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Psychometric Update of the Social Anxiety Screening Scale (SASS/EDAS) in a Spanish Adolescent Population

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The aim of this work was to update the validation of the Social Anxiety Screening Scale (SASS/EDAS) in a sample of Spanish adolescents. To achieve this, one study with a sample of 1489 students in secondary education, of ages 14 to 17 years, were carried out. The psychometric properties of EDAS were examined through confirmatory factor analysis, reliability (Cronbach's alpha), temporal stability (test-retest), and concurrent criterion validity. The results supported the three-independent-factor structure (avoidance, distress and interference), that showed best fit indices compared to alternative models. They also showed that the scores of participants on EDAS scales were reliable in terms of internal consistency ($\alpha > .80$) and moderately reliable concerning temporal stability ($r = .48$-$.60$) over a five-week period. The correlations between the EDAS factors and other social anxiety measures were positive and significant. Data provide empirical evidence of the estimation of reliability and validity of this scale. Future work should extend the validation of the EDAS in clinical samples.
Keywords: social anxiety, social phobia, adolescents, validity, reliability, Spain.

El objetivo de este trabajo fue actualizar la validación de la Escala para la detección de ansiedad social (EDAS) en una muestra de adolescentes españoles. Para ello se llevó a cabo un estudio con una muestra de 1489 estudiantes de educación secundaria, cuyas edades se encontraron entre los 14 y los 17 años. Se analizaron las propiedades psicométricas de la EDAS mediante análisis factoriales confirmatorios, análisis de fiabilidad a través del alfa de Cronbach, de estabilidad temporal test-retest y análisis de la validez de criterio concurrente. Los resultados ofrecieron apoyo a la estructura de tres factores independientes (Evitación, Malestar e Interferencia), que mostró mejores índices de ajuste en comparación con los modelos alternativos. También mostraron que las puntuaciones de los participantes en las escalas de la EDAS fueron fiables en términos de consistencia interna ($\alpha > .80$) y relativamente estables temporalmente ($r = .48$-$.60$) en un periodo de cinco semanas. Los factores de la escala correlacionaron positiva y significativamente con otras medidas de ansiedad social. Los datos aportan evidencia empírica de la estimación de la fiabilidad y validez de esta escala. Futuros trabajos deberían ampliar la validación de la EDAS en población clínica.
Palabras clave: ansiedad social, fobia social, adolescentes, validez, fiabilidad, España.

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Social anxiety disorder (SAD), or social phobia, is one of the most common disorders in children and adolescents across different cultures. The prevalence rates range from 1.6 to 7% (García-López, Piqueras, Díaz-Castela, & Inglés, 2008). The percentages for social fears and subclinical social anxiety in community samples of adolescents are even higher, between 8% and 12% (Inglés, Piqueras et al., 2010; Piqueras, Olivares, & López-Pina, 2008). Besides being a disorder with early onset, it remains stable throughout adolescence and can have a chronic course if it is not treated (Hale, Raaijmakers, Muris, van Hoof, & Meeus, 2008). Consequently, the repercussions of SAD on the adaptation process of children and adolescents can be very severe (Olivares, 2009). Among them, we can highlight a significant interference in social, school and work functioning and a marked reduction in different quality of life and health indicators (e.g., Fehm, Beesdo, Jacobi, & Fiedler, 2008; Olivares, Piqueras, & Rosa, 2006; Piqueras et al., 2008). Thus, emphasis is given to the importance of early screening and intervention in this disorder during childhood and adolescence in order to minimize its effects both at the time and in the future adjusted development of adolescents, since these effects tend to persist throughout life when not treated (Hale et al., 2008; Olivares, 2009).

Self-report questionnaires are a commonly used method in the evaluation of social anxiety both in adults and adolescents, partly because of the subjective and internalizing nature of this construct and its clinical manifestation, SAD (Kearny, 2005). In the international setting, there are two empirically and widely validated self-report measures to assess SAD symptomatology in childhood and adolescence: the Social Phobia and Anxiety Inventory for Children (SPAI-C; Beidel, Turner, & Morris, 1995) and the Social Anxiety Scale for Children-Revised (SASC-R; La Greca & Stone, 1993). A revised version of SASC-R has also been validated for its use with adolescents, SAS-A (La Greca & Lopez, 1998). Other tests, originally developed for their use with adults, such as Social Phobia and Anxiety Inventory (SPAI; Turner, Beidel, Dancu, & Stanley, 1989), Social Phobia Inventory (SPIN; Connor et al., 2000) and the Liebowitz Social Anxiety Scale (Liebowitz, 1987), have also shown to be valid and reliable measures for adolescents (e.g., García-López, Bermejo, & Hidalgo, 2010; Olivares, Sánchez-García, & López-Pina, 2009; Olivares, Sánchez-García, López-Pina, & Rosa-Alcázar, 2010).

During the last decade, there has been a marked increase in research on the evaluation of social anxiety in adolescence in the Spanish-speaking context (vr.g, García-López, Hidalgo, Beidel, Olivares, & Turner, 2008; Olivares, 2009). This has meant that the majority of evaluation instruments for this disorder, which were originally developed in English speaking countries, have been adapted to our cultural context (e.g., García-López, Hidalgo et al., 2008; Olivares, Ruiz et al., 2005; Olivares, Sánchez-García et al., 2009; Olivares, Sánchez-García et al., 2010; Olivares, Vera-Villarroel et al., 2009; Vera-Villarroel, Celis-Atenas, Córdova-Rubio, Buela-Casal, & Spielberger, 2007; Zubeidat, Salinas, & Sierra, 2008). One criticism that can be made about such a common procedure is that in many cases the questionnaires of exclusively English speaking origin do not take into account the possible cross-cultural differences (Caballo, Salazar, Arias et al., 2010; Caballo, Salazar, Irurtia et al., 2010). However, there are few instruments used and developed specifically in Spanish for evaluating child and adolescent SAD (Caballo, González, Alonso, & Irurtia, 2007) or related constructs (e.g., Castillo et al., 2008; Inglés, Méndez, & Hidalgo, 2000).

Therefore, it can be suggested that there is still a need to validate specific instruments that do meet the psychometric requirements pertaining to the broad Spanish speaking context (for a more detailed revision see García-López, Olivares, & Vera-Villarroel, 2003; García-López et al., 2008; Olivares, 2009).

In this sense, the first test developed for evaluating social anxiety in adolescence, created and validated specifically in Spanish speaking population, was the Social Anxiety Screening Scale (Olivares & García-López, 1998). The bank of items for this questionnaire was directly and specifically taken from the DSM-IV diagnostic criteria for SAD (American Psychiatric Association, 2000), corresponding to the tripartite operationalization of anxiety proposed by Lang (1968). Consequently, the questionnaire was designed in such a way that the first two items were aimed at assessing the cognitive component of SAD (criterion A; DSM-IV-TR; American Psychiatric Association, 2000) and the remaining items were assigned to measuring fear and avoidance (criteria B-D) and also the intensity of interference that social anxiety may generate in the subject (criterion E). Then, the selected items were contrasted and complemented with the list of social situations most frequently feared by adolescents. A set of ten items emerged from this process, which are included in the current version of EDAS. The first two items have a dichotomous format (Yes / No) and the remaining 8 are presented on a 5-point Likert-type scale (range: 0-4) and three dimensions (avoidance, nervousness/overactivation -distress- and interference). These 8 items contain interaction or performance social situations that are generally feared by the subjects with SAD, so they are evaluated in accordance with the level of avoidance, distress and interference which each one causes the subject; it is the first scale to evaluate interference generated by social anxiety, with the implications that are derived from it with respect to the diagnosis and treatment. The first two items have a qualitative nature and are not used for obtaining scores relative to subscales.

With respect to the psychometric properties of the scale, Olivares, Piqueras, and Sánchez-García (2004) found a

two factor structure: Social Anxiety (corresponding to items from the Avoidance and Distress subscales) and Interference, whose values of internal consistency were high (Social Anxiety = .89 and Interference = .88). A year later, Olivares, Piqueras, and García-López (2005) studied the properties of this test again and found a factorial structure identical to that of the previous study, with equally high values of internal consistency (.90 and .92, respectively). Subsequently, Vera-Villarroel, Olivares et al. (2007) found a three dimensional factorial structure in a sample of Chilean adolescents, whose internal consistency was .80 for Avoidance, .84 for Distress and .86 for Interference. Other studies have supported sensitivity to therapeutic change of the scale in clinical samples (Olivares, Rosa, & Piqueras, 2005). Finally, Piqueras, Olivares, Vera-Villarroel, Marzo, and Kuhne (in press) recently looked at the factorial invariance of the scale in the Spanish and Chilean population and found that each subscale (Avoidance, Anxiety and Interference) fits a unifactorial model representing a single dimension per scale and that the factorial structure appears invariant across samples of Chilean and Spanish adolescents as well as across the sex. This scale, therefore, has proved to have good psychometric properties in the Chilean and Spanish population (Olivares, Piqueras et al., 2005; Olivares et al., 2004; Vera-Villarroel, Olivares et al., 2007), as well as its factorial invariance across sex and nationality (Piqueras et al., in press). These same studies have highlighted the use of this scale as: (i) a screening measure to identify adolescents with social anxiety problems; (ii) a counseling tool for adolescents; (iii) an instrument which helps target areas of treatment and to evaluate the therapeutic change in treatment or prevention programs in a wide variety of clinical, educational and research contexts, including schools, social services and mental health centers, addictive behavior units for youth, juvenile detention centers and research centers.

However, although there are a certain number of studies that have analyzed the factorial structure and internal consistency of the EDAS and highlight the use of this tool, there are certain gaps which have not been dealt with in earlier literature, regarding certain psychometric properties of the scale, such as relative inconsistency of the factorial structure, the inexistence of test-retest reliability estimations and the lack of other evidence of convergent validity.

Consequently, the main objective of this study is to extend the validation of the Social Anxiety Screening Scale in adolescent population. Therefore, in order to provide new data about the psychometric properties of the scale, a reliability and validity analysis was made through a study with a sample of adolescents. Firstly, in this study the aim is to examine the scale factorial structure through confirmatory factor analyses. Secondly, data are included about the reliability estimation through internal consistency and temporal stability analyses. Finally, in order to support the concurrent criterion validity it was calculated the correlations between the EDAS subscales and other empirically validated measures of general social anxiety and of specific dimensions of social anxiety in the non-clinical population.

It was hypothesized that the factor structure of three independent dimensions, previously found, would be repeated (Piqueras et al., in press; Vera-Villarroel, Olivares et al., 2007). Significant values of internal consistency and temporal stability were also expected to be found as well as evidence of convergent validity of the EDAS through positive correlations with the SPAI and the SAS-A. A hypothesis was made that the three EDAS subscales would be significantly correlated with the SAS-A subscales and the SPAI Social Phobia subscale, and also, but to a lesser extent, with the SPAI Agoraphobia subscale. These correlations are expected to be lower than those with social anxiety measures.

Method

Participants

The sample was made up of 1489 adolescents from secondary educational centers (60 participating classes) from the Region of Murcia and the province of Alicante in the Comunitat Valenciana (753 males, 50.6%; 736 females, 49.4%), aged between 14 and 17 years old (M = 15.15, ST = 0.95). Convenience sampling was used. The 13 participating centers belonged to 6 cities of different sizes and were situated in both rural and urban areas; 11 of them were state centers and only two were semi-private. Consequently, the socio-economic status of the sample was broad and representative of the community. 10 (0.40%) subjects refused to participate in the study or were excluded due to incorrectly completing measures or being 18 years old or above.

In order to determine the sample size, we followed the recommendations by Bentler (2005), which indicate that it should be at least five times the number of the total number of parameters in the confirmatory factor analysis model.

Instruments

Social Anxiety Screening Scale (SASS/EDAS; Olivares & García-López, 1998). This instrument was described in the introduction. A broader description of the construction and a reproducible copy of the original instrument can be found in Olivares et al. (2004) or in the appendix of this paper. The questionnaire was translated into English using a translation-backtranslation method and the International Test Commission guides.

Social Anxiety and Phobia Inventory (SPAI; (Turner et al., 1989; Spanish version by Olivares, García-López,

Hidalgo, Turner, & Beidel, 1999). This measure includes three scores; Social Phobia subscale, Agoraphobia subscale and Difference score. Although the SPAI was developed for adults, studies in English (Clark et al., 1994) and Spanish-speakers (García-López, Olivares, Hidalgo, Beidel, & Turner, 2001; Olivares et al., 2002; Olivares et al., 1999; Olivares et al., 2010) have demonstrated its validity and reliability in adolescents. In this study, we also calculated the four factors of the SPAI-FS subscale, found by Olivares et al. (1999): (a) *Social Interactions (SI)*: made up of 15 items referring to social anxiety in interpersonal relationships, for example, attending a meeting, being criticized by others, etc.; (b) *Cognitive and Somatic Symptoms (CSS)*: made up of 7 items about thoughts (for example, "I will probably make a mistake and look foolish") and physiological responses (sweat, palpitations, blushing, etc.) produced by subjects in social situations, (c) *Focus of Attention (hereon FA)*: includes 6 items where the subject feels he/she is being observed by others and, (d) *Avoidance and Escape (Behavioral symptoms; AE)*: made up of 4 items which indicate the subjects' tendency to avoid or abandon social situations.

Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998; Spanish version by Olivares et al., 2005). It has a three factor structure: fear of negative evaluation (FNE), social avoidance and distress in new situations (SAD-N), and social avoidance and distress in general situations (SAD-G). The SAS-A has shown good psychometric properties in English (Storch, Masia-Warner, Dent, Roberti, & Fisher, 2004) and Spanish speaking populations (Garcia-Lopez et al., 2001; Inglés, La Greca, Marzo, García-López, & García-Fernández, 2010; Olivares et al., 2002; Olivares et al., 2005; Olivares-Olivares, Rosa, & Olivares, 2007; Rosa, Olivares, & Olivares-Olivares, 2007).

Procedure

The participants of the present study came from a broader screening and early intervention program for adolescent SAD in a school setting (the characteristics of the program are described in Piqueras et al., 2008). Firstly, an interview was carried out with the principals and the heads of the guidance departments of the participating centers in order to present the objective of the research and the evaluation instruments, to ask for permission and to encourage their participation. After explaining the procedure, giving a complete description of the study and asking for their parents' written consents, the EDAS was applied along with the SPAI and the SAS-A collectively (groups of approximately 25 students). The procedure was as follows: handing out the copies, filling out the sections related to identification details and reading out the instructions, emphasizing the importance of not leaving any question unanswered. Finally, any doubts by participants were clarified, trying not to influence their answers. The assistant researchers were present during the administration of tests for providing information when necessary and verifying that tests were properly completed by the subjects. The average time for applying the three scales was 50 minutes. Incomplete or incorrectly answered questionnaires were eliminated. In order to evaluate the temporal stability of EDAS, the test was applied a month after the first application in a representative sample, 668 (44.86%) subjects. The same procedure was followed as in the first application of the scale.

Data analysis

In order to study the factorial structure of EDAS, confirmatory factor analyses were made using the EQS 6.1 program (Bentler, 2005; Byrne, 2008). The Robust Maximum Likelihood Estimation method was used for all the analyses, since the distribution of the data of our sample presented multivariate kurtosis. According to Finney and DiStefano (2006), the use of the Maximum Likelihood Estimation is adequate, since it deals with ordinal data as if they were continuous, as long as the data observed have sufficient categories (at least 5 points) and they follow an approximately normal distribution. In such cases, the use of this estimation method does not present a severe bias in either of the fit indices, in the estimation of parameters or in the standard errors (Finney & DiStefano, 2006). We used the Satorra-Bentler scaled chi-square (SBχ2; Sattora & Bentler, 2001), as different researchers have indicated that it is adequate for any sample size and for multivariate non-normal data (Curran, West, & Finch, 1996). Following the criteria by Hu & Bentler (1999) and Dimitrov (2006), we selected the following fit indices: GFI (Goodness of Fit Index) and RCFI (Robust Comparative Fit Index) > .90 and SRMR (Standardized Root Mean Square Residual) and RRMSEA (Robust Root Mean Square Error of Approximation) < .06 (good fit) or up to .08 (reasonable fit).

In addition, the following analyses were made: a descriptive analysis, alpha Cronbach of the EDAS subscales with the general sample, a test-retest to evaluate temporal stability of the subscales with a subsample of these students and lineal correlation analyses for analyzing the concurrent criterion validity with a new subsample. The Cohen's d index (standardized mean difference; Cohen, 1988) was included for valuing the effect size (ES) of the differences found according to sex and age. Its interpretation is as follows: small (.20 – .49), medium (.51 – .79) and large effect sizes ($d \geq .80$). We also used Cohen criteria (1988) to evaluate ES of the correlations. In this case, it is considered a small ES when the correlation is between .10 and .10, average when it is between .10 and .30 and large when it is over .50 (Cohen, 1988; Lipsey & Wilson, 2001).

Results

Descriptive statistics

The mean score on the Avoidance scale was 8.11 (*ST* = 5.56), on the Distress scale 8.61 (*ST* = 5.81) and for Interference 7.43 (*ST* = 6.41). In all cases the scores ranged between 0 and 32. The three distributions were not normal, since the non-parametric Kolmogorov-Smirnov test, strictly considered as a Z distribution, was significant (Avoidance, KS = 3.897, $p < .001$; Distress, KS = 3.958, $p < .001$, and Interference KS = 4.670, $p < .001$).

With respect to sex and age differences, a 2 x 4 inter-subject analysis of variance (ANOVA) was made. In general, no statistically significant differences were found. Neither were there any differences attributable to the participants' school center, classroom, course or city. The only exception was the data which revealed that girls presented a significantly higher score in Distress than boys ($F(1, 1407) = 6.2$, $p = .013$, $\eta^2 = .004$), although the effect size was low ($d = -.16$).

Confirmatory Factor Analysis

Based on previous studies about the factorial structure of the EDAS, in this study we evaluated the fit of our data to: the unidimensional model; the two factor model with interaction found in Olivares, Piqueras et al. (2005) and Olivares et al. (2004); the three factor model with interactions; and the model of three independent dimensions following the results by Vera-Villarroel, Olivares et al. (2007) and Piqueras et al. (in press). The obtained values of fit indices were far from those required both in the unidimensional model and the two dimensional model with interactions (see Table 1). However, the results indicated a good fit when each EDAS subscale (Avoidance, Anxiety and Interference) is considered to correspond to an independent factor through unifactorial models. The resulting factorial structure can be seen in Figure 1, while the estimated factor loadings of the latent variables of EDAS are presented in Table 2. The fit indices for the three factors indicated adequate fit, with RCFI values higher than .90 and SRMR and RRMSEA values lower than .065, following the criteria by Hu & Bentler (1999) and Dimitrov (2006) (see Table 3).

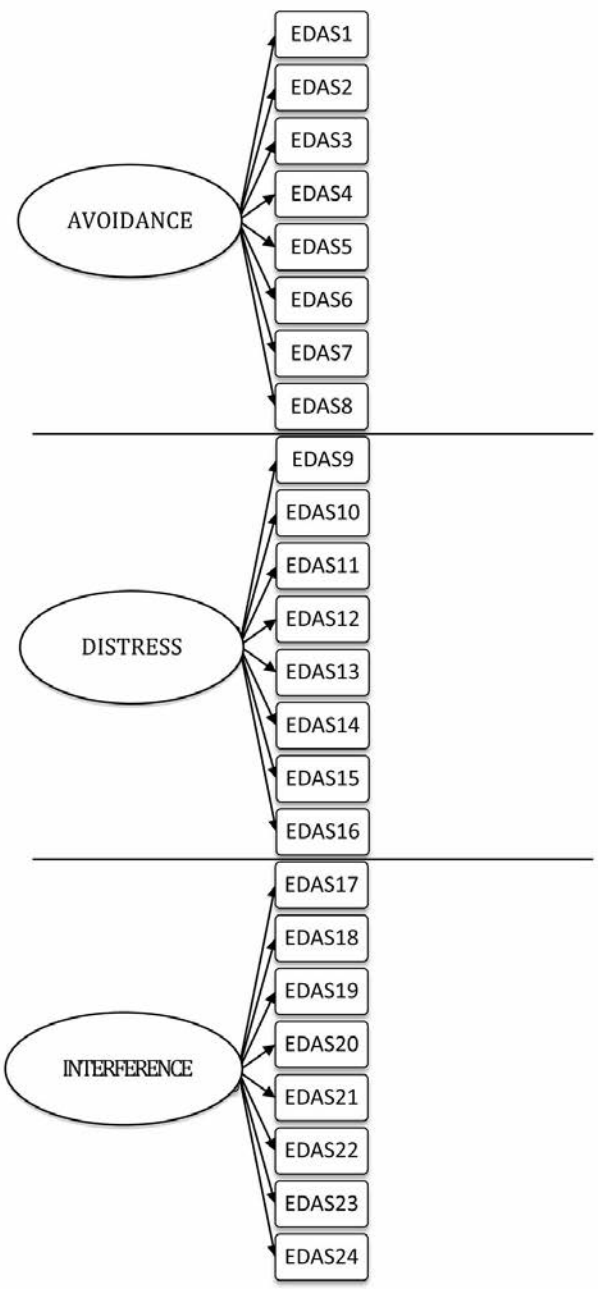

Figure 1. Baseline model of the Social Anxiety Screening Scale (SASS/EDAS).

Table 1

Goodness of Fit Indices in the Confirmatory Factor Analysis (CFA) of the different models of the Social Anxiety Screening Scale contrasted (SASS/EDAS)

Models	SBχ2	*N*	*Df*	*p*	RCFI	RRMSEA	90% CI	SRMR
1 dimension	4841.47	1407	251	.001	.609	.114	.111-.117	.110
2 correlated dimensions	3806.83	1407	251	.001	.697	.100	.098-.103	.075
3 correlated dimensions	3743.58	1407	249	.001	.702	.100	.097-.103	.074

Note. SBχ2 = Satorra-Bentler scaled chi-square (non-normality adjusted); RCFI = Robust Comparative Fit Index; RRMSEA = Robust Root Mean Square Error of Approximation; CI = Confidence Interval; SRMR = Standardized Root Mean Square Residual

Table 2
Factor loading in the CFA for latent variables of the Social Anxiety Screening Scale (SASS/EDAS)

Factor and item	Estimated factor loadings
Factor 1. Avoidance	
How often do you avoid this situation?	
1. Starting conversations	.64
2. Maintaining conversations	.63
3. Going to parties or social meetings	.61
4. Speaking in public	.56
5. Writing, eating or drinking in front of others	.52
6. Being assertive	.52
7. Meeting figures of authority (parents, teachers, adults)	.52
8. Meeting members of the opposite sex	.62
Factor 2: Distress	
How nervous do you feel in this situation?	
9. Starting conversations	.75
10. Maintaining conversations	.70
11. Going to parties or social meetings	.67
12. Speaking in public	.67
13. Writing, eating or drinking in front of others	.57
14. Being assertive	.57
15. Meeting figures of authority (parents, teachers, adults)	.56
16. Meeting members of the opposite sex	.65
Factor 3: Interference	
To what extent does this situation interfere with your life?	
17. Starting conversations	.74
18. Maintaining conversations	.77
19. Going to parties or social meetings	.75
20. Speaking in public	.67
21. Writing, eating or drinking in front of others	.62
22. Being assertive	.68
23. Meeting figures of authority (parents, teachers, adults)	.65
24. Meeting members of the opposite sex	

Table 3
Goodness of Fit Indices in the Confirmatory Factor Analysis (CFA) of the Social Anxiety Screening Scale (SASS/EDAS)

Models	SBχ2	*N*	*Df*	*p*	RCFI	RRMSEA	90% CI	SRMR
Avoidance	142.57	1448	20	.001	.932	.065	.055-.075	.042
Distress	67.11	1436	20	.001	.980	.041	.030-.051	.024
Interference	139.18	1431	20	.001	.959	.065	.055-.075	.036

Note. SBχ2 = Satorra-Bentler scaled chi-square (non-normality adjusted); RCFI = Robust Comparative Fit Index; RRMSEA = Robust Root Mean Square Error of Approximation; CI = Confidence Interval; SRMR = Standardized Root Mean Square Residual3 correlated dimensions

Analysis of internal consistency

The Cronbach's alpha coefficients for the sample were .80 (Avoidance), .85 (Distress) and .88 (Interference).

Analysis of temporal stability

The subsample for analyzing temporal stability was made up of 668 participants, whose mean age was 15.34 (*ST* =

0.94) and 54.2% were women. We administered the EDAS twice, in an interval of 5 weeks. We calculated the lineal correlation analysis for each of the 3 EDAS factors. The two mean scores for the Avoidance factor were 9.26 (*ST* = 4.84) and 7.35 (*ST* = 4.91) with *r* = .53. For the Distress factor, the mean fluctuated from 7.78 (*ST* = 4.62) to 7.28 (*ST* = 4.81), with *r* = .60. For interference, the mean was 6.91 (*ST* = 5.52) up to 6.19 (*ST* = 5.60), with *r* of .48. All correlations were statistically significant ($p < .01$).

Analysis of convergent-discriminating validity

The subsample for examining the concurrent criterion validity of the test was made up of 1268 subjects, with an average age of 14.84 (0.86). 50.56% were women. We calculated Pearson correlation coefficients between the subscales and other scales of social anxiety and specific aspects of this construct. The results are shown in table 4. The correlations of the Distress and Avoidance subscales and the total scores of the SPAI and the SAS-A were positive and can be considered high (*r* = .64-.76), while the Interference scale showed lower correlations with these global indicators of social anxiety (*r* = .50-.54). On the other hand, with respect to association with the specific dimensions of social anxiety, the Distress scale showed higher correlations with all the dimensions (*r* = .47-.72) than Avoidance (*r* = .48-.64). The only exception was the size of the correlation between Avoidance and the Avoidance and Escape scale of the SPAI-FS, which was higher. With respect to Interference, values were between moderate and high (*r* = .29-.51).

Table 4
Convergent-discriminant validity. Community sample

	SASS/EDAS		
Measures	Avoidance	Distress	Interference
SPAI-FS	.68	.76	.50
SI	.56	.66	.40
CSS	.55	.63	.43
FA	.48	.55	.29
AE	.52	.47	.34
SPAI-AG	.51	.56	.43
SASA TOTAL	.64	.73	.54
SASA FNE	.51	.60	.48
SASA SAD-N	.64	.72	.51
SASA SAD-G	.58	.65	.44

Note. SPAI: *Phobia and Anxiety Inventory;* SPAI-FS: Social Phobia subscale; SI = Social Interactions. CSS = Cognitive and Somatic Symptoms. FA = Focus of Attention. AE = Avoidance and Escape; SPAI-AG: agoraphobia subscale.
SASA: Social Anxiety Scale in Adolescents; SASA/SAD-N: social avoidance and distress subscale in new situations; SASA/FNE: subscale for fear of negative evaluation SASA/SAD-G: social avoidance and general distress subscale.
All correlations significant at the level < .01

Discussion

The results of this study supported the factorial validity of the EDAS, since data confirmed the tridimensional factorial structure previously found for the EDAS in Piqueras et al. (in press) and Vera-Villarroel, Olivares et al. (2007). Therefore, the confirmatory factor analyses showed that the data fitted adequately to the unidimensional measurement models, which indicates evidence in favor of the tridimensional factorial structure of the scale. This factorial structure shows each of the subscales (avoidance, distress and interference) as independent dimensions, representative of three single aspects of social anxiety. Therefore, the data from the study suggest that on each of the EDAS subscales an independent dimension appears, which is coherent with the findings by Vera-Villarroel, Olivares et al., who found an emerging dimension on each subscale. However, one consideration indicated in that study, which our findings do not support, is that the emerging dimension on each subscale was representative of the same construct "social anxiety". Thus, it would imply the possibility that, as a screening instrument, only one subscale could be applied instead of three, when what we aimed to save time in the selection of the subjects with SAD, the subscales being different modes of expression of the same problem. Our data do coincide with the findings by Olivares, García-López, Hidalgo, and Caballo (2004) or Inglés, La Greca et al. (2010), which found that some of the more important measures of social anxiety such as the SPAI, the SAS-A, etc. in adolescents proved to be invariant across different samples and that each of their subscales included specific dimensions of SAD (cognitive, behavioral or somatic). However, they did not fully coincide with other results from this study which supported the existence of a factor of a higher order called social anxiety, which is common to all these tests. In this sense, it would be coherent to expect that besides the emerging dimension or factor in each subscale (symptomatic dimension or specific factor: avoidance, nervousness/overactivation – distress – and interference), a factor of a higher order would also have emerged on the three scales. From a theoretical point of view, this consideration would have greater coherence with respect to results from previous studies and the definition itself of the social anxiety construct according to the APA in the DSM-IV-TR (American Psychiatric Association, 2000). One possible explanation with respect to our resulting factorial structure is that the specific format in the presentation of the tests could influence the responses in the sense of "artificially" grouping the dimensions because the three scales are presented in columns (see Appendix). However, other recent studies also coincide in indicating the need to analyze adolescent social anxiety on the basis of specific symptomatological dimensions (social interactions, cognitive, psychophysiological and motor) rather than looking at the general construct "social anxiety" (Inglés, La Greca et al., 2010; Inglés, Piqueras et al., 2010).

With respect to the reliability estimation, the internal consistency coefficient for Avoidance, Distress and Interference scales was between moderate and high (.80-.86), above the recommended value of .70 by Nunnally (1978) or of .60 for reliable self-report instruments by Holmbeck et al. (2008). These data indicate a high internal consistency of the scales which supports the existence of a single dimension per subscale. The data are consistent with previous studies carried out with the EDAS, which indicated values between .76 and .89 for the different scales (Olivares, Piqueras et al., 2005; Olivares et al., 2004; Piqueras et al., in press; Vera-Villarroel, Olivares et al., 2007) and are also coherent with those found in other self-reports which evaluate social anxiety or SAD, which vary from .86 and .96 for the SIAS and the SPS, the Social Phobia subscale of the SPAI, the total score for the SAS-A, the LSAS and the SPIN (García-López et al., 2010; García-López et al., 2003; Inglés, La Greca et al., 2010; Olivares et al., 2005; Olivares, Sánchez-García et al, 2009; Olivares, Sánchez-García et al., 2010).

The EDAS also showed a relatively adequate temporal stability, since we found positive correlations in the three subscales (.48-.60) over a period of 5 weeks. Reliability studies consider that values between .50 and .70 are moderate (Myers & Winters, 2002). Other studies of self-report measures for social anxiety or social anxiety disorder show short term and long term correlations ranging from .41 to .86 (Beidel et al., 1995; Gren-Landell et al., 2009; García-López et al., 2003; Olivares, Sánchez-García et al., 2010; Ranta et al., 2007; Storch et al., 2004; Zhou, Xu, Inglés, Hidalgo, & La Greca, 2008).

With regard to concurrent criteria validity, the obtained relationship between the EDAS and the two self-report measures with the highest empirical support (SPAI and SAS-A) also support the validity of EDAS. A large positive relationship was found between the EDAS subscales and the SPAI and the la SAS-A subscales and/or dimensions, following criteria by Cohen (1988) and Lipsey and Wilson (2001). To be more exact, the association was considerably higher for the relation between the three EDAS subscales and the SPAI Social Phobia subscale (.50-.76) and the total score for SAS-A (.54-.73) in contrast to its association with Agoraphobia of the SPAI (.43-.56). Furthermore, the size of the correlations followed a similar pattern of association according to which the highest values were Distress, followed by Avoidance and finally those of Interference. These results are consistent with the findings from other studies with the SPAI and the SAS-A (e.g., García-López et al., 2001), which indicated a pattern of positive and statistically significant correlations of these questionnaires with other social anxiety scales (FNE, SAD and ADIS-IV-L), being higher with the social phobia subscale (.54-.73) and lower with the Agoraphobia subscale (.39-.59), as is the case of our study. They are also coherent with the findings by Olivares, Sánchez-García et al. (2009) with correlations between .44 and .77 between the fear and avoidance subscales of the LSAS-CA-SR and other social anxiety instruments, such as the SPAI-C and the SAS-A, being the higher association with the SPAI-C, as is the case of our study with the SPAI. More recently, García-López et al. (2010) have reported high associations between the total SPIN score and the SPAI-B, the total score of the SAS-A, the SPAI, the FNE subscale and the SAD subscales of the SAS-A (.72-.83) and Olivares, Sánchez-García et al. (2010) have found a high correlation between SPAI-C and LSAS-CA and SAS-A subscales (.61-.77).

However, the high correlation between the EDAS subscales and the Agoraphobia subscale of SPAI is important. One explanation for this finding is the symptomatological overlap between anxiety disorders, which other studies have also found (Anderson, Jordan, Smith, & Inderbitzen-Nolan, 2009). For this reason, the correlations between specific social anxiety dimensions and the EDAS subscales were analyzed. As a result, it was found that nervousness/overactivation – Distress- showed a greater association with interaction social anxiety; the cognitive and psychophysiological component, focus of attention, social distress and avoidance in general and in new situations and even with Agoraphobia. Meanwhile, Avoidance is associated to a greater extent with Avoidance and Escape of SPAI-FS, and Interference showed the lowest correlation values with Focus of attention or feeling observed by others, Avoidance and Escape behaviors, and anxiety related to agoraphobic situations. These data, therefore, support the validity of the EDAS and broaden support for using this scale as a screening measure for identifying adolescents with problems of social anxiety and an counseling tool for adolescents in school setting (Olivares, Piqueras et al., 2005; Olivares et al., 2004; Piqueras et al., in press; Vera-Villarroel, Olivares et al., 2007).

Consequently, the results of this study attained their objective of updating the validation of the EDAS in the Spanish adolescent population. However, more studies are necessary to confirm these findings and to extend the validation of the test to the clinical population and different populations. For example, it would be necessary to confirm whether the EDAS factorial structure is repeated in the clinical population and to analyze the discriminative and diagnostic capacity of this tool. Consequently, this paper does have some limitations associated to the methodology and design used: lack of clinical sample and the measurement method. Our sample is not representative of the general Spanish adolescent population, which is an obstacle for generalizing the results (to samples of lower age, clinical samples of adolescents and samples of different education and employment levels to those studied). With respect to the limitations of the measurement, future studies should also take into account the points made by experts in psychological evaluation regarding the need to use multi-method and multi-informant focus. In spite of these limitations and considerations, this study provides valuable

data about the quality of EDAS in the evaluation of social anxiety. To sum up, this study was able to confirm factorial validity and internal consistency of the EDAS, to guarantee its temporal stability and to contribute data about the correlation of EDAS with other well established methods for evaluating social anxiety in children and adolescents.

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APPENDIX

Escala para la Detección de la Ansiedad Social

(EDAS; Olivares y García-López, 1998)

NOMBRE: _____ *EDAD:* _____

INSTITUTO: _____ *CURSO:*_____ *SEXO:*_____

Esto no es un examen, no hay respuestas correctas o incorrectas. Por favor, contesta cada frase tan sinceramente como puedas. Marca tu elección (SI o NO) con una X

Hay personas que se ponen nerviosas cuando están con gente que no conocen bien. Esto les ocurre si están con una o más personas extrañas o poco conocidas. No importa el lugar. Se pueden sentir mal en una fiesta, en un bar o simplemente mientras se habla en grupo aunque ello no le obligue a uno a participar.

1. **¿Te ocurre algo de esto a ti?.** SI ___ NO ___
2. **¿Generalmente te preocupa cuando tienes que decir o hacer algo porque piensas que ello te puede poner en evidencia ante los demás?.** SI ___ NO ___
3. Teniendo en cuenta el cuadro de SITUACIONES que te presentamos más abajo, nos gustaría que valoraras el grado de nerviosismo que sientes en esas situaciones, la frecuencia con que te pasa y en qué medida ha interferido tu miedo o la evitación de estas situaciones en tu vida cotidiana. Para ello, usa las escalas que te presentamos a continuación:

¿Con qué frecuencia intentas evitar (no hacer) esta situación?	*¿Qué grado de nerviosismo te produce esta situación?*	*¿Cuánto ha interferido en tu vida cotidiana?*
1 = Nunca	1 = Ninguno	1 = Nada
2 = Pocas Veces	2 = Un Poco	2 = Un Poco
3 = Algunas Veces	3 = Bastante	3 = Bastante
4 = Bastantes Veces	4 = Mucho	4 = Mucho
5 = Siempre	5 = Muchísimo	5 = Muchísimo

Por favor, rodea con un *círculo* el número que mejor te describe en cada situación.

SITUACIONES	***¿Con qué frecuencia intentas evitar, no hacer, lo que se describe en esta situación?***	***¿Qué grado de "nerviosismo" te produce esta situación?***	***¿Cuánto ha interferido esta situación en tu vida cotidiana?***
Iniciar una conversación	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Mantener una conversación	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Ir a fiestas o reuniones sociales	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Hablar en público	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Escribir, comer o beber delante de gente	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Defender mis derechos ante otras personas	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Relacionarme con figuras de autoridad (padre, profesores, personas mayores, etc.)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Relacionarme con personas del sexo opuesto	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

Social Anxiety Screening Scale

(SASS/EDAS; Olivares and García-López, 1998)

NAME: _____ *AGE:* _____

SCHOOL: _____ *GRADE:* _____ *SEX:* _____

This is not a test. There are no right or wrong answers. Please answer each sentence as honestly as you can. Put a cross X next to your choice (YES or NO).

Some people get nervous when they're with strangers or with people they do not know well. It may happen anywhere; at a party, in a cafe, at social events or just when they're with a group of people, although they do not have to participate.

1. Does any of this happen to you? YES ____ NO ____

2. Are you usually afraid of speaking or acting in a way that will be humiliating or embarrassing to you? YES ___ NO ___

3. Based on the situations mentioned below, we would like you to score how nervous you feel in a specific situation, how often you avoid that situation and to what extent it interferes with your daily life. Please, use these scales:

How often do you avoid this situation?	*How nervous do you feel in this situation?*	*To what extent does this situation interfere with your life?*
1= Never	1= Not at all	1= Not at all
2= Rarely	2= A little	2= A little
3= Sometimes	3= Moderately	3= Moderately
4= Often	4= A lot	4= A lot
5= Usually	5= Extremely	5= Extremely

Please circle the number that best describes how you feel in each situation.

SITUATIONS	***How often do you avoid this situation?***	***How nervous do you feel in this situation?***	***To what extent does this situation interfere with your life?***
Starting conversations	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Maintaining conversations	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Going to parties or social meetings	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Speaking in public	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Writing, eating or drinking in front of others	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Being assertive	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Meeting figures of authority (parents, teachers, adults)	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Meeting members of the opposite sex	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

* English version of EDAS using a translation-backtranslation method and the International Tests Commission guides.