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Universal Social, Emotional, and Behavioral Screeners for Preschool Students: A Systematic Review

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Abstract

Social, emotional, and behavioral (SEB) screening is an essential component of multi-tiered systems for supporting students' social-emotional development. SEB screening facilitates early identification and intervention for individual students and may be used to evaluate population-level response to universal positive behavior supports and social-emotional learning programs. Although school-based SEB screening research is common, the majority of studies have focused on screening tools for use with students in K-12 settings. The current study expands upon prior research to systematically review research on school-based teacher-report SEB screening tools for students in preschool. Results indicated 17 studies published in peer-reviewed journals between 2008-2019, which evaluated 6 teacher-report SEB screening tools with preschool populations. All 17 (100%) research studies evaluated the technical adequacy of the screening tools and 1 (5.9%) research study explicitly evaluated aspects of usability and provided novel data to support usability. Results indicate a need to continue to evaluate the technical adequacy of preschool SEB screening tools and to place more explicit focus on evaluating the usability of the tools.

Keywords: *universal screening, social-emotional/behavior, preschool, systematic review*

Early detection and prevention of social, emotional, and behavior (SEB) problems among young children in schools are imperative due to the prevalence of emotional and behavior disorders among preschoolers, which ranges from 10-18% (Cree et al., 2018; Lavigne et al., 2009). The prevalence is concerning given that preschoolers with SEB challenges are placed at risk for future SEB challenges, poor academic achievement, and difficulties with peer and adult relationships (Bulotsky-Shearer et al., 2010; Bulotsky-Shearer & Fantuzzo, 2011). While some challenging behaviors such as defiance, hyperactivity, and aggression may be developmentally normative for young children, these behaviors may warrant intervention if they remain consistent and/or severe over time.

Unfortunately, many preschools have historically used reactive and exclusionary disciplinary practices such as suspension or expulsion. Data from the U.S. Department of Education's Office for Civil Rights (2014) indicate 6% of preschool programs had suspension data for at least one preschool student. Additionally, the expulsion rate for preschool has been reported as 6.7 per 1000 students, which is more than three times greater than the rate of expulsion in grades K-12 (Gilliam, 2005). In examining who is suspended or expelled, the pattern in preschool mirrors what continues to be documented in K-12 schools. Black students only comprise 18% of the preschool population, yet account for 48% of preschool suspensions, whereas White students represent more than half of the preschool population and comprise only half of suspensions (Gilliam & Reyes, 2018). Black students are also at increased risk for expulsion, at a rate two times their Latino/a and White peers, and five times their Asian American peers (Gilliam, 2005).

In response to high rates of preschool suspensions and expulsions, as well as racial disparities within discipline data, the U.S. Department of Health and Human Services and the U.S. Department of Education communicated the need for proactive intervention in order to support students with SEB difficulties (Gilliam & Reyes, 2018; U.S. Department of Health & Human Services & U.S.

Department of Education, 2014). Policy guidelines match multi-tiered systems designed to support students experiencing SEB problems, which view students' needs on a continuum; students exhibiting more severe problems are in need of more intensive and supportive school-based intervention to enhance their school readiness (Gilliam, 2005). Although multi-tiered systems of support (MTSS) have been commonly used in grades K-12, evidence also demonstrates the effectiveness of MTSS for preschool-aged students, particularly with regard to interventions targeting SEB development (Shepley et al., 2020).

Universal screening is an essential component of MTSS because it provides a structured process for identifying students at risk for SEB problems and connecting them with support of the appropriate type and intensity. Universal SEB screening is defined as "the systematic assessment of all students in a given population in order to identify students at risk of emotional, behavioral, or related difficulties" (Dever et al., 2012). Although universal SEB screening has been increasingly implemented in K-12 schools, it has not been as common in preschool settings (Eklund & Dowdy, 2014). Explanations for the discrepancy include MTSS implementation being less widespread in preschool and a limited number of SEB screening tools available for preschool-aged students (Kettler & Feeney-Kettler, 2011).

Preschool is an ideal time for schools to conduct universal screening because it is often the first formal educational setting that young children experience, and it provides an opportunity for preventative SEB instruction and intervention, thus reducing reliance on reactive practices (Gilliam, 2005). It may also help improve equity and reduce racial disparities by reducing reliance on teacher referral, which may be influenced by subjectivity and bias (Eklund & Dowdy, 2014; Skiba et al., 2002). SEB screening in preschool is an effective approach to identifying challenges early and for linking students to intervention they may not have received if screening did not occur (Silver et al., 2010).

Evaluating Universal Screening

Glover and Albers (2007) identified three main areas for evaluating universal screeners: (a) appropriateness, (b) technical adequacy, and (c) usability. *Appropriateness* refers to the extent to which a screener matches the developmental level of students being assessed and the constructs of interest, as well as the fit between the screener and the service delivery needs of the school or district.

Technical adequacy indicates how well the screener performs when identifying students in need of SEB support; this is demonstrated by evidence supporting reliability and validity. Specifically, evidence supporting reliability includes measures of *internal consistency* (i.e., the extent to which items of a screener measure the same phenomenon), *temporal stability* (i.e., the extent to which scores are consistent over time), and *interrater reliability* (i.e., the degree of agreement between different people rating the same child's behavior). Evidence supporting validity, or the extent to which a screener measures what it intends to measure, includes results of analyses examining *concurrent validity* (i.e., the extent to which a screener identifies children currently demonstrating SEB difficulties as indicated by other outcomes of interest), *predictive validity* (i.e., the extent to which a screener differentiates between children who will be at later risk for a particular SEB outcome and those who will not), *construct validity* (i.e., the extent to which scales of a screener measure the intended constructs), and *content validity* (i.e., the extent to which items on a scale adequately represent the full range of behaviors the scale is intended to measure).

Usability indicates the extent to which the screener is *acceptable* (i.e., viewed by stakeholders as appropriate and beneficial), *feasible* (i.e., may be completed with acceptable amounts of time and effort), and *cost-effective* (i.e., the benefits of using a screener outweigh the costs). Additionally, usability includes *treatment utility*, or the extent to which data yielded by a screener may be used to direct or evaluate intervention and/or improve student outcomes.

Glover and Albers (2007) also identified ways in which screeners vary and how the variations should be considered when selecting a tool for a given context. Specifically, the informant, or the person who completes the screener, is important to determine. Teachers are typically used as primary informants in school-based screening, particularly with younger children, while parents are used as informants less frequently (Hendricker et al., 2018). Correlations between parent and teacher ratings of preschool students' SEB functioning show moderate agreement (*r*s = .22–.26). However, teacher ratings are predictive of future SEB and academic outcomes in kindergarten and parent ratings do not significantly improve prediction of outcomes above and beyond teacher ratings (Moore et al., 2021). Additionally, teachers are more likely than parents to rate preschool students as at-risk, which implies that using teacher ratings would result in more students being identified and connected to proactive targeted or intensive school-based SEB intervention than use of parent ratings alone (Moore et al., 2021). Overall, research indicates teachers and support staff in the school play an important role in promoting young children's SEB functioning and positive well-being through universal screening.

Despite the advantages of using teachers as primary informants in preschool SEB screening, including parents may offer additional benefits for children and families. Engaging parents in SEB screening facilitates home-school collaboration by validating parents' participation in their children's education and fosters the development of positive, constructive relationships between parents and school staff that continue beyond preschool (Hendricker et al., 2018; Powell et al. 2010). Parents also provide information about their children's behavior in social and community contexts outside of school, which may lead to more comprehensive and effective intervention (Sheridan et al., 2010).

Prior Reviews of Social, Emotional, and Behavioral Screeners

Preschool Screeners

Two reviews of SEB screeners specific to preschool populations were known to the authors at the time this review was conducted. Caselman and Self (2008) reviewed aspects of technical adequacy for nine parent-report and caregiver/teacher-report screeners measuring preschool students' SEB problems and strengths. Usability evidence was not reviewed or provided. At the time, Caselman and Self (2008) concluded, "…most of the parent-report and caregiver/teacher-report measures examined in this review continue to need additional research to adhere to the rigorous standards of sound psychometric instruments" (p. 112).

Miles et al. (2018) conducted a review of screeners intended to broadly assess "kindergarten readiness" with explicit consideration of appropriateness ("suitability"), technical adequacy, and usability; however, the study reviewed screeners for students from 4-7 years old and was not limited exclusively to SEB assessments. That is, screeners designed to measure cognitive development/intelligence, and/or academic skills were also included. Additionally, multiple sources were used in the review, including websites, technical manuals, and published test reviews in databases, and thus the review was not limited to peer-reviewed literature. Additionally, Miles et al. (2018) created usability criteria which included the comparison of administration time and costs per class (25 students per class), scoring complexity, available test variations, and the level of training required. Each criterion was rated by the authors as "good," "adequate," or "not adequate." Although Miles et al. (2018) reviewed 48 assessment tools, only two fell under the traditional classification of SEB screeners: Behavioral Assessment System for Children, 3rd edition: Behavioral and Emotional Screening System (BASC-3 BESS; Kamphaus & Reynolds, 2015) and Teacher-Child Rating Scale 2.1 (T-CRS 2.1; Hightower & Perkins, 2010). Both were rated

positively on some aspects of usability (e.g., feasibility, cost) and technical adequacy (e.g., internal consistency, validity). Additional assessments of social development in the review were individually administered assessments or full-length rating scales typically used for classification and were not feasible for screening.

Elementary and Secondary Screeners

Several reviews of school-based SEB screening have focused on use with elementary or secondary populations. For example, Houri and Miller (2020) reviewed the psychometric properties of 11 teacher-report SEB screeners used to assess "kindergarten readiness," which included emotional and behavioral self-regulation, and social/interpersonal skills. Although the review was systematic, it included only literature published in secondary sources (e.g., Buros Center's *Mental Measurements Yearbook)*, and it did not include studies published in peer-reviewed literature. Despite the fact that the review focused on kindergarten SEB screeners, five measures reviewed by Houri and Miller (2020) have preschool versions: BASC-3 BESS, Conners Early Childhood Behavior Short Form (Conners EC(S); Conners, 2009), Systematic Screening for Behavior Disorders, Second Edition (SSBD-2; Walker, Severson, & Feil, 2014), Social Skills Improvement System Performance Screening Guide (SSIS-PSG; Elliott & Gresham, 2007), and T-CRS 2.1. Three of the measures (BASC-3 BESS, Conners EC(S), T-CRS 2.1) had "adequate" to "strong" evidence for internal consistency and temporal stability with overall samples, which included students in preschool, and three (BASC-3 BESS, SSBD-2, SSIS-PSG) had some evidence to indicate interrater reliability. Only three measures (Conners EC(S), SSBD-2, T-CRS 2.1) had evidence to support content validity and three measures (BASC-3 BESS; Conners EC(S), SSBD-2) had adequate evidence to demonstrate concurrent and/or predictive validity.

Brann et al. (2020) conducted perhaps the most comprehensive review of peer-reviewed research on SEB screeners used with K-12 students. The review focused primarily on peer-reviewed

research studies that explicitly evaluated usability. Definitions for specific components of usability, as well as appropriateness and technical adequacy, were derived from Glover and Albers (2007). Results indicated 97% of research studies (n = 124) evaluated technical adequacy and a majority evaluated appropriateness. Surprisingly, less than 20% of studies evaluated usability, which typically involved teachers' perception of acceptability and/or feasibility. Only five screeners evaluated by Brann et al. (2020) had corresponding preschool versions (BESS, BASC-3 BESS, SSIS-PSG, Strengths and Difficulties Questionnaire [SDQ; Goodman, 1997], SSBD). The significant lack of usability research suggests a tendency to evaluate psychometric evidence without regard to how the SEB screeners will be used in school settings to support the social and emotional development of students. Given that Brann et al. (2020) focused on research in K-12 settings, the extent to which usability has been evaluated in preschool SEB screening research remains unknown.

Research Questions

SEB screening is an essential component of MTSS for supporting preschool students' social-emotional development. Although school-based SEB screening research is common, most studies have focused on screeners for K-12 settings. Previous reviews of preschool SEB screeners did not examine usability or were not limited to peer-reviewed research. The purpose of the current study was to conduct a systematic review of teacher-report universal SEB screeners for use in preschools. The goal was to provide technical adequacy and usability evidence from peer-reviewed research to help guide teachers and mental health practitioners in their screener selection. The following research questions guided the systematic review:

1. What teacher-report universal SEB screeners are available for preschool-age students in school settings? Of these, how many also include parent-report versions?

2. What subscales/constructs are evaluated by each of the screeners?
3. What is the scope of the evidence supporting the technical adequacy (e.g., reliability, validity, classification accuracy) of the identified screeners?
4. What is the scope of evidence supporting the usability (e.g., feasibility, costs, treatment utility) of the identified screeners?

Method

A systematic review of peer-reviewed research published between 2008 and 2019 was conducted to identify articles for inclusion. ERIC and PsychInfo databases were used with search term keywords including "*screening*" AND "*social*" OR "*emotion**" OR "*behavior**". Results were filtered to include only peer-reviewed journal articles written in English. This initial search yielded 480 articles, which were examined to determine if the study involved a SEB universal screener used with preschool populations. Each article was examined and included in the systematic review if the article: 1) examined or used a universal screener with preschool students completed by a teacher in a school setting within the U.S., and 2) presented data on technical adequacy of the screener. After applying the inclusion criteria, of the 480 articles, 13 relevant articles were initially considered for inclusion. An ancestral search of the text and references were then examined for further relevant articles and/or the mention of additional screeners, resulting in the identification of an additional 10 articles considered for inclusion. The 23 articles were examined to confirm appropriateness for inclusion in the review; any inclusion uncertainties were discussed by the research team. Of these 23, seven articles were excluded for failing to meet inclusion criteria (e.g., outside of U.S.). The final review included 16 articles, examining a total of six screeners across 17 different studies (one article included two studies). Please see Table 1 for a flow diagram depicting the inclusion process.

The 17 studies were coded according to Glover and Albers (2007) aforementioned technical adequacy and usability criteria, and the procedural characteristics of the screeners were summarized (e.g., subscales, number of items, informant/rater). Articles were initially coded by one doctoral student enrolled in a School Psychology Program. Due to the small number of articles, all articles were independently coded by the first author, which revealed only one inconsistency that was resolved through discussion between the doctoral student and the first author. Specifically, initial coding by the doctoral student of the Downs et al. (2012) article indicated evidence to support concurrent validity of the SDQ; however, review by the first author determined concurrent validity analyses were conducted using a sample of preschool students in German schools and the analyses were therefore not coded as providing concurrent validity evidence for students in the U.S.

Results

A total of 17 studies evaluated six teacher-report universal SEB screeners for preschool students: Ages and Stages Questionnaire: Social Emotional (ASQ:SE; Squires et al., 2002), Attention, Behavior, Language, and Emotion Screening Tool (ABLE; Barbarin, 2004), Behavioral and Emotional Screening System Teacher Rating Scale-Preschool form (BESS TRS-P; Kamphaus & Reynolds, 2007), Pediatric Symptoms Checklist (PSC-17; Jellinek & Murphy, 2006), Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997), and Student Risk Screening Scale for Early Childhood (SRSS-EC; Lane et al., 2015). Five of the six screeners also have parent-report forms available. Characteristics of each screener are provided in Table 1 and in-depth descriptions are provided below. All 17 studies (100%) examined technical adequacy, and one study (5.9%) provided novel data to support usability. The BESS-TRS-P was the focus of the most studies (n = 10), followed by the PSC-17 (n = 2) and the SRSS-EC (n = 2). The ASQ:SE, ABLE and SDQ were each evaluated in one study.

Table 1. *Universal SEB Screeners for Preschool Students in Schools*

Screener	Completion Time	Items	Subscales	Preschool Forms Available	Cost	Technical Adequacy Evidence	Usability Evidence
ASQ:SE	0-15 minutes per student	Differs by age group	None	Teacher; Parent	$250 for forms that can be photocopied	Yes	No
ABLE	Not reported	15 initial items, 7 follow-up items	Attention, Behavior, Emotion, Language	Teacher; Parent	Not reported	Yes	No
BESS TRS-P	2-5 minutes per student	25	none	Teacher; Parent	Not reported	Yes	Yes
PSC-17	1-2 minutes per student	17	Internalizing, Externalizing, Attention	Teacher; Parent	Free	Yes	No
SDQ	Not reported	25	Conduct, Problems, Hyperactivity, Emotional Symptoms, Peer Problems, and Prosocial Behavior	Teacher; Parent	Free	Yes	No
SRSS-EC	10 minutes per class	11	Internalizing, Externalizing	Teacher	Free	Yes	No

Note. ASQ:SE = Ages and Stages Questionnaire-Social Emotional; ABLE = Attention, Behavior, Language, and Emotion Screening Tool; BESS TRS-P = BASC-2 Behavioral and Emotional Screening System Teacher Rating Scale-Preschool; PSC-17 = Pediatric Symptoms Checklist; SDQ = Strengths and Difficulties Questionnaire; SRSS-EC = Student Risk Screening Scale for Early Childhood.

Ages and Stages Questionnaire: Social Emotional (ASQ:SE; Squires et al., 2002*)*

The ASQ:SE is designed to assess the social and emotional difficulties of young children from infancy to preschool. The ASQ:SE yields an overall risk score, although items measure difficulties in self-regulation, compliance, communication, adaptive functioning,

autonomy, affect, and social interaction. Higher scores correspond to higher risk, indicating deficits and/or developmental delays. Forms are available in both English and Spanish. The ASQ:SE takes approximately 10-15 minutes to screen a class, and costs $250 for forms that may be photocopied.

Technical adequacy of the ASQ:SE was examined by one study (Pooch et al., 2019); however, usability was not evaluated. Results indicated adequate internal consistency and consistent measurement (i.e., concurrent/divergent validity) with the BASC-2 TRS. Statistically significant positive correlations were found between the ASQ:SE total score and BASC-2 Hyperactivity and Aggression scales, as well as the BASC-2 Behavioral Symptoms Index, a global measure of SEB functioning. Statistically significant negative correlations were found between the ASQ:SE total score and BASC-2 Social Skills and Adaptability scales, and the BASC-2 Adaptive Skills composite. These correlations indicate congruence between risk measured by the ASQ:SE and problem behaviors and skill deficits measured by the BASC-2.

Attention, Behavior, Language and Emotion Screening Tool (ABLE; Barbarin, 2004*)*

The ABLE is a 15-item questionnaire intended to measure risk in attention, behavior, language, and emotion domains. The 15 items are marked "yes/no," and the most concerning item marked "yes" is further assessed by seven follow-up questions designed to evaluate severity. More than three positive answers on the severity scale indicates a need for follow-up. Teacher and parent forms are available in English and Spanish.

The ABLE was examined by one study (Barbarin et al., 2019), which evaluated technical adequacy, but did not include new data related to usability. Results indicated the ABLE consistently measured a single severity construct across informants and problem type; however, individual items functioned differently across teachers and parents. Although the study did not explicitly

evaluate usability, Barbarin et al. (2019) argued the severity scale may usefully inform treatment decisions, by identifying children with more serious problems to whom limited resources may be efficiently allocated.

BASC-2 Behavioral and Emotional Screening System -Teacher Rating Scale – Preschool (BESS-TRS-P; **Kamphaus & Reynolds, 2007***)*

The BESS-TRS-P is a 25-item measure designed to measure behavioral and emotional risk for preschoolers. The BESS-TRS-P includes items measuring internalizing and externalizing problems, as well as adaptive behaviors from the Behavioral Assessment System for Children- 2nd edition (BASC-2; Reynolds & Kamphaus, 2015). Items are rated on a 4-point scale (0 = never, 1 = sometimes, 2 = often, and 3 = almost always). The BESS-TRS-P yields a total score measuring Maladaptive Behavior, with T-scores ≥ 60 considered at risk. Parent and teacher forms are available in both English and Spanish and can be completed electronically or on paper.

The BESS-TRS-P was examined by 10 studies and was the most frequently studied screener. All ten studies (100%) evaluated technical adequacy and one (10%) presented new data related to usability. Four studies (40%) evaluated the construct validity (factor structure) of the BESS and found varied results. Yanosky et al. (2013) found a three-factor model to be the best fitting after conducting exploratory and confirmatory factor analysis; however, fit indices for the three-factor model were lower than desired. DiStefano et al. (2013, 2015, 2016) found a bifactor model, with a general maladaptive behavior factor and four subscale factors (low Adaptive Skills, School Problems; Externalizing Problems, and Internalizing Problems), to exhibit the best fit. Results of these studies informed an updated version of the BESS which corresponds with the BASC-3 (Reynolds & Kamphaus, 2015) and includes a total risk score and subscale scores for the four factors.

Three studies (30%) examined internal consistency and yielded high alpha coefficients, indicating items measure the same constructs (DiStefano et al., 2014; Greer et al., 2015; Yanosky et al., 2013), and three studies (30%) found strong temporal stability for preschool students across 12 weeks (Yanosky et al., 2013), 6 months (Greer et al., 2015), and the academic year (Dever et al., 2018).

Two studies (20%) evaluated correlations between different types of informants. Greer et al. (2015) found a high degree of agreement between classroom teachers and their assistants when completing ratings for preschool students. Kettler et al. (2017) found agreement between teachers and parents to be lower but still within the expected range based on prior research (e.g., Achenbach et al., 1987).

Five (50%) studies evaluated criterion validity using various methods. Dowdy et al. (2013) evaluated concurrent validity and found BESS TRS-P scores to be (a) strongly negatively correlated with measures of kindergarten readiness, including social-emotional readiness, and receptive vocabulary, and (b) moderately positively correlated with the ASQ:SE. Stated differently, more severe problems measured by the BESS TRS-P were associated with more significant academic and social skills deficits. Yanosky et al. (2013) found scores on the BESS TRS-P to correlate strongly with the Student Teacher Relationship Scale (STRS; Pianta, 2001) total (negative correlation) and teacher conflict scores (positive correlation). Regression models indicated BESS TRS-P scores differentiated general education preschool students from students receiving special education or those referred to the student support team (Yanosky et al., 2013). Greer et al. (2015) found BESS TRS-P scores to correlate strongly with both externalizing and internalizing problems as measured by the Achenbach System of Empirically Based Assessment Teacher Report Form (ASEBA TRF; Achenbach & Rescorla, 2000), administered at the same time during the fall screening and between fall BESS TRS-P and spring ASEBA TRF ratings. In separate studies, Kettler et al. (2017) and Dever et al. (2018) found high overall classification accuracy

(Area Under the Curve > .90) of the BESS TRS-P and acceptable (> .80) sensitivity, specificity, and negative predictive value when predicting ASEBA TRF scores in the same academic year. However, positive predictive values were less than desirable, which indicated a large number of false positives (i.e., students were identified by the BESS TRS-P as having SEB problems but not by the ASEBA TRF).

Finally, Greer et al. (2012) examined usability by surveying 32 preschool teachers. The majority of teachers (73%) indicated the BESS TRS-P was useful, particularly for identifying externalizing problems, and worth the time necessary to complete the screener. Teachers estimated 7 minutes per student, on average, were needed to complete the BESS TRS-P. The majority of teachers indicated the BESS TRS-P was acceptable (65%) and slightly more than half (56%) indicated the screener was feasible within typical school responsibilities. In qualitative interviews, teachers reported the screener was (a) relevant to student difficulties, (b) effective in identifying students in need of follow-up assessment and/or intervention, and (c) helpful in providing information that may be used to discuss with parents.

Pediatric Symptoms Checklist (PSC-17; Jellinek & Murphy, 2006*)*

The Pediatric Symptoms Checklist (PSC-17) is a free, 17-item checklist designed to measure the social-emotional risk of children with regard to Internalizing, Externalizing, and Attention difficulties. Items are rated on a three-point scale from 0 (*never*) to 2 (*often*). The PSC-17 was originally developed for use in pediatric settings and is available in several other languages. Screening with the PSC-17 takes approximately 1-2 minutes per student.

Technical adequacy of the PSC-17 with preschool samples was evaluated by two studies (DiStefano et al., 2017, 2019); however, neither evaluated usability. Both studies provided evidence of construct validity with "good" fit for the three-factor structure and high internal constancy for each of the three problem scales. DiStefano et

al. (2017) validated the three-factor structure via confirmatory factor analysis and exploratory structural equation modeling. DiStefano et al. (2019) provided additional evidence for three factors, as well as strict measurement invariance and equivalence across the two versions of the PSC-17 (i.e., both versions of the PSC-17 measure the same constructs equally well). Alpha and omega coefficients indicated high internal consistency (DiStefano et al, 2017, 2019).

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997*)*

The Strengths and Difficulties Questionnaire (SDQ) is a free 25-item measure designed to screen for social, emotional, and behavioral challenges in children aged 3-16. In addition to a total risk score, the SDQ measures risk across four problem scales (Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems) and one adaptive scale (Prosocial Behavior). Each item is rated on a 3-point scale (0 = *not true*, 1 = *somewhat true*, 2 = *certainly true*). Total risk scores range from 0-40, with higher scores corresponding to higher risk. SDQ is available in over 64 languages and has both teacher and parent forms for preschool students.

The SDQ was examined by one study (Downs et al., 2012), which examined technical adequacy, although the study did not present data on usability. Confirmatory factor analysis indicated adequate fit for the five-factor structure across German-speaking, English-speaking and Spanish-speaking U.S. preschool samples. Internal consistency for the 20-item total problems scales was adequate and correlations between administrations 5 months apart were moderate to high for the English and Spanish versions. However, these correlations may not be representative of test-retest reliability which is typically measured over a shorter interval; social and emotional functioning are likely to change over 5 months. Concurrent validity analyses were limited to the sample of German preschool students and therefore not included as evidence in the current review.

Student Risk Screening Scale for Early Childhood (SRSS-EC; Lane et al., 2015*)*

The Student Risk Screening Scale for Early Childhood (SRSS-EC) is the downward extension of a measure designed to screen for internalizing and externalizing problems in elementary and secondary students. A teacher-report form is the only version available, and the 11 items are rated on a 4-point Likert-type scale ranging from 0 (*never*) to 3 (*frequently*). Scores are classified into "low," "moderate," and "high-risk" status. The SRSS-EC is free and the matrix format is designed to facilitate efficient completion. Screening with the SRSS-EC takes approximately 10 minutes per class.

Technical adequacy of the SRSS was examined by two studies presented in one article by Lane et al. (2015). Appropriateness was also examined by extending the SRSS to a new population (preschool); however, neither study explicitly evaluated usability. Study 1 supported retention of 11 items across two factors (7 externalizing items and 4 internalizing items) via exploratory factor analysis and indicated high internal consistency. Study 2 confirmed the 2-factor structure and provided evidence for convergent validity of the SRSS-EC with the SDQ and the maladaptive scales within the Combined Frequency Index of the Early Screening Project (Walker et al., 1995). That is, scores yielded by the SRSS-EC strongly correspond with overall SEB problems as measured by other assessment tools (e.g., SDQ, Early Screening Project).

Discussion

We systematically reviewed extant research published in peer-reviewed journals that evaluated the technical adequacy and usability of teacher-report SEB screeners for use within MTSS to support the social-emotional development of preschool students. Results of the current systematic review indicate several options are available for schools seeking to implement universal SEB screening with preschool-age students. Six teacher-report SEB screeners (five of which have corresponding parent-report versions) were identified

in the literature. All six screeners have at least some recent evidence supporting their technical adequacy for screening purposes across 17 research studies published in the peer-reviewed literature; however, the volume of evidence varied significantly across screeners.

The BESS TRS-P has the most available evidence to support technical adequacy with 10 peer-reviewed research articles providing data. Overall, evidence provides strong support for the construct validity of the BESS-TRS-P, which measures adaptive skills, school problems, externalizing behaviors, and internalizing behaviors, as well as overall maladaptive behaviors. Studies also provide strong evidence of reliability. Specifically, internal consistency and temporal stability across intervals up to one academic year are strong, and interrater reliability between teachers and parents is consistent with results of other studies. With regard to validity, scores yielded by the BESS-TRS-P correspond with other measures of preschool students' social and emotional skills both concurrently and over the course of an academic year. Finally, evidence indicates the BESS-TRS-P effectively differentiates between those students who exhibit and do not exhibit problems in school based on external criteria (e.g., special education status, referral to the student support team, scores on the ASEBA TRF). Given the extent of evidence supporting its reliability and validity, the BESS-TRS-P may be used to consistently and accurately identify preschool students at risk for SEB challenges so that they may be provided with targeted and/or intensive intervention.

Although the volume of evidence supporting the technical adequacy of the SRSS-EC is smaller, two studies (included in one article) indicate items on the SRSS-EC clearly and consistently measure two distinct constructs (externalizing and internalizing problems). Concurrent validity analyses show scores yielded by the SRSS-EC strongly correspond with overall SEB problems as measured by other assessment tools (e.g., SDQ, Early Screening Project); therefore, the SRSS-EC may also be used to accurately identify preschool students at-risk for SEB challenges.

One study indicates overall SEB risk measured by the ASQ:SE corresponds with overall problem behaviors, hyperactive behaviors, and aggression, as well as social and adaptive skill deficits measured by another well-researched SEB assessment tool, the BASC-2. As a result, school stakeholders can have some confidence that the overall score on the ASQ:SE predicts concurrent risk for SEB problems.

One study provides minimal evidence to support the construct validity and temporal stability of the SDQ. Results indicate items of the SDQ measure five distinct constructs (Conduct Problems, Hyperactivity, Emotional Symptoms, Peer Problems, and Prosocial Behavior) and do so consistently over a 5-month period; however, the extent to which scores on the five scales predict current or future risk for SEB problems exhibited by preschool students in U.S. schools remains unknown based on the reviewed literature. Stated differently, school stakeholders may not be able to use the SDQ to accurately identify students at-risk so that they may be supported with SEB intervention, and its use is not recommended at this time based on available evidence.

Results of two studies indicate items of the PSC-17 adequately and consistently measure three distinct constructs (internalizing, externalizing, and attention problems) among samples of preschool students; however, no evidence supporting the extent to which the PSC-17 predicts SEB outcomes is provided in the reviewed literature. Without additional validity evidence, the ability of school stakeholders to predict risk among preschool student populations and make decisions regarding intervention using the PSC-17 is limited.

Finally, one study includes analysis of how individual items of the ABLE perform and does not include evidence of reliability or criterion-related validity to support use of the ABLE at this time. Furthermore, results indicate that responses to the items within the ABLE are likely influenced by the gender of the preschool student being rated and the type of rater (e.g., teacher, parent).

Reliable and valid screening tools allow school-based teams to accurately identify students at-risk for SEB difficulties in order to connect them with appropriate intervention; therefore, use of screening tools that lack such evidence, including the PSC-17 and ABLE in this review, is not recommended at this time. Overall, the volume of evidence from peer-reviewed studies to support the technical adequacy of teacher-report preschool SEB screening measures is far less than the volume of evidence (26 screening measures evaluated across 128 studies) to support the technical adequacy of K-12 SEB screening measures reviewed by Brann et al. (2020).

As with SEB screeners intended for K-12 students reviewed by Brann et al. (2020), very little empirical data to support the usability of the preschool screeners were available. Only one screener (BESS TRS-P) had data evaluating usability, specifically social validity, feasibility, and acceptability (Greer et al, 2012). Importantly, only 65% teachers indicated the BESS TRS-P was acceptable, and only 56% indicated the screener was feasible, which means substantial proportions of teachers did not view the screener to be usable in typical school settings. This is concerning given that assessment procedures that are not acceptable and feasible to stakeholders are not likely to be consistently and universally used in preschool settings.

Overall, findings highlight the need for researchers to explicitly consider and evaluate the usability of preschool SEB screeners. Future evaluations of usability are necessary, in order to provide school personnel with guidance regarding the extent to which SEB screening tools may be used in cost-effective and sustainable ways that inform intervention within MTSS. Given that costs and limited resources are cited as barriers to conducting SEB screening (Kauffman, 1999), availability of efficient and cost-effective SEB tools may facilitate increased screening and ultimately improve the extent to which school personnel may use data to inform appropriate intervention for students.

Limitations

Although the current study identifies several teacher-report SEB screening tools that may be used with preschool students, results should be considered in light of a few limitations. First, our review included only studies published in peer-reviewed literature to examine evidence supporting the appropriateness, technical adequacy, and usability of the screening tools. Therefore, we may have missed data included in manuals or test reviews, as well as in unpublished studies or dissertations. Second, it is possible that inclusion of screening tools in the review was affected by the timeframe (2008-2019) and search terms. Other SEB screeners may be available for preschool students that have evidence to support their technical adequacy and usability, which were not included in this review because the studies were conducted prior to 2008 or used different terms to classify the measures. For example, our search did not yield recent evidence for the SSBD-2 or the SSIS-PSG, despite the fact that the target age range for these measures includes preschool. Despite these limitations, results of the present study may be considered together with prior reviews of preschool SEB screeners that did include data from test manuals and reviews (e.g., Houri & Miller, 2020) to provide a more complete picture of tools available for preschool and their supporting evidence.

Conclusions and Future Directions

Several screeners are available to school professionals seeking to assess the SEB functioning of students in preschool. Selection of a specific SEB screening tool depends on the appropriateness of the screener for the local context, the extent to which the screening tool yields reliable and valid information, and how the information may be used to inform SEB supports and intervention for preschool students. At the time of this review, the majority of research on teacher-report preschool screeners focused on evaluating technical adequacy, a finding that is consistent with the

peer-reviewed literature evaluating SEB screeners used in K-12 education settings (Brann et al., 2020). Given the large volume of reviewed studies evaluating the construct validity of preschool SEB screeners, including subscales verified through exploratory and confirmatory factor analyses, future research should evaluate the extent to which subscales measuring discrete constructs are developmentally appropriate for preschool students and useful for informing the type of supports and interventions typically implemented in preschool settings. Limited research has explicitly evaluated how preschool SEB screeners may be used within MTSS to support students' social-emotional development. Future research should focus on evaluating the costs vs. benefits and treatment utility of preschool SEB screening tools, including screening tools that may not have been evaluated in the peer-reviewed literature and tools used in settings outside of schools (e.g., pediatric and mental health settings).

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