

Shorter communication

Behavioral assessment of public-speaking anxiety using a modified version of the Social Performance Rating Scale

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Abstract

The current study aimed to extend the evaluation of the utility of the Social Performance Rating Scale (SPRS) [Behav. Res. Ther. 36 (1998) 995]. We examined the utility of a modified SPRS for the behavioral assessment of public-speaking anxiety among patients with social phobia ($n = 49$). The videotaped performance of public-speaking fearful patients in a public-speaking task was rated using four of the five SPRS ratings and was compared to global ratings by patients and observers, as well as to self-report and clinician-administered measures of social anxiety. The pattern of correlations with criterion measures of social anxiety provided evidence for the convergent and divergent validity of this modified SPRS for the behavioral assessment of public-speaking anxiety.

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1. Introduction

Individuals with social phobia experience excessive fears of negative evaluation in situations where they might be observed by others or when interacting with other people. These feared social situations are either avoided or endured with great distress. As research into social phobia has progressed, its cognitive, physiological and behavioral correlates have become fruitful avenues for multimodal assessment. The cognitive manifestations of social anxiety (i.e. anxious thoughts in social situations, dysfunctional beliefs and negative expectancies about the outcomes

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of social events) are frequently assessed by self-report inventories or by the self-report of anxious thoughts during exposures to feared situations (e.g. McNeil, Ries, & Turk, 1995). Physiological processes in social anxiety can be assessed via measures of autonomic arousal (such as heart rate and blood pressure) in anxiety-provoking situations (for review, see McNeil et al., 1995) or by the self-report of symptoms. The behavioral signs of social anxiety can be assessed during role-plays simulating feared social situations or during in vivo exposures. The current investigation evaluated the utility of an observer rating system for behavioral assessment of public-speaking anxiety.

Behavioral assessment tests (BATs) for socially anxious persons typically consist of impromptu public speeches or role-played social interactions and may be standardized (i.e. all participants engage in the same simulated social task) or individualized with regard to the participant's primary situation of concern (Chiauzzi, Heimberg, Becker, & Gansler, 1985). BATs have been shown to reliably elicit anxious thoughts, changes in heart rate and blood pressure, as well as the subjective distress experienced by socially anxious individuals in these situations (Beidel, Turner, Jacob, & Cooley, 1989). Several investigators have developed rating systems in order to reliably assess the overt behavior of individuals in social situations (Rapee & Lim, 1992; Turner, Beidel, Dancu, & Keys, 1986). Depending on the issues investigated, one may employ molecular (highly specific ratings), mid-level (intermediate categories) or macro- (overall global ratings) levels of measurement, differing in the degree of specificity of the coding system (Becker & Heimberg, 1988). When BATs are employed as a part of the multimodal assessment of social anxiety (as in the context of treatment outcome research) or to provide information for treatment planning, mid-level measurement appears to provide the most productive balance of information yield and simplicity. One such mid-level coding system for the behavior observed in videotaped BAT performances is the social performance rating scale (SPRS; Fydrich, Chambless, Perry, Buergener, & Beazley, 1998).

When using the SPRS, observers rate the behavior of individuals in interpersonal interactions on five dimensions: gaze, voice quality, level of discomfort, conversation flow and length. The initial psychometric investigation of the SPRS (Fydrich et al., 1998) was conducted using standardized social interactions of individuals with social phobia, other anxiety disorders and normal control participants. Moderate to large correlations with self-report measures of social anxiety and a small correlation with a measure of general anxiety provided evidence for the validity of the SPRS. Furthermore, socially anxious patients received less positive behavioral ratings than other patients and normal controls.

Because the original study of the SPRS focused on social interactions, its validity has not been evaluated for the assessment of public-speaking anxiety. However, public-speaking anxiety is a primary complaint for many socially anxious persons (Holt, Heimberg, Hope, & Liebowitz, 1992; Stein, Walker, & Forde, 1996). The purpose of the current study was to extend the findings of the validity and utility of the SPRS for the assessment of social interaction behavior to the assessment of public-speaking performance. To this end, one rating, namely speech length, had to be omitted because the rating criteria were not relevant to a public-speaking situation (see below for further details). In this investigation, each BAT was individualized to simulate each patient's most feared situation. The mid-level SPRS ratings were compared to separate macro-level self and observer global ratings of performance quality and anxiety as well as to self-report and clinician-administered measures of social anxiety.

2. Method

2.1. Participants and procedures

Participants were 49 in number with a primary diagnosis of social phobia who sought treatment for public-speaking anxiety. Diagnosis was determined by advanced doctoral students in clinical psychology as well as doctoral-level psychologists using the Anxiety Disorders Interview Schedule—Revised (ADIS-R; Di Nardo & Barlow, 1988). A previous report demonstrated that social anxiety was diagnosed with high reliability using the ADIS-R ($\kappa = 0.79$; Di Nardo, Moras, Barlow, Rapee, & Brown, 1993). Patients included in the current analyses were part of the dataset used for these reliability analyses. Assessment procedures in this study also allowed us to examine agreement between two different interviewers who assessed the same patient at different times regarding the presence/absence of social phobia. Within 2 weeks following completion of the ADIS-R, all patients were re-interviewed by a second assessor who administered the social phobia module of the ADIS-R. The second assessor was blind to the initial ADIS ratings. Agreement on the presence of social phobia was achieved in 90 of 91 cases (98.9% agreement).

The majority of participants in this study was male (62%), and their mean age was 36.98 years ($SD = 8.50$). Almost half (46.70%) met criteria for the generalized subtype of social phobia. Prior to treatment, patients participated in a public-speaking BAT. A particular situation (including the number of audience members) was chosen for each patient based on his or her real-life public-speaking concerns. Specifically, patients generated a hierarchy of feared situations and clinicians chose a situation which had received a fear rating of 75 or greater (on a 0–100 subjective units of discomfort scale). Specific topics included speaking about one's job, describing a work project, and presenting on a summer vacation. Consent was obtained for the assessment procedures including the diagnostic interview, questionnaire measures and videotaped behavioral assessments.

2.2. Measures

2.2.1. Behavior rating scales

2.2.1.1. The Social Performance Rating Scale (SPRS; Fydrich et al., 1998). The SPRS is a rating scale for the evaluation of behavioral indicators of anxiety in videotaped social interaction role-plays. According to instructions for the original SPRS, participants' BATs are rated on five specific dimensions: gaze (i.e. eye contact), voice quality (i.e. voice volume, tone), level of discomfort (e.g. trembling, fidgeting), conversation flow (i.e. initiation, maintenance, stalling), and length (e.g. turn-taking behavior, monopolizing conversation, length of the person's contributions) which are then combined to produce a total score. However, as the dimension of "length" was not applicable to the rating of the public speaking in this study (there was no conversation partner and the length of the speech was standardized), this dimension was omitted from the rating procedure. Observers were two doctoral students who were trained according to the guidelines provided by Fydrich et al. (1998). Training consisted of viewing several BATs, rating several BATs for patients not included in the study, discussion of these ratings, and successful agreement with the ratings on a "gold standard" tape developed by the two of the

authors (WE and RGH). Observers were blind to participants' performance on other measures and all tapes were coded by both observers for purposes of reliability analyses.

2.2.1.2. Global Rating Form. The global rating form has been used in our previous research (e.g. Heimberg et al., 1990; Hope, Heimberg, & Bruch, 1995) and consists of two ratings related to a person's social performance: (1) highest level of anxiety experienced and (2) quality of behavioral performance. Anxiety is rated from 0 (totally relaxed) to 100 (severely anxious). Performance quality is rated from 0 (unable to speak) to 100 (able to communicate what I/he/she wanted). The performance quality ratings were subsequently reversed, so that higher numbers indicated greater anxiety and poorer social performance. This form was completed by both the observers and the patient.

2.2.2. Social anxiety instruments

2.2.2.1. Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969). This 30-item self-report scale assesses fears of being judged unfavorably by others in a true/false format and has been among the most widely used scales in the assessment of social anxiety. Originally developed and validated in a college student population (Watson & Friend, 1969), the FNE has since been widely used in clinical samples, demonstrating sound validity, the ability to distinguish between patient groups, and sensitivity to change with cognitive-behavioral treatment (e.g. Gelernter, Stein, Tancer, & Uhde, 1992; Heimberg, 1994; Heimberg et al., 1999; Mattick, Peters, & Clarke, 1989; Stopa & Clark, 1993).

2.2.2.2. Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS), (Mattick & Clarke, 1998). These companion self-report instruments were designed to measure anxiety experienced in dyadic and group situations (SIAS) and anxiety experienced while being observed by others (SPS). Each scale contains 20 items rated from 0 to 4 Likert-type scales (0 = not at all characteristic of me, 4 = extremely characteristic of me). These measures have demonstrated high internal consistency as well as high retest reliability. The SIAS has been found to be more strongly related to other measures of social interaction anxiety while the SPS has been shown to be more strongly related to measures of observation–performance anxiety (Brown et al., 1997; Heimberg, Mueller, Holt, Hope, & Liebowitz, 1992). The two scales also discriminate individuals with social phobia from persons with other anxiety disorders as well as from nonclinical samples (Brown et al., 1997; Heimberg et al., 1992; Mattick & Clarke, 1998).

2.2.2.3. Fear Questionnaire-Social Phobia Subscale (FQ-SP, Marks & Matthews, 1979). The FQ-SP assesses the degree of avoidance of five social situations: eating or drinking in public, being observed, performing, being criticized, and talking to authority figures. These items are rated on a 9-point Likert-type scale (0 = would not avoid it, 8 = always avoid it). The FQ-SP has demonstrated adequate internal consistency, retest reliability and positive correlations with other measures of social anxiety, as well as sensitivity to treatment change (Mattick & Clarke, 1998; Oei, Moylan, & Evans, 1991).

2.2.2.4. Liebowitz Social Anxiety Scale (LSAS, Liebowitz, 1987). The LSAS is a clinician-rated scale that separately assesses social fear and avoidance in 11 social interaction (e.g. “initiating

conversations”) and 13 performance (e.g. “working while being observed”) situations. It uses a 4-point Likert-type scale (fear subscale : 0 = never to 3 = severe/disturbing; avoidance subscale : 0 = never/0% to 3 = usually/67–100%) and contains four subscales: fear of social interaction, fear of performance, avoidance of social interaction, and avoidance of performance. Several evaluations of the LSAS have yielded evidence for good psychometric properties including high internal consistency, good convergent and discriminant validity (Heimberg et al., 1999), ability to discriminate between social phobia subtypes (Mennin et al., 2002), and sensitivity to treatment change (Heimberg et al., 1998).

3. Results

3.1. Skewness and kurtosis

With one exception (the FNE), all variables examined in the current study were normally distributed. An inverse transformation was applied to FNE scores, as suggested by Tabachnick and Fidell (1996) for negatively skewed distributions. All significant associations between the FNE and all other variables remained significant when analyses were repeated with the transformed FNE scores, and in most cases, correlations with the transformed FNE scores were even stronger.

3.2. Inter-rater reliability

The individual observer ratings for SPRS gaze, voice quality, discomfort and speech flow exhibited good inter-rater reliability (intraclass $r_s = 0.76, 0.75, 0.69$ and 0.81 , respectively), allowing us to combine these ratings into an internally consistent ($\alpha = 0.82$) mean modified SPRS score with high inter-rater reliability (intraclass $r = 0.84$). Patients’ impressions of their highest anxiety and of the quality of their performance (from the Global Rating Form) were averaged to form a 2-item scale with a composite score, “patient impression”, reflecting patients’ overall subjective impression of their performance, with acceptable internal consistency for a 2-item index ($\alpha = 0.54$). Similarly, we created an average score derived from global observer ratings of perceived anxiety and quality of performance (which exhibited good intraclass correlations, $r_s = 0.75$ and 0.72 , respectively), “observer impression”, with high internal consistency ($\alpha = 0.83$).

3.3. Validity of SPRS mean scores

The correlations between mean SPRS scores, observer/patient global impressions, and measures of social anxiety are shown in Table 1. Lower mean SPRS ratings were associated with significantly greater clinician-rated social anxiety and impairment (ADIS-R CSR), fear of public performance (LSAS—Fear of Performance), and avoidance of public performance situations (LSAS—Avoidance of Performance). SPRS ratings were not related to clinician-rated fear or avoidance of social interaction. Tests of dependent correlations showed that mean SPRS ratings were significantly more highly correlated with LSAS—Fear of Performance than with LSAS—Fear of Social Interaction ($t(42) = 1.95, p < 0.05$). However, mean SPRS ratings were not

Table 1

Measures of social anxiety: means, standard deviations, and correlations with mean rating scores for public-speaking behavioral assessment tests

Measure	<i>n</i>	<i>M</i> (SD)	<i>r</i> with SPRS	<i>r</i> with observer impression	<i>r</i> with patient impression
<i>Clinician-rated</i>					
ADIS-R Clinician Severity Rating	45	5.6 (1.05)	−0.49**	0.46**	0.26
LSAS—Fear of Performance	45	16.38 (4.99)	−0.31*	0.36*	0.28
LSAS—Fear of Social Interaction	45	13.69 (5.80)	−0.12	0.07	0.22
LSAS—Avoidance of Performance	45	13.24 (6.21)	−0.35*	0.37*	0.26
LSAS—Avoidance of Social Interaction	45	11.80 (6.47)	−0.23	0.16	0.18
<i>Self-report</i>					
Social Interaction Anxiety Scale	43	39.79 (16.18)	−0.25	0.26	0.16
Social Phobia Scale	43	30.33 (17.53)	−0.32*	0.33*	0.22
Fear Questionnaire—Social Phobia	44	18.64 (7.85)	−0.36*	0.27	0.02
Fear of negative evaluation ^a	45	23.91 (6.87)	−0.31*	0.34*	0.17
Observer impression	49	59.31 (15.79)	−0.87**	—	0.44**
Patient impression	44	64.89 (18.99)	−0.39**	0.44**	—
SPRS	49	2.98 (0.64)	—	−0.87**	−0.39** ^b

ADIS-R = Anxiety Disorders Interview Schedule—Revised, SPRS = Social Performance Rating Scale, LSAS = Liebowitz Social Anxiety Scale.

^a Based on transformed FNE scores.

^b *n* = 44.

* *p* < 0.05.

** *p* < 0.01.

more strongly associated with LSAS—Avoidance of Performance than with LSAS—Avoidance of Social Interaction (*t* (42) = 1.29, *ns*).

Among the self-report measures, lower mean SPRS ratings were associated with significantly greater fears of being observed (SPS), social avoidance (FQ-SP), and fear of negative evaluation (transformed FNE). SPRS ratings were not related to self-reported fear of social interaction.

Lower mean SPRS ratings were significantly associated with poorer global impressions of both observers and patients. However, higher correlations were found between SPRS ratings and observers' impressions than between SPRS ratings and patients' impressions (*t* (46) = 6.24, *p* < 0.001).

4. Discussion

The SPRS was developed and validated for the rating of videotaped social interaction tasks. In the current study, the modified SPRS was used to rate the videotaped performances of socially anxious patients in public-speaking tasks. Modified SPRS ratings yielded significant and meaningful relationships with anxiety symptoms. Evidence for the convergent validity of the modified SPRS was provided by significant correlations of moderate magnitude with measures of fear and avoidance of performance situations and self-reported fear of being observed and scrutinized by others and fear of negative evaluation. Discriminant validity was supported by

the lack of association of modified SPRS ratings derived from a public-speaking task and measures of fears and avoidance of social interaction. Modified SPRS scores were highly correlated with observer ratings but less so with patient impressions.

It is interesting to note that mean modified SPRS ratings were highly correlated with observers' global impression and that this observer rating demonstrated a similar pattern of relationships with self-report measures of performance anxiety. This could lead one to conclude that a macro-level assessment tool such as the Global Rating Form is sufficient for behavioral assessment of public-speaking anxiety. However, the mid-level assessment of behavioral signs of anxiety provides important information about patients' specific strengths and weaknesses for use both in treatment planning and during the course of treatment. Using only a macro-level assessment would mean losing important information about potential targets for intervention (e.g. increasing eye contact) and would deprive patients of important corrective feedback (e.g. patients may believe they behave more poorly than they do).

Fydrich et al. (1998) questioned the usefulness of the SPRS for performance situations such as giving a speech. However, the results of the present investigation demonstrate that the anxiety experienced by socially anxious patients in public-speaking situations is behaviorally manifested and may be reliably rated with four of the five items of the SPRS. Limitations of the current study included a relatively small sample size and a lack of a control or psychiatric comparison group and the necessary modification of the SPRS from a 5-item to a 4-item rating scale. Future research may attempt to replicate this study of socially anxious individuals with primarily public-speaking fears, comparing SPRS ratings for fear-relevant and fear-irrelevant BATs. It would also be of interest if patients with primary public-speaking fears could be distinguished from patients with more global social fears (i.e. generalized social phobia) on SPRS scores derived from a social interaction BAT.

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