

STRENGTH-BASED ASSESSMENT OF SOCIAL AND EMOTIONAL FUNCTIONING: SEARS-C AND SEARS-A

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Abstract: To address the need for more strength-based measurement tools, the SEARS assessment system was developed. This paper reports preliminary descriptive statistics, internal consistency reliability, gender differences, grade level differences, and factor structure of the SEARS. Students from elementary, middle, and high schools in Colorado, Georgia, Iowa, and Massachusetts. Significant gender and grade-level differences were found for both the SEARS-C and SEARS-A ($p < .05$). Internal consistency reliability using Chronbach's alpha was .95 for the SEARS-C and .96 for the SEARS-A. Using Principle Axis Factor, four factors were retained for both measures. SEARS appears to measure aspects of social competence, emotion regulation, empathy, and self-esteem.

Estimates of children and youth experiencing psychological problems reach up to 20 percent (Greenberg, et al., 2003). Of these twenty percent, up to 80 percent do not receive appropriate support to ameliorate these problems (Greenberg, et al.). Historically, researchers and practitioners have used a problem-centered or pathology-driven model of assessment and service delivery to support youth experiencing psychological problems. Not until recently has more focus been given to strength-based assessment and service delivery. The idea of strength-based service is not new (e.g., Caplan & Grunebaum, 1967). However, as more researchers and clinicians recognize the gaps in a strictly problem-centered focus, attention is being given to other methods of psychological service delivery to complement and balance the traditional approach.

Strength-based theory is often considered to be synonymous with *positive psychology* or *positive youth* development (Beaver, 2008; Jimerson, et al.). Strength-based assessment consists of measuring skills, competencies, and positive characteristics of individuals that guide their interaction with the world (Epstein & Sharma, 1998). Epstein, Dakan, Oswald, and Yoe (2001) described four main tenets of strength-based assessment as: (1) All children and families have strengths; (2) focusing on the positive can be motivating for children and create positive changes; (3) deficiencies are an opportunity to learn skills; and (4) using strength-based plans increases client involvement. Although a sound

theory supports the notion of strength-based assessment, currently, more tools are needed to carry out strength-based assessment and to move this initiative forward (Rhee, et al., 2001). Whereas some measures of youth's strengths do currently exist (e.g., Epstein, 1999; Goodman, 2001; Huebner, 1991), there is still a strong need for development of additional measures in this arena.

One new strength-based assessment system currently under development is the *Social Emotional Assets and Resiliency Scales* (SEARS; Merrell, 2008a). The SEARS is a cross-informant social-emotional assessment system, currently being researched and refined. As its name implies, the SEARS is a strength-based assessment system, aimed at assessing positive social-emotional attributes of children and adolescents, including social and emotional knowledge and competence, peer acceptance and relationships, resilience in the face of difficulties, coping skills, problem-solving abilities, empathy, global self-concept, and other positive traits. The intended age range for the SEARS assessments is grades K-12, or about ages 5-18. Four rating forms comprise the system: a student self-report for children in grades 3-6 (SEARS-C), a student self-report for students in grades 7-12, a teacher report for teachers of students in grades K-12 (SEARS-T), and a parent report for caregivers of children ages 5-18 (SEARS-P). The various forms contain similar item content,

reworded slightly to reflect appropriate age levels, informant targets, or setting contexts.

The current research versions of the SEARS assessments range from 52 to 54 items, and require an average of about 15 minutes to complete. Items are rated using a four-point categorical rating scale, where the rater is asked to determine whether a particular item is “never,” “sometimes,” “often,” or “always” true for them (in the case of child and adolescent self-reports) or for the student who is being rated (in the case of the teacher and parent rating forms). The SEARS items were developed based on a theory-driven process of identifying a large number of potential descriptors and reducing them to a manageable number, using a step-wise development process and a content validation panel. Copies of the SEARS may be viewed at <http://strongkids.uoregon.edu/SEARS.html>. This website also contains additional information on the SEARS norming and standardization project.

Many of the current strength-based tools in existence lack empirical support, breadth of coverage of social-emotional strengths and assets, or practitioner utility (Rhee, et al., 2001). The SEARS intends to add to the strength-based literature in several ways. First, the SEARS assesses multiple areas of social-emotional functioning (i.e., Friendship skills, empathy, interpersonal skills, social support, problem solving, emotional competence, social maturity, global self-concept, self-management, social independence, cognitive strategies, social-emotional resilience). Although many rating scales include one or two of these areas, very few assess such a broad range of strengths. Second, few strength-based measures include parent, teacher, and self-reports. Research on rating-scales indicates that using social-behavioral ratings from these informants in unison is appropriate and useful (Achenbach, McConaughy, & Howell, 1987; Merrell, 2008b). Having three raters provides unique information from different sources in different settings, which is consistent with best practice in social emotional assessment (Merrell, 2008b). Lastly, the SEARS is currently being researched to establish psychometric properties, norms, and empirical support.

To make the SEARS a useful instrument, a necessary next step includes establishing psychometric properties, norms, and a factor structure. The purpose of this paper is to present the development and purpose of the SEARS assessment system and initial findings on the SEARS-C and

SEARS-A. Findings presented include basic descriptive statistics, psychometric properties, preliminary factor structure, and preliminary findings regarding gender and grade differences. Four main research questions were addressed:

1. What are the basic descriptive statistics of the current SEARS-C and SEARS-A norming sample?
2. Using an exploratory factor analysis technique with a national sample, what is the likely underlying factor structure of the SEARS-C and SEARS-A?
3. Using summative scores, how do males and females compare on self-ratings of social-emotional strengths using the SEARS-C and SEARS-A?
4. Using summative scores, how do students in different grades compare on self-ratings the SEARS-C and SEARS-A?

METHOD

Sample

Participants in this study were from elementary, middle, and high schools, grades 3-12. School sites consisted of public schools and one alternative high school. Students in grades 3-6 completed the SEARS-C and students in grades 7-12 completed the SEARS-A. States represented in the sample include Massachusetts, Illinois, Iowa, and Colorado. On the SEARS-C, the 903 participants to date included 87% Caucasian, 4.5% Latino, 2% African American, 2.5% Asian/Pacific Islander, and 2% multiracial/other. Grade breakdowns for the SEARS-C were, 9% 3rd grade, 30% 4th grade, 31% 5th grade, and 30% 6th grade. Approximately 49% of SEARS-C respondents were female, with about 51% male. On the SEARS-A, the 714 participants to date included 88% Caucasian, 5% Latino, 2% African American, 1.5% Asian/Pacific Islander, and 2% multiracial/other. Grade breakdowns for the SEARS-A sample to date were, 37% 7th grade, 35% 8th grade, 4% 9th grade, 8% 10th grade, 8.5% 11th grade, and 7% 12th grade. Gender comparisons were about equal, 50% female and 50% male. Although several ethnic groups are represented in the sample, it is not yet a representative sample. This sample is only a preliminary sample and future efforts include make the final norming sample nationally representative according to the most recent US Census.

Instruments

The Social Emotional Assets and Resiliency Scales child and adolescent self-report versions (Merrell, 2008a) were used in this study. The SEARS-C and SEARS-A are self-report measures of youth's perceived social-emotional strengths. Differences between the SEARS-C and SEARS-A make each measure appropriate for the age group but still tap the same general content domains. To complete the measures, youths rate themselves on statements about how they feel, think, or act using a 4-Point Likert scale (Never, sometimes, often, almost always). Items include, "I stay calm when there is a problem or an argument," "I make friends easily," "I am good at starting a conversation," and "I think before I act." The SEARS-C is composed of 52 items and the SEARS-A is composed of 53 items. Both measures require 15-20 minutes to complete.

Procedure

Data collection took place over 12 months. The principle investigator from the University of Oregon and potential sites communicated via telephone and email to work out logistical procedures and secure research agreements, using an informed process that was approved by the University of Oregon's Human Subjects IRB. Teachers administered the measures to students in the classroom. Once completed, forms were mailed back to the University of Oregon. Participating schools received compensation for each student completing a form, to be used for supporting student activities, and also received complimentary copies of *Strong Kids* or *Strong Teens*, a social emotional learning curriculum. Graduate students on the ORP research team then entered data into an SPSS database.

Analysis

Data were analyzed using SPSS Grad Pack for Mac. Data analysis consisted of four phases: 1. Basic descriptive and psychometric analysis; 2. Exploratory factor analysis; 3. Tukey's *t*-test; 4. One-way between-subjects analysis of variance with a priori pairwise *t*-tests. Basic descriptive statistics and psychometric analysis were conducted to determine the composition of the sample, measures of central tendency, and internal-consistency reliability. Four separate analyses were run to answer the four primary research questions for this specific aspect of the project. Measures of

central tendency (e.g., mean, standard deviations), frequencies (e.g., ethnicity, grade), and Chronbach's alpha were run to measure internal-consistency reliability, describe the sample, and establish basic psychometric properties. An exploratory factor analysis was conducted to determine the factor structure of the SEARS-C and SEARS-A. A *t*-test was conducted to test the null hypothesis that differences between male and female's ratings of their social-emotional strengths on the SEARS-C and SEARS-A do not exist. And, a one-way between subjects analysis of variance was conducted to test the null hypothesis that differences between youth's ratings of their social-emotional strengths in grades 3-12 on the SEARS-C and SEARS-A do not exist.

RESULTS

Descriptive Statistics and Internal Reliability

Descriptive statistics, sample size, means, and standard deviations are presented in Table 1 for both measures. To test the internal consistency reliability Chronbach's Alpha was calculated for the combination of all items. On the SEARS-C $\alpha = .95$ and on the SEARS-A $\alpha = .96$.

Factor Structure

SEARS-C. To analyze the validity of the structure and function of the Social-Emotional Assets and Resiliency Scales-Child version, Principle Axis Factor (PAF) analysis was used with promax oblique rotation. Data were screened for normality, range restriction, outliers, missing data, and initial communalities. All assumptions for running PAF were met. The mean of all communalities was fairly low, .43, with two items falling below .30. With a cutoff of .45 for inclusion of a variable in interpretation of a factor (Tabachnick & Fidell, 2007), 27 of the 52 variables did not load on any factor. The scree test (Cattell, 1966) was used to determine the number of factors to retain. Four factors were retained using the scree test and percent variance explained. Percent variance explained was 29.30 for factor 1, 4.49 for factor 2, 3.91 for factor 3, and 2.75 for factor 4. These four factors explained 40 percent of the total variance.

A promax oblique rotation was used based on theory that the factors would correlate (Preacher & McCallum, 2003). The instrument purported to measure social-emotional assets and strengths;

these strengths were hypothesized to correlate to some degree. The analysis yielded factor correlations between .39 and .68, so the promax oblique rotation was employed instead of a VARIMAX orthogonal rotation. Due to space limitations, pattern coefficients for items are not presented. To further assess the components, intercorrelations between variables were reviewed (Preacher & McCallum, 2003). Variables from each of the factors correlated weakly ($< .30$) if at all.

SEARS-A. To analyze the validity and structure of the SEARS-A, Principle Axis Factor (PAF) analysis was used with promax oblique rotation. The same requirements used for analysis of the SEARS-C as described above were used. All assumptions for running PAF were met. The mean of all communalities was fairly low, .47, with one item falling below .30. Percent variance explained was 31.1 percent for the first factor, 5.23 percent for the second factor, 4.63 percent for the third factor and 2.12 percent for the fourth factor. Total percent explained by these four factors was 42 percent.

A promax oblique rotation was used based on theory that the factors would correlate (Preacher & McCallum, 2003). The instrument purported to measure social-emotional assets and strengths; these strengths were hypothesized to correlate to some degree. The analysis yielded factor correlations between .36 and .61, so the promax oblique rotation was employed instead of a VARIMAX orthogonal rotation. Again, due to space limitations, pattern coefficients for items are not presented. Items correlating highest with factor one were items related to empathy and taking other people's perspectives. Items correlating highest with factor two were items related to social competence and peer acceptance. Items correlating highest with factor three were items related to regulating emotions and impulsive acts. Items correlating highest with factor four were items related to responsibility and trustworthiness. To further assess the components, intercorrelations between variables were reviewed (Preacher & McCallum, 2003). Variables from each of the factors correlated weakly ($< .30$).

Gender Differences

The effect of gender on students' self-report of social-emotional strengths was evaluated with an independent observations *t*-test. Results are presented in Table 2. On the SEARS-C girls reported significantly higher scores ($M = 110.16$,

$SD = 23.34$) than boys ($M = 104.55$, $SD = 25.18$). Based on confidence interval estimates, we are 95% confident that the gender difference in means is between 2.42 and 8.79. Girls reported significantly higher scores on the SEARS-C than boys, $t(894) = 3.46$, $p < .05$. On the SEARS-A girls reported significantly higher scores ($M = 107.42$, $SD = 22.47$) than boys ($M = 98.25$, $SD = 24.67$). We are 95% confident that the gender difference in means is between 5.71 and 12.65. Girls reported significantly higher scores on the SEARS-A than boys, $t(705) = 5.19$, $p < .05$. The direction of these gender differences is consistent: As a group, girls self-reported greater levels of perceived social-emotional assets and resilience as measured by the SEARS than did boys.

Grade-Level Differences

SEARS-C. Data on the SEARS-C were analyzed using a one-way, between-subjects analysis of variance to estimate the degree of difference across grade levels. Results of the ANOVA are presented in Table 3. Grade was the independent variable with four levels: (a) 3rd grade, (b) 4th grade, (c) 5th grade, and (d) 6th grade. Total sum score on the SEARS-C was the dependent variable. There was a significant difference effect of grade on SEARS-C total sum scores, $F(3, 900) = 3.25$, $p < .05$. Follow up pairwise comparisons using Tukey's *t*-Tests were conducted to analyze grade-by-grade comparisons. Results are presented in Table 4. Only one comparison was significantly different. On the SEARS-C 6th graders ($M = 110.39$, $SD = 29.51$) reported significantly higher scores than 4th graders ($M = 104.03$, $SD = 22.81$). We are 95% confident that the difference in means between 4th and 6th graders is between .96 and 11.75.

SEARS-A. Data of the SEARS-A were analyzed using a one-way, between subjects analysis of variance. Results of the ANOVA are presented in Table 5. For the SEARS-A, grade computed as the independent variable with six levels: (a) 7th grade, (b) 8th grade, (c) 9th grade, (d) 10th grade, (e) 11th grade, and (f) 12th grade. Total sum score on the SEARS-A was the dependent variable. There was a significant effect of grade on SEARS-A total sum scores, $F(5, 707) = 6.57$, $p < .05$. Follow up pairwise comparisons using Tukey's *t*-Tests were conducted to analyze grade-by-grade comparisons. Results of the follow up pairwise comparisons are presented in Table 6. Four comparisons were significantly different. On the SEARS-A 7th graders

Table 1*Descriptive Statistics of the Total Sum Scores on SEARS-C and SEARS-A Measures*

Variable	SEARS-C			SEARS-A		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Total score	904	107.32	24.48	714	102.78	24.04

Table 2*t-Test Results for Gender Comparisons of Total Scores on the SEARS-C and SEARS-A*

Variable	SEARS-C				SEARS-A			
	<i>t</i>	<i>df</i>	M dif	95% CI	<i>t</i>	<i>df</i>	M dif	95% CI
Total score	3.46*	894.42	5.61	2.42-8.79	5.19*	705.26	9.18	5.71-12.65

Note. * $p < .01$ **Table 3***One-Way Analysis of Variance Summary Table for the Effects of Grade on Total SEARS-C Scores*

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Grade level	3	5788.89	1929.63	3.25*
Error	900	535200.44	594.67	
Total	903	540989.33		

Note. * $p < .05$ **Table 4***Descriptive Statistics for SEARS-C Total Score by Grade*

Grade level	<i>n</i>	<i>M</i>	<i>SD</i>
Third	83	109.17 ^a	20.89
Fourth	269	104.03 ^{bd}	22.81
Fifth	280	106.96 ^c	21.08
Sixth	272	110.39 ^{db}	29.51

Note. Group means with common superscripts are significantly different.**Table 5***One-Way Analysis of Variance Summary Table for the Effects of Grade on Total SEARS-A Scores*

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Grade level	5	18259.95	3651.99	6.57*
Error	707	393226.87	556.19	
Total	712	411486.82		

**p < .05*

Table 6
Descriptive Statistics for SEARS-A Total Score by Grade

Grade level	<i>n</i>	<i>M</i>	<i>SD</i>
Seventh	262	106.63 ^{acde}	25.48
Eighth	255	105.00 ^{bd}	22.81
Ninth	30	92.00 ^{ca}	29.77
Tenth	55	92.84 ^{dab}	17.19
Eleventh	61	96.31 ^{ea}	20.69
Twelfth	50	97.04 ^f	22.30

Note. Group means with common superscripts are significantly different.

($M = 106.63$, $SD = 25.48$) reported significantly higher scores than 9th graders ($M = 92.00$, $SD = 29.77$). We are 95% confident that the difference in means between 7th and 9th graders is between 1.64 and 27.62. On the SEARS-A 7th graders ($M = 106.63$, $SD = 25.48$) reported significantly higher scores than 10th graders ($M = 92.84$, $SD = 17.19$). We are 95% confident that the difference in means between 7th and 10th graders is between 3.79 and 23.79. On the SEARS-A 7th graders ($M = 106.63$, $SD = 25.48$) reported significantly higher scores than 11th graders ($M = 96.31$, $SD = 20.69$). We are 95% confident that the difference in means between 7th and 11th graders is between .73 and 19.90. On the SEARS-A 8th graders ($M = 105$, $SD = 22.81$) reported significantly higher scores than 10th graders ($M = 92.84$, $SD = 17.19$). We are 95% confident that the difference in means between 8th and 10th graders is between 2.15 and 22.19.

DISCUSSION

Preliminary analysis of the SEARS-C and SEARS-A indicate that both measures have exceptionally strong internal consistency reliability. Analysis of differences between males and females indicates females rate themselves higher on items of concerning social-emotional strengths and assets than do males. These results indicate that on the average females perceive they have more social-emotional strengths (e.g., social competence with peers, emotional regulation skills, empathy), than males. These findings are interesting, given that they appear to be at variance with what is known about self-perceived gender differences in internalizing problem symptoms, where girls tend to report higher levels of problem symptoms than males, as well as higher rates of depressive disorders.

The results comparing total scores by grade indicate there are significant differences between

grades. It is important to note that sample sizes between grades were not equal, and could have affected results. These analyses will be more telling when more data is gathered, particularly for the SEARS-A. Greatest differences were found for grades seven through eleven. Whether differences between gender and grades were big enough to warrant creating different norms for different groups is yet to be determined, but would be a point to consider when developing the norms and creating the measurement manual.

Results from the Principal Axis Factor analysis showed that items on the SEARS-C and SEARS-A cluster into four significant factors. Suggestions as to what the factors measure are given based on an analysis of the items that correlate with the individual factors. Although four factors were identified for both measures, the factors differed in type and amount of variance explained for the SEARS-C and SEARS-A. On the SEARS-C factor one appears to be measuring peer association and social competence; factor two appears to be measuring empathy and taking other people's perspectives; factor three appears to be measuring emotion regulation; factor four appears to be measuring self perceptions. On the SEARS-A, factor one appears to be measuring empathy; factor two appears to be measuring social competence and peer associations; factor three appears to be measuring emotion regulation skills; factor four appears to be measuring responsibility and reliability. Based on the item clusters of these factors, the SEARS-C and SEARS-A seems to be measuring areas of interpersonal skills, emotion regulation, empathy, perceptions of self, and social responsibility. Although these factors correlated strongly and there is little ambiguity of which items correlate to which factor, three of the four factors on each measure explain less than seven percent of the variance individually.

In addition to the limitations about differing sample sizes between groups, and limited total variance explained by the four factors and small explained variance of three of the four factors for each measure on other limitation needs mentioning. Although the overall sample size is adequate for the analyses conducted in this study, the sample was not representative of the general population. Gender ratios were appropriate, but ethnic ratios do not equal those of the US population. Future efforts with the SEARS will focus on obtaining representative ethnic samples, conducting convergent and discriminant validity studies, examining construct validity, and developing appropriate cutoff points of scores for specific purposes.

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