



Spanish adaptation and validation of sexual distress scale in Colombian population

Mayra Gómez-Lugo^{*}, Nathalie Villalba-Ríos, Carlos Valbuena-Vargas, Alejandro Saavedra-Roa

SexLab KL - Human Sexual Laboratory, Department of Psychology, Fundación Universitaria Konrad Lorenz, Bogotá D.C., Colombia

ARTICLE INFO

Keywords:

Sexual distress
Sexual functioning
Colombia
Psychometry

ABSTRACT

Background/Objective: The adaptation and validation of measures to assess Sexual Distress (SD) are crucial for the diagnosis and treatment of sexual dysfunction. This study aimed to adapt and validate the Spanish Sexual Distress Scale (SDS) in a Colombian sample and provide a percentile ranking score for a comprehensive understanding of sexual distress among the population.

Method: Five hundred ninety-six people from Colombia (50.08 % women; 49.92 % men) aged 18–60 participated in the study. Exploratory and confirmatory factorial analyses and a convergent validity analysis were performed.

Results: The SDS showed a high internal consistency ($\Omega = .95$, $\alpha = .94$) and a unidimensional model. Significant correlations were found between the SDS and related measures with sexual functioning, further supporting its convergent validity.

Conclusions: The SDS is a valid and reliable measure to evaluate SD in Colombians, with implications for clinical practice and sexual health research. More investigations are needed to address the limitations, strengthen the validity and reliability of the scale, and develop specific interventions based on its results.

Introduction

The prevalence of issues related to sexual dysfunction ranges from 6 % to 22 % in different parts of the world. These dysfunctions can significantly affect the quality of life, sexual health, and well-being of people who experience them (Lafortune et al., 2023). It is essential to diagnose these dysfunctions appropriately to provide an effective treatment and improve the quality of life of those who suffer from them (Giraldo et al., 2013). Also, it is of essence to consider that the accurate diagnosis of sexual dysfunctions is only possible when the criteria that define them are recognized. Therefore, it is paramount to understand the nosological criteria that characterize these dysfunctions to provide a correct diagnosis and adequate treatment.

Sexual Distress (SD) has been described as a transdiagnostic process (Pascoal et al., 2020) and a diagnostic criterion for the detection of different issues related to sexual functioning (American Psychiatric Association, 2014). This process has been defined as a concern, frustration, and/or anxiety related to the sexual activity/functioning of people (Derogatis et al., 2002; Meston & Trapnell, 2005). Although traditionally, some research has shown SD as a construct that is found on the opposite side to sexual pleasure (Snyder & Berg, 1983), more recently,

they have been considered as independent constructs that require individual attention for the creation of evaluation measures that are not interchangeable or for the prevention the overlapping of the effectiveness of the treatments developed for sexual dysfunctions (Stephenson & Meston, 2010). The SD has not only been shown to be present in various populations (Lin et al., 2023; Lin et al., 2017; Lin et al., 2022) but has also been shown to be associated with negative impacts on the sexual life of individuals with relevant medical conditions (e.g., endometriosis, dyspareunia, epilepsy, prostate cancer, and heart disease; Lin et al., 2020; Lin et al., 2022; Privitera et al., 2023; Saffari et al., 2017; Santos-Iglesias et al., 2020). Although there are no data in Colombia regarding the relationship between sexual functioning and SD, the fact that around 44.6 % of cisgender women and 33.5 % of cisgender men may experience a possible difficulty related to their sexual functioning (Marchal-Bertrand et al., 2016) can highlight the importance of timely detection of SD in the Colombian population.

Despite the independence of the SD, its evaluation appears to have been relegated to self-report measures relevant to the diagnosis of sexual dysfunctions as in the International Index of Erectile Function (IIEF; Rosen et al., 1997; Vallejo-Medina et al., 2022) or the Female Sexual Function Index (FSFI; Rosen et al., 2000; Vallejo-Medina et al., 2018).

^{*} Corresponding author.

E-mail address: mayra.gomezl@konradlorenz.edu.co (M. Gómez-Lugo).

For instance, in the review by Santos-Iglesias et al. (2018a), they found 17 measures that assessed SD in several countries (i.e., Deutschland, Korea, Poland, Iran, Turkish, Spain, etc.), from which only four were independent questionnaires, and the rest contained the construct as a sub-scale. Only five of these assessed SD in the general population and the rest in a clinical population — it is noteworthy that so far, in Colombia and Southamerica, those are not available for assessment in the general or a clinical population —.

The Female Sexual Distress Scale (FSDS; Derogatis et al., 2002) is a scale designed for women and has shown its effectiveness in assessing the construct in people from different countries (Nekoo et al., 2014; Bancroft et al., 2003; Ghassami et al., 2014; Ter Kuile, 2006). Although initially, the FSDS was designed for women, since the SD is a trans-diagnostic process, Santos-Iglesias et al. (2018b) assessed its properties in sexually functional and dysfunctional males. They found favorable reliability indexes ($\alpha = .93$ and $.94$), good consistency and validity, and structural equivalence in both genders (i.e., women and men); also, the name of the scale changed to Sexual Distress Scale (SDS). The scale has a total of 12 items grouped in a single factor (i.e., sexual distress) that do not specifically assess the components of the sexual response (i.e., excitation, erection, orgasm, etc.); nonetheless, the abbreviated and revised version (i.e., of 8 items) adds an item related to sexual desire (Derogatis et al., 2008). The preliminary abbreviated version (SDS-S) by Santos et al. (2020) comprises 5 items and demonstrated a unifactorial structure with good fit indices.

The study of the SD is crucial since it allows the identification of one of the most essential criteria for the diagnosis of sexual dysfunctions and its subsequent treatment. For this, it is necessary to have reliable and valid measures to identify the SD for the diagnostic of issues that hinder the quality of life and the sexual well-being of people. As for the above, the purpose of this instrumental study (Montero & León, 2007) is to adapt and validate the Sexual Distress Scale in a sample of men and women in Colombia and provide a percentile ranking score. Its construct validity and reliability will be assessed.

Method

Participants

This study had a sample of 596 participants (50.08 % women and 49.92 % men) aged 18–60 years ($M = 35.07$; $SD = 14.26$) with Colombian citizenship. Most of the participants were Bogotá residents (71.98 %) from Tumaco (9.06 %), Zipaquirá (4.36 %), and other Colombian cities (7.6 %). The mean monthly income was USD 504 ($SD = 458$; min = Zero income and max: 3459 USD). Only 14.72 % of the sample reported having health issues, and 3.74 % reported taking medication that might affect their sexual functioning.

Regarding sexual practices in the sample, we found that men reported having an average of 6.92 ($SD = 9.94$) oral sex partners, 9.35 ($SD = 13.37$) vaginal intercourse partners, and 3.85 ($SD = 6.14$) anal intercourse partners. Women reported an average of 3.96 ($SD = 5.19$) oral sex partners, 5.22 ($SD = 7.74$) vaginal intercourse partners, and 1.50 ($SD = 0.99$) anal intercourse partners over their lifetime. All participants had to be legal adults (i.e., 18 years old in Colombia) and voluntarily consent to participate in the study. For more information on the characteristics of the sample, see Table A.1.

Instruments

Psychosexual and sociodemographic information

An ad hoc questionnaire was designed to obtain psychosexual and sociodemographic information from the participants. It recorded age, gender, education level, religion, socio-economic level, nationality, monthly income, marital status, if they have a partner, number of partners with sexual contact, sexual activity frequency, possible diagnosis of sexual dysfunction, intake of medication that may affect/

influence sexual response, issues and/or possible medical diagnoses, sexual orientation (cf. Kinsey et al., 1948) and number of children.

Sexual Distress Scale (SDS; Derogatis et al., 2002; Santos-Iglesias et al., 2018a)

The validation by Santos-Iglesias et al. (2018) was used. This unidimensional instrument comprises 12 items that assess SD and are answered on a four-point Likert scale (0 = never to 4 = always). Scores above 15 indicate the presence of SD. An example of an item is “Have you regretted your sex life?” For more information on the reliability of the scale, see the Introduction.

Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ; Fava et al., 1998)

The validated version for Colombia was used (Marchal-Bertrand et al., 2016). This self-report measure has the purpose of evaluating the sexual functioning of people. It has five items – item four is exclusive to men – that are responded on a five-point Likert scale (0 = Completely diminished to 4 = Normal). Each item appraises one dimension: desire, arousal, orgasm, erection, and general sexual satisfaction. Its reliability ranges from .81 to .86. An example of an item in the satisfaction dimension is: “How would you rate your general sexual satisfaction during the past month?”

Sexuality Scale (SS; Snell & Papini, 1989)

The validated version for Colombia was used (Soler et al., 2016). This scale has 15 items and appraises what people think and feel about their sexuality through three dimensions: sexual self-esteem, depression, and sexual preoccupation. The scale has high levels of reliability (Cronbach's alpha above .83) and adequate psychometric properties. This questionnaire is answered on a five-point Likert scale from 1 (i.e., disagree entirely) to 4 (i.e., totally agree). An example of an item is: “Am I a good sexual partner?”

Procedure

For the adaptation and validation of the scale, we started with the questionnaire translation using a double forward translation with a content review between the translators and adaptors (Muniz et al., 2013). Following, the research group members – who were required to have three or more years of experience in the human sexuality field and to be bilingual (Spanish – English) – reviewed the final version, making sure that the items' thematic content was not modified on the translation. When the adapted scale version was agreed upon, a 10-person pilot was conducted to assess its initial effectiveness and feasibility. The research questionnaire was administered individually on paper, and adjustments and suggestions were discussed by the research team. Based on this study, modifications deemed necessary by the team were implemented, such as editorial corrections or additional inclusions.

Afterwards, the sampling procedure was done. All the participants gave consent to participate voluntarily in the study. The average completion time was 20 min, and the application was done on paper. Following this, a database was built to analyze the scale's psychometric properties regarding the items' functioning and the reliability and validity evidence of the scores. For the validity evidence analyses of the scores, and specifically for the internal structure analysis, the sample was segmented into two parts using a simple random sampling technique; in the first sub-sample, an Exploratory Factor Analysis (EFA) with 300 participants was conducted, and in the second sub-sample, a Confirmatory Factor Analysis (CFA) was estimated. This study received the approval of the Ethics Committee for the hidden for the publication process.

Data analysis

The psychometric properties of the items were assessed using the R programming language (R Core Team, 2022) within the R Studio environment (R Core Team, 2022). The psych package (Revelle, 2024) was utilized to estimate the items' discrimination index (corrected item-test

correlation), as well as McDonald's Omega (1999) and Cronbach's Alpha (1951) as indicators of score reliability. The validity analysis regarding the internal structure of the scale was performed using the psych packages (Revelle, 2024) for the exploratory perspective (EFA) and lavaan (Rosseel, 2012), and SemPlot (Epskamp et al., 2019) for the confirmatory perspective (CFA). Before the factor analysis estimation, a Mardia test was used (Mardia, 1980) to assess the multivariate normality assumption and define the most appropriate estimation method.

To define the number of factors to be extracted in the EFA, a parallel analysis (PA) was estimated using a polychoric correlations matrix and unweighted least squares (ULS) as estimation method, following the parameters proposed by Garrido et al. (2013) for ordinal variables. Based on the results obtained from the Mardia test and the PA, a uni-dimensional EFA was estimated using a polychoric correlation matrix and ULS as the estimation method. To evaluate the quality of the results in this exploratory perspective, we considered the number of factors obtained in the PA, the variance percentage explained by the factor, and the size of the factors' weights of the items in the PA. The estimation of the CFA followed the exact parameters of the EFA, using the polychoric correlations matrix and ULS as estimation methods. In this case, to evaluate the goodness of fit of the data to the initial model, four indicators were used: Root Mean Square Error of Approximation (RMSEA), Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and Standardized Root Mean Square Residual (SRMR). RMSEA values below 0.06, SRMR values below 0.08, and TLI and CFI values above 0.95, are indicative of a good fit between the hypothesized model and the observed data (Hu & Bentler, 1999). Finally, to analyze the construct relation with external variables (evidence of validity regarding other variables), Pearson correlations were estimated between the global score of the scale and the totals obtained in two scales (i.e., MGH-SFQ and SS) and their corresponding dimensions. The significance and magnitude of the correlations obtained were analyzed.

Ethical considerations

The present study was approved by the Ethical Committee, which is independent of the Psychology Department under the hidden for publication process with the approval code hidden for publication process. This process was done following the principles of the 1975 Helsinki Declaration, reviewed in 1983 by the Clinical Investigation Ethical Committee. All participants decided voluntarily to take part in the study. Likewise, the ethical committee assessed the procedure to obtain consent.

Results

Exploratory and confirmatory factor analysis

Regarding the factorial analyses, since the Mardia test was significant ($p < 0.01$) for both sub-samples and the analyzed items were from ordinal categories, we opted, in both cases, to use a polychoric correlations matrix and ULS as the estimation method. From the exploratory perspective, the PA indicated that the internal structure for the test is unidimensional, and the EFA was set accordingly. The results show factorial weights and high commonalities for all items, with item one with the lowest value (.76; .58) and item four with the highest values (.93; .86). These results, added to the variance percentage explained by the factor (73 %), suggest a good fit of the data to a unidimensional factorial model as was theoretically proposed. On the other hand, with the CFA, we estimated four indexes of the goodness of fit: RMSEA = .00, CFI = 1.00, TLI = 1.00, and SRMR = .04. The results suggest a good fit of the scale's theoretical model (unidimensional) to the empirical data. Fig. A.1 presents the diagram for the theoretical structure of the model, together with the standardized factorial weights recovered in the CFA.

Convergent validity

A convergent validity analysis was performed using the Pearson correlations between the SDS and the factors that compose the Sexuality Scale and the MGH-SFQ. Negative and significant correlations were observed between the sexual desire, arousal, orgasm, and erection factors and, in general, with the total scores of the MGH-SFQ; particularly, the Erection factor of the scale showed the strongest negative correlation with -.348, followed by Sexual Self-esteem of the SS scale with -.291. On its part, the SS also evidenced significant correlations with the SDS, in this case, both the total and the factors of Sexual Preoccupation and Sexual Depression showed positive correlations (.118, .365, and .153 respectively), while the correlation with the Sexual Self-esteem factor was negative with a value of -.291. For more details, see Table B.1.

Examination of the psychometric properties and reliability of the items

The obtained value in the McDonald's omega (Ω) for the 12 items and the totality of the sample was .95 ($\alpha = .94$); meanwhile, for the sub-samples, it was .95 ($\alpha = .95$) and .96 ($\alpha = .94$), respectively, which indicates a high internal consistency between the 12 items, which make up the scale in the three different settings, as shown in Table C.1. This result agrees with what was found in the discrimination indexes. In all cases, the correlations were high and positive between the items and the tests corrected total; item one had the lowest value (.66), and the highest was for item four (.83). Table C.1 presents the psychometric properties of the items.

Percentile ranking scores

Finally, the percentile ranking scores of the adaptation of the SDS for the Colombian population were obtained, as differentiated by gender and age group: 18–30, 31–44, and over 45 (Table D.1).

Discussion

Sexual Distress (SD) is one of the diagnosis criteria that allow for the detection of sexual dysfunction in a clinical setting (Pascoal et al., 2020). Despite its relevance, its assessment in Colombia has been limited to people's self-reports due to the absence of reliable and valid measures that allow precise detection. Hence, this investigation aimed to adapt and validate the Sexual Distress Scale (SDS; Derogatis et al., 2002; Santos-Iglesias et al., 2018a) in Colombia. For that purpose, an adaptation and validation process was carried out using expert judges of the Spanish version of the scale (Santos-Iglesias et al., 2018a), the corresponding factorial analyses were performed (i.e., exploratory and confirmatory), the convergent validity was observed, and its psychometric properties analyzed.

In general terms, the scale could be adapted to Colombian Spanish; besides, as with other versions, it showed a unidimensional model with favorable indexes of goodness of fit for the Latin American country (Derogatis et al., 2008; Derogatis et al., 2002; Ter Kuile et al., 2006; Santos-Iglesias et al., 2018a). The scale also showed favorable psychometric properties (i.e., content validity, reliability and convergent validity) similar to the previously observed ones (Derogatis et al., 2008; Derogatis et al., 2002; Ter Kuile et al., 2006; Santos-Iglesias et al., 2018a), the above can favor the timely detection of sexual issues and their prompt intervention. Also, correlations between the SD and constructs related to sexual functioning were evidenced.

The convergent validity analysis revealed significant relations between SDS and several factors related to sexual functioning. Negative and significant correlations between the SDS and the factors of sexual desire, arousal, orgasm, erection, and total scores of the MGH-SFQ were observed, which in turn suggests that higher SD levels are associated with deficient sexual functioning in this regard. The above agrees with studies in which SD is associated with the emergence of sexual

dysfunctions in the general population (Bayat et al., 2023; Maestre-Lorén et al., 2021; O’Sullivan et al., 2016; Witting et al., 2008; Zheng et al., 2020) as well as in people with relevant medical conditions (Vannier and Rosen, 2017; Dawson et al., 2020; Peters et al., 2007).

As expected, sexual preoccupation and depression showed a significant and direct correlation with SD, which contributes to the hypothesis that repetitive negative thinking can be a transdiagnostic process that underlays SD (Pascoal et al., 2020). Likewise, the fact that sexual self-esteem showed a significant and inverse correlation with SD supports the hypothesis that the former can be a protection factor for the emergence of sexual dysfunctions (Peixoto et al., 2018) and even risky sexual conduct (Ethier et al., 2006; Shepler and Perrone, 2016).

Finally, the percentile classification of the scores differentiated by gender and age ranges can help assess SD in the Colombian population. However, caution is recommended when interpreting the results, especially for men over 45 in Colombia, due to limitations of non-continuity and non-normality that hinder the achievement of good variance for the scores of these groups. It is important to note that symmetry and kurtosis measures should be considered when analyzing this data. Specifically, some asymmetry and kurtosis are observed in the scores’ distributions, especially between men over 45 and women in the same age group, as well as for women between 31 and 44. These characteristics suggest a possible deviation of the data normality, which should be considered when interpreting the results and performing statistical analyses.

Conclusion

The SDS adaptation was a valid and reliable tool for assessing SD in Colombian women and men. This suggests that it can be relevant for evaluating sexual dysfunctions in the clinical context, identifying one of the most relevant criteria that characterizes them.

Appendix

Table A.1
. Sample sociodemographic data.

Variables		Men <i>M(SD)</i> or <i>n(%)</i>	Women <i>M(SD)</i> or <i>n(%)</i>	Statistical Contrast
Age		35,41 (14,11)	34,59 (14,42).	$U = 47822; p > .05; r_{bis} = .07$
Sexual orientation	Asexual	1(0.34%)	-	$\chi^2(6) = 17.26; p < .01; V = .17$
	Exclusively heterosexual	279(95.87%)	264(89.18%)	
	2	2(0.68%)	16(5.40%)	
	3	-	3(1.01%)	
	4	1(0.34%)	3(1.01%)	
	5	1(0.34%)	3(1.01%)	
With current partner	Exclusively homosexual	7(2.40%)	7(2.36%)	$\chi^2(1) = 1.95; p = .16$
	Yes	221(75.17%)	208(70.03%)	
	No	73(24.83%)	89(29.96%)	
Sexual activity frequency	Less than once a month	27(9.27%)	37(12.93%)	$\chi^2(4) = 7.78; p = .10$
	1 to 2 times a month	112(38.48%)	98(34.26%)	
	1 to 2 times a week	97(33.33%)	107(37.41%)	
	3 to 4 times a week	37(12.71%)	37(12.93%)	
	More than 4 times a week	18(6.18%)	7(2.44%)	
Marital status	Single	126(42.71%)	150(50.67%)	$X^2(4) = 8.61; p = .07$
	Married	93(31.52%)	89(30.06%)	
	Common-law relationship	51(17.28%)	43(14.52%)	
	Widow	9(3.05%)	9(3.04%)	
	Separated	16(5.42%)	5(1.68%)	
Education level	Primary	1(0.34%)	2(0.67%)	$X^2(5) = 45.37; p < .01; \tau = .07$
	High school	50(17.18%)	30(10.06%)	
	Technical	57(19.58%)	28(9.39%)	
	Technology	21(7.21%)	24(8.05%)	
	Undergraduate	106(36.42%)	185(62.08%)	
	Postgraduate	56(19.24%)	29(9.73%)	
Religion	None	14(5.12%)	37(13.16%)	$\chi^2(10) = 23.300; p = .01$
	Christian	45(16.48%)	54(19.21%)	

(continued on next page)

Limitations and future directions

Although the results show an adequate adaptation to Colombian Spanish and favorable psychometric properties, such as the convergent validity and a unidimensional model, some limitations must be considered. Among those are the possible sample bias, the exclusive use of self-reports, the lack of inclusion of specific clinical groups, and the need to explore the correlations with constructs related to sexual functioning. For future research, we suggest replicating the study with broader and more diverse samples, performing a multivariate analysis to understand better the contribution of the SDS in the experiencing of sexual dysfunction, and considering the transcultural validation in other Spanish-speaking countries.

Despite the limitations, this study suggests that SDS can be a valuable and promising tool to assess SD in the Colombian context, with significant implications for clinical practice and sexual health research. However, a rigorous and exhaustive approach is required in future research to confirm and strengthen the validity and reliability of the scale. Besides, it is essential to consider the development of specific interventions based on the results of the SDS to approach SD and improve the sexual well-being of the Colombian population.

Declaration of competing interest

The authors declare no competing interests.

Funding

This work was supported by grants from the Konrad Lorenz University Foundation and awarded to the first author with the project number 9INV8231.

Table A.1 (continued)

Variables		Men	Women	Statistical Contrast
		<i>M(SD)</i> or <i>n</i> (%)	<i>M(SD)</i> or <i>n</i> (%)	
Age		35,41 (14,11)	34,59 (14,42).	$U = 47822; p > .05; r_{bis} = .07$
	Catholic	197(72.161%)	171(60.85%)	$\chi^2(1) = 1.22; p = 0.26$
	Buddhist	4(1.46%)	1(0.35%)	
	Agnostic	5(1.83%)	11(3.91%)	
	Atheist	6(2.19%)	2(0.71%)	
	Evangelical	1(0.36%)	-	
	Pantheism	-	1(0.35%)	
	Believer	1(0.36%)	2(0.71%)	
	Mormon	-	1(0.35%)	
	Hinduism	-	1(0.35%)	
	Yes	144(50.52%)	128(45.87%)	
Children	No	141(49.47%)	151(54.12%)	
Number of children		1.73(.946)	1.74(.656)	$U = 8015; p = .27; r_{bis} = .07$
Assistance to religious services	Never	82(27.89%)	48(16.60%)	$\chi^2(5) = 11.38; p = .04$
	Once a year	96(32.65%)	110(38.06%)	
	Once a month	80(27.21%)	88(30.45%)	
	At least once a week	27(9.18%)	34(11.76%)	
	Several times per week	7 (2.38%)	8(2.76%)	
	Every day	2(.68%)	1(.34%)	

Note. % = Percentage; n = valid frequency; U= Mann-Whitney U Test; r_{bis}=Biserial r; χ^2 = Chi square.

Table B.1
Matrix of bivariate correlations among the three scales and their factors.

Variable	1	2	3	4	5	6	7	8	9	10
1. MGH-SFQ Sexual Desire										
2. MGH-SFQ Sexual Arousal	.660**									
3. MGH-SFQ Orgasm	.525**	.685**								
4. MGH-SFQ Erection	.590**	.675**	.665**							
5. MGH-SFQ General Satisfaction	.222**	.248**	.233**	.238**						
6. MGH-SFQ Total	.600**	.646**	.614**	.591**	.857**					
7. SS Sexual Self-esteem	.251**	.154**	.229**	.243**	0.051	.167**				
8. SS Sexual Preoccupation	-.235**	-.259**	-.266**	-.295**	-.214**	-.318**	-.209**			
9. SS Sexual Depression	.0482	.001	.101*	.086*	.226**	.201**	.197**	.278**		
10. SS Total	.0411	-.047	.044	.028	.05	.044	.523**	.544**	.810**	
11. SDS Total	-.259**	-.276**	-.197**	-.348**	-.142**	-.262**	-.291**	.365**	.153**	.118**

Note: MGH-SFQ = Massachusetts General Hospital Short Form Questionnaire; SS = Sexuality Scale.

* Indicates $p < .05$.
** Indicates $p < .01$.

Table C.1
Psychometric properties of the items.

Item	<i>M</i>	<i>SD</i>	r_{it}^c	Ω -i	λ	h^2
1	0.66	0.89	.66	.94	.76	.58
2	0.57	0.88	.69	.94	.77	.60
3	0.42	0.83	.72	.94	.84	.71
4	0.37	0.74	.83	.93	.93	.86
5	0.44	0.78	.74	.94	.83	.69
6	0.24	0.65	.76	.94	.87	.76
7	0.50	0.80	.75	.94	.85	.72
8	0.34	0.71	.68	.94	.83	.68
9	0.33	0.75	.79	.94	.92	.85
10	0.26	0.67	.79	.94	.91	.83
11	0.42	0.80	.78	.94	.89	.79
12	0.32	0.75	.77	.94	.85	.72

Note: M = mean; SD = standard deviation; r_{it}^c = corrected item-total correlation; Ω -i = McDonalds omega if the item is eliminated; λ = factorial weights extracted from the EFA; h^2 obtained communalities in the EFA

Table D.1
. Validated SDS scales for the Colombian population by gender and age group.

Gender	Male			Female		
Age	18 - 30	31 - 44	45+	18 - 30	31 - 44	45+
<i>N</i>	155	37	105	157	42	100
<i>M</i>	4.219	4.081	4.048	5.127	4.714	6.81
<i>SD</i>	6.585	6.877	4.604	7.517	6.671	9.845
<i>Skew</i>	2.382	3.002	1.08	3.052	1.791	1.618

(continued on next page)

Table D.1 (continued)

Gender	Male			Female		
Kurtosis	6.343	10.22	0.645	11.011	2.456	1.721
Min	0.0	0.0	0.0	0.0	0.0	0.0
Max	36.0	36.0	20.0	48.0	25.0	36.0
P5	0.0	0.0	0.0	0.0	0.0	0.0
P10	0.0	0.0	0.0	0.0	0.0	0.0
P15	0.0	0.0	0.0	0.0	0.0	0.0
P20	0.0	0.0	0.0	1.0	0.0	0.0
P25	0.0	1.0	0.0	1.0	0.0	0.0
P30	0.0	1.0	0.0	1.0	0.0	0.0
P35	0.0	1.0	0.0	1.6	0.0	0.0
P40	1.0	1.0	1.0	2.0	0.4	1.0
P45	1.0	1.0	1.8	2.0	2.0	1.6
P50	1.0	1.0	2.0	3.0	3.0	2.0
P55	2.0	2.0	3.0	3.0	3.0	3.0
P60	2.0	2.6	5.0	3.0	4.0	4.0
P65	4.0	3.0	6.0	4.0	4.7	5.4
P70	4.0	3.2	7.0	6.0	5.0	7.0
P75	5.0	4.0	7.0	7.0	6.0	11.0
P80	7.0	5.0	7.0	8.0	6.8	12.2
P85	9.0	7.6	9.0	8.6	8.7	17.3
P90	13.0	10.2	10.0	9.4	13.7	24.0
P95	17.6	16.2	13.0	22.0	22.7	25.6
P99	29.7	29.2	17.0	38.3	24.6	36.0

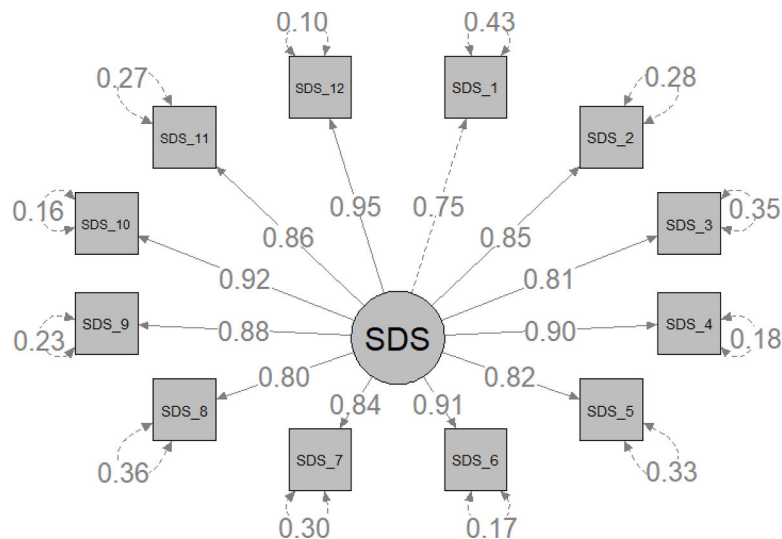


Fig. A.1. Model of sexual distress scale
Note. The unidimensional model. its standardized loads (k). and uniqueness.

Appendix A. 1 Colombian version of sexual distress scale

A continuación, encontrará una lista de problemas sobre la sexualidad que en algunas ocasiones preocupan a hombres y mujeres. Por favor lea cuidadosamente cada pregunta y escoja la opción que mejor describa con qué frecuencia este problema le ha molestado o angustiado **en las últimas 4 semanas**. Por favor escoja una sola opción de respuesta para cada pregunta y trate de no saltarse ninguna. Si cambia de opinión respecto a una respuesta por favor bórrela y vuelva a seleccionarla con cuidado.

Por favor escoja una sola opción de respuesta para cada pregunta.

	Nunca	Rara vez	Ocasionalmente	Frecuentemente	Siempre
	0	1	2	3	4
1. ¿Angustiado (a) por su vida sexual?					
2. ¿Infeliz con sus relaciones sexuales?					
3. ¿Culpable de sus dificultades sexuales?					
4. ¿Frustrado (a) por sus problemas sexuales?					
5. ¿Estresado(a) por el sexo?					
6. ¿Inferior debido a problemas sexuales?					
7. ¿Preocupado (a) por el sexo?					
8. ¿Sexualmente deficiente?					
9. ¿Se lamentó por su vida sexual?					
10. ¿Avergonzado(a) por problemas sexuales?					
11. ¿Insatisfecho (a) con su vida sexual?					
12. ¿Enojado(a) con su vida sexual?					

References

- American Psychiatric Association. (2014). *DSM-5: Manual diagnóstico y estadístico de los trastornos mentales*. Editorial Médica Panamericana Madrid.
- Bancroft, J., Loftus, J., & Long, J. S. (2003). Distress about sex: A national survey of women in heterosexual relationships. *Archives of Sexual Behavior*, 32, 193–208. <https://doi.org/10.1023/A:1023420431760>
- Bayat, F., Ozgoli, G., Mahmoodi, Z., & Nasiri, M. (2023). Predictor factors of female sexual distress in a population-based sample of Iranian women: A path analysis: Predictors of female sexual distress. *Urology Journal*, 20(03), 173–180. <https://doi.org/10.22037/uj.v20i3.7375>
- Dawson, S. J., Vaillancourt-Morel, M. P., Pierce, M., & Rosen, N. O. (2020). Biopsychosocial predictors of trajectories of postpartum sexual function in first-time mothers. *Health Psychology*, 39(8), 700–710. <https://doi.org/10.1037/hea0000861>
- Derogatis, L. R., Rosen, R., Leiblum, S., Burnett, A., & Heiman, J. (2002). The Female Sexual Distress Scale (FSDS): Initial validation of a standardized scale for assessment of sexually related personal distress in women. *Journal of Sex & Marital Therapy*, 28(4), 317–330. <https://doi.org/10.1080/00926230290001448>
- Derogatis, L., Clayton, A., Lewis-D'Agostino, D., Wunderlich, G., & Fu, Y. (2008). Validation of the female sexual distress scale-revised for assessing distress in women with hypoactive sexual desire disorder. *The Journal of Sexual Medicine*, 5(2), 357–364. <https://doi.org/10.1111/j.1743-6109.2007.00672.x>
- Epskamp, S., Stuber, S., Nak, J., Veenman, M., & Jorgensen, T. D. (2019). SemPlot: Path diagrams and visual analysis of various SEM packages' output. R package. R version, 1(2). Retrieved 28/02/2024, from <https://CRAN.R-project.org/package=semPlot>.
- Ethier, K. A., Kershaw, T. S., Lewis, J. B., Milan, S., Nicolai, L. M., & Ickovics, J. R. (2006). Self-esteem, emotional distress and sexual behavior among adolescent females: Inter-relationships and temporal effects. *The Journal of adolescent health: official publication of the Society for Adolescent Medicine*, 38(3), 268–274. <https://doi.org/10.1016/j.jadohealth.2004.12.010>
- Fava, M., Rankin, M. A., Alpert, J. E., Nierenberg, A. A., & Worthington, J. J. (1998). An open trial of oral sildenafil antidepressant-induced sexual dysfunction. *Psychotherapy And Psychosomatics*, 67(6), 328–331. <https://doi.org/10.1159/000012299>
- Garrido, L. E., Abad, F. J., & Ponsoda, V. (2013). A new look at Horn's parallel analysis with ordinal variables. *Psychological Methods*, 18(4), 454–474. <https://doi.org/10.1037/a0030005>
- Ghassami, M., Asghari, A., Shaeeri, M. R., Soltaninejad, Z., & Safarinejad, M. R. (2014). Psychometric properties of the Female Sexual Distress Scale-Revised among a sample of non-clinical Iranian women. *International Journal of Psychiatry in Clinical Practice*, 18(4), 293–299. <https://doi.org/10.3109/13651501.2014.940048>
- Giralaldi, A., Rellini, A. H., Pfau, J., & Laan, E. (2013). Female sexual arousal disorders. *The Journal of Sexual Medicine*, 10(1), 58–73. <https://doi.org/10.1111/j.1743-6109.2012.02820.x>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Kinsey, A. C., Pomeroy, W. B., & Martin, C. E. (1948). Kinsey scale. *Personality and Social Psychology Bulletin*. <https://psycnet.apa.org/doi/10.1037/t17515-000>.
- Lafortune, D., Girard, M., Dussault, É., Philibert, M., Hébert, M., Boislard, M., Goyette, M., & Godbout, N. (2023). Who seeks sex therapy? Sexual dysfunction prevalence and correlates, and help-seeking among clinical and community samples. *Plos One*, 18(3), Article e0282618. <https://doi.org/10.1371/journal.pone.0282618>
- Lin, C.-Y., Fung, X. C. C., Nikoobakht, M., Burri, A., & Pakpour, A. H. (2017). Using theory of planned behavior incorporated with perceived barriers to explore sexual counseling services delivered by health professionals in individuals suffering from epilepsy. *Epilepsy & Behavior*, 74, 124–129. <https://doi.org/10.1016/j.yebeh.2017.06.011>
- Lin, C. Y., Broström, A., Årestedt, K., Mårtensson, J., Steinke, E. E., & Pakpour, A. H. (2020). Using extended theory of planned behavior to determine factors associated with help-seeking behavior of sexual problems in women with heart failure: A longitudinal study. *Journal of Psychosomatic Obstetrics & Gynecology*, 41, 54–61. <https://doi.org/10.1080/0167482X.2019.1572743>
- Lin, C. Y., Griffiths, M. D., Pakpour, A. H., Tsai, C. S., & Yen, C. F. (2022). Relationships of familial sexual stigma and family support with internalized homonegativity among lesbian, gay and bisexual individuals: the mediating effect of self-identity disturbance and moderating effect of gender. *BMC Public Health*, 22, 1465, 10.1186/s12889-022-13815-4.
- Lin, C. Y., Chang, Y. P., Chou, W. J., & Yen, C. F. (2023). Assessing enacted sexual stigma toward gay and bisexual men in the military: The enacted sexual stigma experiences scale in military service. *International Journal of Environmental Research and Public Health*, 20, 1260. <https://doi.org/10.3390/ijerph20021260>
- Maestre-Lorén, F., Castillo-Garayoa, J. A., López-i-Martín, X., Sarquella-Geli, J., Andrés, A., & Cifre, I. (2021). Psychological distress in erectile dysfunction: The moderating role of attachment. *Sexual Medicine*, 9(5), Article 100436. <https://doi.org/10.1016/j.esxm.2021.100436>
- Marchal-Bertrand, L., Espada, J. P., Morales, A., Gómez-Lugo, M., Soler, F., & Vallejo-Medina, P. (2016). Adaptation, validation and reliability of the Massachusetts General Hospital-Sexual Functioning Questionnaire in a Colombian sample and factorial equivalence with the Spanish version. *Revista Latinoamericana de Psicología*, 48(2), 88–97. <https://doi.org/10.1016/j.rlp.2016.01.001>
- Mardia, K. V. (1980). 9 Tests of univariate and multivariate normality. *En Handbook of statistics*, 279–320. [https://doi.org/10.1016/s0169-7161\(80\)01011-5](https://doi.org/10.1016/s0169-7161(80)01011-5)
- McDonald, R. P. (1999). *Test theory: A unified treatment*. Lawrence Erlbaum Associates Publishers. <https://doi.org/10.4324/9781410601087>
- Meston, C., & Trappnell, P. (2005). Development and validation of a five-factor sexual satisfaction and distress scale for women: The Sexual Satisfaction Scale for Women (SSS-W). *The Journal of Sexual Medicine*, 2(1), 66–81. <https://doi.org/10.1111/j.1743-6109.2005.20107.x>
- Montero, I., & León, O. G. (2007). A guide for naming research studies in psychology. *International Journal of Clinical and Health Psychology*, 7(3), 847–862. <https://doi.org/10.1007/996696eefbfa4f53934c9ba97d273382>
- Muñiz, J., Elosua, P., & Hambleton, R. K. (2013). International Test Commission Guidelines for test translation and adaptation: Second edition. *Psicothema*, 25(2), 151–157. <https://doi.org/10.7334/psicothema2013.24>
- Azimi Nekoo, E., Burri, A., Ashrafi, F., Fridlund, B., Koenig, H. G., Derogatis, L. R., & Pakpour, A. H. (2014). Psychometric properties of the Iranian version of the female sexual distress scale-revised in women. *The Journal of Sexual Medicine*, 11(4), 995–1004. <https://doi.org/10.1111/jsm.12449>
- O'Sullivan, L. F., Byers, E. S., Brotto, L. A., Majerovich, J. A., & Fletcher, J. (2016). A longitudinal study of problems in sexual functioning and related sexual distress among middle to late adolescents. *Journal Of Adolescent Health*, 59(3), 318–324. <https://doi.org/10.1016/j.jadohealth.2016.05.001>
- Pascoal, P. M., Raposo, C. F., & Roberto, M. S. (2020). A transdiagnostic approach to sexual distress and sexual pleasure: A preliminary mediation study with repetitive negative thinking. *International Journal of Environmental Research and Public Health*, 17(21), 7864. <https://doi.org/10.3390/ijerph17217864>
- Peixoto, M. M., Amarelo-Pires, I., Biscia, M. S. P., & Machado, P. P. P. (2018). Sexual self-esteem, sexual functioning and sexual satisfaction in Portuguese heterosexual university students. *Psychology And Sexuality*, 9(4), 305–316. <https://doi.org/10.1080/19419899.2018.1491413>
- Peters, K. M., Killinger, K. A., Carrico, D. J., Ibrahim, I. A., Diokno, A. C., & Graziottin, A. (2007). Sexual function and sexual distress in women with interstitial cystitis: A case-control study. *Urology*, 70(3), 543–547. <https://doi.org/10.1016/j.urology.2007.04.037>
- Privitera, G., O'Brien, K., Misajon, R., & Lin, C. Y. (2023). Endometriosis symptomatology, dyspareunia, and sexual distress are related to avoidance of sex and negative impacts on the sex lives of women with endometriosis. *International Journal of Environmental Research and Public Health*, 20, 3362. <https://doi.org/10.3390/ijerph20043362>
- Revelle, W. (2024). Procedures for Psychological, Psychometric, and Personality Research [computer software]. Evanston, Illinois: <https://CRAN.R-project.org/package=psych>.
- Rosen, R. C., Riley, A., Wagner, G., Osterloh, I. H., Kirkpatrick, J., & Mishra, A. (1997). The international index of erectile function (IIEF): A multidimensional scale for assessment of erectile dysfunction. *Urology*, 49(6), 822–830. [https://doi.org/10.1016/S0090-4295\(97\)00238-0](https://doi.org/10.1016/S0090-4295(97)00238-0)
- Rosen, C., Brown, J., Heiman, S., Leiblum, C., Meston, R., Shabsigh, D., Ferguson, R., & D'Agostino, R. (2000). The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex & Marital Therapy*, 26(2), 191–208. <https://doi.org/10.1080/009262300278597>
- Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36. <https://doi.org/10.18637/jss.v048.i02>
- Saffari, M., Lin, C. Y., Broström, A., Mårtensson, J., Malm, D., Burri, A., & Pakpour, A. H. (2017). Investigating sexual problems, psychological distress and quality of life in female patients with Takotsubo cardiomyopathy: A prospective case-control study. *European Journal of Cardiovascular Nursing*, 16, 614–622. <https://doi.org/10.1177/1474515117702028>
- Santos-Iglesias, P., Mohamed, B., Danko, A., & Walker, L. M. (2018a). Psychometric validation of the female sexual distress scale in male samples. *Archives of Sexual Behavior*, 47(6), 1733–1743. <https://doi.org/10.1007/s10508-018-1146-2>
- Santos-Iglesias, P., Mohamed, B., & Walker, L. M. (2018b). A systematic review of sexual distress measures. *The Journal of Sexual Medicine*, 15(5), 625–644. <https://doi.org/10.1016/j.jsxm.2018.02.020>
- Santos-Iglesias, P., Bergeron, S., Brotto, L. A., Rosen, N. O., & Walker, L. M. (2020). Preliminary validation of the Sexual Distress Scale-Short Form: Applications to women, men, and prostate cancer survivors. *Journal of Sex & Marital Therapy*, 46(6), 542–563.
- Shepler, D. K., & Perrone, K. M. (2016). Differences in psychological distress and esteem based on sexual identity development. *College Student Journal*, 50(4), 579–589. <https://eric.ed.gov/?id=EJ1121562>
- Snell, W. E., & Papini, D. R. (1989). The sexuality scale: An instrument to measure sexual-esteem, sexual-depression, and sexual-preoccupation. *The Journal of Sex Research*, 26(2), 256–263. <https://doi.org/10.1080/00224498909551510>
- Snyder, D. K., & Berg, P. (1983). Determinants of sexual dissatisfaction in sexually distressed couples. *Archives of Sexual Behavior*, 12, 237–246. <https://doi.org/10.1007/BF01542074>
- Soler, F., Gómez Lugo, M., Espada, J. P., Morales, A., Sierra, J. C., Marchal Bertrand, L., & Vallejo Medina, P. (2016). Adaptation and validation of the brief sexuality scale in Colombian and Spanish populations. *International Journal of Psychology and Psychological Therapy*, 16(3), 343–356. <http://www.redalyc.org/articulo.oa?id=56049049009>

- Stephenson, K. R., & Meston, C. M. (2010). Differentiating components of sexual well-being in women: Are sexual satisfaction and sexual distress independent constructs? *The Journal of Sexual Medicine*, 7(7), 2458–2468. <https://doi.org/10.1111/j.1743-6109.2010.01836.x>
- Ter Kuile, M. M., Brauer, M., & Laan, E. (2006). The Female Sexual Function Index (FSFI) and the Female Sexual Distress Scale (FSDS): Psychometric properties within a Dutch population. *Journal Of Sex & Marital Therapy*, 32(4), 289–304. <https://doi.org/10.1080/00926230600666261>
- Vallejo-Medina, P., Pérez-Durán, C., & Saavedra-Roa, A. (2018). Translation, adaptation, and preliminary validation of the female sexual function index into Spanish (Colombia). *Archives of Sexual Behavior*, 47(3), 797–810. <https://doi.org/10.1007/s10508-017-0976-7>
- Vallejo-Medina, P., Saffon, J. P., & Álvarez-Muelas, A. (2022). Colombian clinical validation of the international index of erectile function (IIEF-5). *Sexual Medicine*, 10(1), Article 100461. <https://doi.org/10.1016/j.esxm.2021.100461>
- Vannier, S. A., & Rosen, N. O. (2017). Sexual distress and sexual problems during pregnancy: Associations with sexual and relationship satisfaction. *The Journal of Sexual Medicine*, 14(3), 387–395. <https://doi.org/10.1016/j.jsxm.2016.12.239>
- Witting, K., Santtila, P., Varjonen, M., Jern, P., Johansson, A., Von Der Pahlen, B., & Sandnabba, K. (2008). Female sexual dysfunction, sexual distress, and compatibility with partner. *The Journal of Sexual Medicine*, 5(11), 2587–2599. <https://doi.org/10.1111/j.1743-6109.2008.00984.x>
- Zheng, J., Skiba, M. A., Bell, R. J., Islam, R. M., & Davis, S. R. (2020). The prevalence of sexual dysfunctions and sexually related distress in young women: A cross-sectional survey. *Fertility and Sterility*, 113(2), 426–434. <https://doi.org/10.1016/j.fertnstert.2019.09.027>