A pilot study on normative data for two social anxiety measures: The Social Phobia and Anxiety Inventory and the Social Anxiety Scale for Adolescents[1]

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ABSTRACT. Although social phobia is one of the most common mental disorders in adolescence, there is little research concerning social anxiety self-reports designed and/ or adapted for adolescents. This pilot study provides initial evidence for normative data for the Social Phobia and Anxiety Inventory (SPAI) and the Social Anxiety Scale for Adolescents (SAS-A) in an adolescent Spanish speaking sample. Adolescents (n = 303) with and without social phobia completed the SPAI and the SAS-A. Initial results supported both the Social Phobia subscale of the SPAI and the Total SAS-A score as an indexes to minimize false negatives or positive. Nevertheless, the highest agreement was found when the SPAI and the SAS-A were used together. This finding points out that these scales are not necessarily exclusive but complementary, as the use of both

increases the efficiency of the diagnosis for social phobia, and suggest these scales are the most measures for use in general screening.

KEYWORDS. Adolescence. Assessment. Normative data. Social anxiety.

RESUMEN. Pese a que la fobia social es uno de los trastornos mentales más frecuentes en la adolescencia, existe poca investigación publicada sobre instrumentos de evaluación de la misma, bien hayan sido diseñados y/o adaptados para población adolescente. Este estudio piloto proporciona los primeros resultados sobre datos normativos en población adolescente de lengua española del Inventario de Ansiedad y Fobia Social (SPAI) y la Escala de Ansiedad Social para Adolescentes (SAS-A). El SPAI y la SAS-A fueron cumplimentados por 303 adolescentes con y sin fobia social. Los resultados preliminares apoyan tanto a la subescala de Fobia Social del SPAI como a la puntuación Total de la SAS-A como las mejores medidas para minimizar los falsos positivos y negativos. No obstante, la mayor tasa de acuerdo se encontró cuando tanto el SPAI como la SAS-A se usaron conjuntamente, lo cual apoya la complementariedad de ambas escalas, ya que su uso conjunto incrementa la eficiencia en el diagnóstico de la fobia social, además de sugerir que estos instrumentos de evaluación parecen ser las medidas más apropiadas para su empleo como herramientas de muestreo.

PALABRAS CLAVE. Adolescencia. Ansiedad social. Evaluación. Datos normativos.

RESUMO. Embora a Fobia Social seja uma das perturbações mais frequentes na adolescência, existe pouca investigação publicada sobre instrumentos de avaliação da mesma, que tenham sido construídos e adaptados para a população adolescente. Este estudo piloto fornece os primeiros resultados sobre dados normativos em população adolescente de língua espanhola do Inventário de Ansiedade Social (SPAI) e da Escala de Ansiedade Social para a Adolescentes (SAS-A). O SPAI e a SAS-A foram completados por 303 adolescentes com e sem fobia social. Os resultados preliminares apoiam quer a subescala de Fobia Social do SPAI como a pontuação total da SAS-A como as melhores medidas para minimizar os falsos positivos e negativos. Não obstante, a maior taxa de acordo foi encontrada quando o SPAI e a SAS-A foram usados conjuntamente, o que apoia a complementaridade de ambas as escalas, já que o seu uso conjunto incrementa a eficiência no diagnóstico de fobia social, para além de sugerir que estes instrumentos de avaliação parecem ser as medidas mais apropriadas para um despiste geral.

PALAVRAS CHAVE. Adolescência. Ansiedade social. Avaliação. Dados normativos.

Introduction

Despite the fact that social phobia was introduced into the DSM-III over 20 years ago (American Psychiatric Association, 1980), specific social anxiety measures for use with adolescents did not appear until very recently. Therefore, research on social anxiety measures in adolescence has yet to receive much attention. This contrasts with the

importance of social phobia during adolescence as reported by several authors (Albano, Detweiler, Logsdon-Conradsen, 1999; Beidel and Turner, 1998; Inderbitzen and Hope, 1995; Poulton *et al*., 1997). In fact, to our knowdledge, only two self-report inventories designed to specifically evaluate social anxiety in adolescence have been developed and/or adapted to date. One measure, the Social Phobia and Anxiety Inventory (SPAI), was initially developed for adults as a diagnostic instrument to measure DSM-related features of social phobia. It has shown excellent psychometric properties (Beidel, Turner, and Cooley, 1993; Bögels and Reith, 1999; Turner, Beidel, Dancu, and Stanley, 1989). Research supports the, with demonstrated reliability and validity of the SPAI in both English (Clark *et al*., 1994) and Spanish-speaking adolescent samples (García-López, Olivares, Hidalgo, Beidel and Turner, 2001; Olivares, García-López, Hidalgo, Turner, and Beidel, 1999a). A second measure, the Social Anxiety Scale for Adolescents (SAS-A), was initially developed to assess youngsters' social anxiety, using non-pathological community samples to determine developmentally appropriate levels of social anxiety (e.g., La Greca, Dandes, Wick, Shaw, and Stone, 1988; La Greca and López, 1998, La Greca and Stone, 1993). Using the conceptualization of social anxiety proposed by Watson and Friend (1969), La Greca and colleages have developed the Social Anxiety Scale for Adolescents (SAS-A) as well as a children's version of the scale (Social Anxiety Scale for Children-Revised; La Greca and Stone, 1993). With respect to the adolescent version (SAS-A), La Greca and López (1998) have found this scale to be a reliable and valid measure of social anxiety. A recent study has also validated this scale for a Spanish population (Olivares, Ruiz, Hidalgo and García-López, 1999b). To date, however little effort has been directed at developing clinical cut-off scores for these the SPAI and the SAS-A, so that these instruments may be used as screening tools for identifying socially phobic adolescents within community samples. Thus, this pilot study was designed to compare the normative data on the SAS-A in a non-English-speaking sample and to establish cut-off scores for the SPAI in adolescence. To determine the SPAI and/or SAS-A scores that can best meet such a goal, tentative cut-off scores have been examined for selecting adolescents who are likely to exhibit social anxiety symptoms.

Method

Participants

The sample was composed of 202 adolescents who met DSM-IV criteria for social phobia (American Psychiatric Association, 1994) and 101 non-socially anxious adolescents. Participants were students in the 10th and 11th grades[3] of two private and eight public high schools residing in three cities of a medium region of Spain. Gender consisted of 112 boys and 191 girls and the average age was 15.62 years (SD = 0.83, range: = 14-17 years). Almost the entire sample was caucasican (99%), but the participants they represented a wide range of socioeconomic status.

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3 For Spanish readers, grades were: FP, 4º ESO and 1º Bachiller or 2º and 3º BUP.

Procedure

Recruitment was divided into two parts. In the first phase, the initial sample was located from a initial study of 3 160 adolescents who completed the SPAI in groups of 25 to 39 people (Olivares *et al.*, 1999). In a second phase, adolescents scoring one standard deviation above the mean on the Difference score of the SPAI completed a battery of self report measures and were administered a semi-structured interview (a modified version of the Anxiety Disorders Interview Schedule for DSM-IV; DiNardo, Brown and Barlow, 1994). This latter measure was used to establish the diagnosis of social phobia (García-López *et al.*, 2001). After this screening phases, 202 adolescents who met criteria for social phobia and 101 non-socially anxious adolescents were found. To evaluate the "goodness" of the SPAI and/or SAS-A cut-off scores, the sample of 202 clinically diagnosed adolescents were considered to be "positives". Subjects with no evidence of social phobia were defined as "negatives".

Measures

  - Social Phobial and Anxiety Inventory (SPAI).

Due to the absence of well-validated measures for assessing social anxiety, Turner *et al.* (1989) constructed this instrument to assess cognitive, somatic and behavioral dimensions of social phobia. The SPAI consists of 45 items, and each item is rated on a 7-point scale (1 = never, 7 = always:). Of these items, 32 comprise the Social Phobia subscale and the remaining 13 compris the Agoraphobia subscale. A Difference score is derived by substracting the Agoraphobia subscale from the Social Phobia subscale. The maximum scores for the Social Phobia subscale, the Agoraphobia subscale and the Difference are 192, 78 and 192, respectively.

  - Social Anxiety Scale for Adolescents (SAS-A).

La Greca and López (1998) developed the SAS-A from a conceptualization of social anxiety by Watson and Friend (1969), who identified two aspects of social anxiety in adults: fear of negative evaluation (FNE) and social avoidance and distress (SAD). Factor analysis of developmentally appropriate items for children (La Greca and Stone, 1993) and adolescents (La Greca and López, 1998) revealed a 3 factor structure for youngsters' social anxiety. The three primary factor of the SAS-A include a subscale reflecting: fears or worries of negative evaluations from peers (FNE) and two subscales reflecting social avoidance and distress: one that is specific to new social situations or unfamiliar peers (SAD-New) and one that reflects generalized social inhibition (SAD-General). The subscales contain eight, six and four items, respectively. In general, SAS-A consists of 22 items (but 4 are filler items) arranged in a 5-point Likert rating format. A Total score can be obtained by summing the ratings for the 18 anxiety items, and can range from 18 to 90. La Greca (1998) recommended that a cut-off of 50 be used for the Total score to determine "clinically significant" social anxiety in English-speaking community samples of adolescents.

Results

As can be seen in the tables below, each one of the cut-off scores gives a different predicted percentage of false positive and false negative cases. Depending upon the objective for administering SPAI and/or SAS-A, therapist or researcher can be more interested in minimizing false negatives or false positives. Thus, in a clinical setting, minimizing false negatives for identifying adolescents is warranted and would then receive detailed assessment and diagnosis. However, for general purpose screening to minimize false positives is warranted and therefore, higher cut-off scores are needed. The first goal of the study was to determine what cut-off scores on the SPAI would be useful for identifying adolescents who met DSM-IV criteria for Social Phobia. Table 1 presents various SPAI-Difference cut-off scores, and the rates of false positive and false negatives associated with each cut-off. The data in this table indicates that cut-off scores of 30 and 40 points appear to be best for minimizing the rate of false negatives (i.e., social phobics that SPAI identify as normal subjects) but then high rates of false positives appear (i.e., normal subjects incorrectly diagnosed as social phobic).

TABLE 1. SPAI Difference Cut-off Scores for Identifying Adolescents with a DSM-IV diagnosis of Social Phobia.

SPAI-Difference Cut-off score	False positives (%)	False negatives (%)	Agreement (%)
30	26.07	0.99	72.94
40	20.46	0.99	78.85
50	17.16	2.31	80.53
60	11.88	6.60	81.52
70	6.60	12.87	80.53
80	3.30	21.45	75.25

Note: SPAI: Social Phobia and Anxiety Inventory; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, 4th edition.

In contrast, a cut-off point of 80 permits the reduction of false positives. Although the election of a cut-off score depends on the purpose of the investigation, the 60 SPAI-Difference cut-off point shows the highest overall agreement rate (81.52%). As a previous study indicated the Social Phobia (SP) subscale of the SPAI may also be used to indentify social phobics (García-López *et al.,* 2001), various cut-off scores for this subscale were also examined, (see Table 2). The highest overall agreement (86.47%) appears for a SPAI-SP of 70, with similar false positives but lower false negatives rates (2.31% vs. 6.60%) compared to the SPAI-Difference score.

In addition to examining cut-off scores for the SPAI, we evaluated the ability of the Total SAS-A score to detect adolescents with social phobia (see Table 3). The highest overall agreement rate (84.16%) was found with a 44 cut-off score. Above this score, the rates of false negatives increase.

TABLE 2. SPAI Social phobia Cut-off Scores for Identifying Social Phobic Adolescents According to DSM-IV.

SPAI-Social phobia Cut-off score	False positives (%)	False negatives (%)	Agreement (%)
50	21.12	0.33	78.55
60	17.16	0.66	82.18
70	11.22	2.31	86.47
80	6.60	7.26	86.14
90	3.30	15.51	81.19
100	1.32	22.11	76.57

Note. SPAI: Social Phobia and Anxiety Inventory; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, 4th edition

TABLE 3. Total SAS-A Cut-off scores for identifying Adolescents with a DSM-IV diagnosis of social phobia.

Total SAS-A Cut-off score	False positives (%)	False negatives (%)	Agreement (%)
37	21.12	0.99	77.89
41	15.51	3.63	80.86
44	10.56	5.28	84.16
48	6.60	11.88	81.52
50	4.62	14.85	80.53
52	3.63	19.80	76.57
53	2.97	20.13	76.90
54	2.31	24.75	72.94

Note. SAS-A: Social Anxiety Scale for Adolescents; DSM-IV: Diagnostic and Statistical Manual of Mental Disorders, 4th edition

Once we examined the high level of agreement for both the SPAI and the SAS-A measures, we evaluated whether the combination of both scores would establish an even higher perecent of agreement. Table 4 provides data concerning the SPAI-Difference (a cut-off score of 60, the highest agreement in that measure), the SPAI-SP (a cut-off of 70) and several Total SAS-A scores. The combination of the SPAI-Difference score and the Total SAS-A points revealed that the highest overall agreement was with a cut-off score of 52 or 53 for the Total SAS-A (84.16%). This percent was identical to that

found if a Total SAS-A point of 44 was selected, although a lower false negative rate appeared as well as better overall agreement than with the 60 SPAI-Difference cut-off score. As for SPAI-SP, the highest level of agreement was with a cut-off score of 70 and was combined with several Total SAS-A scores. As can be observed in the Table 4, the highest agreement (86.80%) was identified when a 70 SPAI-SP and a 53 Total SAS-A cut-off score were combined, reducing the false negative rate to the 1.65%, a lower percentage than that reached if the SPAI-SP and SAS-A measures were used individually. Taking these results into consideration, the combination of a SPAI-SP of 70 and the Total SAS-A of 53 provide the highest agreement, optimal for minimizing the false positives and negative rates.

TABLE 4. Combination of the SPAI measures and total SAS-A Cut-off scores for identifying subjects with a DSM-IV diagnosis of social phobia.

	Total SAS-A Cut-off score	False positives (%)	False negatives (%)	Agreement (%)
SPAI-Difference ≥ 60	44	17.16	0.66	82.18
	48	14.85	1.65	83.50
	50	13.20	2.97	83.83
	52	12.54	3.30	84.16
	53	12.21	3.63	84.16
	54	12.21	4.29	83.50
SPAI-Social Phobia ≥ 70	44	15.18	0.33	84.49
	48	13.53	1.32	85.15
	50	12.54	1.65	85.81
	52	11.88	1.65	84.47
	53	11.55	1.65	86.80
	54	11.55	1.98	86.47

Note. SPAI: Socia Phobia and Anxiety Inventory; SAS-A: Social Anxiety Scale for Adolescents; DSM-IV: Diagnostic and Statistc Manual of Mental Disorderss.

Discussion

The pilot study reported here is the first to date to report the results of normative data for assessment of social phobia in adolescents. The primary objective of this study was to provide normative data concerning a Spanish speaking population for the only social anxiety self-report measures that have been designed or adapted for adolescents: the SPAI and the SAS-A. First, we discuss our results by means of the findings obtained with the original SPAI and SAS-A, and then discuss the use of the two measures combined. Regarding the SPAI, the data indicated that the highest agreement rate for the Difference score was obtained for a cut-off of 60, similar to that of an adult population reported by Turner *et al.* (1989). However, it is the Social Phobia subscale of the SPAI showed the highest levels of overall agreement (cut off of 70). This cut-

ff minimized the false negatives, which suggest it may be very useful when the object of the research is to detect adolescents with social anxiety, independent of other psychopathologies. On the other hand, the choice of a cut-off score will always be dependent on the objectives of a particular study. Thus, a 50 cut-off point in the SPAI-Difference could be useful when the aim is to reduce false positives, regardless of the number of normal adolescents incorrectly diagnosed as social phobics. As for SAS-A, as La Greca (1998) suggests, a Total SAS-A score below 37 is useful for identifying "non-socially anxious" adolescents. However, our data suggest that a cut-off above 44 provides the highest agreement rate to detect social anxiety among adolescents. This cut-off is lower than the recommended cut-off of 50, proposed by La Greca (1998).

Based on our findings, a future goal is todetermine whether the cut-off scores proposed in our work could be applied to another non-Spanish speaking population (i.e., English, French, German, Chinese, etc.). Given that previous studies have shown that the SPAI and the SAS-A are valid and reliable measures for adolescent Spanish samples (Olivares *et al.,* 1999a; Olivares *et al.,* 1999b), with psychometric properties similar to those obtained by the authors' of these scales, we expect that the normative data proposed in this work can be extrapolated to other languages and cultures, although cross-cultural studies are encouraged. Further research on adolescent (as well as adults and child) measures of social anxiety is also warranted. Efforts to find well-validated cut-off scores would also contribute to locating identifying or recruiting clinical samples in community areas with minimal false positives and negatives rates and, therefore, also, reduce time and material costs. As well as being useful for clinicians, establishing sensitive cut-offs for measures of social anxiety could be useful for psychologists working in the educational context (e.g., high- schools). Given that socially phobic adolescents usually show impairment in educational and social role functioning, and because social phobia is frequently characterized by a chronic and unremitting course, early detection of this disorder is warranted. In this sense, the current study demonstrates that both SPAI and SAS-A could be valid screening tools for identifying social anxiety subjects in this stage of life, especially if both scales are used together.

In conclusion, we would recommend that both scales be used in community samples in order to increase the proportion of subjects with social anxiety correctly detected. Overall, this pilot study provides, the strongest support for the SPAI Social Phobia subscale and the Total SAS-A score together as the most appropiate measures for use in general screening.

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