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Adaptation and validation of the Social and Emotional Health Survey – Secondary into Turkish culture

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ABSTRACT

This study investigated the psychometric properties of a Turkish-language adaptation of the Social and Emotional Health Survey – Secondary (SEHS-S), a measure of core psychological assets hypothesized to be associated with adolescents' flourishing mental health. Convenience samples of students (Grades 9–12) from six Turkish high schools were used; one sample had 402 students (45% male and 55% female) and the second sample had 452 students (44% male and 56% female). Using Sample 1, confirmatory factor analysis replicated the previously identified SEHS-S higher-order factor structure, consisting of 12 subscales that formed four first-order latent traits (belief-in-self, belief-in-others, emotional competence, and engaged living) and a second-order trait (covitality). Using Sample 2, additional validity analyses showed that covitality was positively correlated with psychological resilience and prosocial behaviors. There was a negative correlation with externalized and internalized psychological distress. Acceptable alpha reliability coefficients were found for the four SEHS-S domains (males = .74–.89; females = .75–.81) and the covitality total score (.89 for males and females). The findings supported the use of the SEHS-S as a valid and reliable measurement instrument for use in positive mental health research with Turkish adolescents and generalized the SEHS-S covitality measurement model to another cultural context.

A core goal of school psychologists is to provide flexible and responsive services for adolescents who are experiencing mental health challenges that might inhibit transitions to upward-spiraling, positive developmental trajectories (Masten, 2001). One component of this overall effort is to search for and monitor psychosocial experiences via the administration of whole-school surveys as part of universal mental health screening assessments (e.g., Dowdy et al., 2015; Moore et al., 2015). School-based screening has typically measured adolescents' emotional and behavioral problems (e.g., Behavioral and Emotional Screening System [Furlong & O'Brennan, 2010; Kamphaus & Reynolds, 2007], Brief Symptom Inventory [Derogatis, 1992; Şahin, Batıgün, & Uğurtaş, 2002] and the Mental Problems Screening Scale for Adolescents [Ögel, Karadayı, Şenyuva, & Kanoğlu, 2012]). Such problem-focused measures are necessary because they provide important information about students' psychological distress; however, it has been argued that a focus on deficits alone produces an incomplete understanding of adolescents' complete social-emotional health (Epstein, 1999; Husky et al., 2011; Nickerson, 2007; Renshaw et al., 2014). Deficit-focused screeners are purposefully designed to identify the 15% to 20% of students who experience substantial psychological distress symptoms, but provide no specific actionable information about the 80% to 85% of students who return self-ratings in the normal range. Most prominently, Keyes (2006) has effectively suggested that the *absence of distress symptoms*, as reported by a majority of adolescents, is not equivalent to thriving mental health.

Efforts to extend and complement deficit-focused school screeners have recently drawn upon the positive psychology (e.g., Furlong, Gilman, & Huebner, 2014) and youth development (e.g., Larson, 2000; Lerner, Dowling, & Anderson, 2003) literatures by incorporating survey items that measure personal strengths and thereby potentially produce a more comprehensive understanding of adolescents' developmental needs (Furlong, Dowdy et al., 2014). Such an implementation of whole-school assessments that includes items alluding to both

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psychological distress and strengths has been called *complete social emotional health screening* (Moore et al., 2015) and this approach has been used in basic research to evaluate the dual-factor mental health model (Kim, Furlong, Dowdy, & Felix 2014; Suldo, 2016; Suldo & Shaffer, 2008). Among the early approaches to measuring students' positive psychological strengths in school settings is the Resilience Youth Development Module (RYDM), which is part of the California Healthy Kids Survey (Furlong, Ritchey, & O'Brennan, 2009; Hanson & Kim, 2007). The RYDM was developed to ascertain various internal assets and external resources associated with positive adolescent development and is based on Benard's (2005) review of resilience research. The RYDM was modified and extended by Furlong and colleagues with the goal of providing a psychometrically defensible measure of students' psychosocial strengths that can be efficiently used by schools as part of whole-school screening. This instrument—the Social Emotional Health Survey–Secondary (SEHS-S)—thus far has been validated with culturally diverse samples of students from California (Furlong, Dowdy et al., 2014; You et al., 2014; You, Furlong, Felix, & O'Malley, 2015), Korea (Lee, You, & Furlong, 2016), and Japan (Ito, Smith, You, Shimoda, & Furlong 2015). Given the promising, to date, cross-national validation of the SEHS-S in two east Asian countries, the goal of this study was to evaluate and extend the construct and concurrent validity of the SEHS-S using a sample of Turkish adolescents as part of an effort to empirically examine the cross-cultural relevance of the SEHS-S covitality model. Additional cross-cultural validation of the SEHS-S would lend support to its use in comparative research and its potential to be used as a general quality-of-life surveillance indicator in international research (Kim, Furlong, Ng, & Huebner, in press).

Social-emotional and mental health needs of Turkish students

Turkish adolescents, as students in all countries, are confronted with many developmental challenges. While the use of drugs among Turkish adolescents is lower than their peers in North American and European countries, use has increased in recent years (Ünlü & Evcin, 2014). With respect to social-emotional health, a substantial proportion of Turkish high school students experience depressive symptoms, with rates as high as 30% (Unsal & Ayranci, 2008) to 45% (Ergene & Yıldırım, 2004). Another important challenge is that, in Turkey, teachers and parents place a heavy emphasis on academic performance in an attempt to encourage students to get high course marks and thereby become eligible to enter

top-ranked universities. One consequence of this high academic pressure is that 42% (Yıldırım, 2007) to 47% (Kavakci et al., 2014) of Turkish students report experiencing high levels of test anxiety. In this academic milieu, less attention is given to Turkish students' social and emotional development, which is associated with diminished levels of student subjective well-being. For example, Turkish students were in the below-average range of the happiness-at-school rankings in the 2012 PISA study (Programme for International Student Assessment, 2013). Although the interest of teachers and parents in promoting Turkish students' academic success is well respected, research has shown that high academic performance and high subjective well-being are positively correlated (Furlong, Dowdy, et al., 2014; Ito et al., 2015; Lee et al., 2016) and there are recognized benefits to fostering both.

Access to a validated psychological asset instrument could provide Turkish school psychologists and counselors a resource to (a) identify students with low levels of psychological resources, (b) implement resilience-fostering interventions for the identified students, and (c) thereby boost these students' academic performance and psychological well-being. Unfortunately, to date, the development of resilience measurement tools in Turkey has focused on adults (e.g., the Resilience Scale for Adults [Basım & Çetin, 2011], the Adult Resilience Scale [Çakar, Karataş, & Çakır, 2014]) and university students (e.g., Resilience Scale [Terzi, 2006], the Ego-Resilience Scale [Karaırmak, 2007], the Connor-Davidson Resilience Scale [Karaırmak, 2007], the Brief Resilience Scale [Doğan, 2015], and the Resilience Scale [Gürgan, 2006]). Preliminary efforts were undertaken to adapt the Resilience Youth Development Module (WestEd, 2001) for use with Turkish adolescents (Gizir & Aydın, 2006); however, this population-based measurement has limited research support validating its use for individual psychological assessment (Furlong et al., 2009). The recent development of the SEHS-S with its comprehensive psychometric profile and a strong theoretical grounding provides a possible resource for use with Turkish students and could be used to assess the effectiveness of intervention programs designed to increase the resilience and well-being of Turkish high school students.

Description of the Social Emotional Health Survey–Secondary

The conceptual foundation of the SEHS-S is grounded in the idea that all children and adolescents are naturally faced with key tasks that are essential to the development of psychological assets, and as this developmental process unfolds, natural cognitive organizational processes build
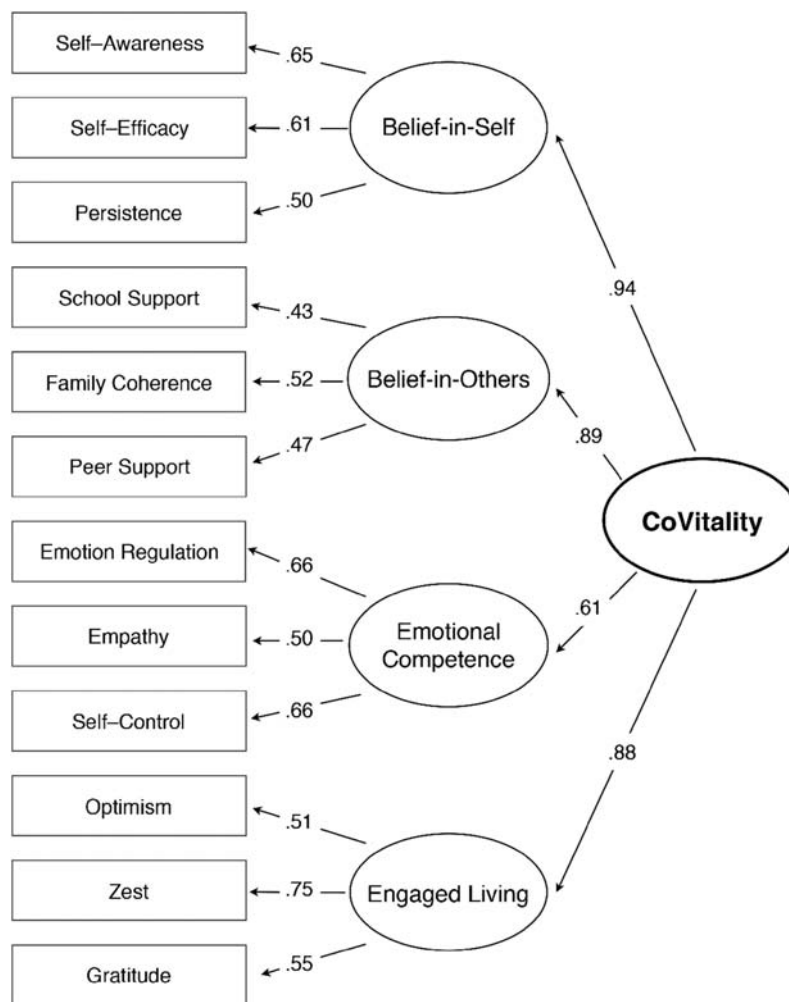
Figure 1. Social Emotional Health Survey – Secondary higher-order measurement model and latent trait loadings.

core self–other attitudes or cognitive schemas (Crisp & Turner, 2014). The value of these schemas lies in their potential capacity to help an adolescent to organize his or her world and his or her place in it to foster positive development and protect against or cope with psychological distress (Tomlinson, Keyfitz, Rawana, & Lumley, 2016). These cognitive schemas help adolescents to make sense of past behaviors and predict future behavioral possibilities and their probabilities. In addition, the SHES-S model proposes that core cognitive schemas, combinatorially, foster higher levels of subjective well-being (Jones, You, & Furlong, 2013; Lenzi, Dougherty, Furlong, Dowdy, & Sharkey, 2015). The combined and interactive effect of positive psychological schemas or dispositions has been called *covitality* (Figueredo, Vasquez, Brumbach, & Schneider, 2007; Renshaw et al., 2014; Weiss, King, & Enns, 2002; Weiss & Luciano, 2015). The SEHS-S operationalizes the measurement of core psychological dispositions by hypothesizing that lower-level dispositions are linked with four first-order

latent traits or schemas (belief-in-self, belief-in-others, emotional competence, and engaged living); the combined influence of which is conceptualized as the higher-order latent trait labeled *covitality* (see Figure 1; see Renshaw et al. [2014] for a description of the conceptual and research groundings of SEHS-S components).

Prior research supports the potential utility of the SEHS-S model with reported positive relations between the covitality index and subjective well-being (Furlong, Dowdy, et al., 2014; Lee et al., 2016; Ito et al., 2015), students' perceptions of feeling safe at school (Furlong, Dowdy, et al., 2014), academic course grades (Furlong, Dowdy, et al., 2014; Lee et al., 2016), prosocial behaviors at school (Ito et al., 2015), and personal adjustment (Jones et al., 2013). In addition, studies have reported negative relations between (a) covitality and substance abuse, depression (Furlong, You, Renshaw, Smith, & O'Malley, 2014; Lee et al., 2016); and (b) attention deficit and hyperactivity disorder, school problems, and internalizing problems (Jones et al., 2013; You et al., 2015).

Study objectives

Quality-of-life research brings attention to positive development and mobilizes students, families, educators, and policy makers to take action in support of all adolescents; hence, there is a need for valid instruments for use in whole-school surveys. In the Turkish education system, when conducting student assessment, psychological service providers have traditionally used self-report measures of psychological distress. Hence, there is a need in the Turkish school system, specifically, for an instrument that also elicits information about students' positive psychological attributes.

Given the stated need for a validated and conceptually grounded assessment in Turkish schools, the SEHS-S has the potential to be a resource to (a) meaningfully assess Turkish high school students' social and emotional assets, and (b) inform the efforts of school-based mental health service providers to foster students' thriving complete mental health. The availability of the SEHS-S in Turkish schools could potentially be used to examine the flourishing developmental needs of all students (Renshaw et al., 2014) and contribute to the prevention of problematic behaviors (Kim et al., 2014). Hence, the main objective of this study was to investigate the psychometric features of a Turkish-language version of the SEHS-S. It was hypothesized that the SEHS-S measurement model, replicated in previous studies (Furlong, Dowdy, et al., 2014; You et al., 2014, 2015) would be replicated for the Turkish version with acceptable construct validity, concurrent validity, and reliability. In addition, conceptually, and supported by recent studies (e.g., Ito et al., 2015; Lee et al., 2016; Pennell, Boman, & Mergler, 2015), the SEHS-S is hypothesized to measure psychological schemas that are associated with positive development across cultural contexts. The results of the present study will provide additional evidence about the cross-national utility of the SEHS-S covitality model and thereby contribute to future cross-cultural research of adolescents' social-emotional health.

Method

Participants

Two samples of Turkish high school students were used in the current study. The first sample (data collected during the 2013–2014 academic year) was used in analyses that assessed the SEHS-S construct validity, reliability, and cross-gender responses and consisted of a convenience sample of 402 (45% male and 55% female) students from high schools affiliated with the Turkish Ministry of National Education. In the first sample, four of eight high schools in Çanakkale town center were randomly selected with one class within each school randomly selected from each grade level. All students in the selected classes participated in the study. The students were enrolled in Grades 9 (41%), 10 (33%), 11 (19%), and 12 (7%). The participants ranged from 14 to 18 years of age and had a mean age of 16.0 years ($SD = 1.1$). A second convenience sample of students was used in analyses to assess concurrent validity. This group consisted of 425 students (44% male and 56% female) from two of the four remaining high schools also located in Çanakkale Province of Turkey. The schools and students were randomly selected—two classes from each grade level (Grades 9–12) participating in the survey. The participants ranged from 14 to 18 years of age. These students had a mean age of 16.3 years ($SD = 1.3$).

Measures

Social and Emotional Health Survey (SEHS-S)

The SEHS-S assesses core psychosocial assets based on a higher-order model that consists of four latent traits (each comprised of three measured subscales): *belief-in-self* (with subscales of self-efficacy, self-awareness, and persistence), *belief-in-others* (with subscales of school support, peer support, and family coherence), *emotional competence* (with subscales of emotional regulation, behavioral self-control, and empathy), and *engaged living* (with subscales of gratitude, zest, and optimism; Furlong, Dowdy, et al., 2014). This 36-item instrument is used with adolescents ages 13 to 18 years. For 10 of the 12 subscales, the students' self-reports are completed using a 4-point scale (1 = *not at all true of me*, 2 = *a little true of me*, 3 = *pretty much true of me and*, and 4 = *very much true of me*). The gratitude and zest measured subscales use a 5-point response scale: (1 = *not at all*, 2 = *very little*, 3 = *somewhat*, 4 = *quite a lot*, 5 = *extremely*). The following are examples of SEHS-S items: self-efficacy, "There are many things that I do well"; family support, "My family members really help and support one another"; self-control, "I can deal with being told no"; and optimism, "I usually expect to have a good day." Six previous studies have examined the psychometric properties of the SEHS-S. CFA analyses have provided construct validity support for the SEHS-S higher-order measurement model (Furlong, Dowdy, et al., 2014; Ito et al., 2015; Lee et al., 2016; You et al., 2014). Each analysis reproduced the same higher-order structure with high factor loadings (all in the .50–.91 range) and no double-loading items. Evidence supporting measurement invariance has been found for gender (Furlong, Dowdy, et al., 2014; Ito et al., 2015; Lee et al., 2016), younger and older adolescents (You et al., 2014), and five ethnic groups (Latino, White, Asian, Black,

and bi-ethnic) of California students (You et al., 2015). Reported internal consistency reliabilities have been favorable across previous studies: belief-in-self (.75 – .84), belief-in-others (.81 – .87), emotional competence (.78 – .82), engaged living (.87 – .88), and covitality (total score across the 36 items; .91 – .95).

Resilience Scale for Children & Adolescents (RSCA)

The original 28-item form of Resilience Scale for Children & Adolescents (Liebenberg, Ungar, & Vijver, 2012) has three subscales and eight subdimensions; however, this study used the validated short form (12 items) developed by Liebenberg, Ungar, and LeBlanc (2013). The short form instrument's 5-point response scale is graded from 1 = *does not describe me at all* to 5 = *describes me totally*. Factor loadings of the short form range between .39 and .88, with internal consistency coefficient of .84 (Liebenberg et al., 2012). High scores indicate more robust resilience levels. Arslan (2015) developed a Turkish adaptation of the 12-item form, with reported factor loadings between .54 and .81 (51.3% of the total variance) and an internal consistency coefficient of .91. The alpha coefficient for the present sample was .83.

Strengths and Difficulties Questionnaire (SDQ)

The Strengths and Difficulties Questionnaire (Goodman, 1997) is widely used to screen for mental distress symptoms among children and adolescents. The SDQ has 25 items and measures the following five subscales: behavioral problems, attention deficit, emotional problems, peer problems (the first four subscales are summed to form a total difficulties index), and prosocial behaviors. Güvenir, Özbek, and Baykara (2008) developed a Turkish adaptation of the questionnaire and reported a Cronbach's alpha of .73 for the total difficulties score. The alpha coefficient of the total difficulties score for the present sample was .71.

Procedure

Translation process

Two language experts from Canakkale Onsekiz Mart University, Department of English Language Teaching, translated the SEHS-S into Turkish. The translation process was completed as follows: (a) first, both experts translated the survey independently from English to Turkish; and (b) second, the Turkish form was then back-translated into English by two different language experts. While an examination of the back-translated Turkish version showed that it had high concordance with the original version, to further explore the adequacy of the

SEHS-S Turkish version, six school-based mental health experts independently ascertained the suitability of the Turkish version. Based on the comments provided by these six experts, a few wording adjustments were made. Prior to conducting the survey, the opinions of two additional independent experts from the Department of Turkish Language Teaching provided final comments on whether the survey items were appropriate in terms of Turkish's expressions. Finally, to pilot test and further evaluate the language equivalence of the SEHS-S Turkish version survey, 60 fourth-year students studying at the Çanakkale Onsekiz Mart University, Department of English Language Teaching, completed first the English version and then the Turkish version with a two-week interval. The correlation between the total 36-item sum (covitality) of the Turkish and English versions was .93 ($p < .01$) providing additional evidence of the linguistic similarity.

Survey administration

The necessary permissions were taken from Canakkale Onsekiz Mart University Social and Educational Sciences Research Ethics Board, the Governorship of Canakkale, and the Provincial Directorate of National Education for conducting the survey in the schools. Parental permission and student assent were obtained prior to survey administration. Students completed the surveys in their classroom settings, but so as to not interrupt class lessons. School psychological counselors and subject teachers administered the survey using the following written script: "Hello! We are conducting a scientific research on education and we are hoping that you can voluntarily help us in this study. Please read the sentences carefully and mark the most suitable answer for you. Thank you for your valuable contributions." The survey was administered using a paper format with students completing the surveys within approximately 25 min.

Data analysis plan

Confirmatory factor analysis is widely used to evaluate construct validity when a measure has a prespecified theoretical model and is adapted for use with a different culture (Aksayan & Gozum, 2002; DeCoster, 1998; Tavşancıl, 2002). To ascertain if the SEHS-S conceptual model was appropriate for the Turkish translation, model fit was evaluated using SRMR (standardized root mean square residuals), RMSEA (root mean square error of approximation), and CFI (comparative fit index). Acceptable model fit was evaluated with the combination of SRMR and RMSEA values (below .08 [good fit] and below .05 [excellent fit]; Browne & Cudeck, 1989) and CFI values (.90 [good fit]

and .95 [excellent fit]; Bentler, 1990; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999). Concurrent validity was evaluated examining the relations between the SEHS-S total score (covitality) and the RCSA and SDQ total scores. Cronbach's alpha internal consistency coefficients were used to determine reliability. A *t*-test for independent samples was used to examine gender differences for the SEHS-S first-order (belief-in-self, belief-in-others, emotional competence, and engaged living) and second-order factors (covitality). SPSS 16.0 and LISREL 8.7 programs were used in the analysis of these data.

Results

Construct validity

Confirmatory factor analysis

Using the first sample of students, confirmatory factor analysis was conducted to examine the higher-order structural model that was described in previous SEHS-S validity studies (e.g., Furlong, Dowdy, et al., 2014). The first analysis examined a correlated first-order model that organized the 36 items and 12 subscales loading to the four SEHS-S domains (belief-in-self, belief-in-others, emotional competence, and engaged living). The CFA produced the following fit indices: $\chi2 = 823.38$, $df = 528$, $p < .05$, SRMR = .04, RMSEA = .03, 90% CI (.035, .042), and CFI = .97. The standardized parameter values of the survey items varied between .47 and .69 in the dimension of belief-in-self, .73 and .89 in belief-in-others, .49 and .82 in emotional competence, and .51 and .89 in the dimension of engaged living (see Table 1). Model 2 extended the analysis by testing a second-order latent factor model, wherein the four first-order latent constructs loaded onto the general second-order latent construct—covitality (see Figure 1). Results from model 2 also indicated an adequate fit to the data, $\chi2 = 81.80$, $df = 45$, $p < .05$, RMSEA = .04,

Table 1. Standardized factor loadings (using Sample 1 data).

Subscales	Item no.	Turkish sample loadings	California sample loadings
Belief-in-self			
Self-efficacy	1.	.59	.79
	2.	.63	.81
	3.	.69	.78
Self-awareness	4.	.57	.78
	5.	.64	.81
	6.	.75	.73
Persistence	7.	.66	.66
	8.	.68	.85
	9.	.47	.81
Belief-in-others			
School support	10.	.76	.84
	11.	.73	.94
	12.	.83	.84
Family coherence	13.	.82	.79
	14.	.86	.77
	15.	.78	.86
Peer support	16.	.82	.86
	17.	.87	.92
	18.	.89	.94
Emotional competence			
Emotional regulation	19.	.75	.84
	20.	.68	.83
	21.	.51	.71
Empathy	22.	.56	.66
	23.	.82	.74
	24.	.80	.71
Behavioral self-control	25.	.49	.78
	26.	.61	.89
	27.	.54	.90
Engaged living			
Gratitude	28.	.82	.81
	29.	.81	.92
	30.	.73	.83
Zest	31.	.89	.88
	32.	.89	.92
	33.	.77	.86
Optimism	34.	.55	.90
	35.	.78	.91
	36.	.51	.85

Note. California sample (N = 7,068) loadings are provided for comparison purposes; values from You et al. (2015). Turkish sample loadings $p < .05$. A copy of the Turkish SEHS-S is available as online supplemental material and the English version is available from the second author.

Table 2. Relations among Social Emotional Health Survey–Secondary (SEHS-S), and resilience, prosocial behaviors, and behavioral difficulties (using Sample 2 data).

Variable	(1)	(2)	(3)	(4)	(5)	(6)
(1) SEHS-S	—					
(2) RSCA	.66**	—				
(3) SDQ prosocial	.40**	.41**	—			
(4) SDQ externalizing	− .28**	− .37**	− .37**	—		
(5) SDQ internalizing	− .18*	− .27**	− .13**	.49**	—	
(6) SDQ total difficulties	− .25*	− .35**	− .26**	.82**	.88**	—
M	109.53	47.65	7.66	7.59	7.35	15.55
SD	15.49	8.12	2.97	3.65	1.95	5.77

Note. RSCA = Resilience Scale for Children & Adolescents. SDQ = Strengths and Difficulties Questionnaire.
*$p < .05$. **$p < .01$.

Table 3. Means, standard deviations, and t-values for the Social Emotional Health Survey–Secondary (SEHS-S) latent traits by gender (using Sample 1 data).

Variable	Gender	n	M	SD	t	p
Belief-in-self	Male	182	26.35	4.51	0.57	.56
	Female	220	26.10	4.31		
Belief-in-others	Male	182	32.98	4.57	0.85	.39
	Female	220	32.59	4.64		
Emotional competence	Male	182	28.97	3.75	1.10	.27
	Female	220	28.55	3.97		
Engaged living	Male	182	31.23	5.71	3.78	.00*
	Female	220	28.83	6.80		
Total SEHS-S (covitality)	Male	182	116.15	14.53	2.37	.01*
	Female	220	112.69	14.49		

*$p < .05$.

SRMR = .04, 90% CI (.027, .056), CFI = .96. When the fit indexes of both models are examined (the ratio of the chi-square value to the degree of freedom is below 2, the RMSEA and SRMR are below .05, and the CFI is .95), the findings indicate the model has acceptable fit. Applying the principle of parsimony, the results support the use of the total covitality index as a viable scoring summary for the Turkish SEHS-S in the following validity analyses.

Concurrent validity

Using the second sample of students, we examined the correlations between the SEHS-S covitality index and SDQ and RSCA scores to examine evidence of concurrent validity. The results showed that SEHS-S covitality index was positively correlated with RSCA psychological resilience ($r = .66$, $p < .01$; large effect size) and SDQ prosocial behaviors ($r = .40$, $p < .01$; medium effect size). There were negative relations with SDQ externalizing ($r = − .28$, $p < .01$; small effect size), SDQ internalizing ($r = − .18$, $p < .01$; small effect size), and SDQ behaviors and the total difficulties ($r = − .25$, $p < .01$; small effect size) scores (see Table 2).

Gender differences

Again using the second sample, significant differences by gender were found for the SEHS-S scores of engaged living, $t(400) = 3.78$, $p = .01$ ($d = 0.38$, small effect size), and covitality, $t(400) = 2.37$, $p = .01$ ($d = 0.24$, small effect size; see Table 3). No significant differences by gender were detected in the areas of belief-in-self, belief-in-others, and emotional competence.

Reliability

Cronbach's alpha internal coherence coefficient was calculated using Sample 1 data to examine the reliability of the survey. Cronbach's alphas were .76 for

belief-in-self, .77 for belief-in-others, .74 for emotional competence, .80 for engaged living, and .89 for covitality. Reliability analysis was separately calculated for female and male students. For females the Cronbach alpha internal consistency coefficient was .77 for belief-in-self, .77 for belief-in-others, .74 for emotional competency, .76 for engaged living, and .89 for covitality. For males Cronbach's alphas were .75 for belief-in-self, .77 for belief-in-others, .75 for emotional competency, and .81 for engaged living,

Discussion

This study investigated the psychometric features of a Turkish translation of the SEHS-S. The results of confirmatory factor analyses provided evidence supporting its construct validity. These findings replicated the results reported in previous studies for the original U.S. version of the SEHS-S (Furlong, Dowdy, et al., 2014), for five different sociocultural groups in the California (You et al., 2014), for a Korean sample (Lee et al., 2016), and for a Japanese sample (Ito et al., 2015). The results of the correlation analyses provided evidence supporting concurrent validity with positive relations observed between covitality, psychological resilience, and prosocial behaviors; and negative relations between externalized and internalized behaviors.

When the SEHS-S scores were compared by gender, small effect-size differences were found for engaged living (gratitude, zest, and optimism) and covitality scores, with males having higher scores. This finding replicated those of previous studies using the SEHS-S in that gender differences have been minimal when found in the small effect-size range; however, two previous studies found differences in covitality scores by gender (Furlong, Dowdy, et al., 2014 [$d = 1.11$]; Lee et al., 2016 [$d = 0.06$]) and one found a small effect size difference ($d = .40$) favoring Japanese females over males. In general, this study contributed to the growing evidence that while there are some cross-national

differences in the SEHS-S profiles of males and females, in general, differences are in the small effect-size range. Finally, the mean covitality index for the Turkish sample ($M = 109.53$) was higher than those reported for samples from California ($M = 106.4$; You et al., 2015), Korea ($M = 102.3$; Lee et al., 2016), and Japan ($M = 101.5$; Ito et al., 2015), although similar to a regional California sample ($M = 112.2$; You et al., 2014).

The results of the reliability analyses showed the alpha coefficients for the four first-order SEHS-S factors were all above .70 (range = .76 – .80), which is above the acceptable threshold value and similar to those found in previous SEHS-S studies (range = .76 – .88; Furlong, Dowdy, et al., 2014; Ito et al., 2015; Lee et al., 2016; You et al., 2014, 2015). The .89 alpha coefficient found for the covitality index was comparable to those reported in previous studies, which were in the .90 – 95 range (Furlong, Dowdy, et al., 2014; Ito et al., 2015; Kim et al., 2014; Lee et al., 2016; You et al., 2014, 2015).

School-based applications

The results of this study provide additional support for the use of the SEHS-S to assess core assets to better inform school-based mental health providers' efforts to foster the quality of life and social–emotional health of all students. The survey could be used for needs assessment and to develop whole-school and targeted treatment planning (Furlong, Dowdy, et al., 2014). When used in combination with a distress-oriented assessment, such as the Behavioral Emotional Screening System (Kamphaus & Reynolds, 2007), the SEHS-S provides a resource for schools to carry out comprehensive screening of students' complete social emotional health (Dowdy et al., 2015; Furlong, Fullchange, & Dowdy, 2016; Kim et al., 2014). In addition, the SEHS-S covitality index alone could be used to evaluate whole-school efforts designed to foster the quality of life and subjective well-being of all students (Kim et al., in press; You et al., 2015). In sum, the SEHS-S could be used as part of a multilevel school strategy to provide universal and targeted mental health services and supports. See Dowdy et al. (2015) and Moore et al. (2015) for examples of comprehensive social emotional health screening in support to foster students' well-being.

Limitations and future research

The limitations to consider when interpreting the findings are that the current study used convenience samples drawn solely from high schools in Canakkale province and have undetermined generalizability to other Turkish provinces. Although a multistep, independent translation process was employed and the survey was pilot tested on a sample of undergraduate students, we did not pilot test the instrument with high school students. As such, future research needs to further examine the Turkish version's test–retest reliability and concurrent validity relations with other quality-of-life indicators such as academic achievement, school attachment, and involvement in risk behaviors, although we note that a strength of the current study is that the concurrent validity analyses included a second independent student sample. Given the generally higher mean covitality scores found for this Turkish sample than reported in previous studies (Furlong, Dowdy, et al., 2014), additional research establishing cross-national measurement invariance and examining latent mean differences is needed, ideally in the context of a controlled cross-national study employing a common survey design. With these limitations in mind, taken together, the current study supports the continued exploratory use of the SEHS-S to better understand and promote the positive development of Turkish students and provides additional scaffolding in support of international comparative research into the psychosocial development of adolescents.

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