Development and Standardization of a Test to Measure the Emotional and Behavioral Strengths of Preschool Children

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The purpose of the present study was to document the development and standardization of the *Preschool Behavioral and Emotional Rating Scale* and to examine its factor structure, internal consistency, and criterion validity. Data from a nationally representative sample (N = 1,471) of preschool children with and without disabilities were collected. An exploratory factor analysis identified four factors: Emotional Regulation, School Readiness, Social Confidence, and Family Involvement. The subscales and total instrument appear remarkably stable and consistent (.838 to .983). Age differences across 3-, 4-, and 5-year olds were small in magnitude, although girls were rated as possessing significantly more strengths than boys. Preschool children with disabilities were seen as having less emotional and behavioral strength than their peers without disabilities. The limitations and future research needs are discussed.

Keywords: preschool; strength-based assessment; emotional/behavioral scale

Recently, several national groups and federal agencies have questioned the adequacy of instruments to assess the social-emotional competence of young children. These groups have included the National Institute of Child Health and Development, Administration for Children and Families, Office of Special Education and Rehabilitative Services, among others. Essentially, many of the assessment instruments (a) do not include large, nationally representative samples of preschool children with or without disabilities; (b) were not standardized or developed for use with diverse or disabled populations; (c) require extensive training and thus are limited for widespread use among preschool personnel; and (d) lack adequate psychometric properties. Another issue with many of the preschool assessment tests is that they share a single perspective; simply stated, they are deficit based. The identification of deficits or weakness is often critical for qualification for specialized education and mental health services; however, there is a potential problem in that assessment that is solely designed to determine deficits may unnecessarily limit the range and types of information collected on individuals and may unduly emphasize the negative aspects of a child's behavior or functioning at the expense of the positive.

Several years ago the Working Group on Developmental Assessment identified a set of principles for guiding the assessment of young children (Greenspan & Meisels, 1996). Among the 10 identified principles was 1 focused on the need for assessing competencies and strengths. Specifically, the Working Group stated, "The assessment process should identify the child's current competencies and strengths, as well as the competencies that will constitute developmental progression in a continuous growth model of development" (Greenspan & Meisels, 1996, p. 17). Based on this principle, early childhood policy makers, practitioners, and researchers view the identification of children's strengths as an integral part of assessment. The child's strengths and competencies alert the assessor to the personal and ecological resources that a child may be able to call on to meet later developmental changes. The information also aids in fashioning interventions that make good use of available strengths and resources (Provense, Erikson, Vater, & Palmeri, 1995).

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Risk factors increase the likelihood that a child will develop a behavioral or emotional deficit, problem, or pathology. Known risk factors include biological (e.g., genetic factors, developmental delays) and environmental (e.g., poverty, maternal depression) variables. Not all children with identified risk factors, however, exhibit poor adjustment and life outcomes. Indeed, within the past few decades, researchers have focused on the development of individuals who overcame extremely negative life situations to lead normal, productive lives. Masten (1994) defined resilience in children as "successful adaptation despite risk and adversity" (p. 3). There appear to be several factors that "protect" children who are at risk of poor adjustment or life outcomes. Protective factors are those "individual or environmental characteristics that moderate better outcomes in people at-risk or exposed to adversity" (Masten, 1994, p. 7). Known protective factors can be grouped into personal, family, and community factors (see Garmezy, Masten, & Tellegen, 1984; Rutter, 1985). Rutter (1987) suggests that risk factors and protective factors interact to produce or moderate either positive or negative outcomes in children.

Strength-based assessment is related to the research on risk, resilience, and protective factors. Strength-based assessment is focused on identifying the strengths, competencies, assets, and resources that a child and family possess (Epstein & Sharma, 1998). Personal strengths are the foundation for future growth and development and therefore may moderate the challenging life experiences of the child (Rutter, 1985). More important, the strength-based information gathered during assessment may become a key factor in developing an individual child and family services plan for the child and family or an individual educational program for the child, or both. Moreover, the strengths-based perspective appears to be an ideal fit for use in preschool, early childhood special education, and Head Start programs.

Given the research pointing to the importance of protective factors for children at risk of behavioral problems and the apparent lack of a psychometrically sound instrument to assess strengths or assets of preschoolers, we began development of such a test. The *Preschool Behavioral and Emotional Rating Scale* (PreBERS; Epstein & Synhorst, in press) is a standardized, norm-referenced test, which was developed to address some of the previously mentioned concerns about the adequacy of other preschool measures. The PreBERS is composed of 42 items and is completed by preschool teachers and staff who are knowledgeable about the child being assessed. The PreBERS assesses four dimensions of emotional and behavioral strengths in preschoolers 3 to 5 years of age: (a) Emotional Regulation (13 items; e.g., "takes turns in play situations"), (b) School Readiness (13 items; e.g., "follows multi-step directions"), (c) Social Confidence (9 items; e.g., "identifies own feelings"), and (d) Family Involvement (7 items; e.g., participates in family activities"). In each of these areas, adults who are working with the preschool child (e.g., teachers, paraprofessionals) judge a series of statements using a 4 point Likert-type scale (0 = not at all like the child, 1 = notmuch like the child, 2 = like the child, 3 = very much likethe child). For each of the four subscales, a total raw score is calculated by summing the item scores. Raw scores for each of the subscales can be converted to standard scores with a mean of 10 and a standard deviation of 3. An overall strength index is derived by summing the standard scores of the four subscales and converting that sum into a standard score.

The content validity of the PreBERS was determined using a multistep process described in detail elsewhere (Epstein & Synhorst, in press). First, a list of the 52 items from the original Behavioral and Emotional Rating Scale (BERS; Epstein, 2004; Epstein & Sharma, 1998) was sent to a group of 150 preschool teachers and administrators who were asked to rate the appropriateness of each item for use with preschool children. Based on the responses, 21 of the original items were deleted. Second, a thorough literature review of the social-emotional development of children 3 to 5 years of age was conducted. Numerous excellent sources identified or suggested important items related to social-emotional development (e.g., DelCarmen-Wiggins & Carter, 2004; National Research Council and Institute of Medicine, 2000). Also, tests, rating scales, and inventories assessing the emotional and behavioral development of preschool children were examined. For example, the items of the ASEBA Preschool Forms and Profiles (Achenbach & Rescorla, 2000) were analyzed for content, format, and wording. The review of scholarly articles and other assessments resulted in 39 items being added to the PreBERS prototype. Third, a study was conducted to determine whether the items would discriminate between children with and without disabilities (Epstein & Synhorst, in press). The findings identified 8 items that did not differentiate the two samples, and they were deleted. Finally, data on 239 preschoolers 3 to 5 years of age were collected on the 62-item PreBERS prototype. An exploratory factor analysis was conducted with this data set. An additional 5 items were deleted based on redundancy, overlap with other items, or failure to contribute to a factor. Thus, the content validation process included several item-development, item-identification, itemdiscrimination, and data-reduction strategies, resulting in a 57-item prototype scale.

The goal of the present study was to further develop and refine the PreBERS. This was achieved by obtaining

Table 1Demographic Characteristics ofthe PreBERS Norming Sample

| Characteristics | Percentage of Sample | Percentage of U.S, Under 5 Years Population ^b |
|------------------------------------|----------------------------|---|
| Geographic Area | | |
| Northeast | 20 | 18 |
| South | 37 | 36 |
| Midwest | 24 | 22 |
| West | 19 | 24 |
| Gender | | |
| Male | 52 | 51 |
| Female | 48 | 49 |
| Spanish/Hispanic | | |
| Yes | 14 | 14 |
| No | 86 | 86 |
| Ethnicity | | |
| White | 72 | 80 |
| Black/African American | 14 | 13 |
| Other | 14 | 7 |
| Exceptionality status ^a | | |
| Disability | 18 | 13 |
| No Disability | 82 | 87 |

^aBased on school-aged data reported in *The Statistical Abstract of the United States*, by U.S. Bureau of the Census, 2006, Washington, DC: Author.

^bBased on total population data reported in *The Statistical Abstract of the United States*, by U.S. Bureau of the Census, 2006, Washington, DC: Author.

a nationally representative sample of preschool children and (a) validating the factor structure of the PreBERS, (b) deriving age and gender norms, (c) assessing whether any age and gender differences exist, (d) determining the internal consistency of the PreBERS factors and the interrelationships of its factors, and (e) evaluating the criterion validity of the PreBERS.

Method

Participants

The PreBERS was normed on a sample of 1,471 preschoolers in 26 states and Washington, DC. The characteristics of the sample with regard to geographic area, gender, race, ethnicity, residence, and disabling condition are reported in Table 1. Children with disabilities were school identified as disabled by their preschools, and in such cases their teachers were instructed to record the disability condition. The percentages of these characteristics

were compared with data reported in *The Statistical Abstract of the United States* (U.S. Bureau of the Census, 2001) for the preschool population. A comparison of the percentages across the demographic variables indicates that the PreBERS sample is representative of preschool children nationwide.

Procedures

Trained educators from around the United States were recruited to coordinate data collection. First, a list of preschool programs in each state was constructed. Then, depending on the size of the list for each state, 10% to 20% of the preschools per list were randomly selected to be contacted. Specifically, directors or coordinators of the identified preschool programs were contacted by telephone, mail or e-mail; provided information on the purpose of the study; and asked to coordinate data collection at their sites. If they agreed to participate, they were sent a letter stating the purpose of the study, instructions in how to select the preschool children to be rated, and specific guidelines on how to complete the PreBERS form. No information was asked about the school setting or the instructional program. Participating coordinators were further informed on how to randomly select the number of children at each site. Specifically, raters were given the following instructions to ensure an unbiased selection process.

First, decide how many students you wish to rate. Then, start either at the top or bottom of your class roster and rate every other child. Do not skip any child unless you have known this child less than two months. Stop selecting and rating children when you have reached the number of children you wished to rate.

Raters were asked to select only children they had known for at least 2 months. The university internal review board approved the recruitment process for the participants.

Instrument

As previously described, the content validation process of the PreBERS resulted in a prototype instrument of 57 items. The PreBERS is designed to be completed in approximately 10 min by teachers or other school staff who read each item and mark the rating that best reflects how much of a given characteristic is representative of the child. The instrument is administered on a 4-point Likert scale that ranges from 0 (*not at all like the child*) to 3 (*very much like the child*).

Results

Factor Analysis

Based on the national data, the 57 items of the prototype PreBERS were intercorrelated. The correlation matrix of the 57-item pool was subjected to an exploratory factor analysis, scree test, and eigenvalue cutoff scores of 1.0 or higher. These criteria indicated the relative suitability of four factors. Items were retained on the final version of the scale if they met the following criteria: a) items had to load on a factor at .40, b) items could not be redundant with an item with a higher loading, and c) items had to have conceptual coherence with the factor. The remaining items were factor analyzed, and four factors were rotated to a Promax solution. The factor loadings and eigenvalues for each factor are presented in Table 2 as well as the actual PreBERS items.

The four factors, or subscales of the PreBERS, were identified as follows. Factor 1, Emotional Regulation (13 items; e.g., "takes turns in play situations"), measures a child's ability to regulate or govern his or her behavior in social situations with peers or adults. Factor 2, School Readiness (13 items; e.g., "follows multi-step directions"), assesses a child's language, preliteracy, and attention-to-task skills. Factor 3, Social Confidence (9 items; e.g., "identifies own feelings"), focuses on a child's ability to socially interact and get along with peers. Factor 4, Family Involvement (7 items; e.g., "participates in family activities"), assesses a child's participation and relationship with his or her family.

Age and Sex Differences

Standard scores were used in subsequent data analyses. For each of the four subscales, the raw scores for the total normative sample were converted to standard scores with a mean of 10 and a standard deviation of 3. Then, the sum of the subscale standard scores was converted into an overall strength index with a mean of 100 and a standard deviation of 15.

Standard scores were used to assess gender and age differences. With respect to gender, significant differences were found for each of the subscales and total score. In each case the girls were judged as possessing more emotional and behavioral strengths than boys. The differences were statistically significant (p < .001), with moderate effect sizes ranging from .27 to .42 (see Table 3). For this reason, separate gender norms were constructed. With respect to age, statistical differences were found for two subscales—emotional regulation (F = 6.863, p < .001) and school readiness (F = 23.917, p < .0001)—and total score (F = 6.687, p < .001). Tukey post hoc analyses indicated no differences between

3- and 4-year-olds, but 5-year-olds were judged as having more emotional regulation, school readiness, and total strength scores than 3-year-olds. Although these differences were statistically significant, they were of small magnitude (range = 0.17 to 0.23). For this reason separate age norms for 3-, 4-, and 5-year-olds were not calculated. The final analyses involved 2 (age) \times 2 (gender) analysis of variance for each subscale. This was done to assess whether any of the significant gender differences were specific to any age level. None of the analyses were significant or approached significance.

Internal Consistency and Intercorrelations

To assess the homogeneity of the PreBERS with the normative sample, internal consistency reliabilities were calculated for the four subscales and total score. First, Cronbach's alphas were calculated for the entire sample separately at ages 3, 4, and 5 years. Then, Cronbach's alphas were conducted separately for boys and girls at each of the three age levels. The average alpha coefficients for the subscale and total scores were highly acceptable and ranged between .836 and .980 (see Table 4).

Criterion Validity

One way of establishing a test's criterion validity is to measure the performance of different groups of individuals. Each group's results should make sense, given what is known about the test's content to the group. With respect to the PreBERS, which assesses emotional and behavioral strengths, one would hypothesize that preschool children with disabilities would be rated lower by their teachers than preschool children without disabilities. Data from the national sample were used to determine criterion validity. The means and standard deviations for each of the four subscales and total score for the two groups are presented in Table 5. To test for group differences between preschoolers with and without disabilities, five t tests were conducted. The groups were significantly different across each of the four subscales and total score (p < .001). Hedges effect sizes were calculated and were moderate to large (see Table 5).

Discussion

The PreBERS (Epstein & Synhorst, in press) was constructed in a theoretically sound and logical manner and in accordance with the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999).

| | s of the PreBERS by Subsc |
|---------|---------------------------|
| Table 2 | Items of the Pr |
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| | Id |

| | | Factors and Loadings of the Items of the PreBERS by Subscale | ne Items o | f the PreBERS by Sub | scale | | |
|---|---------------|--|--------------|--|---------|--|---------|
| Emotional Regulation | | School Readiness | | Social Confidence | 0 | Family Involvement | |
| Item | Loading | Item | Loading | Item | Loading | Item | Loading |
| Controls anger toward others | .815 | Understands meaning of words similar to neers | .812 | Is self-confident | .725 | Sense of belonging to family | .850 |
| Expresses remorse of behavior that hurts others | .762 | Carries on conversations | .772 | Acknowledges painful feelings | .761 | Trusts significant person | .852 |
| Shows concern for feelings of others | .820 | Persists with tasks until completed | .756 | Asks for help | .768 | Maintains positive family relationships | .867 |
| Reacts to disappointments calmly | .824 | Demonstrates age-appropriate hvgiene | .666 | Stands up for self | .686 | Reacts positively with parents | .801 |
| Handles frustration with challenging tasks | <i>T9T</i> . | Understands complex sentences | .879 | Accepts closeness/ intimacy of others | .791 | Is involved in family discussions | .700 |
| Takes turns in play situations Accepts responsibility for | .820 | Listens to the conversations of others | .812 | Identifies own feelings | .816 | Interacts positively with siblings | .575 |
| own actions | .873 | Pays attention to tasks | .819 | Makes friends | .778 | Participates in family activities | .794 |
| Loses a game gracefully | .839 | Listens attentively when stories are read | .793 | Asks others to play | .784 | | |
| Accepts "no" for an answer | .830 966 | Follows multi-step directions | .867 | Is enthusiastic about life | 707. | | |
| Shares with others | .850 | Uses details in talking with others | .026 .826 | | | | |
| Apologizes to others when | | 1 | | | | | |
| wrong | .792 | Works independently | .733 | | | | |
| Is kind toward others | .799 | Uses numbers/color words | .801 | | | | |
| Eigenvalues | 22.053 | correctly | 2.867 | | 1.976 | | 1.420 |
| Note: DreRFRS = Preschool Rehavioral and Emotional Ratine Scale | wioral and Fm | notional Rating Scale | | | | | |

Note: PreBERS = Preschool Behavioral and Emotional Rating Scale.

| Domain | Boys | Girls | t Score | p Value | Hedges Effect Size |
|----------------------|---------------|----------------|---------|---------|--------------------|
| Emotional Regulation | 9.42 (3.08) | 10.51 (2.65) | 6.807 | .001 | .38 |
| School Readiness | 9.46 (2.98) | 10.66 (2.80) | 7.482 | .001 | .41 |
| Social Confidence | 9.31 (2.98) | 10.53 (2.89) | 7.526 | .001 | .42 |
| Family Involvement | 9.69 (2.96) | 10.45 (2.68) | 4.876 | .001 | .27 |
| Total score | 96.81 (16.08) | 103.19 (14.09) | 7.608 | .001 | .42 |

Table 3Means and Standard Deviations of Boys and Girls on the PreBERS

Note: PreBERS = Preschool Behavioral and Emotional Rating Scale.

 Table 4

 Coefficient Alphas for PreBERS Scores by Age and Gender

| | Boys | | | Girls | | | Total | | |
|----------------------|------|------|------|-------|------|------|-------|------|------|
| Domain | 3 | 4 | 5 | 3 | 4 | 5 | 3 | 4 | 5 |
| Emotional Regulation | .942 | .959 | .973 | .941 | .954 | .954 | .943 | .957 | .966 |
| School Readiness | .932 | .938 | .954 | .936 | .958 | .956 | .935 | .949 | .955 |
| Social Confidence | .902 | .886 | .913 | .897 | .926 | .909 | .904 | .907 | .913 |
| Family Involvement | .865 | .904 | .914 | .836 | .886 | .904 | .855 | .899 | .907 |
| Strength Index | .966 | .972 | .980 | .968 | .978 | .979 | .968 | .976 | .980 |

Table 5Means and Standard Deviations of PreBERS Scores for PreschoolChildren With and Without Disabilities

| Domain | Disability | No Disability | t Score | p Value | Hedges Effect Size |
|----------------------|---------------|----------------|---------|---------|--------------------|
| Emotional Regulation | 8.20 (3.03) | 10.27 (2.80) | 9.690 | .001 | .73 |
| School Readiness | 8.20 (2.99) | 10.38 (2.82) | 10.166 | .001 | .77 |
| Social Confidence | 8.18 (2.95) | 10.21 (2.90) | 9.275 | .001 | .70 |
| Family Involvement | 8.68 (3.15) | 10.31 (2.72) | 7.059 | .001 | .59 |
| Strength Index | 89.55 (15.69) | 101.81 (14.66) | 10.978 | .001 | .83 |

Note: PreBERS = Preschool Behavioral and Emotional Rating Scale.

The representative sample of preschool children nationwide provided a data set, from which resulted the identification of four factors to assess emotional and behavioral strengths of preschoolers.

Each of the four factors identified in the PreBERS (i.e., Emotional Regulation, School Readiness, Social Competence, and Family Involvement) represents a distinct and important factor that has been demonstrated in the literature to influence later child development. Infant emotional regulation qualities such as temperament, emotional tone, and effortful control have predicted higher scores in cognitive/language skills (Halpern, Garcia Coll, Bendersky, & Meyer, 1998; Robinson & Acevedo, 2001), problemsolving skills (Harris, Robinson, Chang, & Burns, 2006; Keenan, 2002), and school achievement (Churchill & Stoneman, 1997). Research has predicted school-age academic and language success from school readiness skills in at-risk children as young as 2 years, including receptive language (Thal, Reilly, Seibert, Jeffries, & Fenson, 2004) and expressive language (Oliver, Dale, & Plomin, 2004; Paul & Fountain, 1999; Rescorla, 2005). School readiness and social competence were the two high-priority strengths emphasized for early intervention with at-risk preschoolers (Emde & Robinson, 2000). Social competence in early childhood, including peer relationships, social engagement, and play strategies, predicts later academic and adjustment skills for children who are otherwise typically developing (Parker & Asher, 1987; Rubin, Bukowski, & Parker, 1997). Finally, multiple studies of preschool children with and without disabilities indicate that family involvement predicts academic, language, and social outcomes independently from other family variables such as maternal education or socioeconomic status (Churchill & Stoneman, 1997; Eyler, Behnke, Wilson Garvan, Wobie, & Hou, 2002; Gould & Finello, 1998; Hauser-Cram et al., 1999; Poehlmann & Fiese, 2001).

Assessment of multiple strength factors in the PreBERS provides the potential for better prediction than assessment based on these single factors in isolation. Research studies incorporating more than one of the strength factors in the PreBERS demonstrate both independent and interaction effects of these factors (Emotional Regulation, Social Confidence, School Readiness, Family Involvement). For instance, preschool readiness skills (language and play) in preterm children predicted later peer social competence, yet preschool social competence risk factors persisted to 8 years when language risk factors did not (Hebert-Myers, Klecan-Aker, Swank, & Landry, 2004). Three-year-old children with emotional regulation strengths were not necessarily more socially competent, indicating independent patterns of development in these factors (Balaraman & Brownell, 2002). Infant family involvement is associated with peer social competence and communication skills, yet it independently contributes to predictions of school outcomes (Churchill & Stoneman, 1997; Hauser-Cram et al., 1999). The strength factors of the PreBERS account for multiple domains of influence on development in a concise, straightforward, and powerful assessment tool.

Gender differences on the PreBERS indicated that teachers rated girls as possessing significantly more strengths than boys. The standard scores for each of the subscales as well as the overall strength score showed that girls had more strengths than boys. Based on prior research, the gender differences found in the national data set were not surprising. First, research with the original BERS that was normed on school-age children showed that girls had more strengths, although not significantly more, across the subscales and the total score of the BERS (Epstein, 2004; Epstein & Sharma, 1998). Also, in large-scale studies of psychopathology, boys are typically rated as exhibiting more problems than girls (e.g., Achenbach & Edelbrock, 1981). Thus, gender differences are typically found in studies of behavior problems, although these differences with emotional and behavioral strengths tend to attenuate with age.

With respect to age, on some PreBERS subscales (i.e., Emotional Regulation, School Readiness) differences did appear, although these differences were small in magnitude. The failure to find consistent moderate to large significant age differences was not unexpected. Previous research on strengths indicated no age differences among children 5 to 18 years of age (Epstein & Sharma, 1998). Also, most other tests of emotion and behavior used with preschoolers do not report age differences (e.g., Achenbach & Rescorla, 2000). Nonetheless, further research is needed to clarify whether age and gender differences exist in the measurement of personal strengths.

Earlier research on the reliability and validity of the PreBERS indicated that the test has acceptable psychometric properties. Specifically, prior research has established short- and long-term test-retest reliability and interrater reliability (Epstein & Synhorst, in press). The present findings complement the previous findings. Specifically, the internal reliabilities as reported by Cronbach's alphas demonstrate that the PreBERS subscales and total score are highly stable and internally consistent. Previous research established the convergent validity of the PreBERS (Epstein & Synhorst, in press). In the present study, the criterion validity was assessed by the test's ability to discriminate between groups of children. Specifically, the scores of the preschool children with disabilities were as one would predict. In general, across the four subscales and total score, children with disabilities scored almost .5 SD lower than preschool children without disabilities. Moreover, these differences between groups were statistically significant with moderate to large effect sizes.

A number of limitations with the present study need to be acknowledged. First, the national sample of preschool children was not randomly selected. The sample was selected by individuals who were contacted via letter, telephone call, or e-mail and agreed to participate. Basically, the sample consisted of individuals who volunteered to participate and agreed to complete rating scales on the children with whom they work. This convenience sample does not inform us about children not included by the individuals who did not volunteer and thus may have led to rater bias. Second, the PreBERS was normed on the responses of school personnel, primarily preschool teachers, and did not include ratings from parents or primary caregivers. Future efforts need to include a representative sample of preschool children rated by their parents or caregivers. Finally, although the nationally representative sample included ratings on preschool children with disabilities (18%) and minority preschool children (28%), separate norms were not established for these groups. Simply stated, insufficient numbers of these children were included in the sample to conduct separate confirmatory factor analyses and norms. Clearly, future research needs to assess the factor

structure of the PreBERS with more diverse samples of preschool children. This should include studies of children in Head Start and early childhood special education programs. In addition, future studies of preschool children with disabilities may contrast the factor structure and standard scores of the PreBERS by type of disability. We are presently pursuing this line of research with larger, more diverse samples of preschoolers

The point-by-point item-development process, the large nationally representative sample, and the preliminary reliability and validity studies reported in the present study underscore the care taken in the development of the PreBERS. The factor structure of the instrument reported in this study is consistent with research conducted on risk, resilence, protective factors, and social development of children. Also, the reliability and validity data meet the standards of professional groups when developing test instruments and are as high as if not higher than most preschool tests of emotion and behavior. Moreover, the PreBERS is the first test that focuses exclusively on preschoolers' strengths as opposed to deficits. Nonetheless, additional research needs to be conducted on the psychometrics of the PreBERS. First, additional convergent validity studies need to be conducted with other instruments of childhood and family status. For example, the PreBERS could be correlated with measures of family cohesion, preschool readiness measures in such areas as language and literacy, task persistence and regulation, and social interaction. Second, additional research needs to be undertaken to determine the cross-informant reliability (i.e., teacher to parent) of the PreBERS. This will determine whether teachers and parents assess the strengths of preschool children in a similar or dissimilar manner. Third, the PreBERS should be used in longitudinal research to determine its ability to assess change over time. Another longitudinal study would be to assess the predictive ability of the PreBERS to discriminate successful from nonsuccessful children in the transition to kindergarten and first-grade settings. Finally, continued research needs to examine the psychometric characteristics of the PreBERS with larger and more diverse samples, including samples of children from different ethnic, racial, and economic groups.

Although there exists a clear need for additional study, the initial research of the PreBERS indicates that the test possesses a logical factor structure that matches research on the social-emotional development of preschoolers. Also, the test demonstrates adequate internal consistency and criterion validity and has nationally representative norms. As such, the PreBERS seems to satisfy the concerns raised by several national organizations for tests to have representative national norms, be appropriate for use with diverse populations, have adequate psychometric characteristics, and be appropriate for use by preschool staff. Moreover, the test satisfies the recommendation of the Working Group on Developmental Assessment (Greenspan & Meisels, 1996) with respect to assessments being strength and competency based.

Based on psychometric characteristics, the PreBERS appears to have several uses. First, the PreBERS can be used to document for the parent and professional what is working well in the life of a child. The emphasis on strengths may lead to a more positive parent-professional relationship. Second, the test can be used as part of a comprehensive evaluation to identify preschool children for special education or mental health services. Specifically, children with disabilities scored more than .5 SD below children without disabilities. Third, the PreBERS can be used in treatment planning to identify goals and objectives for children to achieve as part of treatment. Assessment information on personal strengths may balance the deficit-based information typically included in an evaluation and lead to a more comprehensive treatment plan of services for a child.

References

- Achenbach, T. M., & Edelbrock, C. (1981). Behavioral problems and competencies reported by parents of normal and disturbed children aged four to sixteen. *Monographs of the Society for Research in Child Development*, 46(1, Serial No. 188).
- Achenbach, T. M., & Rescorla, L.A. (2000). Manual for the ASEBA Preschool Forms and Profiles. Burlington: University of Vermont, Department of Psychiatry.
- American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.
- Balaraman, G. R., & Brownell, C. A. (2002, April). Self-regulation and peer social competence in young preschool children. Poster session presented at the International Conference on Infant Studies, Toronto, Canada.
- Churchill, S. L., & Stoneman, Z. (1997, April). *Family routines and temperament as a predictor of child outcomes*. Paper presented at the meeting of Society of Research in Child Development, Washington, DC.
- DelCarmen-Wiggins, R., & Carter, A. (Eds.). (2004). *Handbook of infant, toddler, and preschool mental health assessment*. Oxford, UK: Oxford University Press.
- Emde, R. N., & Robinson, J. (2000). Guiding principles for a theory of early intervention: A developmental-psychoanalytic perspective. In J. P. Shonkoff & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (2nd ed., pp. 160–178). New York: Cambridge University Press.
- Epstein, M. H (2004). *Behavioral and Emotional Rating Scale: A strength-based approach to assessment* (2nd ed.). Austin, TX: PRO-ED.

- Epstein, M. H., & Sharma, J. (1998). *Behavioral and Emotional Rating Scale: A strength-based approach to assessment.* Austin, TX: PRO-ED.
- Epstein, M. H., & Synhorst, L. (in press). *Preschool Behavioral and Emotional Rating Scale*. Austin, TX: PRO-ED.
- Eyler, F. D., Behnke, M., Wilson Garvan, C., Wobie, K., & Hou, W. (2002, April). *Prenatal cocaine exposure: Analysis of direct and indirect effects on 36-month developmental outcome*. Poster session presented at the International Conference on Infant Studies, Toronto, Canada.
- Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children. *Child Development*, 55, 97–111.
- Gould, S. I., & Finello, K. M. (1998, April). Using home environment variables to predict resiliency in a sample of premature, low birthweight, Latino infants. Poster session presented at the International Conference on Infant Studies, Atlanta, GA.
- Greenspan, S. I., & Meisels, S. J. (1996). Toward a new vision for the developmental assessment of infants and young children. In S. J. Meisels & E. Fenichel (Eds.), *New visions for the developmental assessment of infants and young children* (pp. 231–266). Washington, DC: Zero to Three.
- Halpern, L. F., Garcia Coll, C. T., Bendersky, K., & Meyer, E. C. (1998, April). *The cognitive development of full-term small-forgestational-age (SGA) infants at 12 and 18 months of age*. Poster session presented at the International Conference on Infant Studies, Atlanta, GA.
- Harris, R. C., Robinson, J. B., Chang, F., & Burns, B. M. (2006). Characterizing preschool children's attention regulation in parent–child interactions: The roles of effortful control and motivation. *Journal of Applied Developmental Psychology*, 28, 25–39.
- Hauser-Cram, P., Erickson Warfield, M., Shonkoff, J. P., Wyngaarden Krauss, M., Upshur, C. C., & Sayer, A. (1999). Family influences on adaptive development in young children with Down syndrome. *Child Development*, 70, 979–989.
- Hebert-Myers, H. M., Klecan-Aker, J., Swank, P., & Landry, S. (2004, November). *Language skills as a predictor of social competence at 8 years*. Poster session presented at the conference of the American Speech-Language-Hearing Association, Boston.
- Keenan, T. (2002). Negative affect predicts performance on an object permanence task. *Developmental Science*, 5, 65–71.
- Masten, A. S. (1994). Resilience in individual development: Successful adaptation despite risk and adversity. In M. C. Wang & W. Gordon (Eds.), *Educational resilience in inner-city America: Challenges and prospects* (pp. 3–25). Hillside, NJ: Erlbaum.
- National Research Council and Institute of Medicine. (2000). From neurons to neighborhoods: The science of early childhood development. Washington, DC: National Academy Press.
- Oliver, B., Dale, P. S., & Plomin, R. (2004). Verbal and nonverbal predictors of early language problems: An analysis of twins in early childhood back to infancy. *Journal of Child Language*, 31, 609–631.
- Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin*, 102, 357–389.
- Paul, R., & Fountain, R. (1999). Predicting outcomes of early expressive language delay. *Infant-Toddler Intervention: The Transdisciplinary Journal*, 9, 123–135.

- Poehlmann, J., & Fiese, B. H. (2001). Parent–infant interaction as a mediator of the relation between neonatal risk status and 12-month cognitive development. *Infant Behavior & Development, 24*, 171–188.
- Provense, S., Erikson, J., Vater, S., & Palmeri, S. (1995). Infant-Toddler Development Assessment. Chicago: Riverside.
- Rescorla, L. (2005). Age 13 language and reading outcomes in latetalking toddlers. *Journal of Speech, Language, and Hearing Research, 48*, 459–472.
- Robinson, J. L., & Acevedo, M. C. (2001). Infant reactivity and reliance on mother during emotion challenges: Prediction of cognition and language skills in a low-income sample. *Child Development*, 72, 402–415.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (1997). Peer interactions, relationships, and groups. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional,* and personality development (pp. 619–700). New York: Wiley.
- Rutter, M. (1985). Resilience in the face of adversity. *British Journal* of *Psychiatry*, 147, 598–611.
- Rutter, M. (1987) Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316–331.
- Thal, D. J., Reilly, J., Seibert, L., Jeffries, R., & Fenson, J. (2004). Language development in children at risk for language impairment: Cross-population comparisons. *Brain and Language*, 88, 167–179.
- U.S. Bureau of the Census. (2001). *The statistical abstract of the United States*. Washington, DC: Author.

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