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LONG-TERM RELIABILITY OF THE FINNISH BEHAVIORAL AND EMOTIONAL RATING SCALE

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Abstract

In previous research, the Finnish version of the Behavioral and Emotional Rating Scale-2 has demonstrated adequate internal consistency, factor structure and convergent validity. The purpose of the present study was to examine the long-term test-retest reliability of the Finnish BERS-2. Youth, parent and teacher BERS-2 ratings were collected once a year for three years in order to assess the stability of scores. All of the correlations were significant and moderate to very large in magnitude. Study limitations, future research and implications were discussed.

Key words: *Behavioral and Emotional Rating Scale, Long-Term Test-Retest Reliability*

Long-Term Reliability of the Finnish Behavioral and Emotional Rating Scale

For years assessment of the emotional and behavioral functioning of children has been based on measuring their deficits, problems and pathologies. While a deficit based assessment model has been useful in identifying children in need of specialized services, it may unnecessarily limit the range of information collected on the behaviors of a child with or at-risk of behavior problems, by narrowing the focus of those who provide the data. This restricted assessment model may result in the failure to collect information about children that may be necessary and valuable to developing, implementing and evaluating comprehensive treatment supports and interventions. In response to this concern, parents, policymakers, practitioners and researchers have sought alternative assessment models that provide a more holistic view of the child.

Recently, the value and importance of strength-based assessment has received considerable recognition in education, child welfare, family services, and mental health service delivery (Albrecht & Braaten 2008; Drolet, Paquin, & Soutyrine 2007). Strength based assessment has been defined as “the measurement of those emotional and behavioral skills, competencies, and characteristics that create a sense of personal accomplishment; contribute to satisfying relationships with family members, peers and adults; enhances ones ability to deal with adversity and stress; and promote one’s personal, social, and academic development” (Epstein, 2004, p. 4). Strength based assessment affords several advantages including it a) identifies what is going well for the child and family; b) empowers the family to take responsibility for decision-making; c) documents competencies and skills as a program outcome; and d) may lead to a family that is engaged in the treatment process.

Over the past few years a number of assessments have been developed to assess the strengths of children including the Personal Strength Inventory (Liau, Chow, Tan, & Senf,

2011), the Strengths Assessment Inventory–Youth Self Report (Brazeau, Teatero, Rawana, Brownlee, & Blanchette, 2012), the Social Emotional Assets and Resiliency Scales (Merrell, 2008), the Devereux Student Strengths Assessment (LeBuffe, Shapiro, & Naglieri, 2009), and the Values in Action Inventory for Youth (Park & Peterson, 2006). Perhaps one of the most widely used strength-based assessments is the Behavioral and Emotional Rating Scale-2 (BERS-2; Epstein, 2004). The BERS-2 is a 52-item standardized, norm-referenced test that assesses the strengths of children 5 to 18 years of age; has three separate rating scale forms for youth (Youth Rating Scale), parents (Parent Rating Scale), and teachers (Teacher Rating Scale) raters; and creates five subscales of emotional and behavioral strengths and an overall strength index. The five subscales include: a) the interpersonal strength subscale (i.e., 15 items) assesses a child's ability to interact with others in social situations (e.g., I can deal with being told "no"); b) the family involvement subscale (i.e., 10 items) measures a child's relationship with their family (e.g., I get along well with my family); c) the intrapersonal strength subscale (e.g., 11 items) measures how a child perceives his or her own functioning (e.g., I believe in myself); d) the school functioning subscale (i.e., 9 items) measures a child's performance and competence in school (e.g., I pay attention in class); and e) the affective strength subscale (i.e., 7 items) assesses a child's ability to give and receive affect (e.g., I let people know when I like them; Epstein, 2004). Teachers, parents or youth (12-18 years of age) can complete the BERS-2 in approximately 10 minutes. The psychometric characteristics of the BERS-2 including the factor structure, reliability, and validity has been well-established (Oliver, Cress, Savolainen, & Epstein, 2014).

Internationally, the value of strength-based assessment has received considerable recognition (Obel et al., 2004; Rothenberger & Woerner, 2004). For example, European special education programs have been integrating a positive, interactive approach to assessment that takes student strengths, assets, competencies and resources into account. European educators have acknowledged that strength assessments can be useful in planning and implementing supports and services, and such assessments enhance the potential for students with disabilities to be provided quality services in general education settings (Watkins, 2007). Given the value placed by international educators several strength based instruments have been modified and adapted for use in countries outside where the assessments were developed and normed. However, when an assessment instrument is translated from one language into another language or is used in a different cultural context, the instrument's psychometric properties must be re-established and re-evaluated (AERA, APA, NCME, 1999; Geisinger, 1994).

For this reason, a group of Finnish researchers have evaluated the psychometric properties of the BERS-2. Prior to the current study, the investigators translated the BERS-2 into Finnish in the following manner. First the researchers translated the test into Finnish and then a professional translator, who had received the information on the content and purpose of BERS-2 and was familiar with the Finnish school culture, back translated the test into English. To work toward language and content equivalence, the two versions were compared, differences were discussed between researchers and translator, and consensus on the needed modifications agreed upon. Based on this process the wording of two of the original BERS-2 items was slightly modified to align them with Finnish culture. Then a series of studies were undertaken to determine the psychometrics of the Finnish BERS. In two studies, the internal structure of the Finnish BERS-2 was examined using tests of internal consistency, confirmatory factor analysis, and Rasch analysis. The Finnish BERS-2 was found to have acceptable internal consistency (.71 to .93) and to possess the same five subscales as reported in the U.S. (Lappalainen, Savolainen, Kuorelahti, Epstein, 2009; Sointu, Savolainen, Lambert, Lappalainen, & Epstein, 2014). In two cross informant studies the researchers found small to large cross informant agreement of student behavioral and emotional strengths between the ratings of youths, parents and teachers, with the majority of correlations being moderate

in magnitude (.30-.50). Interestingly, the largest agreements reported were the parent, youth and teacher ratings for students receiving full or partial special education services (Sointu, Savolainen, Lappalainen, & Epstein, 2011, 2012). In another study (Savolainen, Nordness, Sointu, Lappalainen, & Epstein, 2012), the convergent validity of the Finnish BERS-2 was investigated by having teachers and parents rate children on the BERS-2 and the Finnish Strength and Difficulties Questionnaire (Koskelainen, Sourander, & Kaljonen, 2000). The researchers found moderate to large correlations across the subscales of the two instruments. However, an important psychometric characteristic of the Finnish BERS-2 – namely long-term test-retest reliability – has not been studied in these earlier investigations.

In addition to providing information on factor structure, convergent validity, cross informant reliability and internal reliability, a sound measure needs to demonstrate other types of reliability. To Anastasi (1988), the concept of test reliability refers to “the extent to which individual differences in test scores are attributable to “true” differences in the characteristic under consideration and the extent to which they are attributed to chance errors” (p. 109). Test-retest reliability is an indication of a measure’s stability over a short (e.g., 2 weeks) or long period (e.g., 2 months) of time, where the closer together in time the two data collection points the higher the estimated reliability. Long term reliability is necessary to determine particularly with behavioral rating scales for a few reasons. First, unlike school achievement tests that directly assess the attribute of interest (i.e., academic functioning), behavior rating scales involve another individual (e.g., teacher, parent) who makes judgments about the variable of interest (i.e., child’s behavior). A number of factors such as rater bias or rater drift may influence the rater’s judgment and influence the behavior rating scores. Second, different from characteristics such as academic functioning which are known to be stable over time, emotional and behavioral strengths may be unstable over time. Because strength based measures such as the Finnish BERS-2 may be useful as an outcome indicator in the evaluation of school based interventions, it is important to assess the stability of these instruments over time. If the BERS scores are found to be relatively stable over a one- or two-year period, then the measure would seem to be appropriate for use in studies evaluating specific interventions. The purpose of the study was to assess the long-term reliability (i.e., stability) of the Finnish BERS-2 scores over a one- and two-year time period.

Method

Participants

The participants included 381 fifth grade students, drawn from 49 schools, who provided ratings on the BERS-2 across three years. Parents and teachers provided ratings for 120 and 136 of those students, respectively. The sample was drawn from a larger study on behavioral and emotional well-being in Finnish schools. The sample of students consisted of 55.1% females and 44.9% males, 11.5% of students received intensified special education supports and 6.0% received full-time special educational supports. The sample was homogenous in terms of race and ethnicity with approximately 95% of students being of Fennoscandian descent with the other 5% representing other ethnicities. The ethnic composition of the sample matches the regional population.

Measure

The Behavioral and Emotional Rating Scale-2 (BERS-2) has three forms: youth (YRS), parent (PRS) and teacher (TRS). Each form of the BERS-2 consists of 52 items rated on a 4-point Likert-type scale (0 = *not at all like you/child/student*, 1 = *not much like you/child/student*, 2 = *like you/child/student*, 3 = *very much like you/child/student*). The BERS-2 provides scores across five subscales and a total strength index score. The original BERS-2 has been translated from English to Finnish (see Sointu et al., 2012 for an in depth description of the procedures).

Procedures

Researchers from the Eastern Finland Education Development Project (ISKE), recruited schools to participate in a study on the effects of school reform on child wellbeing. Administrators from 49 schools volunteered their school and 57 fifth class teachers from these schools consented to participate. Then parents of students in the consenting teachers' classrooms were contacted to obtain consent for their child and themselves to participate. Data were collected at the end of each school year starting in Spring 2010 in the 57 classrooms. Youth completed a questionnaire packet including the BERS-2 among other measures in their respective schools. Teachers were administered the BERS-2 within one week of the youth completing the assessment. Teachers received questionnaire packets with the target students identified. The return rate for teacher questionnaires was 91%. Parent questionnaire packets were sent home with the students and returned to researchers in a pre-paid envelope. The return rate for caregiver questionnaires was approximately 55%. A similar process was continued when the youth were in grades 6 and 7, with the exception that in the 7th grade the homeroom teacher filled in the questionnaires. The data reported in this study includes only those cases where only complete three year data existed from the youth, parent or teacher respondent.

Results

Stability coefficients were estimated by computing Pearson product-moment correlations for one- and two-year lagged measurements – that is, correlations between 5th and 6th grade, and 5th and 7th grade Finnish BERS-2 scores. The one-year and two-year lagged stability estimates were evaluated statistically for equivalence using a dependent correlation test (Steiger, 1980), applying a 1-tail test of significance. A 1-tail test was used because all two-year correlations were hypothesized to be smaller than the one-year correlations (Harvill, 1991). Following general guidelines proposed by Cohen (1988) and Hopkins (2006), correlation coefficients between .10 and .29 are considered small, between .30 and .49 are considered moderate, between .50 and .69 are large, and those between .70 and .89 are very large.

The one-year (i.e., between 5th and 6th grade) and two-year correlations (i.e., between 5th and 7th grade) for the youth, parent and teacher ratings are presented in Table 1. Based on the general guidelines, 11 of the one-year correlations were large and 7 were very large. Point-estimates for parent ratings were larger than both youth and teacher ratings, although these differences were not tested statistically. Eleven of the two-year stability estimates were significantly smaller ($p < .05$) than the one-year estimates as was hypothesized – interestingly, the majority of one- and two-year stability estimates for parent ratings were statistically equivalent indicating that parent ratings were unexpectedly stable. Nonetheless, the magnitude of the correlations for two-year stability ranged from moderate (4 cases) to large (11 cases) to very large (3 cases). Point-estimates for two-year stability suggest that, by and large, teacher ratings were the least stable compared to youth and parent ratings, but these differences were not tested statistically.

Discussion

This study is part of a comprehensive investigation of the Finnish BERS-2 (see Lappalainen et al., 2009; Savolainen et al., 2012; Sointu et al., 2011, 2012, 2014). The previous studies provided support for the Finnish BERS-2 with respect to its internal reliability, factor structure, cross informant reliability and convergent validity; however, the investigators had not addressed the issue of test-retest reliability, specifically the BERS-2 long-term reliability. Overall, the results of the study demonstrated that the youth, parent and teacher ratings of the Finnish BERS-2 are stable over one and two year periods of time.

The results are in line with previous research on the test-retest reliability of the BERS-2 conducted in the U.S. In these studies BERS-2 teacher ratings were found to be stable over a short-term, 10 day period (correlations ranged .85 to .99) and long-term, 6 month

period (correlations ranged from .53-.79; Epstein, Harniss, Pearson, & Ryser, 1999; Epstein, Hertzog, & Reid, 2001). The present findings with correlations ranging between .41 and .80 are compatible with previous results and extend the research to one and two years, to a Finnish population, and most importantly, to ratings by students and parents.

The long term stability of the BERS-2 ratings over an extended period of time is important for school personnel and other service providers who are considering using the BERS-2 in planning prevention or intervention services. It would make little sense to plan services or supports around a personal variable that would change markedly over time in the absence of intervention efforts. The present results found that the BERS-2 subscales and total scores of youth, parent and teacher ratings are relatively stable over one and two year periods. This in turn suggests that observed changes in children's emotional and behavioral functioning as measured by the BERS-2 are not related to measurement or characteristic instability but are likely related to planned interventions.

Limitations and Future Research

A number of limitations should be noted. First, one limitation is the representativeness of the sample. While the sample was reasonably large, it was drawn from the eastern part of Finland, and thus not representative of students throughout Finland. However, based on the Program for International Student Assessment (PISA) studies (OECD, 2009), the between school variance in Finland on academic outcomes is very small (about 5 % of total variance) and among the smallest of any country. However, future researchers should address this issue by selecting a more geographically balanced and representative sample. Second, the schools, teachers, parents and youth who provided the ratings all volunteered for the study. Three schools declined to participate as well as several teachers, parents and youth. For this reason, the data do not reflect the ratings of individuals who did not participate and the ratings of these individuals may vary in specific and important ways from the individuals who did participate. Third, the data were analyzed as if the students were representative of a single, homogenous group. In future studies it is important to assess reliability of ratings for other specific student groups such as students at-risk of academic or behavioral problems or students with school identified disabilities. Fourth, in this study, the research began when the students were in fifth grade, but do not address the stability of ratings for younger or older students. Future researchers should consider a more heterogeneous sample by collecting data across a wide age range including young elementary and high school age students.

The results of the present study along with the previous research conducted on the Finnish BERS-2 indicate that the test scores demonstrate acceptable psychometric characteristics. Therefore, researchers should consider more substantive research questions related to the Finnish BERS-2 and the strengths of Finnish students. Future researchers should assess the relationship between the Finnish BERS-2 to important school criterion measures such as academic functioning, attendance patterns and behavior functioning. Another suggestion would be to determine how student strengths mediate or moderate the relationship between specific interventions and supports and important educational outcomes. A further area of study would be the intra-individual change in strengths over time for different age groups of students; such a study would provide information on the natural developmental process of strengths independent of specific interventions. Researchers may consider using accelerated growth modeling procedures to more efficiently address this question across the entire range of school-aged children.

Implications

Despite the need for future research, the scores from the Finnish BERS-2 appears to be psychometrically sound and therefore, the Finnish BERS-2 might be useful in the assessment of children and can be recommended for use as a measure of student's emotional and behavioral strengths. The test appears to have several uses. First, while the BERS-2 was not designed to identify children with specific types of emotional or behavioral problem, data from the BERS-

2 assessment can be used to document the absence of personal strengths. The absence of behavioral and emotional strengths is not the key variable in diagnosing children with or at-risk of problems, yet children with minimal personal strengths are at risk for being so identified. Second, data from the BERS-2 should assist teachers, other school personnel, and parents to identify behaviors to be developed, set goals, and build on strengths. Improvement in (a) behaviors described on specific items or (b) subscale or total index scores can be used as goals on Individualized Educational Programs (IEPs) or other treatment plans. Also, individual items from the BERS-2 can be used as targets for behavioral or academic intervention. Third, the results from the BERS-2 can be used to measure the outcome of an intervention designed to develop a child's behavioral and emotional strengths. Documentation of change is important not only for accountability purposes but also for decision-making purposes.

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Summary

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