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Initial Validation of the Sexual Pleasure Scale in Clinical and Non-Clinical Samples of Partnered Heterosexual People

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ABSTRACT

Introduction: Sexual pleasure is a central aspect of human sexuality; however, no validated measurements exist that assess sexual pleasure. We present a preliminary validation study of the psychometric properties of a Sexual Pleasure Scale (SPS), based on the three items developed by Sanchez, Crocker and Boike to measure sexual pleasure. The SPS is a brief and easy-to-implement instrument that assesses the extent of sexual pleasure experienced from sexual relationships, sexual activities, and sexual intimacy.

Aim: To assess the validity of the SPS in a subgroup of patients diagnosed with sexual dysfunction ($n = 89$) and a non-clinical community sample ($n = 188$) of Portuguese men and women.

Methods: We provide an initial examination of the reliability (eg, Cronbach α), convergent validity (eg, with measurements of sexual satisfaction), and divergent validity (eg, with measurements of body satisfaction) of the SPS.

Main Outcome Measures: The survey included a sociodemographic questionnaire and a set of questionnaires to test the psychometric properties of the SPS.

Results: The reliability study showed a high Cronbach value ($\alpha = 0.94$). Convergent validity of the SPS with the measurements described showed mostly moderate to high statistically significant positive correlations, whereas the criterion-related validity showed the expected low non-significant correlation. The results also showed that the SPS shows strong sensitivity to discriminate people with from those without sexual problems.

Conclusion: Results from the clinical population indicate that the SPS has good psychometric qualities and is a reliable measurement of sexual pleasure with applicability in clinical practice and clinical research but shows little variability within the community sample.

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Key Words: Psychometric Study; Sexual Pleasure Scale; Clinical Sample; Sexual Dysfunction

INTRODUCTION

People engage in sexual activities to satisfy different needs, such as desire, love, affection, attachment, stress relief, reproduction, social control, coercion, economic benefits, and sexual pleasure.[1,2] Sexual pleasure serves as a key sexual motivation that is linked to greater engagement in sexual activities.[3–5] Put succinctly, sexual pleasure can be understood as the enjoyment one derives from sexual interaction.[6] For a long time, researchers wrongly presumed that sexual pleasure was interchangeable with orgasm by supposing that pleasure was derived solely from achieving orgasm.[7,8] For that reason, sexual pleasure garnered less attention in the literature in past decades. Since then, researchers have determined that these constructs are distinct and researchers currently understand sexual pleasure as having emotional, cognitive, and physical components (eg, orgasm) and mind-body connections (eg, losing oneself).[9,10] Women who were asked to describe sexual pleasure in dyadic and solitary activities connected pleasure to exploration (of the self and partners), getting outside oneself, orgasm, and sensory stimulation and regulation (eg, stress relief).[10] The present study provides an initial validation of a sexual pleasure scale that allows individuals to subjectively define pleasure for themselves and assess the extent to which they experience pleasure from sexual activities, sexual intimacy, and sexual intercourse.

Qualitative researchers have shown that sexual pleasure is strongly associated with other important positive indicators of

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sexual health, such as sexual satisfaction (eg, Pascoal et al[11]). Most research addressing sexual pleasure has been quantitative in using sexual pleasure as a correlate of other important sexual dimensions, such as sexual desire (eg, Brotto and Smith[12]) and satisfaction (eg, Renaud et al[13]). However, sexual pleasure is rarely studied as an outcome, although there are exceptions. For example, some empirical work has demonstrated sexual pleasure as an important sexual outcome[14] that is positively associated with quality of life.[15] However, most of the research that has focused on sexual pleasure as a sexual outcome has examined its association with condom use,[16] suggesting that pleasure can play an important role in safe sex practices. Despite being a common motive for sexual activity[4] and despite the recent focus that the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* places on sexual pleasure as an essential feature of healthy sexuality,[17] sexual pleasure is absent from most comprehensive models of sexual response or functioning (ie, pleasure has been scarcely defined, studied, and/or measured).

A review of the existing quantitative research shows there is no specific validated instrument designed to measure sexual pleasure. This is surprising because the lack of sexual pleasure is referred to as the most common cause for sexual problems.[18] Thus, the present research sought to fill this gap in the scientific literature because researchers and clinicians need to better understand what individual, interpersonal, and other contextual factors are associated with sexual pleasure to better understand and promote sexual health. Also, a measurement of sexual pleasure would be important to assess the efficacy and efficiency of treatment plans aimed at improving sexual health and to determine the possible impact of medication and treatment for people who are ill or undergoing treatment for a health condition. For that purpose, researchers and clinicians need valid and practical measurements of sexual pleasure for use in clinical practice.

A set of three items developed and used by Sanchez et al[19] were tested as a unidimensional scale to measure sexual pleasure, hereafter referred to as the Sexual Pleasure Scale (SPS). These three items assess the extent of sexual pleasure obtained through sexual relationships, sexual activities, and sexual intimacy, respectively. In the original study, participants were instructed to rate each activity from 1 (not pleasurable at all) to 7 (very pleasurable). The SPS showed good reliability in the original study[19] ($\alpha = 0.84$) and subsequent studies[20] ($\alpha = 0.82$ for men and $\alpha = 0.92$ for women). An inherent advantage of this measurement is that it is brief and therefore easy to implement in different research and clinical settings. However, optimal scale length is debatable because researchers generally presume that short and simple questionnaires have a positive effect on the response rate, and questionnaire length is one of the most frequent reasons for participants' refusal to participate.[21] Furthermore, the SPS items have high face validity because they are straightforward questions are easily understood. The SPS can be used in men and women, in most intimate relationships, and in different relational structures. These factors contribute to the SPS being a good option to measure sexual pleasure for research purposes; however, the SPS has never been validated.

Because the SPS seems easy to understand, takes less than 1 minute to answer, and seemed to have promising psychometric properties in previous work, we examined the SPS to provide a preliminary test of whether the three items were a reliable measurement of dyadic sexual pleasure with applicability in clinical practice and research. Thus, the goal of the present study was to provide an initial test of the psychometric properties of the SPS in clinical and non-clinical samples of Portuguese men and women in heterosexual relationships.

AIMS

The purposes of the present work were to examine (i) the construct validity (factorial, convergent, and divergent) of the SPS in a Portuguese sample; (ii) SPS reliability (internal consistency and average inter-item correlation [AIIC]); and (iii) SPS discriminative ability in a clinical sample (those with sexual problems) and a non-clinical sample (those with no perception of sexual problems or any reported distress with any sexual activity).

METHODS

Participants

The study was comprised of 279 participants from a community sample (n = 188) and a clinical sample (n = 89). The samples were equivalent in important sociodemographic variables, such as age ($t_{277} = 0.528$, $P = .59$), sex ($\chi^2_{1,279} = 0.66$, $P = .42$), and education ($\chi^2_{4,279} = 4.216$, $P = .38$). The sample (46% men; mean age = 32.0 years, SD = 10.6, range = 18−88) consisted entirely of highly educated individuals (with 76% having at least an undergraduate degree) involved in committed exclusive romantic relationships from a largely urban demographic (n = 255, 91.4%). Committed relationship types varied, although most were unmarried in long-term relationships (n = 164, 58.8%) and the remaining participants were living in common-law relationships (n = 60, 21.5%) or were married (n = 55, 19.7%). All participants had been sexually active in the past 4 weeks.

Measurements

General Sociodemographic Questionnaire

Various sociodemographic data were collected, including sex, age, educational background, area of residence, and relational situation.

Global Measure of Sexual Satisfaction

The Global Measure of Sexual Satisfaction (GMSEX)[22] assesses overall sexual satisfaction in the current relationship. Participants rated their current sexual satisfaction on a seven-point Likert scale (eg, very bad to very good). The total scale ranges from 5 to 35, with higher scores indicating greater satisfaction. Although the scale's total scores had limited variability, this measurement was recently referred to as the most

psychometrically sound measurement of sexual satisfaction for heterosexual couples.[23] The GMSEX has been validated in different samples of the Portuguese population.[8] In the present study, the Cronbach α was 0.94 and the AIIC was 0.78.

Global Body Dissatisfaction Scale

The Global Body Dissatisfaction Scale (GBDS)[24] is a subscale of the Body Attitudes Test, which has four items. This subscale assesses levels of global body dissatisfaction based on the frequency of negative perceptions, behaviors, and feelings about one's own body. Answers are rated on a six-point Likert scale (from 1 = never to 6 = always) and the total scores range from 4 to 24 points. Higher scores indicate higher levels of global body dissatisfaction. The GBDS has presented good reliability and validity,[24] namely in Portuguese samples.[25,26] In the present study, the scale was reliable ($\alpha = 0.89$; AIIC = 0.67).

International Index of Erectile Function

The International Index of Erectile Function (IIEF)[27] is a 15-item multidimensional scale with five domains (erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction) that assesses key dimensions of men's sexual functioning during the past 4 weeks and can be used as a unidimensional scale that assesses men's total sexual function. The IIEF and its short version (IIEF-5) have been validated in different samples of the Portuguese population.[28,29] In the present study, the scale was found to be reliable measurement of men's sexual function ($\alpha = 0.91$; AIIC = 0.43).

Female Sexual Function Index

The Female Sexual Function Index (FSFI)[30] is a 19-item questionnaire that was developed as a brief, multidimensional self-report instrument for assessing key dimensions of sexual function (desire, arousal, lubrication, orgasm, satisfaction, and pain) in women that can be used as a single-dimension measurement that assesses total women's sexual function. Women were asked about the frequency and satisfaction of their sexual response in the previous 4 weeks. The FSFI has been validated in different samples of the Portuguese population.[31,32] The scale was found reliable in the present sample ($\alpha = 0.95$, AIIC = 0.48).

Sexual Pleasure Scale

The SPS[19] consists of three items that assess the extent of sexual pleasure obtained through three aspects of intimate relationships: sexual relationships, sexual activities, and sexual intimacy, respectively, on a scale from 1 (not pleasurable at all) to 7 (very pleasurable; Appendix 1). Total scores can range from 3 to 21, with higher values indicating more sexual pleasure.

Procedures

This study is part of a larger study on predictors of positive sexual health outcomes in clinical and non-clinical samples. The study was aimed at heterosexual people older than 18 years and not pregnant or breastfeeding owing to its impact on sexual outcomes.[33] The study received approval by the ethical review board of the Escola de psicologia e ciências da Vida at the Universidade Lusofona de Humanidades e Tecnologias (Lisbon, Portugal) and was tested for face validity, comprehension, and length. The informed consent form had information about anonymity and confidentiality, expected duration, inclusion criteria, lack of financial compensation, and information on acceptance from the board of ethics and funding. To recruit a community sample, the study was launched online. The server was secure and regularly checked for security. Participants were recruited through advertising on social media, mainly Facebook. People who agreed to participate in the study had to read the informed consent page. We also collected data from a clinical sample of people with at least one confirmed *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* diagnosis for sexual dysfunction. This clinical sample was recruited from three distinct specialized clinical sexology units (one public and two private).

Data Analysis

Data were analyzed using SPSS 22 (IBM SPSS, Armonk, NY, USA). The factor structure of the Portuguese-language version of the SPS was assessed with principal components analysis performed on the original scale items. Items with standardized loading above 0.30 were retained.[34] Pearson correlations for each sex were used to analyze associations among scale variables to determine convergent and divergent validity.[35] To determine the criterion-related validity of the SPS, we used analyses with the goal of comparing mean values of SPS total scores between a clinical sample and a non-clinical sample. Then, we used a receiver operating characteristics curve to verify the accuracy of the SPS to evaluate sexual pleasure differences between the clinical and non-clinical samples.

RESULTS

We examined the psychometric properties of the Portuguese version of the SPS using principal components analysis to determine whether the items conformed to a unidimensional factor structure. Table 1 lists the item loadings for the SPS. All items had loadings well above 0.30 and thus were included.

The Cronbach's Alpha and mean inter-item correlation and corrected item-total correlation range are shown in Table 2 and were within desirable ranges for the SPS.

The convergent validity of the SPS with the GMSEX, the IIEF, and the FSFI revealed mostly moderate to high statistically significant positive correlations, while the criterion-related validity with the GBDS/BAT revealed the expected low non-significant correlation (see Tables 3 and 4).

The average total SPS scores in the community sample (M = 20.66; SD = 1.04; N = 188) were higher than the average scores in the clinical sample (M = 16.89; SD = 4.34; N = 89). The use of the Independent Student's t-test showed that sexual pleasure was higher in the community sample ($t = -11.249$;

Table 1. Item loadings of the Sexual Pleasure Scale

Items	
Community sample	
Sexual intercourse	0.89
Sexual activities	0.92
Sexual intimacy	0.87
Eigenvalue	2.38
Variance, %	79.34
Clinical sample	
Sexual intercourse	0.92
Sexual activities	0.92
Sexual intimacy	0.94
Eigenvalue	2.57
Variance, %	85.65
Total sample	
Sexual intercourse	0.94
Sexual activities	0.95
Sexual intimacy	0.95
Eigenvalue	2.67
Variance, %	88.84

$P < .001$, effect size = .56, Cohen's d = −1.356) compared with the clinical sample.

A binary logistic regression was performed with membership (N = 89) or non-membership (N = 188) in the clinical sample represented by a dichotomous dependent variable. The regression model was significant [χ^2 (1, N = 189) = 107.672, β =.78, $P < .001$], indicating that the model was able to distinguish between participants in the clinical and nonclinical sample. As a whole, the model explained between 32% (Cox and Snell R square) and 45% (Nagelkerke R squared) of the variance in clinical status with a percentage of 81.9% of cases. In this study, the ROC Curve showed an area under the curve .82 ($P < .001$ and 95% CI 0.76 to 0.88), an indicator of strong discrimination value. Table 5 shows the value specificity and sensitivity to each cutting point.

DISCUSSION

This study sought to provide a preliminary examination of the validity of the SPS, a three-item measurement of sexual pleasure.[19] The work was carried out in clinical and non-clinical community Portuguese samples. The results of factorial analysis showed a unidimensional measurement with high factor loadings

Table 2. Cronbach α, mean inter-item correlation, and corrected item-total correlation range

SPS	Cronbach α	MIIC	CITCR
Community sample	0.87	0.69	0.70–0.81
Clinical sample	0.92	0.79	0.82–0.85
Total sample	0.94	0.83	0.86–0.87

CITCR = corrected item-total correlation range; MIIC = mean inter-item correlation; SPS = Sexual Pleasure Scale.

Table 3. Convergent validity of SPS with the GMSEX, IIEF, and FSFI and divergent validity with the GBDS for men and women in the community sample by Pearson correlation

Measurements	SPS	GMSEX	IIEF or FSFI	GBDS
SPS	–	0.24*	0.30†	−0.05‡
GMSEX	0.47†	–	0.34†	−0.14‡
IIEF or FSFI	0.37†	0.43†	–	−0.10‡
GBDS	0.00‡	−0.20‡	−0.24*	–

FSFI = Female Sexual Function Index; GBDS = Global Body Dissatisfaction subscale of the Body Attitudes Test; GMSEX = Global Measure of Sexual Satisfaction; IIEF = International Index of Erectile Function; SPS = Sexual Pleasure Scale.
*$P < .01$; †$P < .001$; ‡not significant.

and substantial variance explained. Moreover, the SPS showed high reliability and high homogeneity among items. In addition, evidence of convergent and divergent validity was found by the correspondence between the SPS and measurements of sexual satisfaction, functioning (for non-clinical), and non-correspondence with body satisfaction measurements. The non-significant relation between the SPS and the FSFI for the clinical sample was somewhat unexpected but could reflect the small sample. Moreover, the lack of relation supports the independence of the construct of sexual pleasure and orgasm.[8] Nevertheless, the strong positive correlation found between the SPS and the GMSEX clearly established the convergent validity of the SPS in the clinical sample because sexual pleasure has been referred to as an important correlate of satisfaction.[8,10] These results support the existence of convergent and divergent construct validity.

To assess the instrument's discriminative capacity, we compared the total of the sum scores on the SPS in the community and clinical samples. Results showed significant differences between the two samples such that the non-clinical sample had very low variability and higher scores on the SPS compared with the clinical sample. Given the low variability on the SPS for non-clinical samples, the scale might be better suited for clinical use. However, comparing SPS scores in the clinical and non-clinical samples yielded a large effect size, suggesting the SPS can differentiate between the clinical sample and the non-clinical

Table 4. Convergent validity of SPS with the GMSEX, IIEF, and FSFI and divergent validity with the GBDS for men and women in the clinical sample by Pearson correlation*

Measurements	SPS	GMSEX	IIEF or FSFI	GBDS
SPS	–	0.69†	0.10§	−0.03§
GMSEX	0.64‡	–	0.04§	−0.14§
IIEF or FSFI	0.51‡	0.37†	–	−0.19§
GBDS	0.14§	−0.08§	−0.01§	–

FSFI = Female Sexual Function Index; GBDS = Global Body Dissatisfaction subscale of the Body Attitudes Test; GMSEX = Global Measure of Sexual Satisfaction; IIEF = International Index of Erectile Function; SPS = Sexual Pleasure Scale.
†$P < .01$; ‡$P < .001$; §not significant.
*Values for women are above the diagonal.

Table 5. Specificity and sensitivity for each cutoff point

Minimum cutoff points	Sensitivity	1 − Specificity
2.0000	1.000	1.000
4.5000	1.000	0.989
7.0000	1.000	0.978
8.5000	1.000	0.966
9.5000	1.000	0.921
10.5000	1.000	0.865
11.5000	1.000	0.831
13.0000	0.995	0.775
14.5000	0.995	0.764
15.5000	0.995	0.697
16.5000	0.989	0.697
17.5000	0.973	0.618
18.5000	0.952	0.461
19.5000	0.926	0.348
20.5000	0.846	0.258
22.0000	0.000	0.000

sample. Furthermore, the criterion-related analysis supported the instrument's ability to discriminate between a clinical sample and a community sample. These results seem to indicate that the SPS has strong sensitivity to discriminate between people with and without sexual problems.

The results of the receiver operating characteristics curve supported that the SPS has good sensitivity to discriminate sexual problems in clinical populations from those in non-clinical populations. The selection of the best cutoff point should consider the objectives for which the SPS could be used. In the context of research, the SPS could be a useful instrument to complement others in the screening of people with sexual complaints. In this case, a value of 13 would be a good cutoff point. People scoring lower than 13 would present levels of sexual pleasure that are indicative of belonging to a clinical sample. Researchers should be aware that this value, owing to its high specificity, could be less efficient in controlling for false positives. Researchers should select the most appropriate cutoff point for its objectives, because, despite the promising results in sensitivity and specificity of the SPS, this study has limitations that should not be neglected. For example, the study involved small samples, Portuguese participants, and convenience sampling that might not be representative of other cultural contexts. In addition, the sample size precluded the study of moderators, such as age, health status, and sexual orientation. Although the SPS was intended to measure general sexual pleasure without regard to the nature of the sexual relationship or dyadic sexual exchanges, the present analysis suggests that the SPS can be used in the research context specifically with clinical samples, because it can differentiate individuals with from those without sexual problems. In future studies, researchers should include instructions that specify type of sexual behavior to examine possible important differences between partnered and solitary sexual pleasure.[10]

The present study demonstrates the initial validity of the SPS and its applicability in clinical settings and clinical research. The major strength of the SPS is that it is short and clearly differentiates between clinical and non-clinical samples but might be most suitable for clinical samples. Because no other measurement of sexual pleasure has been developed for clinical and research use, the present study provides an important first step in proposing one. The SPS proved to be a brief, easy-to-understand, and easy-to-implement measurement for men and women, which might be suitable for clinical research purposes, specifically to evaluate the progress of treatment aimed at improving sexual health.

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APPENDIX 1

Focus on your current relationship. Think about your sex life in the past 4 weeks.						
Please circle the option that better matches your experience.						
I find sexual intercourse						
1	2	3	4	5	6	7
Not pleasurable						Very pleasurable
I find sexual activities						
1	2	3	4	5	6	7
Not pleasurable						Very pleasurable
I find sexual intimacy						
1	2	3	4	5	6	7
Not pleasurable						Very pleasurable