Issues for the Measurement of Social Phobia

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Introduction

When social phobia was introduced into the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III; American Psychiatric Association [APA], 1980), limited tools were available to assess the severity of the disorder, the nature of patients’ presenting complaints, or the effectiveness of treatment. Fortunately, over the last two decades, the assessment of social phobia has become increasingly sophisticated. Our review of the assessment literature focuses on semi-structured diagnostic interviews, self-report questionnaires, and clinician-administered instruments. Brief overviews of the most commonly utilized approaches to cognitive and behavioral assessment of social phobia are also presented. Due to space restraints, physiological assessment in social phobia will not be covered in this chapter, and the reader is referred to McNeil, Ries, and Turk (1995) for a review of this topic.

Diagnostic Interviews

Semi-structured interviews provide a framework for reviewing diagnostic criteria while allowing the clinician the flexibility to explore areas deemed particularly important to the patient. The clinician has the freedom to accommodate to the patient’s way of understanding his or her symptoms, to challenge inconsistencies in patient report, and to employ a fund of information in rating the severity of symptoms and their relevance to diagnostic criteria. Limitations of diagnostic interviews are that they are often time-consuming to administer and may require substantial training to ensure inter-rater reliability. A number of interviews have been developed to assist in the diagnosis of a broad range of mental disorders while others focus more specifically on the anxiety disorders. Interviews that have been commonly employed in the diagnosis of social phobia are reviewed. Except where noted, reliability statistics for DSM-IV (APA, 1994) versions of the interviews have not yet been published. This is understandable given the considerable lag-time necessary between the introduction of new diagnostic criteria and the publication of reliability data for new diagnostic instruments. The criteria for social phobia changed
minimally from DSM-III-R (APA, 1987) to DSM-IV, however, making this issue less crucial than for previous revisions.

**Schedule for Affective Disorders and Schizophrenia**

One of the first diagnostic interviews, the Schedule for Affective Disorders and Schizophrenia (SADS; Endicott and Spitzer, 1978) was developed prior to the publication of DSM-III. The SADS was developed as part of a concerted effort to standardize both the information gathered and criteria utilized in diagnostic decisions (Spitzer et al., 1978). Although the SADS Anxiety Summary score has demonstrated adequate test-retest and excellent inter-rater reliability (Endicott and Spitzer, 1978), the SADS has been criticized for failure to provide the information needed to adequately make differential diagnostic decisions among the anxiety disorders.

The Schedule for Affective Disorders and Schizophrenia--Lifetime version modified for the anxiety disorders (SADS-LA; Mannuzza et al., 1986) includes specific questions designed to differentiate between anxiety disorders and rules to account for episodes which may be best attributed to an affective disorder. It devotes specific attention to subclinical syndromes, symptom levels, and identification and differentiation of types of panic attacks. The inter-rater agreement of the SADS-LA is fair to good, with kappas of .68 for current and .71 for lifetime diagnoses of social phobia (Mannuzza et al., 1986). In a later study of diagnostic reliability, similar rates of agreement were found (Mannuzza et al., 1989). When a field rater and expert rater separately interviewed patients within a 2-month period (a very conservative standard for agreement), kappas for current diagnoses of social phobia ranged from .69 to .75.

The reliability of symptom and situation ratings has also been examined with the SADS-LA (Fyer et al., 1989). In a mixed sample of psychiatric outpatients, kappas for ratings of individual symptoms ranged from .08 (trouble concentrating) to .54 (muscles tense or achy), with an average of .36. In a sample of individuals with social phobia, ratings of fear in social situations demonstrated somewhat better reliability, with kappas ranging from .16 (asking directions) to .88 (writing in public), with an average of .56. Panic attacks have been demonstrated to occur often in social phobia (Barlow et al., 1985). The kappa for assessment of any type of panic attack in the full sample was .77. Kappas were .90, .63, and
.35 for spontaneous, situationally predisposed, and situationally bound panics, respectively. The low kappa for situationally bound panic resulted from difficulty in determining whether panic attacks sometimes or always occurred in specific situations. If situationally bound and situationally predisposed panic attacks were collapsed into a single category of “situational panic,” this source of unreliability would likely diminish.

Overall, the SADS-LA possesses acceptable reliability for the diagnosis of social phobia. However, the SADS-LA follows a lifetime sequential format in which symptoms of multiple disorders are inquired about simultaneously. Therefore, one cannot administer a module exclusively for social phobia.

**Structured Clinical Interview for DSM**

The Structured Clinical Interview for DSM has recently been updated to conform to DSM-IV criteria (SCID-I/P; First et al., 1996). Like the SCID-I/P, the SCID for DSM-III-R (SCID-P; Spitzer et al., 1988) focuses on Axis I disorders. Both begin with an overview of education, work history, and present illness, followed by modules for the major diagnostic categories. An important feature of the SCID is branching logic, focusing specifically on the criteria necessary for diagnosis and skipping out of sections if screening questions yield negative answers.

In a mixed sample of psychiatric patients, the reliability of the SCID was found to be poor to fair, with kappas of .47 to .57 for current and lifetime diagnoses of DSM-III-R social phobia (Spitzer et al., 1992). In another study using the SCID for DSM-III-R, Skre et al. (1991) had three raters evaluate audiotaped interviews of 12 individuals with social phobia. Kappa agreement of these raters was .72. However, the use of audiotapes to determine the reliability of SCID diagnoses has been criticized because skipping out precludes additional or alternate diagnoses from being entertained by the second rater (Cox and Swinson, 1995). Furthermore, the use of audiotapes eliminates potential sources of unreliability such as the provision of different information to different interviewers and is therefore inherently less conservative than other procedures.

The SCID has yet to demonstrate strong psychometric properties, although one unpublished study from 1993 reported by Cox and Swinson (1995) suggests adequate reliability for the diagnosis of DSM-
III-R social phobia. In this study, Hazen et al. had two separate interviewers administer a modified version of the SCID to 33 anxious outpatients, separated by 3-13 days. A kappa of .73 was reported for the diagnosis of current social phobia, indicating good reliability. Nevertheless, further evidence of the SCID’s reliability is needed.

Using the DSM-IV version of the SCID, Ventura and colleagues (1998) reported on the reliability of interviewers who had participated in a training and quality assurance program. Trained raters were reliable in both their symptom ratings and diagnostic decisions. Unfortunately, kappas for individual diagnoses were not reported, and some of the data used in the analyses were collected using the earlier version of the SCID.

The primary advantage of the SCID is its ability to arrive at diagnoses quickly without collecting a lot of information peripheral to the diagnostic criteria. However, this speed comes at the expense of the depth of information collected. The SCID provides less detailed information than other interviews about subclinical symptoms that may be of interest.

**Anxiety Disorders Interview Schedule**

The Anxiety Disorders Interview Schedule for DSM-IV: Lifetime Version (ADIS-IV-L; DiNardo et al., 1994) is the third generation of the original ADIS (DiNardo et al., 1983). The ADIS-IV-L assesses current and lifetime anxiety disorders but also includes modules for mood disorders, substance abuse and dependence, and other disorders that overlap with anxiety disorders either conceptually or in terms of presenting symptoms (e.g., hypochondriasis). In addition, there are screens for other major disorders (e.g., psychosis). The ADIS-IV-L also inquires about clinically relevant issues such as situational and cognitive cues for anxiety. These features make it a popular instrument in psychosocial treatment studies for social phobia and the anxiety disorders in general.

In an initial reliability study, the ADIS-IV-L demonstrated adequate reliability ($k = .64$) for the diagnosis of social phobia (DiNardo et al., 1995). The ADIS-R (DiNardo and Barlow, 1988), the previous version of the ADIS, also demonstrated good reliability for the diagnosis of DSM-III-R social phobia. Kappas for the primary diagnosis of social phobia were between .77 (T. Brown and Barlow,
The kappa for DSM-III-R social phobia as a secondary diagnosis was .66 (DiNardo et al., 1993).

In another study using the ADIS-R, Chorpita, Brown, and Barlow (1998) examined the effects of patient and diagnostician characteristics on the reliability of diagnoses. Reliability was excellent when social phobia was the sole diagnosis ($k = .93$) but decreased with the presence of one or more additional diagnoses ($k = .67$). Severe social phobia was diagnosed much more reliably ($k = .96$) than social phobia which was just over the diagnostic threshold ($k = .56$). Additionally, the reliability of a social phobia diagnosis was increased if both interviewers had the same level of training. Specifically, reliability was highest when both interviewers were doctoral level psychologists ($k = .88$) and lowest if one was a doctoral level psychologist and the other a graduate student ($k = .54$).

Overall, the ADIS demonstrates good reliability and clinical utility and complete coverage of the anxiety disorders. Its modular format makes it easy to administer only those sections of interest and it collects data of interest to both researchers and clinicians.

**Patient-Rated Social Phobia and Social Anxiety Inventories**

**Social Interaction Anxiety Scale and Social Phobia Scale**

The Social Interaction Anxiety Scale (SIAS) and Social Phobia Scale (SPS) are commonly used companion measures designed to assess two domains of social anxiety: fear of interacting in dyads and groups and fear of being scrutinized by others, respectively (Mattick and Clarke, 1998). Although the paper describing the development and validation of the SIAS and SPS was published only recently (Mattick and Clarke, 1998), the original work was conducted in the 1980s. In the interim, researchers relied upon an unpublished version of the manuscript. However, there is one difference between the SIAS as it appears in Mattick and Clarke’s 1998 paper and the remainder of the literature. In most applications, both the SIAS and SPS are 20-item measures, but the Mattick and Clarke (1998) version of the SIAS contains only 19 items. The 20-item version of the SIAS differs only by the inclusion of the reverse-scored item, “I find it easy to make friends of my own age.” No data are available regarding the correlation of the two versions, although one must suspect it is quite high given that they differ only by a
single item. For each instrument, respondents are asked to rate the extent to which they feel each statement is characteristic of them on a 5-point Likert-type scale (0 = not at all; 4 = extremely).

Research suggests that the SIAS and SPS are reliable measures. The SIAS and SPS demonstrated adequate test-retest reliability among patients with social phobia over 12 weeks (Mattick and Clarke, 1998). Among undergraduates, the SIAS demonstrated good test-retest reliability over 1-2 weeks, although SPS demonstrated somewhat weaker test-retest reliability over the same interval was weaker (Heimberg et al., 1992). Excellent internal consistency has been reported for both scales among college students, community volunteers, and patients with social phobia, agoraphobia, and simple phobia (Heimberg et al., 1992; Mattick and Clarke, 1998). The SIAS and SPS also have been shown to demonstrate good internal consistency among individuals with social phobia after cognitive-behavioral treatment (Cox et al., in press).

Multiple studies support the validity of the SPS and SIAS. The SIAS and SPS are positively correlated with other measures of social anxiety (e.g., Mattick and Clarke, 1998; Ries et al., 1998) and with each other (e.g., E. J. Brown et al., 1997; Heimberg et al., 1992). Despite their intercorrelation, 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 (E. J. Brown et al., 1997; Cox et al., in press; Heimberg et al., 1992). The SIAS is negatively correlated with the endorsement of facilitative thoughts and positively correlated with the endorsement of inhibitory thoughts after both formal speaking and conversation role-plays (Ries et al., 1998). In the same study, higher scores on the SPS were negatively related to the amount of time spent in a speech task before the patient requested that the task be terminated.

Individuals with social phobia score significantly higher than either college students or community volunteers on both scales (Heimberg et al., 1992; Mattick and Clarke, 1998). Heimberg et al. (1992) suggest using a cut-off score of 34 for the SIAS and 24 for the SPS to differentiate between individuals with and without social phobia. The SIAS and SPS also differentiate between social phobia and other anxiety disorders (E. J. Brown et al., 1997; Mattick and Clarke, 1998). Furthermore, patients
with the generalized subtype of social phobia have been found to consistently achieve higher scores on the SIAS than patients with the nongeneralized subtype (E. J. Brown et al., 1995; Heimberg et al., 1992; Holt et al., 1992; Ries et al., 1998). In a study that employed a receiver operating characteristic (ROC) analysis, SIAS and SPS scores were each compared against the standard of the patient subtype classification made by a consensus of clinicians (Mennin et al., 1998). The overall utility of each scale in specifying subtype was determined by examining the area-under-the curve (AUC) statistic, which ranges from .5 (no information) to 1 (optimal fit). The SIAS, but not the SPS, produced a robust AUC statistic (AUC = .87), indicating a good fit and suggesting that the presence of social interaction fears is central to the determination of subtype. In this analysis, a cut-off score of 42 on the SIAS was found to be optimal, correctly determining generalized or nongeneralized subtype of social phobia for 76% of patients.

The SPS and SIAS have been shown to be sensitive to the effects of cognitive-behavioral treatments in several studies (e.g., Heimberg et al., 1998; Mattick et al., 1989). Medium to large effect sizes have been reported for the SIAS and the SPS after 12 weeks of Heimberg’s Cognitive Behavioral Group Therapy (Cox et al., in press; Ries et al, 1998).

Lastly, a recent exploratory factor analysis of the pooled items from the SIAS and SPS yielded three factors: 1) interaction anxiety, 2) anxiety about being observed by others, and 3) fears that others will notice anxiety symptoms (Safren et al., 1998). The interaction anxiety factor consisted solely of items from the SIAS. The other two factors emerged from the SPS. Thus, although anxiety about being observed by others and fears that others will notice anxiety symptoms have traditionally been collapsed together (on the SPS as well as other measures of social anxiety), these data suggest that these domains should be considered separately. Safren et al. (1998) suggested that fears that others will notice anxiety symptoms, which are part of the DSM-IV description of social phobia, are under-represented in current assessment devices for social phobia. More research is warranted to assess the relative benefits and drawbacks of using the SIAS and SPS factor subscales empirically derived by Safren et al. (1998).

**Social Phobia and Anxiety Inventory**
The Social Phobia and Anxiety Inventory (SPAI; Turner et al., 1989) consists of a Social Phobia subscale, an Agoraphobia subscale, and a derived Difference (or Total) score. The SPAI contains 45-items, 21 of which require multiple responses. For example, for the item that begins “I attempt to avoid social situations where there are…”, the patient indicates how frequently situations involving “strangers,” “authority figures,” the “opposite sex,” and “people in general” are avoided. In all, the respondent answers a total of 109 items, making the administration and scoring of the SPAI more time-consuming than that of other patient-rated measures of social phobia. However, the length of the scale is balanced by the large amount of information that it elicits from the patient. Items from the Social Phobia subscale assess somatic, cognitive, and behavioral responses to a variety of interaction, performance, and observation situations. Items from the Agoraphobia subscale assess anxiety in situations commonly feared by individuals with panic disorder with agoraphobia (e.g., waiting in line). The Difference score is calculated by subtracting the Agoraphobia subscale score from the Social Phobia subscale score. Respondents are asked to rate how frequently they feel anxious in each situation on the SPAI using a 7-point Likert-type scale (1=never; 7=always).

The SPAI appears to be a reliable instrument. It has demonstrated adequate internal consistency with college students with social phobia (Turner et al., 1989) and outpatients with social phobia both before treatment and after treatment (Cox et al., in press). The SPAI has also been shown to have good test-retest reliability over a 2-week period among undergraduates with social phobia (Turner et al., 1989). Several studies have examined the validity of the SPAI. It correlates significantly with other self-report measures of social anxiety (e.g., Herbert et al., 1991; Ries et al., 1998). Herbert et al. (1991) reported that the SPAI was correlated with anxiety ratings during a role-play test, but not with measures of trait anxiety or depression. SPAI scores were also associated with daily ratings of distress in social encounters and closely matched ratings made by significant others (Beidel et al., 1989c).

Undergraduates with social phobia have been found to score significantly higher on the SPAI than non-anxious undergraduates (Beidel et al., 1989c; Turner et al., 1989). Additionally, patients with social phobia had more elevated scores on the SPAI than patients with panic disorder, panic disorder with
agoraphobia, or obsessive-compulsive disorder (Turner et al., 1989). Turner et al. (1989) recommend a cut-off score of 80 for differentiating between patients with social phobia and other anxiety disorders and a cut-off score of 60 for flagging possible cases of social phobia for additional assessment. Individuals with generalized social phobia have been found to score significantly higher on the SPAI than individuals with specific social fears (Ries et al., 1998; Turner et al., 1992).

The SPAI has also demonstrated sensitivity to treatment-related change (Beidel et al., 1993; Cox et al., in press; Taylor et al., 1997). Medium to large effect sizes were reported after 12 weeks of Heimberg’s Cognitive Behavioral Group Therapy (Cox et al., in press; Ries et al, 1998), and a large effect size was reported after 16 weeks of another cognitive-behavioral treatment (Taylor et al., 1997).

One topic of debate about the SPAI has been whether the Social Phobia subscale or the Difference score is the better measure of social phobia symptomatology. The creators of the instrument prefer the Difference score largely because it controls for symptoms of agoraphobia and has been shown to provide a clearer differentiation between social phobia and panic disorder and/or agoraphobia (Beidel and Turner, 1992; Turner et al., 1989). In contrast, Herbert and colleagues (1991, 1992) suggest that the Social Phobia subscale score has the advantage of being more parsimonious. Specifically, the impact of social phobia symptoms is not reduced on the Social Phobia subscale when agoraphobia symptoms are present. Furthermore, the Social Phobia subscale is not influenced by the assumption that endorsement of items on the Agoraphobia subscale indicates fear of panic attacks rather than fear of negative evaluation (e.g., fear of waiting in line may be due to observational concerns). Additionally, recent research suggests that panic symptoms may be an important aspect of the clinical picture for many individuals with social phobia (Jack et al., 1998). These findings highlight the complexity of the relationship between social phobia and panic symptomatology and perhaps argue for examining both domains independently, without making \textit{a priori} assumptions about the relation of one to the other. Lastly, other researchers have suggested that administering the Social Phobia subscale alone may be more practical and time efficient since it is shorter and highly correlated with the Difference score ($r = 0.92$; Ries et al., 1998). Recently, Beidel and Turner (1998) have reiterated their objections that the concerns raised by
Herbert and colleagues lack empirical support and have reaffirmed their recommendation that the Difference score be used for diagnosis and treatment evaluation.

**Social Phobia Subscale of the Fear Questionnaire**

The social phobia subscale of the Fear Questionnaire (FQ-Social; Marks and Mathews, 1979) is a 5-item measure that assesses fear-motivated avoidance of being observed, performing, being criticized, and talking to authorities. Items are rated on a 9-point Likert-type scale (0 = would not avoid it, 8 = always avoid it). The FQ-Social has demonstrated adequate 1-week test-retest reliability in a sample of phobic patients (Marks and Mathews, 1979) and adequate internal consistency in a large sample of patients with anxiety disorders (Oei et al., 1991). It is also correlated with other instruments for the assessment of social phobia and social anxiety (e.g., Herbert et al., 1991; Mattick and Clarke, 1998). Patients with social phobia achieve higher FQ-Social scores than patients with panic disorder, agoraphobia, or generalized anxiety disorder (Cox et al., 1991; Oei et al., 1991). The FQ-Social has differentiated between social phobia subtypes in some studies (E. J. Brown et al., 1995; Gelernter et al., 1992) but not in others (Heimberg et al., 1990c; Holt et al., 1992). It has also demonstrated sensitivity to treatment effects in several studies (e.g., Heimberg et al., 1990c; Mattick and Peters, 1988; Mattick et al., 1989). In a study specifically examining the sensitivity of outcome measures for the treatment of generalized social phobia, the FQ-Social produced a smaller effect size than the SPAI, although the pre-to post-treatment difference scores for these measures were highly correlated (Taylor et al., 1997). Nevertheless, the FQ-Social is limited in that it assesses only behavioral avoidance and contains only 5 items, thereby limiting the breadth of the content domain of social phobia assessed.

**Social Avoidance and Distress Scale**

The Social Avoidance and Distress scale (SAD; Watson and Friend, 1969) is a 28-item true/false measure that assesses fear-motivated avoidance and subjective distress in a variety of social interaction situations. The original development and validation study of the SAD was conducted prior to the inclusion of social phobia in the diagnostic nomenclature. Watson and Friend (1969) reported excellent
internal consistency and adequate 1-month test-retest reliability for the SAD with college students. Additional studies with undergraduates have found SAD scores to be related to behavioral measures of social skill and anxiety (e.g., Arkowitz et al., 1975; Wallander et al., 1980).

With the introduction of social phobia in the DSM-III, the SAD began to be commonly used with clinical samples. It has been found to differentiate among patients with social phobia, patients with other anxiety disorders, and normal controls (Stopa and Clark, 1993). Individuals with generalized social phobia obtain higher scores on the SAD than individuals with nongeneralized social phobia (E. J. Brown et al., 1995; Gelernter et al., 1992; Heimberg et al., 1990c; Holt et al., 1992). It has also shown sensitivity to treatment effects in several studies (e.g., Heimberg et al., 1998; Turner et al., 1994).

There has been some debate regarding the usefulness of the SAD in the assessment of social phobia. Turner et al. (1987) presented data showing that the SAD is significantly correlated with measures of general anxiety, depression and emotional distress and that it was generally unable to discriminate among the anxiety disorders. Based on these findings, they suggested that the SAD has limited usefulness in studies of social phobia. Heimberg et al. (1988) offered alternative interpretations of the data presented by Turner et al. (1987) and presented data from other studies supporting their points. Specifically, they proposed that the SAD may have failed to discriminate social phobia from other anxiety disorders because of the high prevalence of social anxiety across the anxiety disorders and the heterogeneity of social fears among patients with social phobia. Furthermore, they proposed that social anxiety may be an important component of trait anxiety, depression, and emotional distress, and that the significant correlations obtained by Turner et al. (1987) may reflect a meaningful relationship between social anxiety and these other constructs in real life. In reply to Heimberg et al. (1988), Turner and Beidel (1988) argued that, while social anxiety may indeed be a meaningful aspect of many clinical syndromes and general emotional distress, these relationships should not preclude differentiation of patients with social phobia from other patients.

Overall, the use of the SAD in the assessment of social phobia has advantages and disadvantages. Many items on the SAD appear to have relevance for interaction fears characteristically seen among
individuals with generalized social phobia (e.g., “I am seldom at ease in a large group of people”). However, other items seem as if they could apply equally well to other disorders (e.g., “I tend to withdraw from people”). Furthermore, interaction fears are well covered in other, newer measures developed and extensively evaluated with patients with social phobia (e.g., SIAS, SPAI). Nevertheless, the SAD is still recommended as a measure of social anxiety and avoidance in conjunction with other instruments, especially in order to allow comparison of recent studies to early studies examining social phobia.

**Clinician-Administered Social Phobia Inventories**

**Liebowitz Social Anxiety Scale**

The Liebowitz Social Anxiety Scale (Liebowitz, 1987) separately evaluates fear and avoidance of 11 social (e.g., talking to people in authority) and 13 performance (e.g., working while being observed) situations using a 4-point Likert-type scale. The LSAS contains 4 subscales: performance fear, performance avoidance, social fear, and social avoidance. Total fear and total avoidance subscale scores can also be derived. Summing the fear and avoidance ratings for all 24 items yields an overall severity rating. For the fear subscale, the anchors are 0 = none, 1 = mild - tolerable, 2 = moderate - distressing, 3 = severe - disturbing. For the avoidance subscale, the anchors are 0 = never (0%), 1 = occasionally (1-33%), 2 = often (33-66%), and 3 = usually (67-100%).

The internal consistency of the LSAS has been shown to be quite good, with Cronbach’s alpha ranging from .81 to .92 for all subscales (Heimberg at al., 1999). With regard to its validity, the LSAS has been shown to be positively correlated with patient-rated measures of social phobia (Cox et al., in press; Heimberg et al., 1999), although it has demonstrated a weaker relation to the SPAI (Cox et al., in press; Herbert et al., 1991). The social interaction fear subscale has been shown to correlate more strongly with scores on the SIAS whereas the performance fear subscale has been shown to correlate more strongly with scores on the SPS (E.J. Brown et al., 1997; Heimberg et al., 1992). The LSAS has also been shown to discriminate between subtypes of social phobia (E.J. Brown et al., 1995; Holt et al., 1992). Using a ROC analysis, Mennin et al. (1998) concluded that while the performance fear subscale could not adequately determine subtype of social phobia, the social fear subscale effectively
discriminated generalized and nongeneralized subtypes with a good balance of specificity and sensitivity. A cutoff score of 27 on the social interaction fear subscale correctly classified 78% of patients. Lastly, the LSAS has demonstrated sensitivity to pharmacological (Heimberg et al., 1998; Liebowitz et al., 1992) and cognitive behavioral (E.J. Brown et al., 1995; Heimberg et al., 1998) treatment of social phobia.

In a recent confirmatory factor analysis of the LSAS with 382 patients with social phobia, the 2-factor model (i.e., social interaction and performance) was not supported for ratings of either fear or avoidance (Safren et al., 1999). Separate exploratory common factor analyses of fear and avoidance items yielded four factors for each: 1) social interaction, 2) public speaking, 3) observation by others and 4) eating and drinking in public. Safren et al. (1999) concluded that the original subscales for social interaction anxiety and avoidance appear to be unifactorial, while performance anxiety and avoidance appear to be multifactorial, a conclusion similar to that drawn in their factor analytic study of the SIAS and SPS (Safren et al., 1998).

Overall, the LSAS appears to possess good reliability and validity. It is easy to administer and demonstrates good clinical utility. Work is currently underway in our clinic examining the psychometric properties of a self-report version of the LSAS.

**Brief Social Phobia Scale**

The Brief Social Phobia Scale (BSPS; Davidson et al., 1991, 1997) is a clinician-administered scale which includes ratings of fear and avoidance of 7 social situations and severity of 4 physiological symptoms. Items on all 3 subscales are rated on a 0-4 Likert-type scale. The BSPS was originally constructed as a brief observer-rated instrument to assess symptom severity and changes over time with treatment (Davidson et al., 1991). Several of the items are similar to the FQ-Social, and it may be possible to administer the scale as a self-report instrument, although no data are currently available on self-report versions of the BSPS.

The reliability of the scale, as reported by the author, appears good. Davidson and colleagues reported satisfactory test-retest reliability (Davidson et al., 1997) and excellent interrater reliability (Davidson et al., 1991). Furthermore, the internal consistency was satisfactory for the overall scale as
well as the fear and avoidance subscales. The physiological subscale demonstrated poor internal consistency, however.

In a factor analysis, the 3-factor structure of the BSPS was not supported. Davidson and colleagues (1997) arrived at a six factor solution, with some items loading on multiple factors. All fear and avoidance items loaded on the first factor, all physiological items loaded on the second factor, and several fear and avoidance items accounted for the remaining four factors. The BSPS has been shown to be significantly correlated with patient-rated social phobia scales and the clinician-rated LSAS (Davidson et al., 1991). The BSPS total score has also demonstrated sensitivity to drug treatment (Davidson et al., 1993, 1997).

Overall, the BSPS appears to be a valid and reliable measure. Like the LSAS, the structure of separate fear and avoidance subscales has not been supported by factor analysis. On a positive note, the measure is brief and does provide some assessment of the patient’s experiences in the physiological domain. However, the physiological items only target symptoms that can be noticed by others.

**Cognitive Assessment**

Assessment of cognitive factors in social phobia is becoming increasingly important, as recent theoretical work has emphasized the role of cognitive variables in the etiology and maintenance of social phobia (e.g., D. M. Clark and Wells, 1995; Rapee and Heimberg, 1997). In fact, reviews of the outcome literature have suggested that cognitive change may be critical for optimal treatment outcomes (e.g., Turk et al., in press). In this section, we provide an overview of cognitive assessment in social phobia and refer the reader to Elting and Hope (1995) for a more thorough presentation of this topic.

**Fear of Negative Evaluation Scale**

Although developed prior to the inclusion of social phobia in DSM-III, the original Fear of Negative Evaluation scale (FNE; Watson and Friend, 1969) and the brief version of the scale (BFNE; Leary, 1983) have been used in the assessment social phobia. The popularity of these scales stems largely from the fact that they are geared toward assessing the core construct in social phobia. The FNE consists of 30 items and employs a true/false format. The BFNE contains 12 items, uses a 5-point Likert-type
format (1 = not at all characteristic of me; 5 = extremely characteristic of me), and correlates highly with the original scale \((r = .96)\) (Leary, 1983).

The FNE was developed and validated with samples of college students. Watson and Friend (1969) reported good internal consistency and test-retest reliability. Additional studies with undergraduates have found FNE scores to be related to distress regarding negative feedback from others (Smith and Sarason, 1975), estimated likelihood of being evaluated negatively by others (Smith and Sarason, 1975), and avoidance of threatening social comparisons (Friend and Gilbert, 1973).

The FNE has been widely used in clinical samples. It has been found to be positively correlated with patient-rated and clinician-rated measures of social phobia and social anxiety (e.g., Heimberg et al., 1992, 1999). Individuals with generalized social phobia have been shown to obtain higher scores on the FNE than individuals with nongeneralized social phobia (E. J. Brown et al., 1995; Gelernter et al., 1992; Holt et al., 1992). Patients with social phobia have been found to score higher than patients with other anxiety disorders and normal controls (Stopa and Clark, 1993). In treatment studies, changes on the FNE have been found to predict endstate functioning (Mattick and Peters 1988; Mattick et al., 1989).

After reviewing the outcome literature, Heimberg (1994) concluded that the FNE appears to be sensitive to within-group change following treatment, although these changes are typically small in magnitude. The BFNE, with its 5-point Likert-type format, may ultimately prove to be a more sensitive measure, although it has not yet been widely used. However, the FNE has other problems. An inspection of the FNE items suggests that it confounds the assessment of anxiety and cognition (e.g., “I become tense and jittery if I know I am being judged by my superiors”). Because of this issue, the FNE has been included as a measure of social anxiety rather than cognition in recent meta-analytic studies (e.g., Feske and Chambless, 1995). All treatments attempt to reduce social anxiety, and, because the FNE confounds social anxiety and cognition, it may be relatively insensitive to differences in the magnitude of cognitive change produced by various interventions (Heimberg, 1994). In conclusion, the FNE and BFNE are recommended for use in the assessment of social phobia, with the understanding that these instruments appear to assess both nonspecific and critical features of social phobia (Elting and Hope, 1995).
The Social Interaction Self-Statement Test (SISST; Glass et al., 1982) is the thought-endorsement measure that has most commonly been used with individuals with social phobia. It contains 15 positive (facilitative) and 15 negative (inhibitory) self-statements relevant to 1-on-1 interactions with the opposite sex. In various studies, pronouns have been modified to make the instrument relevant to other situations such as public speaking and same-sex interactions (e.g., Turner et al., 1986). Items on the positive self-statement scale (SISST-positive) address optimistic anticipation of the interaction and coping with it, while items on the negative self-statement scale (SISST-negative) concern self-deprecation and fear of negative evaluation. Participants are asked to endorse how often they experienced each thought using a five-point Likert-type scale (1 = hardly ever had the thought; 5 = very often had the thought).

The SISST was initially developed and validated using a college student sample (Glass et al., 1982), and the split-half reliability of both subscales was adequate. SISST-negative was positively related to anxiety ratings and negatively related to skill ratings made by the participant, a role-play confederate, and an observer immediately after a role-play. SISST-positive was less consistently related to these measures. Socially anxious individuals scored higher on SISST-negative and lower on SISST-positive than non-socially anxious individuals.

Dodge et al. (1988) examined the validity of the SISST with patients with social phobia. Compared to patients with primary public speaking fears, patients with primary interaction fears obtained higher scores on SISST-negative but not SISST-positive. Dodge et al. (1988) found SISST-negative and SISST-positive to be significantly correlated and, therefore, conducted partial correlation analyses controlling for the other scale. When doing so, SISST-negative was related to measures of social anxiety and depression while SISST-positive generally was not. Similarly, SISST-negative was related to the percentage of negative thoughts generated after a role-play while SISST-positive was not. Neither scale was related to positive thoughts generated after the role-play, to heart rate prior to or during the behavior test, or to clinician ratings of phobic severity. Dodge et al. (1988) concluded, based on this study and the
work of other researchers, that negative self-statements may play a more important role in social phobia than positive self-statements.

Glass and Arnkoff (1997) outline the advantages and disadvantages of using an endorsement measure like the SISST. Endorsement instruments are brief, easy to administer and score, allow for comparisons across studies and patients, and may have clinical utility with individuals who have difficulty spontaneously reporting thoughts. However, endorsement instruments have a limited ability to capture the idiosyncratic nature of the individual’s thoughts and may have demand characteristics that pull for responses reflecting how the patient was generally feeling rather than what the patient was actually thinking during an interaction.

**Thought Listing**

The goal of production methods used in the assessment of social phobia is to produce a representative sample of the patient’s thoughts in anticipation of, during, and/or after exposure to feared social stimuli. Probably the most commonly used production method is thought listing, which requires patients write down all of the thoughts that they can recall having during a particular period of time (Elting and Hope, 1995). In the clinical setting, thought listing may be facilitated by asking patients to imagine themselves in a fear-evoking situation, to participate in a role-play of a threatening social interaction, or to watch a videotape of themselves engaged in a role-play. In contrast to endorsement methods, production methods capture the idiosyncratic nature of the patient’s thoughts.

Thought listing records can be used in a variety of ways. They may serve as a starting point for cognitive restructuring activities in cognitive-behavioral treatment for social phobia. Alternatively, they can be coded and quantified in various ways in order to assess severity and index change following treatment. Probably the most frequently used approach to coding has been to have independent judges classify the thoughts as positive (e.g., facilitative, happy), negative (e.g., inhibitory, anxious), or neutral. However, other dimensions such as the target of the thought (i.e., self or other) may also be utilized.

Schwartz and Garamoni (1989) proposed that the relative balance between positive and negative thoughts is especially important. According to the States of Mind (SOM) Model, an asymmetrical
balance of positive thoughts (P) to the total of positive plus negative thoughts (P+N) that approximates .618 is considered optimal. This ratio is thought to provide a generally positive background against which negative or threatening events can readily be detected. As negative thoughts become more predominant in the SOM ratio, the more severe the psychopathology that is observed. Among individuals with social phobia, lower SOM ratios (characterized by a greater predominance of negative thoughts) have been associated with more self-reported anxiety during a role-play and higher scores on questionnaires measuring social anxiety (Heimberg et al., 1990a). Prior to treatment, the SOM ratio of individuals with social phobia is characterized by a preponderance of negative thoughts (Bruch et al., 1991). However, following successful treatment, these individuals have SOM ratios what is considered optimal by the SOM model.

**Cognitive Processing Paradigms**

Recent theoretical models have proposed that impairments in the mechanisms for processing information may contribute to the development and/or maintenance of social phobia (e.g., Rapee and Heimberg, 1997). A growing body of research suggests that individuals with social phobia demonstrate an attentional bias toward the detection of threatening social information. Fewer studies have examined the issue of a memory bias in social phobia, and the results of these studies are mixed (see Turk et al., in pressb, for a review of the social phobia information processing literature). To date, cognitive processing paradigms have been used mostly to examine the nature of social phobia and less frequently to measure social phobia severity or treatment outcome.

A variety of approaches have been employed to assess information processing in social phobia. The most commonly used task has been the modified Stroop (1935) color-naming task in which individuals are asked to quickly name the ink colors in which different threatening and neutral words are printed while ignoring the meaning of the words (e.g., the word “boring” is printed in blue ink and the task is to say “blue”). Individuals with social phobia are expected to display a selective attentional bias that will interfere with the primary task of color-naming and increase the time to color-name social threat words relative to other types of words. Patients with social phobia have demonstrated longer color-
naming latencies for social threat words than normal controls (e.g., Mattia et al., 1993) and patients with panic disorder (Hope et al., 1990; cf. Maidenberg et al., 1996). Patients who showed a positive response to treatment of social phobia also showed a reduction in color-naming latencies for social threat words while nonresponding patients did not (Mattia et al., 1993).

The Stroop paradigm has served as a reasonable starting point for examining impairments in information processing. However, it has been criticized as not simply assessing attentional bias but probably also reflecting other processes such as rumination over the meaning of previously presented threat words, semantic priming effects (Kaspi et al., 1995), cognitive avoidance (de Ruiter and Brosschot, 1994), and response inhibition (Cloitre et al., 1992). In recent years, alternative paradigms have been applied to the assessment of cognitive processing in social phobia. Although the application of cognitive processing paradigms to assessment of social phobia is still a relatively new practice, we are optimistic about the potential these paradigms hold for increasing our understanding of the nature of social phobia and assessing the impact of our treatments.

**Behavioral Assessment**

While clinicians commonly use informal observation of behavior during interviews to make inferences how patients behave outside of the clinical setting, a more systematic evaluation of patient behavior is useful. In Behavioral Assessment Tests (BATs), patients with social phobia are asked to confront fear-eliciting social situations in a controlled environment, typically within the context of a role-play task. BATs provide an opportunity for first-hand observation of quality of social performance, visibility of anxiety symptoms, avoidance behaviors (e.g., declining to enter the situation), and escape behaviors (e.g., leaving the situation prematurely). BATs can also serve as the medium for subjective, cognitive, and physiological assessments.

When BATs are used with other anxiety disorders (e.g., specific phobias, agoraphobia), overt avoidance and escape behaviors are typically the focus of the assessment. In contrast, BATs with social phobia often focus on the quality of social performance and visibility of anxiety symptoms (e.g., Turner et al., 1986a). Some researchers have found differences in the quality of social performance between
individuals high and low in social anxiety (e.g., Halford and Foddy, 1982; Stopa and Clark, 1993), but others have not (e.g., Glasgow and Arkowitz, 1975; Rapee and Lim, 1992). Other studies present a more complex picture, with socially anxious individuals performing more poorly on global measures of social skill but not on measures of specific behaviors such as tone of voice or eye contact (Arkowitz et al., 1975; Beidel et al., 1985; Borkovec et al., 1974). Whether or not socially anxious individuals give sub-par performances in BATs, they have been repeatedly found to rate their social skills more negatively than objective observers (e.g., Rapee and Lim, 1992; Stopa and Clark, 1993). Similarly, socially anxious individuals are likely to overestimate the visibility of their anxiety to others (e.g., Alden and Wallace, 1995). Since many patients with social phobia report that their social behavior is inadequate and that their anxiety is quite obvious, BATs can reveal whether the patients’ reports are largely veridical or essentially a demonstration of distorted cognitions.

While BATs conducted with individuals with social phobia have primarily focused on quality of performance and visibility of anxiety, some BAT protocols do provide for the assessment of overt avoidance and escape behaviors. For example, the patient may be informed that the task can be terminated either by saying “stop” or by engaging in an agreed upon termination behavior (e.g., grasping a small “stop” sign clipped to the patient’s collar; Ries et al., 1998). Instructional sets that allow for avoidance or escape have the advantage of being more naturalistic in that patients are not asked to endure situations that they would not normally confront outside of the clinic. However, allowing for avoidance and escape may reduce the amount of data available for physiological or other assessments of interest.

BATs may either be standardized or individualized. Four primary types of standardized BATs can be identified in the recent social anxiety and social phobia literature: conversation with a same-sex stranger (Turner et al., 1994), conversation with an opposite-sex stranger (e.g., Fydrich et al., 1998; Turner et al., 1994), conversation with two or more people (e.g., Hope et al., 1995), and a speech to a small audience (e.g., Beidel et al., 1989a). Standardized role-plays allow for the observation of differences across patients for a particular task. In contrast, individualized BATs have the advantage of being able to more precisely target the idiosyncratic fears of the patient and incorporate specific stimuli.
that occur frequently in the patient’s life. For example, an individualized BAT could involve a patient presenting materials relevant to his or her real-life job to confederates in a role-play of a staff meeting. Individualized role-plays were more related than standardized role-plays to symptom measures in a clinically depressed sample and were perceived as more relevant by patients (Chiauzzi et al., 1985). However, it is unknown whether the same is true in a social phobia sample.

There are two levels of behavior analysis commonly used in BATs: molar vs. molecular analyses (Becker and Heimberg, 1988). The molar approach targets the overall performance of the individual. For example, in a public speaking task, raters might assess the person’s overall skill in speaking formally to others. The molecular approach, most commonly used in social skills research, attempts to break down the observed behavior into components. In a public speaking task, a molecular approach might target specific behaviors, such as eye contact or gestures. Molecular ratings can also be collapsed, allowing for an intermediate, or midi-level of measurement (Monti et al., 1984). For example, the Social Performance Rating Scale (Fydrich et al. 1998) uses 5 separate ratings in midi-level behavior assessment: vocal quality, gaze or eye contact, visible discomfort, speech length, and conversation flow. Each of these scales combines multiple molecular ratings. For example, voice quality includes ratings of tonal quality, clarity, pitch, and volume.

Although BATs have been used extensively in research on social phobia, there has been relatively little attention devoted to their psychometric properties. Inter-rater and test-retest reliability are the most likely to be reported. For example, Turner et al. (1994) reported high inter-rater reliability for effectiveness and overall anxiety in social interaction tasks with an opposite-sex or same-sex partner. Impromptu speech tasks have been shown demonstrate high one-week test-retest reliability for both self-ratings of anxiety level and length of speech time (Beidel et al., 1989b). BATs have also been shown to be sensitive to pre-to-post treatment differences (e.g., Heimberg et al., 1990b; Turner et al., 1994) and to differentiate between patients receiving cognitive-behavioral treatment and patients in a credible placebo-control condition (Heimberg et al., 1990b). With the exception of sensitivity to treatment, there has been little mention of the validity of BATs in social phobia assessment. The lack of support for the validity of
most BATs is especially of concern given the large variability in how the assessments of behavior are conducted. Rating systems with good psychometric properties are available for behavioral assessment techniques (e.g., Fydrich et al., 1998), but they have not been widely used in the social phobia literature. More research is warranted to explore which procedures enhance the reliability and validity of BATs for social phobia.

Conclusion

Today, multiple tools are available for the assessment of social phobia. Considerable progress has been made in the development of reliable, valid, and sensitive self-report instruments specific to social phobia. The clinician-rated measures and diagnostic interviews reviewed here also demonstrate good psychometric and clinical properties. Although the importance of cognitive and behavioral measures has probably received a greater emphasis in the research community, assessment of both of these domains has the potential for informing and directing therapeutic efforts.

Despite the flurry of activity in the development of assessment instruments for social phobia, several limitations remain. With respect to semi-structured diagnostic interviews, little information relevant to DSM-IV has been published. More work is warranted to assure diagnostic confidence using the most recent versions of these instruments. Another limitation is the dearth of knowledge regarding generalizability of the findings from the assessment literature to patients of diverse backgrounds. In addition, some instruments have items that may be less relevant to gay men and lesbians (e.g., SPAI and SIAS items on fears related to the opposite sex). Clinicians may wish to be more circumspect when interpreting the results of an assessment with patients of minority backgrounds.

It is our hope that assessment technologies will continue to advance, with emphasis on development of instruments less widely researched (e.g., attentional bias measures). Ultimately, improved assessment may allow us to better understand the nature of social phobia, to better customize our treatments to the specific problems of the patient, and to increase the effectiveness of our treatments.
References


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