

The Development of the Brief Sexual Performance Anxiety Scale

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ABSTRACT

Performance anxiety impairs attention, increases avoidant behaviors, and is associated with negative evaluations of the self. Relating to sexual experiences, performance is adversely affected by anxiety. Scales measuring the construct of anxiety specifically related to sexual performance are lacking. A series of three studies were conducted in an effort to develop a brief measure of sexual performance anxiety. The current study (N = 530 across three samples) developed and evaluated the psychometric properties of the Brief Sexual Performance Anxiety Scale (BSPAS). An exploratory factor analysis yielded an 8-item instrument that was shown to be a single-factor construct which accounted for 52% of the variance. Cronbach's alpha was assessed during each study and ranged from .87 - .90. Acceptable test-retest reliability over a 4-week interval was also obtained. A confirmatory factor analysis provided evidence that the unidimensional model of the scale fit the data well. The instrument also showed reasonable convergent, discriminant, concurrent, and predictive validities. The BSPAS was created to be an inclusive instrument that can be used to assess sexual performance anxiety in adults across gender, age, sexual orientation, and culture which may be useful to researchers, clinicians, and sex educators.

Keywords: sex anxiety; performance anxiety; sexual dysfunction; measurement

INTRODUCTION

Sexual performance was studied by Masters and Johnson (1970) by looking at participants with self-defined sexual inadequacies. In their research, they conceptualized the four stages of the human sexual response cycle which included desire, arousal, orgasm, and resolution. Performance anxiety occurs when an individual obsesses over performing or satisfying the partner during sexual intercourse (Wincze & Carey, 1991) and this excessive worry usually occurs during the last three stages of the cycle when performance is most critical (McCabe, 2005). Men and women with sexual performance anxiety are concerned with the adequacy of their sexual functioning, which ironically is the major contributor to their sexual dysfunction (Masters & Johnson, 1970).

In the arousal stage, men are typically anxious about issues regarding their erections, including ability, size, and stamina. Women are concerned with lubrication and other physiological aspects that are needed for sexual activity (McCabe, 2005). During the orgasm phase, males focus on the timing of their ejaculation whereas females normally worry if they can reach orgasm. Ultimately, concerns in each stage can affect other stages. For instance, anxiety of a possible threat to the arousal stage could impact an individual's desire to initiate or engage in sexual intercourse (Leiblum & Rosen, 1988). Although the topic of sexual performance anxiety is often discussed and researched, measurement of this construct has not been done in a consistent manner. The focus of this paper was to create a psychometrically sound instrument measuring sexual performance anxiety that could be used across a wide array of individuals.

There is no lack of research on performance anxiety during sexual intercourse as extensive research has been conducted on sexual dysfunction. For example, McCabe's (2005) research showed that performance anxiety is the main psychological factor in sexual functioning. The pattern of this relationship may be explained by the Yerkes-Dodson Law (1908), which illustrated that anxiety is related to performance in an inverted U-shaped pattern; that is, lower and higher levels of anxiety are associated with the worst performance and moderate levels of anxiety produces optimal performance. Barlow (1986) investigated the law's application to sexual performance and found a similar pattern. Low levels of anxiety did not produce enough attention to the sexual experience and resulted in physical inabilities, such as failure to become erect. Similarly, high levels of anxiety produced too much attention to the sexual experience resulting in increased spectatoring and pressure to perform leading to a cognitive overload and contributed to physical inabilities. It was found that moderate amounts of anxiety allowed participants to focus on sexual cues but lower and higher levels of anxiety caused participants to focus on something other than sexual cues (Barlow, 1986).

Masters and Johnson (1970) discussed the process of paying attention to sexual cues in their concept of *spectatoring*. This concept denotes the self-focus or inspection and monitoring of one's own sexual performance and suggests these thoughts distract from, and can inhibit an individual's arousal and orgasm. Barlow (1986) applied the concept of spectatoring to the already established model of attentional processes. He concluded that when sexual performance anxieties are activated, the spectatoring individual shifts their attention to the consequences of failure during sexual intercourse resulting in the individual being distracted from the pleasurable aspects of arousal, which is related to a decrease in sexual abilities (Barlow, 1986). More recently, Bradford and Meston's (2006) study further supported Barlow's (1986) conclusions. When measuring women's anxiety levels and vaginal responses, significantly higher vaginal responses were found in participants that were classified as having moderate anxiety as compared to participants categorized as having low or high anxiety. Thus, it is generally accepted that many types of sexual dysfunctions are highly related to the cognitive distractions that high sexual performance anxiety elicits (Barlow, 1986; Bradford & Meston, 2006; Brien, Smallegange, Gofton, Heaton, & Adams, 2002; Dove & Wiederman, 2000; Karatas et al., 2009).

The most common sexual dysfunction disorder for men is erectile dysfunction (ED; Brien et al., 2002). ED is defined as a persistent or recurrent inability to achieve and/or maintain an erection sufficient for satisfactory sexual performance (NIH, 1993). ED has been shown to impair patients' family dynamics, self-esteem, interpersonal relationships, and quality of life (Idung, Abasiubong,

Udoh, & Akinbami, 2012) as men with ED report lower levels of quality of life, psychological health, and social relationships compared to men without ED. The overwhelming theme found in men with this sexual dysfunction is their anxiety levels. In a recent study on males with type 2 diabetes, males that had higher scores of sexual dysfunction had high levels of anxiety (Erden & Kaya, 2015).

Sexual disorders for women are not as clearly understood compared to men. What does appear to be evident, however, is that anxiety is related to sexual dysfunction in women. Specifically, a high prevalence of sexual dysfunction has been reported in women diagnosed with anxiety disorders (Bradford & Metson, 2006). Evidence suggests that multiple factors contribute to female sexual dysfunction (Dove & Wiederman, 2000; Karatas et al., 2009; Lacefield, Negy, & Velezmoro, 2013) and women tend to report more reasons for being distracted during sexual activity than men. They reported being worried about body image, mechanics, and satisfaction during sexual intercourse. Similar to men, women that report higher cognitive distraction also report lower sexual esteem and sexual satisfaction. But unlike men, women report less consistent orgasms and higher instances of pretending to orgasm (Dove & Wiederman, 2000).

Another difference women experience is pain during sex (Karatas et al., 2009). For example, 14% of college women reported pain during sexual intercourse in at least half of their attempts (Meana & Lykins, 2009). Additionally, women experiencing pain during intercourse reported significantly higher levels of anxiety than the women that did not report pain. The most detrimental impact sexual performance anxiety on women may be research showing women giving-in to unwanted sex (Humphreys & Kennett, 2010). The top reasons for this consent are fear of loss and avoidance of possible rejection, both of which appear to stem from anxiety.

In spite of the large number of studies that investigated components, effects, and treatments of sexual performance anxiety, instruments to measure sexual performance anxiety are lacking. In fact, we were unable to find a scale that *specifically* measured sexual performance anxiety for both gender. There are some scales that appear to have components of sexual performance anxiety, but items are provided in a much more general approach. In searching for these types of instruments, two measures of sexual anxiety were found that were used in the literature, had reported psychometric values, and could be used by both gender.

The first scale is the Sexual Self Perception and Adjustment Questionnaire (SSPAQ) developed by Steinke, Mosack, and Hill (2013). The SSPAQ is a 28-item scale that is categorized into four subscales: Sexual anxiety, sexual self-efficacy, sexual satisfaction, and sexual depression. Of particular interest to this study is the sexual anxiety subscale that can be used independent of the other subscales. The goal of this scale was to measure sexual self-perception and adjustment in sexual activity in cardiac patients. One concern in using the SSPAQ sexual anxiety subscale as a measure of sexual performance anxiety is that it broadly encompasses performance, and other sexual factors, by measuring feelings of worry about “sexual aspects of life”. Another possible limitation is that it was designed to be tested on patients with cardiac medical conditions and was tested on males with a mean age of 61 years (Steinke et al., 2013). This limited the generalizability as the conclusions were largely restricted to elderly males with heart problems.

The second of these two scales is the Sex Anxiety Inventory (SAI) developed by Janda and O’Grady (1980). The SAI is a 25-item scale containing three factors: social situations in which sexuality is

implied, socially unacceptable forms of sexual behavior, and sexuality experienced in private. This scale explicitly defines sexual anxiety as a generalized expectancy for nonspecific external punishment for the violation of, or the anticipation of violating, perceived normative standards of acceptable sexual behavior. The goal of this scale was to distinguish between sexual guilt and sex anxiety. Contrary to the stated goal of the SAI, the measure was positively related to a measure of sexual guilt. The SAI is also rated on a dichotomous presence/absence scale which limits the ability to discern different levels of anxiety for each item. These forced-choice items demand individuals to pick one of two extremes (no anxiety or anxiety). Researchers indicated that items loading on the second factor deal with socially unacceptable forms of sexual behavior which should not be incorporated into a measure of sexual anxiety because socially unacceptable acts make most people anxious. Lastly, the items on this scale include scenarios other than just performing sexual intercourse (i.e., dirty jokes, sexual dreams, and flirting), as well as words that may currently be considered outdated (e.g., petting) and possibly unfamiliar.

Although the SSPAQ and SAI are useful instruments, there does appear to be a gap in the literature in terms of having an instrument that can specifically measure sexual performance anxiety. Sexual dysfunction is common as recent population estimates indicated the range of prevalence rates to be between 19% and 50% among adults living in the United States (Zakhari, 2009). Furthermore, if the scope of sexual dysfunction was broadened to include sexual functioning concerns that might not meet diagnostic criteria for a diagnosis, it is reasonable to assume that prevalence rates would be even higher (Tambling & Reckert, 2014). Thus, the main goal of this study was to develop a psychometrically sound measure of sexual performance anxiety that may be used by researchers, clinicians, and sex educators for adults regardless of gender, age, sexual orientation, and culture.

Analytic Plan

The analytic plan followed three phases to determine factor structure, reliabilities, and validities of the measure. First, items were generated from the literature and evaluated by judges. Then, data was collected on a sample and exploratory factor analyses were conducted to refine the scale. Second, data was collected on a second sample followed by a confirmatory factor analysis as well as assessments of convergent, discriminant, and concurrent validities. Third, data was collected on a third sample at two time intervals approximately 4-weeks apart in an effort to assess test-retest reliability and predictive validity. Internal consistency reliability was assessed for all three phases.

METHOD

Item Development

The first step in this research project involved item generation. The items in the scale were created by identifying factors that are related with sexual performance anxiety from prior research using sexual anxiety scales along with suggestions from relevant studies. Sexual anxiety scales were examined to identify items which are frequently used to measure general sex anxiety and were taken into consideration during the generation of scale items to ensure differentiation from sexual performance anxiety. Aspects of sexual intercourse (such as norms, frequency, outcomes, preferences, etc.) were identified from research on sex anxiety as well as from anecdotal evidence. Based off of the literature review, two researchers generated 19 items.

Next, a group of four judges (i.e., researchers in sexology) were provided the items. Judges were provided a description of the research project, the operational definition of sexual performance

anxiety, and instructions for completing the review. The topical area of the construct (i.e., sexual performance anxiety) was explained and judges were further instructed that the items should assess sexual performance anxiety across a wide variety of individuals (i.e., gender, age, sexual orientation, culture). The instructions were modeled from Gehlbach and Brinkworth's (2011) guidelines. Each judge independently provided a review of the initial item pool. The goals of review were to narrow and refine the initial item pool and attend to content validity, by focusing on the relevance and clarity of the items. For each item, judges made dichotomous decisions and were to indicate if each item was relevant or not, and if relevant, indicate if the item was clearly written or not. In cases in which judges indicated not relevant or not clearly written, they were asked to justify their decisions. If two or more judges indicated that an item was not relevant, it was deleted from the item pool; this resulted in the deletion of 7-items. Some of items were deleted because they described sexual acts that may not be applicable to all participants (e.g., anal and oral sex) whereas other items were deleted because they did not involve the inability to perform (e.g., having too many sexual partners). If two or more judges indicated an item was not clearly written, there was an attempt to re-write the item; this resulted in re-writing 2-items.

Based upon the feedback, the 7-items were deleted leaving 12-items, two of which were slightly re-written. Following the item development phase, a survey was created and data was then collected in an effort to examine the factor structure of the construct.

Study 1

Study 1 was a preliminary psychometric evaluation of the sexual performance anxiety measure, which contained the 12 items that were retained after review by the judges. Factor structure and internal consistency was examined. Institutional review board approval was granted prior to beginning this study.

Participants and Procedure

Data from a total of 196 participants (from the United States and Canada) were collected from Amazon's Mechanical Turk (AMT); recent research (e.g., Shawver, et al., 2016) has reported favorable results in using participants from this pool on health-related indices. Participants were compensated 10 cents for their participation. All participants were provided an external link (i.e., Survey Monkey) to complete the survey. Participants first completed an informed consent, then completed the online survey in approximately three minutes. Regarding gender, 87 (44.4%) were female, 103 (52.6%) were male, and 6 (3.0%) did not respond to the gender question. The age range for the participants in this study was 19-59 years of age, with the mean being 33.3 (SD = 10.7) years.

Measures

Demographic information included gender and age. The 12-item Brief Sexual Performance Anxiety Scale (BSPAS) was administered in an effort to measure levels of sexual performance anxiety. The items were answered on a 5-point Likert scale from 0 (No Anxiety) to 4 (Extreme Anxiety).

Results

The data was first inspected using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy (Dziuban & Shirkey, 1974) to determine the adequacy to conduct an exploratory factor analysis. The KMO = .84, suggesting that an exploratory factor analysis was appropriate because the value exceeded the recommended lowest limit of .60 (Tabachnick & Fidell, 2012). Next, the factor

structure of the BSPAS was examined using a principal components analysis with varimax rotation. Examination of the loadings were guided by the recommendations of Costello & Osborne (2005) such that only loadings $> .50$ were retained. This resulted in the deletion of 4-items and the eight remaining items were subjected to another principal components analysis. This analysis yielded a unidimensional factor (*eigenvalue* = 4.19) that accounted for 52% of the variance. The factor loadings ranged from .59 to .84 and can be seen in Table 1. The internal consistency ($\alpha = .87$) for the BSPAS was acceptable.

Study 2

The findings from Study 1 suggested that the BSPAS was a unidimensional construct with good internal consistency. Thus, the objective of Study 2 was to collect data from a different sample and conduct a confirmatory factor analysis on the BSPAS and examine convergent, divergent, and concurrent validities.

Participants and Procedure

Participants were recruited from AMT (N=236) in a procedure similar to Study 1 and all participants completed an informed consent form. However, participants were paid 50 cents for their participation and it took participants 10-15 minutes to complete the task. Of the participants, 105 (44.5%) were female, 124 (52.5%) were male, and 7 (3.0%) did not respond to the gender question. For reported race and ethnic background, 175 (74.2%) were Caucasian (Non-Hispanic), 17 (7.2%) were Black, 16 (6.8%) were Hispanic or Latino, 9 (3.8%) were Asian, 13 (5.5%) were more than one race, and 6 (2.5%) did not respond to the race/ethnicity question.

The age range for the participants in this study was 18-62 years of age, with the mean being 31.7 (SD = 11.1) years. Fifty-one (21.6%) participants reported using sex enhancement drugs/methods and 6 (2.5%) were diagnosed with a sexual dysfunction.

Materials

Demographic and background information was gathered from every participant including: gender, age, ethnic/racial background, if the participants have ever used supplements/drugs/lubricants to enhance sexual intercourse, and if they were ever diagnosed with a sexual function disorder.

The BSPAS is an 8-item inventory created to measure sexual performance anxiety. The items are answered on a 5-point Likert scale from 0 (No Anxiety) to 4 (Extreme Anxiety). Scores on the BSPAS can range from 0 to 32 with higher values suggesting higher levels of sexual performance anxiety. See Appendix A for the items.

The Sexual Self-Perception and Adjustment Questionnaire (SSPAQ) is a 28-item scale developed by Steinke et al. (2013). The items are rated on a 5-point Likert scale ranging from "never" to "always". The items can be categorized into four subscales which include: sexual anxiety, sexual self-efficacy, sexual satisfaction, and sexual depression. For purposes of this study, only the sexual anxiety subscale was used. The authors of the scale suggested that each one of the SSPAQ's subscales can be individually used because of the interrelated nature of the scale. The sexual satisfaction subscale is comprised of 7 items. Total scores on the subscale range from 7 to 35, with 7 suggesting low levels of sexual anxiety and 35 suggesting high levels of sexual anxiety. The SSPAQ reported a content validity of .97 and a Cronbach's alpha of .90 (Steinke et al., 2013).

The Sex Anxiety Inventory (SAI) is a 25-item inventory developed by Janda and O'Grady (1980). The items are rated with a present-absent system, with one point being awarded for each item when the participant selects the ending statement associated with anxiety. Scores on the SAI can range from 0 to 25, with 0 suggesting low levels of sexual anxiety and 25 suggesting high levels of sexual anxiety. The items can be categorized into 3 components of sexual anxiety including feelings of discomfort in social situations in which sexuality is implied, socially unacceptable forms of sexual behavior, and sexuality experienced in private. The instrument demonstrated an internal consistency of .86, high test-retest reliability, and strong concurrent and discriminant validities (Janda & O'Grady, 1980).

The Sexual Confidence Scale (SCS) is a 6-item inventory developed by Abraham et al. (2009). The items are rated on a 6-point Likert scale from ranging from "strongly agree" to "strongly disagree," with higher scores implying greater sexual confidence. The items are separated into two subdomains labeled as: "overall sexual relationship" and "barriers in sexual relationship" The SCS had a Cronbach alpha of .87 and high test-retest reliability. Convergent and discriminant validities were also strong (Abraham et al., 2009).

The Religiosity Premeasure (RP) is a 3-item scale developed by Friesen, Campbell, and Kay (2015). These items are "I consider myself to be a religious person," "Having a spiritual life is important to me," and, "I regularly attend church or other religious services". The items are rated on a 7-point Likert scale ranging from "strongly disagree" to "strongly agree," with higher scores implying greater self-perceived religiosity. The RP reported a reasonable internal consistency with a Cronbach alpha of .86 and strong convergent validity (Friesen, Campbell, & Kay, 2015).

Results

Confirmatory Factor Analysis

The results from Study 1 yielded a single factor suggesting the 8-items load on a single latent factor. A confirmatory factor analysis using EQS was conducted on the data. The results indicated that the unidimensional model of the BSPAS fit the data well based on a variety of fit indices, NFI = .92, NNFI = .93, CFI = .95, GFI = .93, SRMR = .04, RMR = .06, and RMSEA = .09.

Reliability

A Cronbach's alpha was computed on the 8-items of the BSPAS. The results showed that the BSPAS had strong internal consistency, $\alpha = .88$. Because other scales were also used in this study, it was necessary to ensure they maintained strong internal consistencies as reported in prior studies. As expected, the results showed that all four scales possessed acceptable internal consistency (i.e., SSPAQ $\alpha = .93$, SAI $\alpha = .82$, SCS $\alpha = .94$, and RP $\alpha = .91$).

Validity

Convergent validity of the BSPAS was done by examining correlations between the BSPAS, SSPAQ, SAI, and SCS (see Table 2). The BSPAS, SAI, and SSPAQ were positively related, suggesting overlap, but certainly not the same construct. As expected, the BSPAS was negatively related to the SCS suggesting they seem to measure opposing constructs where high sexual confidence would be associated with low anxiety. Divergent validity was done by examining the relationship between the BSPAS and RP in which no relationship was expected, which was found (i.e., $p = .72$).

The concurrent validity of the BSPAS was examined by comparing those who used sexual enhancement supplements/drugs/lubricants compared to those who did not. It was expected that those who used sexual enhancement lubricants/lubricants would have higher sexual performance anxiety compared to those who did not use them. This was supported as an independent t-test showed a significant difference, $t(208) = 2.78, p < .05, d = .46$. Participants that used sexual enhancement supplements/drugs/lubricants ($M = 18.20, SD = 6.45$) had higher levels of sexual performance anxiety compared to that did not use sexual enhancement drugs/methods ($M = 15.13, SD = 6.98$).

Study 3

Study 3 aimed to examine two more psychometric properties of the BSPAS that required data collection at two time periods. Specifically, the test-retest reliability and predictive validity of the instrument were of interest.

Participants and Procedure

Participants were university students ($N=98$). The researchers had direct access to the university group which made it more convenient to assess test-retest reliability and predictive validity (i.e., participants had to be contacted a second time). The participants consisted of 63 (64.3%) females and 35 (35.7%) males. The age range for the participants in this study was 18 - 24 years of age, with the mean being 20.1 years (1.7). Participants were recruited from several psychology classes. The students were recruited directly in the classrooms and volunteered to participate in the study for extra credit. They were informed that they would be contacted in approximately four weeks for a follow-up data collection. A total of 68 (69.4%) of the university subjects participated in the second data collection (follow-up). All participants were administered the survey in an online format through Survey Monkey. It took participants approximately 3 minutes to complete the survey.

Materials

Demographic and background information was gathered from every participant including: gender, age, and how many times during the past month that they initiated sexual intercourse. The BSPAS as described in Study 2 was used.

Results

A Cronbach's alpha was computed on the BSPAS at both time intervals; the results showed that the BSPAS had strong internal consistency at both time periods (i.e., Time 1 $\alpha = .89$, Time 2 $\alpha = .90$). The test-retest showed a significant relationship ($r = .71, p < .05$), suggesting good test-retest reliability. To assess the predictive validity of the BSPAS, a correlation was conducted on the BSPAS during the first administration and the frequency of times that sexual intercourse was initiated in the past four weeks. The correlation was found to be significant, $r = -.291, p < .05$, showing that those with higher levels of sexual performance anxiety attempted to initiate sexual intercourse less frequently. Thus, the BSPAS demonstrated reasonable predictive validity over a 4-week time frame.

DISCUSSION

The goal of this study was to create a psychometrically sound measure of sexual performance anxiety and the analyses yielded some promising findings across factor structure, reliability, and validity. Three data collection and analytic phases were used to create and assess the psychometric properties of the BSPAS which resulted in an 8-item unidimensional measure. Prior research has

shown sexual anxiety plays a key role in sexual performance (e.g., Barlow, 1986; Bradford & Meston, 2006; Brien et al., 2002; Dove & Wiederman, 2000; Karatas et al., 2009; McCabe, 2005) and it may be the case that an instrument now exists that can provide an accurate assessment of that anxiety *specifically* associated with sexual performance.

The BSPAS is a reliable measure as revealed by the different reliability analyses conducted in this study. The instrument had Cronbach alphas from .87 - .90 across the three studies suggesting strong internal consistency. The test-retest reliability was acceptable although only a 4-week interval was used. It is believed that this construct should be fairly stable over time thus examining longer time intervals in future studies would be of interest.

The BSPAS examined validity in three different ways and found reasonable support. For convergent validity, this study found that the BSPAS was positively associated with existing measures of sex anxiety. The values obtained in this study suggested that the BSPAS does share common characteristics with measures of sexual anxiety as expected (i.e., shared variance 15 – 36%), but it is clearly a different measure. Measures of sexual anxiety assess a more broad perspective by examining factors external to performance; that is, sexual aspects of life that may not be directly related to performance (e.g., a sexual joke). Although important, the purpose of the BSPAS is to offer a very specific assessment of sexual performance anxiety rather than a general assessment of sexual anxiety. In addition, an expected negative relationship was found between the BSPAS and the SCS. This finding indicated that as an individuals' confidence levels increased their anxiety levels decreased.

This finding can be incorporated into the current literature on performance. Prior research has concluded that stress and anxiety can negatively impact performance and confidence, and positive affect can increase performance (Compte & Postlewaite, 2004). The stress and fear related to remembering past bad performances creates a belief of inability that impacts confidence and negatively affects performance like a self-fulfilling prophecy. Also, lower levels of sexual confidence can be found in men and women with a sexual dysfunction compared to men and women without a sexual dysfunction (Abraham et al., 2009). Discriminant validity was demonstrated by showing no relationship between the BSPAS and a measure of religiosity.

Concurrent validity was examined by examining the relationship between the BSPAS and an outcome variable that was collected at the same time. Namely, this study found that individuals who use sexual enhancement supplements/drugs/lubricant had higher levels of sexual performance anxiety than those who do not. The most common enhancements used by participants in the current study were lubricant and alcohol. Unfortunately, sexual enhancement drugs/methods are commonly misused or misunderstood by those with sexual anxiety or sexual functioning problems. For example, Cooper, O'Hara, and Martins (2015) indicated that there is a widely held belief that alcohol enhances a sexual experience, when in fact alcohol actually has no positive effect on sexual experiences.

These researchers found that this lapse in judgment is due to the disinhibiting effects of alcohol. Consequently, those that use alcohol before sex believe that because they are freer and that their anxieties will be reduced, when in fact, an increase in the likelihood of riskier sex is the only reported effect. Additionally, Kalmbach and Pillai (2004) found that high fear and anxiety resulted

in poorer production of lubrication. For this reason, lubrication products are used in order to make up for this lack of natural production. Unfortunately, although the products often do solve the problem of physical lubrication, it may not relieve sexual performance anxiety. This is an interesting consideration because these individuals could be using these enhancement methods in order to elevate their performance and decrease anxiety when in fact, it may result in improved performance with possibly more anxiety with the realization that artificial lubrication is necessary for them to engage in sexual intercourse so they may become dependent on the aid. Thus, the BSPAS may be a useful tool for future studies that examine the usage of supplements, drugs, and lubricants.

The predictive validity of the BSPAS was assessed by examining if an individual's score on the BSPAS could predict the frequency that they would attempt to initiate sexual intercourse among college students. The observed relationship between higher sexual performance anxiety being associated with fewer incidences of initiating intercourse suggests an individual's shortage or decrease of sexual occurrences may not be due to lack of ability or willingness to have sex, but perhaps linked to the level of sexual performance anxiety. Based off of prior research, compared with participants with low in social anxiety, highly anxious participants were less sexually experienced, had higher reports of sexual dysfunctions and engaged in sexual activity less frequently (Leary & Dobbins, 1983). The present findings suggest that an individual's level of sexual performance anxiety may influence their attempts at participating in sexual acts with a current partner or perhaps seeking a sexual partner.

Although this study was successful in developing a psychometrically sound measure of sexual performance anxiety, there are three limitations that should be considered. First, is that we were unable to collect a sufficient number of participants previously diagnosed with a sexual functioning disorder which would have been an important outcome variable to compare those with and those without such a disorder on the BSPAS. The average age of participants in this study was approximately 30 and only 4.5% of our participants were over the age of 50 in Study 2. Young adults are less likely to have sexual dysfunction as shown in a study of 1,178 young women in China which found that only 3.7% indicated having at least one sexual dysfunction (Lau, Cheng, Wang, & Yang, 2006). Alternately, in a study on sexual disorders among participants above the age of 60, half of their sample reported having sexual problems (Sathyanarayana, Ismail, Darshan, & Tandon, 2015). Therefore, results of our study would have been strengthened by having more participants with a diagnosed sexual disorder and more older participants.

Second, our study only measured scores on the BSPAS as a predictor of attempts participants will have at sexual initiation in 4 weeks which was a fairly restrictive timeframe and incidences of sexual initiation was self-report and should be better defined in future studies. Although a significant result was found, better measures of future sexual behaviors should be used in further examining the predictive validity of the BSPAS and a longer time interval would be useful.

Third, although the BSPAS was designed to be inclusive, the generalizability of the findings are limited. Efforts were made to use a broader sample using Mechanical Turk as well as college students in Study 3, but all participants were only collected from the United States and Canada and approximately three out of four participants were Caucasian. Generalizations beyond the demographic characteristics of the sample should be made with caution. For instance, differences have been found between men of Euro-Canadian and East Asian descent on sexual desire and guilt

(Brotto, Woo, & Gorzalka, 2011). Future studies should certainly address this issue by collecting data from more diverse samples and settings although the instrument will not have to be modified for gender, age, sexual orientation, and culture.

The development of the BSPAS is an important step forward in this area of inquiry because it represents a focused and specific measure of sexual performance anxiety. Because of the inclusive nature of the BSPAS, a variety of mental health professionals and researchers may be able to use this instrument across a broad array of settings and individuals. Sex educators may also find this scale useful. Research by Carvalho, Quinta-Gomes, and Nobre (2013) concluded that compared to a control group of peers, male college students who reported using sexual violence against women had significantly more problems with sexual functioning and sexual inhibition due to threat of performance failure.

Aggressors also had significantly higher prevalence of anxiety disorders compared to non-aggressors, which was not found between any other psychiatric problems. The BSPAS may be a useful tool, coupled with other instruments to possibly identify individuals at high risk to engage in sexual violence and targeted interventions may be provided to those individuals before an incident occurs rather than post-incident. This measure is certainly not meant to be diagnostic, but hopefully can provide a measure specific to anxiety associated with experienced during sexual intercourse than can be used by clinicians, educators, and researchers.

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APPENDIX

Table 1 Factor Loadings for Items of the Brief Sexual Performance Anxiety Scale

Item	Factor 1
1	.63
2	.81
3	.68
4	.59
5	.84
6	.80
7	.77
8	.62

Table 2: Summary of Intercorrelations for Scores on the BSPAS, SSPAQ, SAI, SCS, and RP

Measure	1	2	3	4	5
1. BSPAS	—	—	—	—	—
2. SSPAQ	.60*	—	—	—	—
3. SAI	.40*	.51*	—	—	—
4. SCS	-.45*	-.60*	-.55*	—	—
5. RP	.03	.06	.22*	.04	—

Note. For all scales, higher scores are indicative of more extreme responding in the direction of the construct assessed. BSPAS = Brief Sexual Performance Anxiety Scale; SSPAQ = Sexual Self Perception and Adjustment Questionnaire; SAI = Sex Anxiety Inventory; SCS = Sexual Confidence Scale; RP = Religiosity Premeasure .

* $p < .05$.

Appendix A**Brief Sexual Performance Anxiety Scale**

Using the 0-4 scale below, read each statement and rate the level of anxiety you would feel or have felt in that particular situation. Indicate your response for each item by circling the appropriate

	No	Low	Mod	High	Ext
1. When I initiate sexual intercourse	0	1	2	3	4
2. When my partner is not pleased with my sexual performance	0	1	2	3	4
3. When my partner does not ejaculate/orgasm	0	1	2	3	4
4. When my sexual performance is unpredictable	0	1	2	3	4
5. When my partner feels my sexual performance is inadequate	0	1	2	3	4
6. When I feel physically unattractive while performing sexual intercourse	0	1	2	3	4
7. When I feel my sexual performance doesn't compare well to others my age	0	1	2	3	4
8. When I do not engage in enough sexual intercourse	0	1	2	3	4

number that is beside the statement. Please be open and honest in your responding.

0-No Anxiety 1- Low Anxiety 2- Moderate Anxiety 3- High Anxiety 4-Extreme Anxiety