms, internal consistency, and test-retest reliability of the TOPS are strong and more than one study

has demonstrated that this measure is sensitive to change in treatment. Additional information concerning the construct validity of the measure could be collected. The TOPS has largely been used with samples of boys experiencing externalizing problems.

Fast Track Project – Social Competence Scales

As part of the Fast Track project, a large-scale trial examining the prevention of conduct problems, the investigators developed a parent-report measure of children's social competence that included a 6-item prosocial behavior/communication subscale (Conduct Problems Prevention Research Group, 1995). There is also a teacher-report instrument that has not been used in enough clinical samples to be reviewed here. *Norms* were evaluated as *good*. Means and standard deviations are available in large samples ($N > 99$) of boys with conduct problems (Burke & Loeber, 2016; Hawes et al., 2014), and youth with ADHD (Beauchaine et al., 2013). *Internal consistency* was evaluated as *adequate*, with alphas between .70 and .81 reported in clinical samples (Beauchaine et al., 2013; Burke & Loeber, 2016; Hawes et al., 2014). We did not find published evidence of *test-retest reliability*, and therefore a rating of *not established* was given.

Content validity was rated as *not established*, as we could not find a construct definition or a description of how the measure was developed. The items, which include “your child is helpful to others” and “your child shares with others” are face valid. *Construct validity* was evaluated as *excellent*. Higher scores have been linked to lower aggression, behavior problems, inattentiveness (Beauchaine et al., 2013), and callous-unemotional traits (Hawes et al., 2014). In addition, Beauchaine et al. (2013) documented that parasympathetic activity predicts changes in prosocial behavior in response to treatment in a sample of youth with ADHD. Burke and Loeber (2016) provide evidence for the incremental validity of the scale; prosocial behavior predicted change in aggression in response to treatment, controlling for earlier levels of aggression. *Treatment sensitivity* was evaluated as *excellent*. Changes in this scale have been documented in response to the Incredible Years Intervention in two samples of 4–6-year-olds with ADHD (Trillingsgaard et al., 2014; Webster-Stratton et al., 2011), as well as a CBT-based program targeting conduct problems in a sample of boys aged 6–12 years (Burke & Loeber, 2016). *Validity generalizability* was judged to be *adequate* as the measure has been used with samples with ADHD and conduct problems. Samples comprised mainly boys and were ethnically diverse.

Summary. This brief measure has good norms and adequate internal consistency; evidence for validity is

excellent. It has largely been used with samples of boys with externalizing problems.

Behavior Assessment System for Children, Second Edition (BASC-2)

The BASC-2 (Reynolds & Kamphaus, 2004) is a broad measure of the emotional, behavioral, and adaptive function of youth aged 2–18 years. Although there is now a 3rd edition available, the 2nd edition was the most recent version used in sufficient clinical samples. The parent and teacher forms of the BASC-2 have a Social Skills subscale. Only the parent forms for children and adolescents have been used broadly enough in clinical samples to be reviewed here. The psychometric properties of the teacher forms are promising (e.g., Haven et al., 2014; McCarty et al., 2013).

Norms were evaluated as *excellent*. The test developers obtained normative data from both a large, representative sample matched to the United States Census and a very large clinical sample ($N > 1500$, Reynolds & Kamphaus, 2004), which provided evidence for the reliability of the measure. Age-specific norms are available. *Internal consistency* was *good* (alphas between .83 and .88) and *test-retest reliability* was *adequate* with correlations $>.70$ reported for intervals between 35 and 46 days.

Content validity was evaluated as *excellent*. Items are positive social behaviors such as “compliments others,” and “offers to help other children.” To generate items, teachers and students were asked to identify positive behaviors, and all items were rated by large groups of teachers, parents, and students. The BASC-2 manual reports theoretically expectable correlations between the Social Skills subscale and other measures of children's behavior and symptoms; however, this work was done with community samples (Reynolds & Kamphaus, 2004). *Construct validity* was deemed *adequate* for both forms, as there is evidence that social skills scores vary as expected between youth with ASD and typically developing youth (e.g., Goldin et al., 2014; Volker et al., 2010). It should be noted that Harrison et al. (2011) did not find that parent report of social skills differentiated youth with and without ADHD in the BASC-2 norm sample. *Treatment sensitivity* of both forms was judged to be *adequate*: McCarty et al. (2013) reported that parent report of adolescents' social skills changed in response to a cognitive-behavioral prevention program for youth with elevated symptoms of depression and Zlomke et al. (2017) reported change on the child form following Parent-Child Interaction Therapy in a sample of children with ASD. *Validity generalizability* of the adolescent form was judged *adequate* as there is evidence with two clinical groups. For the child form, validity generalizability was *to be established*, as the available evidence is for youth with ASD.

Summary. The parent-report child- and adolescent-forms have excellent norms, good internal consistency, and adequate test-retest reliability. Collecting additional evidence

of construct validity and sensitivity to treatment would strengthen the evidence base for validity.

DISCUSSION

The goal of this evidence base update was to evaluate the psychometric evidence for measures of social skills and social competence in clinical samples of children and adolescents. We found eight measures of social skills that had been used in at least four independent clinical samples. With some exceptions, these measures showed adequate to excellent norms, internal consistency, and test-retest reliability. There was at least adequate evidence of construct validity in clinical samples for all scales assessed, although there was limited work documenting links between social skills and key social outcomes in clinical samples. Many of the measures had been used with a variety of clinical samples and in a variety of settings.

It is difficult to compare the measures of social skills we evaluated, because authors defined and operationalized the construct in different ways (see Table 2). In general, the test developers did an adequate to excellent job identifying content, typically reviewing pertinent literature and asking key informants (e.g., youth, parents, teachers) to identify relevant skills. The measures often include items tapping constructs other than social skills, by the authors' definitions, as well as ours. Sometimes, these items capture other facets of social functioning, such as social competence, by asking about youth's effectiveness at performing a specific behavior or task (e.g., "is good at initiating or joining conversations with peers," HCSBS), or social outcomes (e.g., "I have many friends," MESSY). Sometimes, these items assess different constructs. For example, six of the 30 questions on the SSQ ask about temper loss, which reflects emotion regulation, and the SSIS has a 7-item self-control subscale. These items assess relevant interpersonal processes and outcomes, and their inclusion contributes to a global picture of youth's interpersonal abilities, challenges, and adjustment. However, a tighter focus would allow both clinicians and researchers to obtain a better understanding of the role of behavioral skills in the maintenance of psychological symptoms.

In contrast to measures of social skills, few measures of social competence, defined as efficacy in interpersonal interactions, have achieved widespread use in clinical samples. Definitions of social competence are variable (Dirks et al., 2007); correspondingly, measures of social competence operationalize the construct in different ways. Some measure social skills (e.g., the SCI, reviewed here), whereas others measure interpersonal outcomes (e.g., the Self-Perception Profile for Children/Adolescents, Harter, 1985, 1988; the Social Competence Questionnaire, Spence, 1995). There is increasing recognition of the

value of assessing social competence with respect to key situations (e.g., Dirks et al., 2007; Rose & Asher, 2017). The TOPS (Dodge et al., 1985), takes this approach by asking teachers to rate children's efficacy in important situations with peers. The TOPS has been used widely in clinical samples and demonstrates strong psychometric properties. There are other situation-based assessments of youth social competence that, to date, have not received widespread use in clinical samples. For example, the Measure of Adolescent Social Performance (MASP, Cavell & Kelley, 1992) and the Measure of Adolescent Heterosocial Competence (MAHC, Grover et al., 2005) – neither of which was used with enough independent clinical samples to be included in the review – both assess adolescents' effectiveness in a variety of challenging and critical situations that occur with peers.

Situation-based measures of social competence typically focus on a specific developmental period. In contrast, many of the measures we reviewed assess social skills from early childhood through late adolescence using the same or similar items (e.g., MESSY, SSIS, SDQ). There are easily accessible age-specific norms for many of the tools we reviewed, which provide important information about an individual's skill level relative to others in the same developmental period. However, in addition to age-related changes in the overall level of social skills in which youth engage, there will likely also be developmental differences in the relative importance of a given behavior. The demands of interpersonal relationships change markedly as children grow up; correspondingly, adolescents may need a different repertoire of skills than do younger children. For example, from childhood to adolescence, the nature of friendship evolves, as a focus on mutual activities grows into companionship rooted in personal disclosure (Bagwell & Schmidt, 2011). For these reasons, being able to provide adequate emotional support and to disclose personal details appropriately may be more critical for adolescents than for children. The critical situations that youth must manage will also change as they grow older. Peer victimization decreases across adolescence (Nansel et al., 2001), suggesting the ability to effectively manage provocation by peers may be less important for older youth than for younger children. Conversely, increasing involvement in intimate relationships will introduce new challenges during adolescence, such as approaching someone attractive (Grover et al., 2005).

Given developmental differences in the situations that youth must manage and the skills required to respond effectively, measures capturing the most critical social demands of a given development period may have greater utility both for identifying the key skill deficits of youth experiencing psychopathology and for guiding interventions for youth struggling socially. Knowing how often youth engage in a behavior that is not consequential in

their day-to-day lives will be of limited value. In addition to the MASP and the MAHC, there are other adolescent-specific measures of social skills and social competence, such as the Teenage Inventory of Social Skills (Inderbitzen & Foster, 1992) and the Adolescent Interpersonal Competence Questionnaire (Buhrmester, 1990), neither of which has been used widely in clinical samples.

Measuring Social Skills and Social Competence in Clinical Practice

Increasing the developmental precision of our assessments may pay clinical dividends. Similarly, there may be clinical gains associated with the use of situation-specific tools. Nearly all the measures reviewed showed at least some evidence of sensitivity to change in treatment, suggesting they may be useful for monitoring clients' progress. The functional meaning of such changes remains unclear. The measures of social skills reviewed typically assess how often youth engage in given behaviors, yet an increase in the frequency of these actions will not necessarily translate into meaningful improvement in their interpersonal relationships. To be effective interpersonally, youth need to use a given behavior in the right circumstances. Assessments measuring one type of behavior, such as the SDQ Prosocial subscale, may be particularly limited in this regard. Although often positively received, prosocial behaviors are not effective in all situations (see Dirks et al., 2018); thus, navigating the many challenging interactions that comprise youths' social lives will require a broad repertoire of behavioral skills. For this reason, measures that assess an array of important behaviors, such as the SSIS, SSQ, or the MESSY, may be more clinically useful.

Research is needed to examine the clinical utility of different assessments of social skills and social competence. In particular, it may be helpful to examine whether using these measures in treatment planning improves client outcomes. When planning treatment, it will be valuable to index not only which skills youth have, but their ability to use those tools effectively in their interactions. To do so requires an understanding of the contexts in which skills are being used. Many of the social skills measures we reviewed contain some items assessing the extent to which youth engage in a behavior in the appropriate context; for example, "stands up for him/herself when treated unfairly" (SSIS); "says please when they ask for things" (SSIS); "I say I am sorry when I do something wrong" (SSQ). Situation-based measures of social competence, such as the TOPS, extend this contextualized approach further by providing a detailed map of youths' competence across the important situations that comprise their social lives. Use of such assessments may help clinicians to plan treatment by identifying the critical circumstances that youth could manage more effectively.

Advancing the Measurement of Social Skills and Social Competence in Clinical Samples of Children and Adolescents

Our review identified several ways in which the measurement of social skills and social competence could be advanced. First, wider use of measures in clinical samples would contribute to a stronger evidence base. When ratings were below good, it was often because the measure had not been used often. Part of the reason for this sparse adoption may be that there are so many tools from which to choose; indeed, our initial search identified 133 measures of social skills or competence for use with children and adolescents. When selecting a measure, researchers and clinicians should be guided by theoretical concerns – in particular, how the construct is conceptualized and operationalized, which varied across the measures reviewed – as well as the available empirical evidence (Flake & Fried, 2019).

The evidence base would also be strengthened by greater consistency in the use of measures. We found variability in the items used (e.g., the number of items comprising the MESSY varied across studies) and in how items were scored and combined. Such differences make it difficult to synthesize the available evidence and may compromise both the validity of a given investigation and efforts to replicate results (see Flake & Fried, 2019). It will also be important to collect and document psychometric information more consistently. Test-retest reliability was rarely assessed after the initial measurement validation work and almost never examined in clinical samples. Many studies did not report internal consistency or means and standard deviations. Opportunities to examine validity were missed because correlations among all measured variables were not computed. Routine reporting of this information, perhaps as online supplementary materials, would enable better measurement decisions.

It may also help to establish the psychometric soundness of new measures more quickly. Although there are many measures of social skills and competence, most of the widely used assessments are dated. Many were developed in the 1980s and 1990s (e.g., SDQ, TOPS, MESSY, SSQ, Fast Track) and others were updated before 2010 (e.g., SSIS, BASC-2). Our stringent inclusion criteria may have increased the inclusion of older measures, as it takes time to accumulate evidence. Making new measures easily available and having a repository for all data collected (e.g., at <https://osf.io/>) may accelerate this process.

Using older measures of social skills and social competence may be particularly problematic because the skills needed to succeed socially will change with time. Youth now spend a significant amount of their social lives interacting online or through text messages (Lenhart, 2012) and there is a need for measures of social skills and social competence that consider these different forms of communication. For example, when assessing youths' competence

in managing conflicts with friends, it may be important to distinguish between whether they would respond over text or face-to-face. In some circumstances, texting may be less effective (e.g., when giving an apology). Similarly, the increasing migration of youths' social lives online has created new and challenging situations, such as cyber victimization. Although a large body of work has documented links between cyber victimization and mental health problems (Gini et al., 2018), it remains unclear how youth can respond effectively in these situations. Psychometrically strong measures of youths' competence in online environments are greatly needed.

In developing these tools, it will be valuable to observe youth's interactions directly. Youths' e-mails, text messages, Facebook posts, and Instagram feeds can be reliably and ethically monitored (e.g., Mikami et al., 2019; Underwood et al., 2012), and could be coded for competence. Given that approximately half of youths' interactions with friends occur in person (Reich et al., 2012), there will also be value in observing their face-to-face social skills, which may reveal important nuances, such as tone of voice, not captured by rating scales. Many observational paradigms for the assessment of social skills and social competence have been developed; indeed, observational studies have contributed substantially to our understanding of social skills and competence in typically developing samples (e.g., Dodge et al., 1983). Observational measures have been used extensively with some clinical populations. For example, Beidel developed an observational paradigm that has generated significant knowledge about the social skills of youth with social anxiety (Beidel et al., 2000). Researchers and clinicians may choose rating scales over observational approaches because they are less labor-intensive; yet, there may be circumstances in which observation provides valuable information. In general, research examining the incremental validity of observational assessments of social skills and social competence will help researchers and clinicians make informed decisions concerning when the additional burden of observation will yield significant dividends. At the same time, technological developments may increase the feasibility of observational paradigms. For example, Paschall et al. (2005) provided preliminary psychometric evidence for an assessment of social competence in which youth interact with a "peer" in virtual reality. This approach may make it possible for clinicians to observe peer interactions without having to recruit confederates.

As new measures of social skills and social competence are developed, it will be important that the experiences of youth living in diverse circumstances are represented. The skills and situations that are most consequential for youth's adjustment will vary as a function of social-contextual features. For example, youth living in socio-economically disadvantaged

neighborhoods may need to manage situations – such as witnessing violence or being approached by others to engage in antisocial behavior or to join a gang – that are not as common in more advantaged environments (see Farrell et al., 2007).

Summary and Conclusions

We reviewed eight measures of social skills and one measure of social competence which have been used widely in different types of clinical samples. There is considerable evidence supporting the reliability and validity of these tools. Many of these assessments are decades-old, and there will be value in developing new measures that assess social skills and social competence during different developmental periods, and that capture youth's ability to engage in texting and other forms of online communication effectively. Assessments of social competence that capture youth's effectiveness in consequential social situations, including those occurring online, may provide significant clinical leverage.

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SUPPLEMENTARY MATERIAL

Supplemental data for this article can be accessed on the [publisher's website](#).

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