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Evaluation of the Reliability and Validity of the Social Anxiety Questionnaire for Children in Adolescents with Social Anxiety Disorder

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Abstract

Little research has focused on the measurement of specific facets of social anxiety disorder (SAD) in adolescents. In this study, we report on the Social Anxiety Questionnaire for Children (SAQ-C; Caballo et al., 2016), a 24-item questionnaire which assesses six facets of social anxiety in youth: 1) Speaking in public/Interactions with teachers, 2) Interactions with the opposite sex, 3) Criticism and embarrassment, 4) Assertive expression of annoyance, disgust, or displeasure, 5) Interactions with strangers, and 6) Performing in public. The SAQ-C has been shown to have sound psychometric properties in large samples of non-clinical Latin-American and Spanish youth. The present study aimed to provide the first evaluation of the psychometric properties of the SAQ-C in a clinical sample of 58 English-speaking adolescents diagnosed with SAD in the United States. Findings support the reliability and validity of this new measure and reveal specific facets of social anxiety not adequately captured in other frequently used self-report measures. Implications of the findings for assessment and treatment are addressed.

Keywords

social anxiety disorder; adolescents; psychometrics; SAQ-C

Social Anxiety Disorder (SAD) is characterized by irrational and persistent fears of evaluation and scrutiny by others in social or performance settings. This fear often results in significant distress or impairment which gives rise to behavioral avoidance of a variety of social situations (APA, 2013). The onset of SAD is typically during late childhood and early

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adolescence (Rapee & Spence, 2004), likely due to the increase in social demands during this developmental period which give rise to fears of embarrassment, negative social evaluation, and possible rejection (Ollendick, Benoit, & Grills-Taquechel, 2014; Ollendick & Hirshfeld-Becker, 2002; Weems & Costa, 2005; Westenberg, Gullone, Bokhorst, Heyne, & King, 2007). With the advent of DSM-5 (APA, 2013), for children and adolescents, the anxiety and avoidance associated with SAD must also occur in peer settings not just during interactions with adults.

At the present time, research on SAD in children and adolescents lags behind research in adults (e.g., Caballo et al., 2016). Given that SAD is one of the most prevalent anxiety disorders in childhood and adolescence (Ollendick et al., 2014), is one of the primary causes of school avoidance and refusal in adolescents (Kearney & Albano, 2004), and can lead to other negative psychosocial outcomes including substance abuse, depression, suicide, and conduct problems (APA, 2013; Beidel & Turner, 1998), more research on the understanding and assessment of SAD in adolescence is needed. At present, the most frequently used measures to assess social anxiety in children and adolescence are the Social Anxiety Scale for Children-Revised (SASC-R; La Greca & Stone, 1993) and the Social Anxiety Scale for Adolescents (SAS-A, La Greca & Lopez, 1998). Also frequently used is the Social Phobia and Anxiety Inventory for Children (SPAI-C; Beidel, Turner, & Morris, 1995); although a specific version of this measure for adolescents has not been developed, it is used for youth between 8 and 14 years of age. The SASC-R and SAS-A were adapted from the Social Avoidance and Distress Scale and the Fear of Negative Evaluation Scale, both developed by Watson and Friend (1969) for adults. Similarly, the SPAI-C was adapted from the Social Phobia and Anxiety Inventory developed by Turner, Beidel, Dancu, and Stanley (1989) for adults. Inasmuch as both of these measures were developed from existing adult measures and were not designed specifically for children and adolescents, they may not sufficiently capture specific facets of social anxiety in youth, especially with the advent of DSM-5 and its requirement that the anxiety and avoidance for children and adolescents must also occur in peer settings not just adult settings (see Caballo et al., 2016; Caballo, Arias, Salazar, Calderero, Irtutia, & Ollendick, 2012).

In partial response to this state-of-affairs, Caballo and colleagues (2012) developed the Social Anxiety Scale for Children (SAQ-C). The scale was designed to be appropriate for youth between 9 and 15 years of age and contains six factor-derived subscales: 1) Speaking in public/Interactions with teachers, 2) Interactions with the opposite sex, 3) Criticism and embarrassment, 4) Assertive expression of annoyance, disgust, or displeasure, 5) Interactions with strangers, and 6) Performing in public. The instrument was developed in Spain, following a careful review of the literature and focused interviews with children and adolescents who were highly socially anxious. As such, the youth themselves contributed to the content of some of the items and the phrasing of them. Thus, the measure includes factors such as “Interactions with the opposite sex” and “Interactions with strangers” that are notably lacking in the more frequently used measures such as the SPAI-C and the SASC-R/SAS-A. Psychometric properties, including its test-retest-reliability, internal consistency, and validity with other self-report measures of social anxiety, were well established in the original Spanish sample of 1067 youth between 9 and 15 years of age (Caballo et al., 2012) and then replicated in 12,801 youth, also between 9 and 15 years of age, from 12 Latin

American countries (Caballo et al., 2016). In these normative studies, girls reported more social anxiety than boys on each of the six subscale scores as well as the total score; in addition, preadolescents (9–12 years of age) reported more social anxiety than adolescents (13–15 years of age) on the total score and on three of the six subscales (Interactions with the opposite sex, Speaking in public/Talking to teachers, and Assertive expression of annoyance, disgust, or displeasure). In an additional study, the measure has been shown to be sensitive to treatment outcomes in the evaluation of a school-based social skills program with 87 Spanish children and adolescents with high levels of social anxiety (Caballo, Carrillo, & Ollendick, 2015).

Despite the promise of the SAQ-C with Latin American and Spanish youth, the measure has not been used in a sample of English-speaking youth or with youth who have a confirmed SAD diagnosis. We had two primary aims in the present study. First, we examined whether the measure converged with a host of commonly used self-report and clinician-based indices of social anxiety in English-speaking youth in the United States with a diagnosis of SAD. In doing so, we not only compared performance on the SAQ-C to the SAS-A (La Greca & Lopez, 1998), the SPAI-C (Beidel, Turner, & Morris, 2000), and the more recently developed Severity Measure for Social Anxiety Disorder (SM-SAD; Craske, Bogels, Stein, Andrews, & Lebeu, 2013) but also to measures of self-efficacy (Self-Efficacy Questionnaire for Social Behavior, SEQSB, Ollendick & Schmidt, 1987) and outcome expectancies for performance in social situations with peers who were friends or strangers (Outcome Expectancy Questionnaire for Social Behavior, OEQSB, Ollendick & Schmidt, 1987). Furthermore, we also compared ratings on SAQ-C to Clinical Severity Ratings obtained on the clinician-administered Social Anxiety module of the Anxiety Disorders Interview Schedule for Children (ADIS-IV C/P; Silverman & Albano, 1996).

Second, in an exploratory fashion, we examined whether profiles of youth could be identified based on the six SAQ-C subscale scores. If relative profiles of anxiety could be identified for subsets of adolescents, we reasoned that interventions in the future might be tailored specifically to youth with those profiles so as to improve the clinical outcomes of youth with SAD – the pediatric anxiety disorder that has been shown to be the least responsive to treatment with standard, evidence-based CBT interventions (see Gibby, Casline, & Ginsburg, 2017; Higa-McMillan, Francis, Rith-Najarian, & Chorpita, 2016; James, James, Cowdrey, Soler, & Choke, 2015).

Method

Participants

The participants were 58 treatment seeking adolescents with a diagnosis of SAD who participated in a larger treatment outcome study (source withheld for review). All participants were between 12 and 16 years of age. Inclusion criteria consisted of: a) a diagnosis of SAD (Clinical Severity Rating of 4 or higher) as determined by the ADIS-IV-C/P (Silverman & Albano, 1996); b) average or above average cognitive functioning as determined by the Wechsler Abbreviated Scale of Intelligence ([WASI; Wechsler, 2011] FSIQ 85); c) if prescribed psychiatric medication, a stable dosage of at least four weeks; and d) not currently receiving psychological treatment for anxiety-related concerns.

Participants who met criteria for an Autism Spectrum Disorder, childhood Schizophrenia, and/or psychopathology that warranted more immediate clinical care (e.g., suicidal risk/gestures) were excluded from the study.

Participants were primarily female (70.7%) and averaged 14.29 years of age ($range = 12-16$, $SD = 1.30$). The racial breakdown was primarily White (84.5%), followed by Black/African-American (3.4%), Hispanic/Latino (3.4%), Asian (3.4%), and Other (5.2%). Mean gross family income was relatively high, averaging \$93,804; however, considerable variability in income existed ($range = \$23,000-\$285,000$, $SD = \$54,037.51$). Although all participants met criteria for SAD, comorbidity with other anxiety disorders was common: 65.5% also met criteria for generalized anxiety disorder, 44.8% for a specific phobia, and 5.2% for separation anxiety disorder. Other non-anxiety diagnoses were present but in limited numbers ($< 10\%$). SAD was the primary diagnosis for 62% of participants; however, SAD was the reason for referral in all instances.

Procedure

As noted, data for the present study were collected at pre-treatment from a randomized clinical control trial (RCT) which examined the effectiveness of Attention Bias Modification Treatment for teenagers with a SAD diagnosis (source withheld for review). The study was approved by the university's institutional review board for human subject research. Participants were recruited through university-affiliated clinics, school health services, pediatricians, child psychiatric services, and print advertisements. Following initial contact, potential participants' parents completed a brief phone screen in order to determine eligibility. Following the phone screen, eligible families were invited to participate in two pre-treatment assessment sessions. All parents provided informed written consent and all teenagers provided assent before the start of the assessment. Parents and adolescents completed a clinical intake which consisted of a semi-structured clinical interview (ADIS-IV C/P), a test of cognitive ability (Wechsler Abbreviated Scale of Intelligence, Second Edition; Wechsler, 2011), experimental tasks (i.e., eye tracking tasks and dot probe task), and a battery of questionnaires. Not all measures collected were examined in the present manuscript. Trained clinical science doctoral students administered the ADIS-IV-C/P separately for parent and child. In total, the two assessment sessions lasted approximately 4 hours.

Measures

Self-Report Measures.

The Social Anxiety Questionnaire for Children (SAQ-C; Caballo et al., 2012; Caballo et al., 2016).—The SAQ-C is a 24-item self-report questionnaire designed to assess how much embarrassment, nervousness, or fear particular social situations create for children and adolescents. Items on the SAQ-C are rated on a 4-point Likert scale from 1 (None) to 4 (A Lot). The SAQ-C consists of six subscales determined via factor analysis: Speaking in public/Interactions with teachers (e.g., "Being asked a question in class by the teacher"); Interactions with the opposite sex (e.g., "Kissing a girl (boy) I like"); Criticism and embarrassment (e.g., "Being criticized"); Performing in public (e.g., "Playing a musical

instrument in public”); Interactions with strangers (e.g., “Playing with a group of girls (boys) I do not know well”) ; and Assertive expression of annoyance, disgust, or displeasure (e.g., “Telling a classmate I do not like something she (he) said about me”). There are four items for each subscale and subscale scores are created with the sum of all subscale scores yielding a total score. For the Interactions with the Opposite Sex subscale and the Interactions with Strangers subscale, items were worded in relation to the participant’s biological sex as indicated in the aforementioned sample items. That is, items on the Interactions with the Opposite Sex subscale referenced the opposite sex (i.e., boys were asked to rate their anxiety relative to possible romantic interactions with girls and girls were asked to rate their anxiety relative to possible romantic relationships to boys) and items on the Interactions with Strangers subscale referenced the same sex as the participant (i.e., boys were asked to rate their anxiety relative to interactions with boys they did not know well and girls were asked to rate their anxiety relative to interactions with girls they did not know well). Items on the other subscales used non-gendered terms (e.g. classmate, teacher, friend, others, etc.). Inasmuch as the SAQ-C was originally developed in Spain and subsequently tested with Spanish-speaking youth in South America, the questionnaire was translated from Spanish into English, then back translated to Spanish, and finally revised again in English and Spanish until consensus agreement was reached between translators. Reliability coefficients for our English version were all acceptable across the subscales and total score: Speaking in public/Interactions with teachers ($\alpha = .849$); Interactions with the opposite sex ($\alpha = .887$); Criticism and embarrassment ($\alpha = .744$); Performing in public ($\alpha = .716$); Interactions with strangers ($\alpha = .916$); Assertive expression of annoyance, disgust, or displeasure ($\alpha = .858$); Total score ($\alpha = .928$).

Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998).—The SAS-A is a self-report and parent-report measure which examines adolescents’ reports of social anxiety. The SAS-A consists of 22-items (4 of those items being filler items) which are rated on a five-point Likert scale 1 (Not at all) to 5 (All the time). The SAS-A yields three subscales each of which possessed acceptable internal consistencies in the current study: fear of negative evaluation ($\alpha = .956$); social avoidance and distress in new situations ($\alpha = .876$); and generalized social avoidance and distress ($\alpha = .853$), as well as an overall total score ($\alpha = .954$). The total score was used in the current study.

Social Phobia and Anxiety Inventory for Children (SPAI-C; Beidel, Turner, & Morris, 2000).—The SPAI-C is a 26-item, self-report measure of social anxiety in children ages 8 to 14. Items are rated on a 3-point Likert scale from 0 (Never, or Hardly Ever) to 2 (Most of the Time, or Always) and a total score is calculated ($\alpha = .935$ in the current study).

Severity Measure for Social Anxiety Disorder (SM-SAD; Craske, Bogels, Stein, Andrews, & Lebeu, 2013).—The SM-SAD is a 10-item self-report measure that assesses the severity of social anxiety symptoms for children and adolescents between 11 and 17 years of age. Each item asks the child or adolescent to rate the severity of his or her symptoms consistent with SAD during the past seven days on a five-point Likert scale from 0 (Never) to 4 (All the Time). Higher score are indicative of greater SAD severity. The raw

scores on the 10 items are summed to obtain a total raw score ($\alpha = .917$ in the current study).

The Self Efficacy Questionnaire for Social Behavior (SEQSB; Ollendick & Schmidt, 1987).—The SEQSB is a 10-item self-report questionnaire which prompts the adolescent to indicate how sure they are that they could engage in certain social behaviors (i.e., self-efficacy estimate). The adolescent's self-efficacy estimate was rated on a five-point Likert scale: 1 (Not Sure at All) to 5 (Really Sure). Consistent with past research by Hannesdóttir and Ollendick (2007), the SEQSB was adapted such that the adolescent was asked to rate his/her confidence level in situations (e.g., "How sure are you that you could start a conversation with someone your age?") to which the adolescent would respond separately for: "if they are friends"; and "if they are strangers". Scores are totaled separately for both "friends" and "strangers"; reliability coefficients were acceptable in the current study (friends $\alpha = .902$, strangers $\alpha = .878$).

Outcome Expectancy Questionnaire for Social Behavior (OEQSB; Ollendick & Schmidt, 1987).—The OEQSB is a 10-item self-report measure designed to assess the belief that if one performed the required social behaviors associated with a specific outcome that the outcome would, in fact, occur. The adolescent is prompted to rate how likely the specified outcome were to occur for friends versus a peer who was a stranger, consistent with past research by Hannesdóttir and Ollendick (2007). The probability estimates are rated on a five-point Likert scale from 1 (Definitely Not) to 5 (Definitely So) (e.g., "If someone your age tells you that you did a good job, do you believe them and feel good about what they said?") to which the adolescent would respond separately for: "if the kid was a good friend of yours"; and "if the kid is someone you do not know". Similar to the SEQSB, scores are totaled separately for both "friends" and "strangers" and reliability coefficients were acceptable in the current study (friends $\alpha = .856$, strangers $\alpha = .868$).

Clinician-Rated Measures

Anxiety Disorders Interview Schedule for DSM-IV-Child and Parent Versions

(*ADIS-IV-C/P; Silverman & Albano, 1996*). The ADIS-IV-C (child version) and ADIS-IV-P (parent version) are semi-structured clinical interviews which facilitate the assessment and diagnosis of anxiety and related disorders in childhood and adolescence. Clinical psychology doctoral students in a clinical science training program administered the ADIS-IV-C/P separately for parents and adolescents. The parent and child clinicians independently assigned a clinician severity rating (CSR) on a 9-point scale (0–8), with a rating 4 suggesting a clinical level of interference. Final diagnoses were derived based on composite rules recommended by Silverman and Albano such that the higher CSR of the adolescent or parent was used to determine diagnosis and for subsequent analyses.

The training for the clinicians on the ADIS-IV-C/P included a clinical workshop, practice interviews, and observation of administration conducted by a reliable clinician. The administrations were videotaped and approximately 30% ($n = 17$) of the diagnostic interviews were reviewed by a second clinician. Inter-rater agreement on the CSR score was

high; across the child and parent interviews, agreement (i.e., CSR within one point of each other) was 94% and 100%, respectively.

Data Analyses

A repeated measures analysis of variance (ANOVA) was conducted to compare SAQ-C subscale scores, and bivariate correlations were calculated between SAQ-C scores and other anxiety measures. A two-step cluster analysis was conducted involving an exploratory hierarchical cluster analysis followed by a k-means cluster analysis. Ward's method was used to determine the optimum number of clusters during the first step and that suggested number was then used in the k-means analysis. One-way ANOVAs and chi-square tests were then used to compare demographic and anxiety variables across the identified clusters. Tukey-family contrasts were used to determine which SAQ-C clusters significantly differed across those measures. As recommended by Perneger (1998), Bonferroni adjustments were not made in these comparisons due to the exploratory nature of our study and the need to protect against the commission of Type II error (i.e., the probability of accepting the null hypothesis when the alternative is true).

Results

First, using a repeated measures ANOVA a significant main effect was found for mean differences across the six subscales of the SAQ-C, $F(5, 53) = 25.24$, $p < .001$, $\eta^2 = .70$. Post-hoc comparisons indicated that the subscales of "Interactions with the opposite sex," "Criticism and embarrassment," and "Performing in public" were all significantly greater than the subscales "Speaking in public/Interactions with teachers," "Assertive expression of annoyance, disgust, or displeasure," and "Interactions with strangers." The subscales "Speaking in public/Interactions with teachers" and "Assertive expression of annoyance, disgust, or displeasure" did not differ from each other and were both significantly lower than subscales "Interactions with the opposite sex," "Criticism and embarrassment," "Interactions with strangers," and "Performing in Public." Bivariate correlations among the six subscales indicated that they all were significantly correlated with one another, with one exception: "Interactions with the opposite sex" did not significantly correlate with "Speaking in public" or "Performing in public". As expected, all six subscales significantly correlated with the total score. See Table 1 for variable means, standard deviations, and bivariate correlations.

The factor subscale scores and total scores of the SAQ-C varied in their degree of correlation with the other measures of social anxiety, although each subscale was at least moderately associated with most of the total scores of the other measures (see Table 2). As predicted, the SAQ-C total score was significantly and positively correlated with the total score of each of the other self-report measures of social anxiety (SAS-A, SPAI-C, and SM-SAD) as well as the clinician-administered ADIS Clinical Severity Rating; moreover, it was significantly and negatively correlated with the measures of self-efficacy (SEQSB) and outcome expectancy (OEQSB) – both with strangers and friends. As can be seen in Table 2, all of these correlations were significant at the $p < .01$ level or higher. Also as can be seen in Table 2, all of the factor subscale scores correlated significantly ($p < .05$) and in the expected direction with the other social anxiety measures, with the exception of two correlations of the

performing in public subscale. Performing in public was not significantly correlated with the total scores of the SM- SAD or the total score of the outcome expectancies for friends.

Cluster Analyses

Hierarchical cluster analysis indicated four distinct clusters of social anxiety symptoms as measured by the SAQ-C. This 4-cluster solution was then confirmed by k-means cluster analysis: Group 1 - a generally low group on all subscales ($n = 6$), Group 2 - a generally high group on all subscales ($n = 26$), Group 3 - primarily high on performance and negative evaluation ($n = 8$), and Group 4 - a more heterogeneous group but one that was highest on the “interactions with opposite sex” subscale ($n = 18$). Means of each SAQ-C subscale, across clusters, can be found in Table 3 and displayed in Figure 1. Subscale elevations were based on comparisons to the same subscale across clusters and other subscales within cluster.

A one-way ANOVA did not find differences in age, given SAQ-C group, $F(3,54) = 1.036$, $p = .384$, $\eta^2 = .054$. Furthermore chi-square tests did not support an association between gender, $\chi^2(58) = 5.735$, $p = .125$, or race/ethnicity, $\chi^2(58) = 7.244$, $p = .065$, and SAQ-C group. However, there were significant differences between SAQ-C groups on all self-report and clinician-report measures. As can be seen in Table 4, there were significant differences between the generally low and generally high groups on all measures and between the other groups across select measures as well. As anticipated, the generally high group scored higher than the generally low group on all measures of anxiety severity, and lower than the generally low group on the measures of self-efficacy.

Discussion

Extant research has yet to examine the SAQ-C in a sample of English-speaking youth with a confirmed SAD diagnosis. Results from this preliminary study suggest the SAQ-C and its subscale scores demonstrate high internal consistencies and significant relations with other commonly used self-report and clinician-based indices of social anxiety in our clinically confirmed sample. More specifically, the SAQ-C total score was significantly and positively correlated with the total score of each of the other self-report measures of social anxiety (SAS-A, SPAI-C, and SM-SAD) as well as the clinician-administered ADIS-IV-P/C CSR.

Of note, the convergent validity of the individual subscale scores of the SAQ-C with these commonly used measures was also examined in this study. The degree of convergence was large across all but two of the subscales: “Interactions with the opposite sex” (e.g., “Starting a conversation with a girl (boy) I like”) and “Performing in public” (e.g., “Playing a musical instrument in public”). The magnitude of the associations for these two subscales was small, suggesting that these subscales might not be adequately captured in these other commonly used self-report measures. Conceivably, these other measures might be neglecting important developmentally salient constructs for adolescents such as dating and performing in public. For example, the onset of puberty and sexual development in the teenage years might not be adequately captured in the social interactions of youth on these other measures. Although the SAQ-C was originally developed in Spain and subsequently studied in Latin America,

the overall convergent validity between the English translation and other measures originally developed in English samples from the United States demonstrates that the subscales of SAD are applicable for adolescents across cultures.

In addition to these commonly used self-report measures, the SAC-Q total and subscale scores were also significantly and negatively related to our self-report measures of self-efficacy and outcome expectancies for social behavior (SEQSB and OEQSB, Ollendick & Schmidt, 1987). As suggested by Hannesdóttir and Ollendick (2007), social anxiety and performance in social situations do not develop in isolation. From an early age, expectations and beliefs about performance affect children's motivation to engage in behaviors that are likely to produce desired outcomes (also see Bandura, 1997, 2001). If children's perceived self-efficacy for successful interactions in social situations is low, they are more likely to become anxious and to perform poorly in such situations. Moreover, if they are performing poorly in these situations, they are more likely to receive negative feedback about their performance and, in turn, develop anxiety and avoidance about entering new or similar social situations (Hannesdóttir & Ollendick, 2007). Here, we show that self-efficacy and outcome expectancies with friends and strangers are significantly related to social anxiety in line with Bandura's (2001) theory. As such, these measures, in concert with self-report measures of social anxiety, open new avenues for research and potential targets for intervention. It may be that socially anxious youth do not respond as well to standard CBT protocols (Gibby et al., 2017; Higa-McMillan et al., 2016; James et al., 2015) because they fail to address these important self-efficacy and outcome expectancies.

Our study was also the first to examine the convergent validity between the SAQ-C and a clinician-administered semi-structured diagnostic interview (i.e., ADIS-IV-C/P, Silverman & Albano, 1986) which was used for the diagnosis of SAD. Results suggested that there was modest convergence between the total score and all six of the subscales of the SAQ-C and the ADIS-IV-C/P CSR. This modest relationship might be partially explained by the fact that the SAQ-C and the ADIS-IV-C/P do not fully overlap in items with one another. The SAQ-C, for example, assesses in more detail social situations that are only minimally considered in the ADIS-IV-C/P, such as those situations on the subscales "Interactions with the opposite sex" (a single situation in the ADIS-IV-C/P "Dating"), "Performing in public" (a single situation in the ADIS-IV-C/P "Musical or athletic performances") and "Criticism and embarrassment" (no situation in the ADIS-IV-C/P). These differences in content are important, nonetheless, our measure was found to be at least moderately related to the clinician informant via a commonly used diagnostic interview.

Within the context of our exploratory aim, we were able to show that four statistically meaningful profiles of youth with SAD emerged from our cluster analysis of the SAC-Q. Although 45% of the youth were characterized as high on most subscales and another 10% were characterized by low scores on each of the subscales, a full 31% emerged with their primary anxiety related to interacting with individuals of the opposite sex – the very subscale that is largely missing on the other measures of social anxiety in adolescents and on the ADIS-C/P. Here too, it may be the case that standard CBT programs for SAD may be less than successful because they do not target one of the more important facets of social anxiety in youth in general and specifically for youth who are elevated in this domain.

Finally, our cluster analysis revealed that only 8 (14%) of our youth could be best classified as having the Performance variant of SAD as specified in the DSM-5 (APA, 2013). However, these youth were not solely elevated on this dimension as other scales were moderately elevated as well. This finding is reminiscent of recent findings reported by Kerns, Comer, Pincus, and Hofmann (2013) and Kodal and colleagues (2017) who failed to find a significant number of adolescents with SAD in the United States and Norway, respectively, who could be categorized as the Performance Only subtype. These combined findings question the clinical utility of the Performance Only specifier in the DSM-5, at least for adolescents. Seemingly, youth who demonstrate fears circumscribed to performance anxiety only are relatively rare and not frequently observed in these clinical samples.

The present study has several limitations that should be addressed in future research. In terms of sample composition, the participants were predominantly Caucasian and of relatively high socioeconomic status. As such, future studies should examine whether these findings are observed in more ethnically and culturally diverse samples, as well as those of lower socioeconomic status. Moreover, given that items in the “Interactions with Opposite Sex” subscale all relate to possible romantic interactions with the opposite sex, it will be important for items on this subscale to be altered in subsequent iterations of this measure (i.e., pronouns be specified based on participant gender expression rather than participant sex). In doing so, a different title for this subscale (e.g., Possible Romantic Interactions) will be desirable. Furthermore, we did not have data from an English-speaking, non-clinical, normative sample with which to compare our findings from the socially anxious teenagers enrolled in our study. Another noteworthy limitation is the lack of measures which assessed constructs outside of social anxiety which limited our ability to obtain discriminant validity for the SAQ-C in this study. Finally, an examination of the convergence of the SAQ-C and behavioral measures of social anxiety would lead to the social validity of our findings as well. Notwithstanding these limitations, our study provides preliminary support for the reliability, convergent validity, and clinical utility of the SAC-Q for measuring social anxiety, its relations to important social learning constructs such as self-efficacy and outcome expectancies, and to the possible subtyping of youth with SAD. It is hoped that these findings will lead to important advances in the understanding, assessment, and subsequent treatment of these difficult to treat youth.

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Compliance with Ethical Standards

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Figure 1.
Mean subscale scores across the four SAQ-C clusters

Table 1.

Means, Standard Deviations, and Bivariate Correlations

	M(SD)	1	2	3	4	5	6
1. Speaking in public	9.25(3.20)	–					
2. Interactions with the opposite sex	12.34(3.75)	.237	–				
3. Criticism and embarrassment	12.66(2.62)	.551	.320	–			
4. Assertiveness	9.40(3.41)	.604	.554	.561	–		
5. Interactions with strangers	10.70(3.45)	.714	.382	.576	.667	–	
6. Performing in public	12.25(3.00)	.494	.013	.452	.315	.494	–
7. Total Score	66.44(14.31)	.801	.596	.753	.842	.863	.596

Note. Two-tailed significance, $r > .262 = p < .05$; $r > .341 = p < .01$; $r > .452 = p < .001$

Table 2.

Correlations Between SAQ-C Subscales and other Anxiety Measures

	1	2	3	4	5	6	7
SAS-A Total	.528	.336	.734	.524	.695	.313	.694
SM-SAD Total	.398	.399	.590	.457	.515	.218	.576
SPAI-C Total	.655	.312	.687	.638	.700	.377	.749
OEQSB Friends Total	-.305	-.269	-.293	-.358	-.412	-.189	-.414
OEQSB Strangers Total	-.534	-.313	-.497	-.571	-.717	-.352	-.670
SEQSB Friends Total	-.380	-.353	-.421	-.583	-.512	-.270	-.571
SEQSB Strangers Total	-.529	-.348	-.587	-.674	-.734	-.369	-.727
ADIS Composite CSR	.280	.332	.371	.345	.333	.329	.446

Note. Two-tailed significance, $r > |.262| = p < .05$; $r > |.341| = p < .01$; $r > |.452| = p < .001$. 1 = Speaking in public/Interactions with teachers; 2 = Interactions with the opposite sex; 3 = Criticism and embarrassment; 4 = Assertive expression of annoyance, disgust, or displeasure; 5 = Interactions with strangers; 6 = Performing in public; 7 = Total Score; SAS-A = Social Anxiety Scale for Adolescents; SM-SAD = Severity Measure of Social Anxiety Disorder; SPAI-C = Social Phobia and Anxiety Inventory for Children; OEQSB = Outcome Expectancy Questionnaire for Social Behavior; SEQSB = Self-Efficacy Questionnaire for Social Behavior; ADIS = Anxiety Disorders Interview Schedule; CSR = Clinical Severity Rating.

Table 3.

Means and Standard Deviations of SAQ-C Clusters

	M(SD)			
	Generally Low (<i>n</i> = 6)	Generally High (<i>n</i> = 26)	Performance (<i>n</i> = 8)	Opposite Sex (<i>n</i> = 18)
1. Speaking in public	5.67(1.63)	11.69(2.36)	9.13(2.85)	6.99(1.72)
2. Interactions with the opposite sex	7.00(2.37)	14.35(1.92)	6.88(3.40)	13.67(1.78)
3. Criticism and embarrassment embarrassment embarrassment	8.33(3.44)	14.07(1.62)	13.25(2.19)	11.80(1.78)
4. Assertiveness	4.67(1.63)	12.04(2.11)	6.75(2.82)	8.33(2.33)
5. Interactions with strangers	5.17(1.60)	13.44(1.99)	11.25(2.25)	8.33(1.68)
6. Performing in public	7.83(2.14)	13.69(2.26)	14.75(1.58)	10.52(2.05)

Table 4.

Means and Standard Deviations of Anxiety Measures across the four SAQ-C Clusters

	<i>M(SD)</i>					F-value	Significant Post-hoc tests
	Generally Low ¹ (<i>n</i> = 6)	Generally High ² (<i>n</i> = 26)	Performance ³ (<i>n</i> = 8)	Opposite Sex ⁴ (<i>n</i> = 18)	Total (<i>n</i> = 58)		
SAS-A Total	34.00 (15.74)	68.12 (11.03)	61.63 (18.10)	53.89 (13.53)	59.28(16.82)	11.95 ^{**}	4>1, 2>4, 2>1, 3>1
SM-SAD Total	4.83 (9.60)	19.05 (7.67)	9.97 (6.58)	10.22 (8.31)	13.59(9.32)	8.17 ^{**}	2>4, 2>1, 2>3
SPAI-C Total	11.50 (7.45)	37.08 (10.80)	27.07 (11.44)	20.77 (9.98)	27.99(13.59)	14.65 ^{**}	2>4, 2>1, 3>1
OEQSB Friends Total	45.50 (2.07)	37.65 (4.71)	41.88 (5.74)	40.26 (4.81)	39.86(5.21)	5.30 ^{**}	1>2
OEQSB Strangers Total	37.67 (3.93)	27.12 (5.09)	30.38 (6.14)	33.06 (4.26)	30.50(5.96)	10.03 ^{**}	4>2, 1>2, 1>3
SEQSB Friends Total	47.33 (4.13)	35.04 (7.49)	42.13 (6.01)	41.22 (5.52)	39.21(7.55)	7.89 ^{**}	4>2, 1>2, 3>2
SEQSB Strangers Total	39.50 (7.23)	22.73 (6.37)	28.00 (6.95)	29.30 (4.90)	27.23(7.87)	13.47 ^{**}	1>4, 4>2, 1>2, 1>3
ADIS Composite CSR	4.50 (0.84)	5.81 (0.85)	5.50 (0.76)	5.28 (0.75)	5.16(1.01)	4.75 [*]	2>1

Note.

^{*}
p < .01^{**}
p < .001