Public Speaking Anxiety Scale: Preliminary psychometric data and scale validation

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ABSTRACT

Public speaking anxiety (PSA) is one of the most prevalent forms of anxiety and effects approximately one in five people. There are a handful of scales used to measure PSA, but these scales have limited psychometric data, bringing their validity into question. In addition, few of these scales include both positively and negatively worded items, making them susceptible to acquiescence. Many are limited to measuring a single aspect of anxiety (e.g., cognitive) and do not address the three components of anxiety (i.e., cognitive, behavioral, and physiological). Valid, empirically based psychological assessment is a vital predecessor to successful treatment and tracking treatment outcomes. This paper describes preliminary psychometric data of the Public Speaking Anxiety Scale (PSAS), an instrument measuring cognitions, behaviors, and physiological manifestations of speech anxiety. Results of this study suggest that the PSAS is a highly reliable and valid measure to assess public speaking anxiety.

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1. Introduction

1.1. Background

Public speaking anxiety (PSA) is among the most prevalent forms of anxiety disorders, with approximately one in five individuals experiencing a degree of this type of anxiety (Leary & Kowalski, 1995). Elevated rates of speech anxiety are noted among individuals with social anxiety disorders, with approximately 97% of socially anxious individuals also reporting impairing PSA (Beidel & Turner, 2007). Public speaking anxiety, in its most severe form, is a distinct subtype of social anxiety disorder, with a 12-month prevalence rate of approximately 7% (APA, 2013).

1.2. Outcomes of anxiety

Anxiety disorders can result in a variety of negative outcomes. Social anxiety and public speaking anxiety in particular often result in impairment in career prospects. In a recent study, Blume, Dreher, and Baldwin (2010) found that individuals with public speaking anxiety were less able to demonstrate critical thinking skills in group discussion situations. Aside from impairment in the work sector (e.g., lower employment rates, lower socioeconomic status, lack of advancement), people with significant public speaking anxiety may also experience mediocre academic performance, enhanced feelings of loneliness or social isolation, and lower overall quality of life (Beidel, Turner, & Dancu, 1985).

1.3. Importance of assessment

Assessment serves a variety of functions that aid both the clinician and the researcher. The assessment process can help determine the proper diagnosis for a client. Assessment may also aid in the description of the problem, case formulation and description, and treatment planning. Continued assessment provides additional benefits in tracking treatment outcomes and research efficacy.

1.4. Methods of assessment

Clinical interviews are among the most common methods used in the clinical assessment process. However, interviews require trained professionals to administer, and this method requires extensive time, with interviews typically taking 30 to 50 min (Antony, Orsillo, & Roemer, 2001). Although this method of assessment is reliable and valid, it does not typically take severity, global functioning, and individual differences into account (Rodriguez-Seijas, Eaton, & Krueger, 2015).

Behavioral assessment and direct observation are other methods that may be used to successfully assess clinical issues. These methods also tend to be reliable, but can take extensive periods of time and may lack efficiency (Antony et al., 2001; Rodriguez-Seijas et al., 2015). Even though behavioral measures of anxiety are effective methods of assessment that provide worthwhile information, they do not take into account cognitive or physiological aspects of anxiety.

Physiological measures can also be used to effectively assess anxiety, as there is a direct relationship between bodily sensations and public speaking anxiety (McCullough, Russell, Behnke, Sawyer, & Witt, 2006). Physiological assessment, specifically heart rate measurement, tends to be a reliable and valid method of assessment for anxiety; however,

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many individuals who endorse public peaking anxiety may not exhibit physiological signs of arousal (Behnke & Sawyer, 2001). Although physiological measures of anxiety are typically reliable and valid, they only measure one component of anxiety and fail to take behavioral and cognitive components into account.

Self-report measures can be used to provide much-needed information in the assessment process. Although they are rarely used in clinical settings as a stand-alone for assessment, they are often used to supplement clinical interviews (Antony et al., 2001). Self-report scales have a variety of advantages, but the major weakness to this assessment method is that it is typically not comprehensive. New methods for assessment are being developed constantly, and advances in self-report scales are vital in the progression of the field (Hayes, Barlow, & Nelson-Gray, 1999).

1.5. Self-report measures in assessing PSA

Measuring public speaking anxiety without the use of self-report measures can be complex. Physiological measures of anxiety tend to be difficult to administer and interpret for novice researchers and clinicians, in that their indices often fall outside of the normal sphere of training for clinicians (Dietrich & Roaman, 2001). In addition, behavioral manifestations of anxiety are difficult to assess, in that observational training and mastery of complex data coding strategies require excessive time and commitment on the part of those involved (Barlow, Nock, & Hersen, 2009). Because of these factors, self-report measures of anxiety are vital and necessary.

Many scales have been developed in order to assess PSA, but these are replete with limitations. Most scales focus on a single aspect of anxiety, such as cognitive manifestations (e.g., SATI; Cho, Smits, & Tech, 2004; AAS; Leary, 1983; SSPS; Hofmann & DiBartolo, 2000). Few scales measure the three-component (cognitive, behavioral, and physiological) model of anxiety described by Lang (1971). Some scales that do assess the three-component model include the Personal Report of Confidence as a Speaker (PRCS; Gilkinson, 1942; Paul, 1966) and the Personal Report of Public Speaking Anxiety (PRPSA; McCroskey, 1970). However, these scales have serious limitations. The PRCS (104-, 30-, and 12-item versions) utilizes a true–false format. A major drawback of the longer versions of this scale is that they require extensive time to complete. However, a shorter version of this scale (i.e., PRCS-12; Hook, Smith, & Valentiner, 2008) lacks utility because of the insensitivity of the measure. Although the PRPSA does offer more choice in responding than the PRCS, this scale requires extensive time to complete, with the scale including over 30 items.

In addition, many of the items on these scales are worded either positively or negatively (e.g., PRCS-12; SATI). Although this can result in clean factor loadings and increased internal consistency, acquiescence can be a side effect and its impact can be insidious (Miller, Lovler, & McIntire, 2013). By having both positively and negatively worded items, researchers are able to determine if participants are taking the study seriously and reduce response bias.

Therefore, a brief scale (i.e., less than 20 items) that allows for a wide range of responses would be convenient for research within the public speaking anxiety domain. This scale would benefit research by providing a psychometrically sound instrument that can provide good data for both diagnostic and tracking purposes. In addition, a scale of this type would prove to be an important clinical tool to be used in diagnosing public speaking anxiety and tracking the treatment of this condition.

2. Method

2.1. Participants

Participants included 375 undergraduate students enrolled in psychology courses. Participants were recruited via the SONA System at a public university in a Midwestern metropolitan area. Sona

(SONA SYSTEMS™) assists in managing scheduling, recruitment, and the distribution of extra credit to students who participate in research. Recruitment for this study occurred to ensure that the minimum number of participants with complete data required to run factor analyses was retained. Although there is some discrepancy in the literature regarding the appropriate number of participants required, most researchers agree that 300 participants are adequate (e.g., Comrey & Lee, 1992; Tabachnick & Fidell, 2012). Students were given two points of extra credit for completion of the study, which they received even if they skipped questions or discontinued the survey at any point. Participants completed the survey online using *Qualtrics*. Twenty-four individuals were excluded from analyses due to less than 50% completion. Gender makeup of the sample was 18.7% men and 81.3% women. Students' year in school was variable with a majority of students reporting being in their fourth year ($N = 126$), followed by first ($N = 110$), third ($N = 68$), second ($N = 61$), and beyond fourth year ($N = 9$). A majority of students reported being Caucasian (83.5%), followed by African American (4.3%), Asian American (3.5%), Hispanic (2.4%), and other/biracial (6.1%).

2.2. Procedures

Participants answered questions regarding their demographic information and completed a variety of measures in order to assess reliability and validity of a new scale for speech anxiety, the Public Speaking Anxiety Scale (PSAS). This scale was developed to assess the three-component model of anxiety (cognitive, behavioral, and physiological) as described by Lang (1971). Items for this scale were selected by revising and rewording items from numerous other public speaking anxiety scales. Additional items were created by assessing the overall manifestation of public speaking anxiety in order to produce a comprehensive measure of speech anxiety. The initial version of this scale yielded 17 total questions encompassing the three components of anxiety (cognitive, 8 items; behavioral, 4 items; and physiological, 5 items).

2.3. Measures

2.3.1. Public Speaking Anxiety Scale

The purpose of the PSAS is twofold: to assess and track public speaking anxiety through multiple properties (e.g., behavioral, cognitive, and physiological). The PSAS is a 17-item self-report measure with responses measured in a Likert-format with score ranging from 1 "not at all" to 5 "extremely." Scores on this scale can range from 17 to 85. There are five items on this scale that are reverse coded.[1] Descriptive statistics for the item and overall scale are presented in Table 1.

2.3.2. Personal report of confidence as a speaker-12

The PRCS-12 is a shortened form of the original scale developed by Gilkinson in 1942 which was meant to assess behavioral and affective indicators of anxiety (Hook et al., 2008). Questions on this scale are measured in a true–false format, with scores ranging from 0 to 12. Internal consistency of this scale with the current sample was good ($\alpha = .886$).

2.3.3. Survey of speech anxiety

The SSA is a 6-item scale meant to measure tension and disorganization associated with speech anxiety (Slivken & Buss, 1984). Questions on this scale are measured on a 5-point Likert scale, with scores ranging from 0 to 30. Internal consistency of this scale was good, with Cronbach's alpha = .876.

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[1] For all analyses, the five reverse coded items were used in place of the original items administered to participants. In this manuscript the only place that information from the original (not reverse coded) scale is in Table 1, where descriptive statistics for the scale are presented.