



Psychometric Properties of Teacher Report of Social-Emotional Assets and Resilience Scale in Preschoolers and Elementary School Children

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Abstract

Research in psychology has evolved over the decades creating a movement of greater emphasis on the assessment of strengths and positive characteristics, rather than focusing on risk factors and the diagnosis of pathology. The Social-Emotional Assets and Resilience Scale (SEARS) is an instrument for assessing the children's strengths, resilience and adaptability in daily life, presenting a form completed by teachers. This study presents the factorial structure of the Portuguese version of teacher-report of SEARS and examines its psychometric properties, namely internal consistency and convergent validity, with a sample of 235 children (116 boys and 119 girls) aged between 5 and 10 years ($M = 7.51$, $SD = 1.63$). The factorial structure suggested by Merrell et al. (2011) was tested through a Confirmatory Factor Analyzes, with 41 items making up four factors (responsibility, self-competence, self-regulation, and empathy). In general, our findings support a final structure of 40 items divided into four subscales and provides evidence on the psychometric quality of this instrument. Limitations and future research needs are discussed.

Keywords SEARS · Social-emotional · Preschool children · Elementary school children

Research in psychology has evolved over the decades creating a movement of greater emphasis on the assessment of strengths and positive characteristics, rather than focusing on risk factors or on the diagnosis of pathology (Garnezy, 1993; Kirby & Fraser, 1997; Seligman & Csikszentmihalyi, 2000; Suldo & Shaffer, 2008). When applied to developmental psychology, this movement focuses on unique skills, resources, life experiences and talents to better meet the needs of children and their families (Jimerson et al., 2004; Tedeschi & Kilmer, 2005). Epstein and Sharma (1998) defined the strengths-based assessment as “the measurement of these emotional and behavioral skills, competencies and characteristics that create a sense of personal fulfillment; contribute to satisfying relationships with family members, peers and adults; improve the

ability to deal with adversity and stress; and promote their personal, social and academic development” (p. 3).

Childhood is a key period during which children develop social-emotional competences that will affect their learning and well-being (Denham et al., 2012; Heo & Squires, 2012; Yates et al., 2008), due to their simultaneous cognitive and social changes, as well as the experience of transition from home to the school environment (Vecchiotti, 2003). These competences include characteristics such as empathy, interpersonal skills, emotional competence, self-concept (Merrell, 2011), which allow children to build close relationships with peers, understand emotions, thoughts, and needs of others (Gormley et al., 2011). Empathy, defined as an affective response appropriate or congruent with the situation of another person, allows children to assume the emotional experiences of others, which is important to decrease aggressive acts (Dadds et al., 2008).

Conversely, children who do not develop proper social-emotional competences have greater academic failure, tendency for delinquency, inability to identify and understand their own and others' feelings, and difficulties in establishing relationships with other (Bryan, 1994; Denham & Couchoud, 1991; Gagnon et al., 1995; Greenberg et al., 2001; Gresham, 1992; Haapasalo & Tremblay, 1994; Payton et al., 2008; Rubin & Clark, 1983).

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The accumulation of protective factors has been associated with resilience among high-risk young people (Garnezy, 1993), regardless of gender differences identified in individual and environmental variables (Hartman et al., 2009). Unlike boys, self-esteem has been shown to be a protective factor against delinquency in girls (Hartman et al. 2009). With regard to environmental variables, religiosity and a positive school environment were significantly related to increased resilience in girls (Hartman et al., 2009). Boys exhibit more externalizing behaviors (e.g., hyperactivity, aggressive behavior, behavior problems), while girls have more internalizing problems (e.g., depression, anxiety) (Merrell et al., 2011).

Among the small number of strength-based social-emotional assessment tools for use with children and adolescents, the *Social-emotional Assets and Resilience Scales* (SEARS) system offers distinctive features and advantages. It is a strengths-based instrument that assesses social-emotional domains, including empathy, social competence and peer relationships, problem-solving ability, and personal responsibility (Merrell et al., 2011). The SEARS includes a parent classification form (SEARS-P), a self-report form for 8 to 12 years old (SEARS-C), a self-report form for older children and adolescents, namely 13 to 18 years (SEARS-A), and a teacher form (5 to 18 years; SEARS-T). The SEARS assessment forms are designed to measure child and adolescent strengths from the unique perspective of each informant. As mentioned above, an important recent development in social-emotional assessment of children and adolescents is the increasing interest in assessing student's strengths, assets, and other positive characteristics. From this strength-based perspective, low SEARS scores raise concerns, and identified social emotional deficits or low-ranked scales can be used to set targets for intervention and skills building. Although very low scores on single items or scales may have some association with behavioral disorders, it should be noted that these are not directly assessed nor assumed. The SEARS strength-based approach aims to be less stigmatizing to children and adolescents, setting the conditions for positive intervention planning and outcome evaluation, instead of focusing on the identification of symptoms of pathology, as most child assessment instruments do (Merrell, 2011). Since teachers spend a great deal of time with children, it becomes essential to understand how children behave according to the perception of teachers. SEARS-T is filled by teachers with the general objective of identifying areas designed to teach skills and help correcting social-emotional deficits.

The validation of the original scale of 54 items was administered to 418 teachers for 1673 students. The researchers performed Exploratory factor analyses in half of the sample (837), using the principle axis factor with oblimin rotation. The process involved explorations of three to six potential factors, using Kaiser's rule to force factors. Items that seemed to have no specificity or had low commonality values were

taken out of consideration, resulting in a scale with 41 items. The total variation explained by the four factors was 64.0%: the first factor explains most of the variation, 50.8%; the second factor explained 6.69%; the third factor explained, 4.08%; and the fourth factor explained 2.44% of the total variation. The 4 factors are: (1) responsibility, with 10 items; (2) Social Competence, included 12 items; (3) Self-regulation, included 13 items; (4), Empathy, contains 6 items. Additionally, in the initial study, gender differences were found in the SEARS-T scores. Girls were assessed by their teachers as having higher levels of socio-emotional competence, but the size of these differences is small, thus not requiring the use of separate norms for each gender. These results are congruent with previous research reporting that girls tend to be classified as having better social skills than boys (Merrell & Gimpel, 1998).

Taking into account the need to assess strengths in social, emotional, and behavioral characteristics through an instrument with good psychometric qualities, easy to use and with practical applications, this study aimed to analyze the factor structure of the Portuguese version of the SEARS teacher-report form and its psychometric properties - internal consistency and convergent validity - in a community sample of children from preschool and elementary school.

Method

Participants and Procedure

The sample was recruited in public schools and participants included 46 teachers who provided behavioral ratings on 235 children (116 boys and 119 girls), from kindergarten and elementary school, aged between 5 and 10 years old ($M = 7.51$, $SD = 1.63$) (Table 1). Participants were recruited from contacts made by the researchers with schools in the Northern region of Portugal. Informed consent was provided to parents and teachers of the eligible children, i.e. any children without

Table 1 Age and gender characteristics

	Total		Male		Female	
	n	%	n	%	n	%
Age						
5 years old	42	17.8%	21	50%	21	50%
6 years old	32	13.6%	14	43.8%	18	56.3%
7 years old	31	13.2%	12	38.7%	19	61.3%
8 years old	52	22.1%	27	51.9%	25	48.1%
9 years old	50	21.3%	27	54%	23	46%
10 years old	28	11.9%	15	54%	13	46%
Total age	235	100%	116	49%	119	51%

special needs, aged between five and 10 years. All procedures were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki (WMA, [n.a.](#)) declaration and its later amendments, or comparable ethical standards.

Measures

Social-Emotional Assets and Resilience Scale – Teacher Form

The teacher form of the Social-Emotional Assets and Resilience Scale (SEARS-T; Merrell et al., [2011](#)) comprises a scale for measuring the social-emotional competencies and assets of children and adolescents. Social and emotional assets and resilience can be broadly defined as a set of adaptive characteristics that are important for success at school, with peers, and in the outside world. The SEARS-T comprises 41 items, which are answered in a 4-point *Likert* scale ranging from 0 (= *Never*) to 3 (= *Always*). It is organized in four empirically derived scales, namely: (a) Self-Regulation; (b) Empathy; (c) Social Competence; and (d) Responsibility. Merrell et al. ([2011](#)) found very strong internal consistency values, with Cronbach's α of .95 for the responsibility factor, .94 for Social Competence, .95 for Self-Regulation, and .92 for Empathy.

Social Skills Rating System The Social Skills Rating System (SSRS; Gresham & Elliot, [1990](#)) evaluates several facets of social competence, grouped into two scales, namely social skills and behavioral problems, each one with several subscales. Additionally, it also evaluates academic competence, which has been emphasized by the role it plays in the processes of social adaptation and inadaptation. The Portuguese version of the SSRS (Lemos & Meneses, [2002](#)) has good Cronbach's α values: between .86 and .93 for the social skills subscales, and between .83 and .92 for the behavior problems subscales.

Translation and Adaptation Procedures

The English version of the SEARS-T was adapted and translated according ITC Guidelines for Translating and Adapting Tests (ITC, [2017](#)). As proposed, two independent researchers translated the scale from the original language (English) to Portuguese, and a third bilingual expert provided a detailed review of the translated items. In addition, the back-translation was carried out by a language specialist. Differences in the original and back-translated versions were discussed and resolved by consensus. A pilot test was conducted to understand how the translated version performed in a real-world scenario. Forty-six teachers filled out the translated scale and were asked for feedback on the difficulty and clarity of each item, the administration procedure, and on what was the test for in

their opinion. After these steps, a final version of SEARS-T was obtained.

Statistical Analyses

A CFA was conducted in IBM SPSS-26 and IBM AMOS-26 to test the adequacy of the original 4-factor SEARS-T model, using the mean- and variance-adjusted weighted least squares estimator appropriate for ordinal items (Flora & Curran, [2004](#)). As recommended by Sharma et al. ([2005](#)) model fit was assessed using the Tucker-Lewis Index (TLI), Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). It was considered that RMSEA values below .05 indicate good adjustment, while values between .05 and .08 indicate an acceptable fit. A CFI and TLI index of .95 or higher indicates excellent fit, and a CFI and TLI of .90 or higher indicates good fit (Hu & Bentler, [1999](#)). Cronbach's α was computed to examine the internal consistency of the factors and was complemented with analyses of the average item correlation (AIC) and item-total correlation (ITC). Correlations within SEARS-T scores and between these scores and SSRS scores were also calculated.

Additionally, the items of SEARS were assessed using Ferketich techniques (Ferketich, 1991), which help in making a decision about whether any given item should be retained or deleted. According to Ferketich (1991), the following elements were considered to guide decisions on the items to be retained or deleted: (a) the inter-item correlation matrix; (b) the corrected average inter-item correlation coefficient; (c) the corrected item for the total correlation coefficient; and (d) information on the alpha estimate if the item is taken off the scale. The correlation of the item with the other items on the scale define if the item is unnecessary or not related to the scale. The rule of thumb is that items that correlate $< .30$ are not sufficiently related to the measure and items that correlate $> .70$ may be redundant. Item-total correlation describes if any item in the set of tests is inconsistent with averaged behavior of the other items (Churchill, 1979). The stronger the item-total correlation, the greater the relevance of the item for the total score. In general, item-total correlation $> .30$ is considered good. All analyses were performed with SPSS 26.0.

Results

Confirmatory Factor Analysis (CFA)

Before performing the CFA, it was verified that the data were normally distributed, with no significant skewness or Kurtosis deviations (Kline, [2011](#)). All items of the SEARS-T presented high factor weights ($\lambda \geq .05$) except for the item 20, leading to its elimination. Thus, the CFA was conducted on the

remaining 40 items using AMOS 26. The original model 4-factor model of SEARS-T (Merrell et al., 2011) was tested for the total sample (235 children) revealing poor adjustment, $\chi^2(773) = 2.86$, $p = .00$ (CFI = .84; TLI = .82; RMSEA = .08). The adjustment of model was estimated from the Modification Indices (MI) produced by AMOS. The MI estimate the reduction of χ^2 statistics of the model, being a sequential process. The parameters with higher MI are successively released, until the parameter of the smallest MI is reached. As suggested by Marôco (2010), only the parameters with MI greater than 11 were modified. After correlated the measurement errors of the several items, an adequate adjustment was achieved, $\chi^2(732) = 1.87$, $p = .00$ (CFI = .92; TLI = .91; RMSEA = .06) (Fig. 1).

Internal Consistency

The internal consistency for the total score was excellent, with a Cronbach's $\alpha = .98$. The internal consistency of the four factors - responsibility, empathy, self-regulation, and self-competence - was also excellent in that Cronbach's α were .94, .92, .95 and .92, respectively (Table 2). Inspection of the item-item correlation matrix suggested that deletion of any single item would not significantly improve the internal consistency of the scale taking into account insufficient correlation between items ($r < .30$). However, some correlations were over .70. This is particularly important and item deletion can be recommended when the Cronbach's alpha is above of .95 (Bradberry, 2007). Thus, items of the self-regulation factor were evaluated for their characteristics and compared with each other. After this analysis, no items were deleted by redundancy, poor characteristics, or poor wording.

Convergent Validity

To test whether SEARS-T scores were associated with social competence and behavior problems, the scores of the SEARS-T scales were correlated with scores from the SSRS scales (Table 3). All correlations were positive and statistically significant (all $p < .001$), with coefficients varying between .37 and .80. Regarding the total scores of both scales, it was observed a significant correlation of .76 ($p < .001$). When analyzing the correlation coefficients according to gender, the same pattern of results is maintained.

Gender and Age Differences

Gender (male, female) and age (5 to 10 years old) differences in the SEARS-T factorial structure were analyzed using t-tests and ANOVA. The results showed a significant gender effect on the total score of the scale, $t(233) = -2.35$, $p = .020$, $g = .31$, as well as on the Responsibility, $t(233) = -3.06$, $p = .002$, $g = .40$, Empathy, $t(233) = -1.96$, $p = .049$, $g = .25$, and

Self-Regulation subscales, $t(233) = -2.15$, $p = .033$, $g = .28$. Regarding age, the ANOVA revealed a significant effect of this variable on the total score of the scale, $F(7,227) = 2.33$, $p = .026$, $\eta^2 = .06$, as well as on the Responsibility, $F(7,227) = 2.89$, $p = .006$, $\eta^2 = .08$, and Self-competence subscales, $F(7,227) = 2.17$, $p = .038$, $\eta^2 = .07$. In general, it is possible to verify that girls show higher scores in all subscales and across all ages (Table 4).

Discussion

Development trajectories cannot be fully understood without an integrated focus both on pathology and competence (Masten & Coatsworth, 1995), and research has shown that young people's strengths should be considered as important as their weaknesses in understanding the potential for success (Garmezy, 1993; Kirby & Fraser, 1997). However, the evaluation of students is often based on a deficit model, for example identifying processing deficits, poor achievements, and socio-emotional difficulties for the prescription of intervention programs. The literature shows that it is necessary to emphasize the strengths of young people, rather than to pay special attention to their weaknesses, when understanding the potential for success (Garmezy, 1993; Kirby & Fraser, 1997). Thus, it is necessary to have at our disposal instruments with good psychometric qualities, capable of assessing strengths in social, emotional and behavioral characteristics.

The purpose of the current study was to test the factor structure, psychometric properties, and validity of the SEARS (Merrell et al., 2011). This scale allows assessing social-emotional competencies and a Portuguese version of the SEARS-T was used to evaluate a community sample of children in school settings without diagnosis of any clinical conditions. A Confirmatory Factor Analysis was applied to test the fit of the Portuguese version to the factor structure of the Merrell et al. (2011) original version, with 41 items making up four factors (Responsibility, Self-competence, Self-regulation, and Empathy).

The strong internal consistency estimates for the total scale and the various factors suggest that this instrument provides highly reliable measures. It should be noted that the deletion of item 20 (*Asks others for help when needed*) did allow a better fit of our data to the original model, as it allowed to obtain a better internal consistency of the factor to which it belonged (*self-competence*). Thus, the original 4-factor structure was maintained. The factor 1 (Responsibility) concerns to teacher's assessment of the student's ability to accept responsibility, behave conscientiously, and to think before acting. The Empathy (factor 2) measures the teacher's assessment of a student's ability to empathize with other's situations and feelings. Self-competence (factor 3) measures the teacher's assessment of a students' ability to maintain friendships with

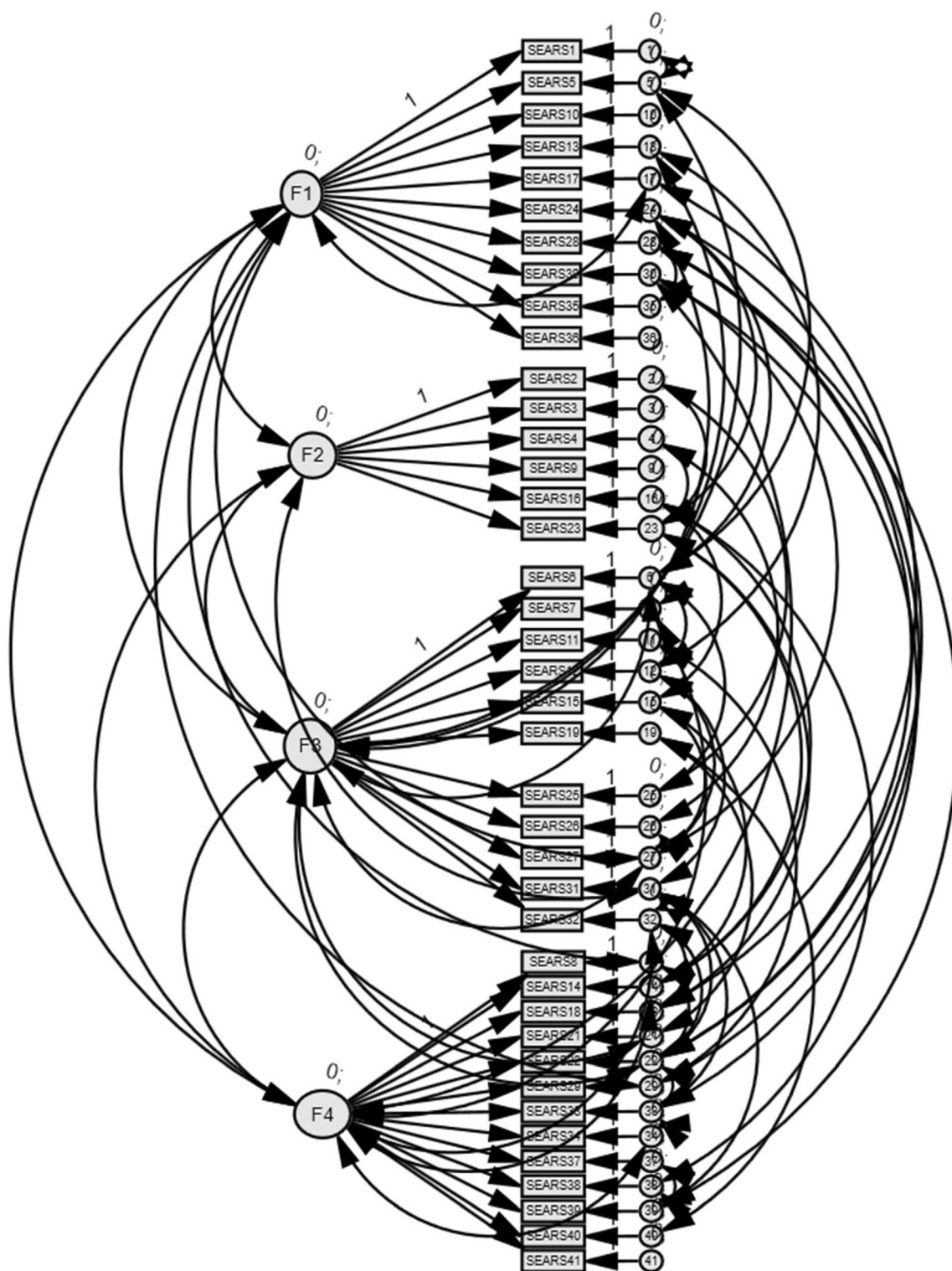


Fig. 1 Confirmatory factor analysis of the Social-Emotional Assets and Resilience Scale, four-factor structural model with standardized estimates

their peers, engage in effective verbal communication, and feel comfortable around groups of peers. Finally, Self-regulation (factor 4) assesses student's self-awareness, meta-cognition, intrapersonal insight, self-management, and direction.

On a different analysis, it was found significant differences in the mean scores of boys and girls. Specifically, teachers scored girls significantly higher in SEARS-T, both on the total scale and in the various subscales. These results are in line with the results of the original study, indicating that

Table 2 Internal Consistency Analysis

	Number of items	Cronbach's α	Inter-item mean correlations	Item-total correlations
Responsibility	10	.94	.59	.62–.81
Empathy	6			.74–.81
Self-regulation	13	.95	.59	.62–.84
Self-competence	11			.52–.78
Total	40	.98	.52	.47–.85

girls tend to be more competent than boys in all dimensions relating to social-emotional skills, even if the effect size is small (Merrell et al., 2011).

It is important to emphasize the nature of SEARS-T as a strength-based screening and assessment tool, which teachers can use to report data on K-12 students. However, as in similar studies, there are several limitations to the present study, which need to be taken into consideration when interpreting our results. One possible limitation is the potential grouping of data, since each teacher evaluated about 4 to 6 students. The way teachers approached the task of classifying their students were not accounted for in our analyses, nor in the Merrell et al. (2011) analyses. Systematic grouping is considered a potential source of measurement that can affect reliability (Webb & Shavelson, 2005). A second limitation is related with the sample size and sample configuration. Although the sample size meets the criterion of five participants per item (Garson, 2008), it is a relatively modest sample. In addition, the present study did not have groups with special needs, which would allow to establish useful comparisons with the analyzed children.

Despite the limitations listed, teacher ratings of students' behavior are an important facet of a comprehensive assessment, being necessary to emphasize the strengths, rather than pay special attention to weaknesses when understanding the potential for success. The focus on deficits may allow psychologists to diagnose lack of skills, but such practice does not properly inform intervention and treatment needs. In contrast,

identifying areas of strength to capitalize, such as encouraging motivation or nurturing confidence, can favor strategies that address underlying problems, rather than simply change behaviors (Terjesen et al., 2004). In addition, by using strength-based assessment, it is possible to enhance a more appropriate understanding of young people and their resources.

The assessment of strengths can provide the clinician with a powerful tool to understand the children's and adolescents' intact repertoires, which can be effectively used to combat problems. In recent decades, many researchers have focused on the development of behavioral problems from childhood to adolescence, in particular the developmental paths of aggressive, antisocial and violent behaviors, as well as conduct problems (Granic & Patterson, 2006; Patterson, 2008). Understanding the etiology of problematic behaviors, for example with explanations from the general theory of crime (Gottfredson & Hirschi, 1990), is as important as to examine the development of the abilities to interact with others, cope with school and work demands, family support, or the interactions with the justice system since an early age. The understanding of conduct problems also requires comprehension those who have well regulated emotions (Salekin, 2016). Thus, self-control and the capacity to cope with negative emotionality are also critical to understand both normative and pathological behavior (DeLisi & Vaughn, 2014). A common feature of psychological disorders is the inability to effectively regulate emotions and self-assessments in different contexts (American Psychiatric

Table 3 Correlations between the SEARS and SSRS

	Responsibility			Empathy			Self-regulation			Self-competence			Total Scale		
	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls
Social Skills	.76**	.80**	.71**	.68**	.72**	.62**	.72**	.74**	.70**	.62**	.65**	.58**	.76**	.78**	.71**
Self-control	.64**	.66**	.59**	.61**	.61**	.60**	.66**	.67**	.64**	.41**	.43**	.37**	.63**	.64**	.60**
Cooperation	.70**	.68**	.71**	.52**	.50**	.52**	.57**	.54**	.59**	.50**	.48**	.50**	.62**	.59**	.63**
Assertion	.65**	.70**	.59**	.62**	.72**	.50**	.64**	.67**	.60**	.72*	.76**	.67**	.71**	.76**	.65**

Note. ** $p < .01$; * $p < .05$

Table 4 Means and standard deviations of all scales and gender and age effects

	Responsibility			Empathy			Self-competence			
	Hedges g/r			Hedges g/r			Hedges g/r			
	Total <i>M(SD)</i>	Boys <i>M(SD)</i>	Girls <i>M(SD)</i>	Total <i>M(SD)</i>	Boys <i>M(SD)</i>	Girls <i>M(SD)</i>	Total <i>M(SD)</i>	Boys <i>M(SD)</i>	Girls <i>M(SD)</i>	
Age										
5 years old	21.2 (6.97)	19.7 (7.19)	22.9 (6.52)	.47/.23	11.8 (4.95)	11.5 (5.03)	12.3 (4.96)	.16/.08	22.4 (8.34)	20.8 (8.65)
6 years old	22.6 (6.51)	22.0 (6.60)	23.0 (6.61)	.15/.08	12.5 (3.99)	11.9 (4.20)	12.9 (3.87)	.24/.12	23.4 (7.77)	23.6 (6.80)
7 years old	20.7 (4.86)	20.3 (4.73)	21.1 (5.03)	.16/.08	11.8 (2.99)	12.2 (2.82)	11.5 (3.13)	.23/.12	21.4 (4.96)	21.7 (4.96)
8 years old	18.9 (4.86)	18.2 (4.91)	19.8 (4.78)	.33/.16	10.7 (2.90)	9.89 (3.20)	11.6 (2.27)	.60/.29	20.2 (4.05)	20.0 (4.55)
9 years old	18.8 (5.86)	17.7 (6.53)	20.0 (4.83)	.39/.20	11.4 (3.17)	11.1 (3.40)	11.7 (2.91)	.00/.00	19.5 (5.43)	19.0 (5.82)
10 years old	22.5 (4.93)	20.7 (4.95)	24.5 (4.27)	.79/.38	13.6 (2.83)	13.1 (3.08)	14.2 (2.52)	.38/.19	22.8 (5.49)	22.0 (5.63)
Total age	20.5 (5.90)	19.3 (6.03)	21.6 (5.57)	.40/.19	11.8 (3.61)	11.3 (3.76)	12.2 (3.41)	.25/.12	21.3 (6.20)	20.7 (6.23)
Effects										
Gender	<i>t</i> (233) = -3.06, <i>p</i> < .05; <i>g</i> = .40			<i>t</i> (233) = -1.96, <i>p</i> < .05; <i>g</i> = .25			<i>t</i> (233) = -1.49, <i>p</i> > .05; <i>g</i> = .19			
Age	<i>F</i> (7,227) = 2.89, <i>p</i> < .05; η^2 = .08			<i>F</i> (7,227) = 1.99, <i>p</i> > .05; η^2 = .06			<i>F</i> (7,227) = 2.17, <i>p</i> < .05; η^2 = .07			

Association, 2013; Kashdan & Rottenberg, 2010). Focusing on strengths, on the one hand, helps children or adolescents deficits in important areas of socio-emotional strength regulate emotions and improve self-assessment in various contexts, on the other hand helps identify students who are exceptionally strong with respect to social-emotional competencies, perhaps for purposes of giving them opportunities to be role models in peer mentoring programs or social-emotional learning interventions (Merrell et al. 2011).

In sum, our findings suggest the usefulness of this instrument to assess socio-emotional competencies among pre-school and elementary school children, aged between five and ten years. Due to the characteristics of this instrument, enabling a closer inspection of a young person's strengths, unique information can be obtained with SEARS-T to facilitate prevention and intervention planning (Rhee et al., 2001).

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Compliance with Ethical Standards

The authors do not have any interests that might be interpreted as influencing the research. The study was conducted according to APA ethical standards. This work was supported by grants from the Portuguese Foundation for Science Technology (SFRH/BD/133694/2017).

Conflict of Interest The authors do not have any interests that might be interpreted as influencing the research.

Ethical Approval “All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.”

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th. ed.). Washington, DC: APA.
- Bradberry, T. (2007). *The personality code*. UK: Penguin.
- Bryan, T. (1994). The social competence of students with learning disabilities over time: A response to Vaughn and Hogan. *Journal of Learning Disabilities*, 27(5), 304–308. <https://doi.org/10.1177/002221949402700506>.
- Dadds, M. R., Hunter, K., Hawes, D. J., Frost, A. D., Vassallo, S., Bunn, P., Merz, S., & Masry, Y. E. (2008). A measure of cognitive and affective empathy in children using parent ratings. *Child Psychiatry and Human Development*, 39(2), 111–122. <https://doi.org/10.1007/s10578-007-0075-4>.
- DeLisi, M., & Vaughn, M. G. (2014). Foundation for a temperament-based theory of antisocial behavior and criminal justice system involvement. *Journal of Criminal Justice*, 42(1), 10–25. <https://doi.org/10.1016/j.jcrimjus.2013.11.001>.
- Denham, S. A., & Couchoud, E. A. (1991). Social-emotional predictors of preschoolers' responses to an adult's negative emotions. *Journal of Child Psychology and Psychiatry*, 32(4), 595–608. <https://doi.org/10.1111/j.1469-7610.1991.tb00337.x>.
- Denham, S. A., Bassett, H. H., Thayer, S. K., Mincic, M. S., Sirotkin, Y. S., & Zinsner, K. (2012). Observing preschoolers' social-emotional behavior: Structure, foundations, and prediction of early school success. *Journal of Genetic Psychology*, 173(3), 246–278. <https://doi.org/10.1080/00221325.2011.597457>.
- Epstein, M. H., & Sharma, J. (1998). *Behavioral and emotional rating scale: A strength-based approach to assessment*. Austin: PRO-ED.
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. *Psychological Methods*, 9(4), 466–491. <https://doi.org/10.1037/1082-989x.9.4.466>.
- Gagnon, C., Craig, W. M., Tremblay, R. E., Zhou, R. M., & Vitaro, F. A. (1995). Kindergarten predictors of boys' stable behavior problems at the end of elementary school. *Journal of Abnormal Child Psychology*, 23(6), 751–766. <https://doi.org/10.1007/bf01447475>.
- Garnezy, N. (1993). Children in poverty: Resilience despite risk. *Psychiatry*, 56(1), 127–136. <https://doi.org/10.1080/00332747.1993.11024627>.
- Garson, D. G. (2008). *Factor analysis: Statnotes*. North Carolina State University Public Administration Program.
- Gormley, W., Phillips, D., Newmark, K., Welti, K., & Adelstein, S. (2011). Social-emotional effects of early childhood education programs in Tulsa. *Child Development*, 82(6), 2095–2109. <https://doi.org/10.1111/j.1467-8624.2011.01648.x>.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. EUA: Stanford University Press.
- Granic, I., & Patterson, G. R. (2006). Toward a comprehensive model of antisocial development: A dynamic systems approach. *Psychological Review*, 113, 101–131. <https://doi.org/10.1037/0033-295X.113.1.101>.
- Greenberg, M. T., Domitrovich, C., & Bumbarger, B. (2001). The prevention of mental disorders in school-aged children: Current state of the field. *Prevention & Treatment*, 4(1), 1–62. <https://doi.org/10.1037/1522-3736.4.1.41a>.
- Gresham, F. M. (1992). Social skills and learning disabilities: Causal, concomitant or correlational. *School Psychology Review*, 21(3), 348–360.
- Gresham, M., & Elliott, S. (1990). *Social skills rating system: Manual*. Circle Pines: American Guidance Service.
- Haapasalo, J., & Tremblay, R. E. (1994). Physically aggressive boys from ages 6 to 12: Family background, parenting behavior, and prediction of delinquency. *Journal of Consulting and Clinical Psychology*, 62(5), 1044–1052. <https://doi.org/10.1037/0022-006x.62.5.1044>.
- Hartman, J. L., Turner, M. G., Daigle, L. E., Exum, M. L., & Cullen, F. T. (2009). Exploring the gender differences in protective factors. *International Journal of Offender Therapy and Comparative Criminology*, 53(3), 249–277. <https://doi.org/10.1177/0306624x08326910>.
- Heo, K. H., & Squires, J. (2012). Cultural adaptation of a parent completed social emotional screening instrument for young children: Ages and stages questionnaire-social emotional. *Early Human Development*, 88(3), 151–158. <https://doi.org/10.1016/j.earlhumdev.2011.07.019>.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>.
- ITC. (2017). Guidelines for translating and adapting tests (second edition). *International Journal of Testing*, 18(2), 101–134. <https://doi.org/10.1080/15305058.2017.1398166>.
- Jimerson, S. R., Sharkey, J. D., Nyborg, V., & Furlong, M. J. (2004). Strength-based assessment and school psychology: A summary and

- synthesis. *The California School Psychologist*, 9(1), 9–19. <https://doi.org/10.1007/bf03340903>.
- Kashdan, T. B., & Rottenberg, J. (2010). Psychological flexibility as a fundamental aspect of health. *Clinical Psychology Review*, 30(7), 865–878. <https://doi.org/10.1016/j.cpr.2010.03.001>.
- Kirby, L. D., & Fraser, M. W. (1997). Risk and resilience in childhood: An ecological perspective. In M. W. Fraser (Ed.), *Risk and resilience in childhood: An ecological perspective* (pp. 10–33). Washington, DC: NASW Press.
- Kline, R. B. (2011). *Methodology in the social sciences. Principles and practice of structural equation modeling* (3rd ed.). New York: Guilford Press.
- Lemos, M., & Meneses, H. (2002). A avaliação da competência social: versão portuguesa da forma para professores do SSRS. *Psicologia: Teoria e Pesquisa*, 18(3), 267–274. <https://doi.org/10.1590/s0102-37722002000300005>.
- Masten, A. S., & Coatsworth, D. (1995). Competence, resilience, and psychopathology. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology, volume 2: Risk, disorder, and adaptation* (pp. 715–752). New York: Wiley.
- Merrell, K. (2011). *Social emotional assets and resilience scales. Professional manual*. Florida: PAR.
- Merrell, K., Cohn, B., & Tom, K. (2011). Development and validation of a teacher report measure for assessing social-emotional strengths of children and adolescents. *School Psychology Review*, 40(2), 226–241.
- Merrell, K. W., & Gimpel, G. A. (1998). *Social skills of children and adolescents: Conceptualization, assessment, treatment*. Mahwah: Erlbaum.
- Patterson, G. R. (2008). A comparison of models for interstate wars and for individual violence. *Perspectives on Psychological Science*, 3, 203–223. <https://doi.org/10.1111/j.1745-6924.2008.00075.x>.
- Payton, J., Weissberg, R. P., Durlak, J. A., Dymnicki, A. B., Taylor, R. D., Schellinger, K. B., & Pachan, M. (2008). The positive impact of social and emotional learning for kindergarten to eighth-grade students: Findings from three scientific reviews. In *Technical report. Collaborative for academic, social, and emotional learning (NJ)*.
- Rhee, S., Furlong, M., Turner, J., & Harari, I. (2001). Integrating strength-based perspectives in psychoeducational evaluations. *The California School Psychologist*, 6(1), 5–17. <https://doi.org/10.1007/bf03340879>.
- Rubin, K. H., & Clark, M. L. (1983). Preschool teachers' ratings of behavioral problems: Observational, sociometric, and social-cognitive correlates. *Journal of Abnormal Child Psychology*, 11(2), 273–286. <https://doi.org/10.1007/bf00912091>.
- Salekin, R. (2016). Psychopathy in childhood: Why should we care about grandiose-manipulative and daring-impulsive traits? *British Journal of Psychiatry*, 209(3), 189–191. <https://doi.org/10.1192/bjp.bp.115.179051>.
- Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55(1), 5–14. <https://doi.org/10.1037/0003-066X.55.1.5>.
- Sharma, S., Mukherjee, S., Kumar, A., & Dillon, W. R. (2005). A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research*, 58(7), 935–943. <https://doi.org/10.1016/j.jbusres.2003.10.007>.
- Suldo, S. M., & Shaffer, E. J. (2008). Looking beyond psychopathology: The dual-factor model of mental health in youth. *School Psychology Review*, 37(1), 52–68.
- Tedeschi, R. G., & Kilmer, R. P. (2005). Assessing strengths, resilience, and growth to guide clinical intervention. *Professional Psychology Research and Practice*, 36(3), 230–237. <https://doi.org/10.1037/0735-7028.36.3.230>.
- Terjesen, M., Jacofsky, M., Froh, J., & DiGiuseppe, R. (2004). Integrating positive psychology into schools: Implications for practice. *Psychology in the Schools*, 41(1), 163–172. <https://doi.org/10.1002/pits.10148>.
- Vecchiotti, S. (2003). Kindergarten: An overlooked educational policy priority. *Social Policy Report*, 17(2), 1–20. <https://doi.org/10.1002/j.2379-3988.2003.tb00021.x>.
- Webb, N., & Shavelson, R. (2005). Generalizability theory: Overview. *Encyclopedia of Statistics in Behavioral Science*, 2, 717–719. <https://doi.org/10.1002/0470013192.bsa703>.
- World Medical Association. (n.a.). WMA Declaration of Helsinki—ethical principles for medical research involving human subjects. www.wma.net/en/30publications/10policies/b3/index.html
- Yates, T., Ostrosky, M. M., Cheatham, G. A., Fetting, A., Shaffer, L., & Santos, R. M. (2008). *Research synthesis on screening and assessing social and emotional competence*. Nashville, TN: Center on the social emotional foundations of early learning at Vanderbilt University. Retrieved from http://csefel.vanderbilt.edu/documents/rs_screening_assessment.Pdf.

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