

International Journal of Clinical and Health Psychology

www.elsevier.es/ijchp



ORIGINAL ARTICLE

Spanish version of the Sexual Excitation/Sexual Inhibition Inventory for Women: Factorial structure, reliability and validity evidences



M. Reina Granados, José María Salinas, Juan Carlos Sierra*

Mind, Brain, and Behavior Research Center, Universidad de Granada, Spain

Received 10 June 2016; accepted 22 September 2016 Available online 27 October 2016

KEYWORDS Sexual Inhibition/Excitation; SESII-W; Spanish validation; Instrumental study

Abstract Background/Objective: The Dual Control Model suggests that sexual excitation and associated behaviors are the result of the balance between relatively independent excitatory and inhibitory mechanisms. Based on this theoretical model, the Sexual Excitation/Sexual Inhibition Inventory for Women (SESII-W) was developed to evaluate excitation and inhibition dimensions in women. The aim was to adapt and validate the SESII-W in the Spanish population. Method: A sample of 1,380 heterosexual women (aged 18 to 52) completed the Spanish SESII-W, together with other related instruments. After the translation and adaptation of the SESII-W, a Confirmatory Factor Analysis (CFA) was performed. Results: CFA resulted in a version consisting of 33 items divided into eight sub-factors, which were grouped into two higher-order factors (Sexual Excitation and Sexual Inhibition). The sub-factors demonstrated adequate internal consistency values except for Sexual Power Dynamics and Concerns about Sexual Function. Test-retest reliabilities were good. Their scores correlated with erotophilia, sexual sensation seeking, age at first intercourse, and number of sexual partners in the expected direction. Conclusions: The Spanish version of SESII-W has adequate psychometric guarantees for use in clinical practice and research, although it would be necessary to further revise factors that showed a lower level of reliability.

© 2016 Asociación Española de Psicología Conductual. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/ by-nc-nd/4.0/).

* Corresponding author: Facultad de Psicología, Campus Universitario de Cartuja, s/n., 18011, Granada, Spain. *E-mail address:* jcsierra@ugr.es (J.C. Sierra).

http://dx.doi.org/10.1016/j.ijchp.2016.09.003

1697-2600/© 2016 Asociación Española de Psicología Conductual. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

PALABRAS CLAVE

Inhibición/excitación sexual; SESII-W; validación española; estudio instrumental

Versión española del Sexual Excitation/Sexual Inhibition Inventory for Women: estructura factorial, fiabilidad y evidencias de validez

Resumen Antecedentes/Objetivo: El Modelo de Control Dual plantea que la excitación sexual y conductas asociadas son resultado del balance de mecanismos de inhibición y excitación relativamente independientes. Basado en este modelo teórico, se desarrolló el Sexual Excitation/Sexual Inhibition Inventory for Women (SESII-W), que permite la evaluación de las dimensiones excitación/inhibición sexuales en mujeres. El objetivo fue adaptar y validar el SESII-W en población española. Método: Una muestra de 1.380 mujeres heterosexuales (edad 18-52 años) completó el SESII-W junto con otros cuestionarios afines. Después de la traducción y adaptación lingüística se realizó un Análisis Factorial Confirmatorio (AFC). Resultados: El AFC dio lugar a una versión de 33 ítems organizados en ocho subfactores, agrupados en dos factores de orden superior (Excitación Sexual e Inhibición Sexual). Los subfactores muestran aceptables valores de consistencia interna a excepción de Dinámicas sexuales de poder y Preocupaciones por el funcionamiento sexual. La fiabilidad test-retest fue aceptable. Sus puntuaciones correlacionaron en la dirección esperada con erotofilia, búsqueda de sensaciones sexuales, edad de la primera relación sexual y número de parejas sexuales. Conclusiones: La versión española del SESII-W presenta adecuadas propiedades psicométricas para su uso en clínica e investigación, aunque las subescalas con menor fiabilidad deberían ser revisadas.

© 2016 Asociación Española de Psicología Conductual. Publicado por Elsevier España, S.L.U. Este es un artículo Open Access bajo la licencia CC BY-NC-ND (http://creativecommons.org/licenses/by-nc-nd/4.0/).

The Dual Control Model of sexual response (DCM) suggests that sexual excitation and associated behaviors are the result of the balance between excitatory and inhibitory mechanisms, relatively independent, present in the central nervous system (Bancroft, 1999; Bancroft, Graham, Janssen, & Sanders, 2009). This theoretical model is based on the assumption that individuals differ in their propensity for sexual excitement or sexual inhibition. Thus, high levels of sexual inhibition are associated with a greater likelihood of developing sexual dysfunctions (Bancroft, Carnes, Janssen, Goodrich, & Long, 2005; Moyano, Vallejo-Medina, & Sierra, 2016), particularly if high sexual inhibition is paired with low levels of sexual excitation (Bancroft & Janssen, 2000). In contrast, low levels of sexual inhibition increase the probability of participating in risky sexual behaviors (Bancroft et al., 2004; Moyano & Sierra, 2016), especially if sexual excitation is high (Bancroft et al., 2003).

Based on this theoretical model, the Sexual Inhibition/Sexual Excitation Scales (SIS/SES; Janssen, Vorst, Finn, & Bancroft, 2002) were developed to assess variation in individual propensity for becoming sexually excited or inhibited. These scales, originally developed for males, have a threefactor structure. The items of the first factor, Sexual Excitation (SES), refer to tactile, olfactory, visual, and imaginary stimuli, as well as sexually exciting social interactions. Items in Sexual Inhibition are divided into two factors: (a) Inhibition due to the threat of performance failure (SIS1) and (b) Inhibition due to the threat of performance consequences (SIS2). SIS1 and SIS2 items reflect situations in which sexual excitation could disappear because of an intra or interpersonal threat (e.g., losing an erection easily, problems in sexual performance, distractions, negative consequences of sex, physical and psychological damage, etc.). Correlations between SES and the two SIS factors were low, which suggests that Sexual Inhibition and Sexual Excitation are relatively independent. In addition, a significant but modest correlation revealed a slight overlap between the two scales of Sexual Inhibition (Janssen et al., 2002). Higher SES scores predict less sexual satisfaction in married couples (Lykins, Janssen, Newhouse, Heiman, & Rafaeli, 2012). Furthermore, SES has been positively related to a greater number of sexual partners, use of alcohol and drugs in sexual situations, casual sex, and negatively related to using contraceptive methods (see Granados & Sierra, 2016). For its part, SIS1 predicted erectile difficulty (Bancroft, Carnes et al., 2005), premature ejaculation, low sexual desire (Bancroft, Herbenick et al., 2005) and has been related to unprotected sex (Nguyen et al., 2012) and to having suffered sexual aggression (Carvalho, Quinta-Gomes, & Nobre, 2013). Furthermore, SIS1 together with SIS2 predicted the probability of having one night stands (Bancroft et al., 2004), of using aggressive methods to have sexual relations (Peterson, Janssen, & Heiman, 2010) and has been linked to unprotected sex (Nguyen et al., 2012). Hereupon, SIS2 predicted the number of sexual partners without using condoms (Bancroft et al., 2004).

Subsequently, SIS/SES were applied to a sample of 1,067 female university students (Carpenter, Janssen, Graham, Vorst, & Wicherts, 2008), and an acceptable fit of the original three-factor model was obtained. When the scores in this sample of women were compared with those of male college students, it was observed that males had higher SES scores whereas women had higher SIS1 and SIS2 scores. Therefore, Graham, Sanders, and Milhausen (2006) developed a scale specifically designed for women, which questioned whether the items in the SIS/SES are equally suited to use with women and whether they faithfully represent sexual excitement and inhibition in females (Graham, Sanders, Milhausen, & McBride, 2004). The following assumptions were used to develop a new scale for women: (a) sexual inhibition is more present in women than in men (Bjorklund & Kipp, 1996; Moyano & Sierra, 2014); (b) threats are different for women than for men (e.g., anxiety regarding body image, reputation, relationship problems, etc.; see Moyano & Sierra, 2015); and (c) SIS/SES focus extensively on genital response, which in women may be less relevant. In fact, there is no clear distinction between sexual excitation and genital response (Graham et al., 2004; Moyano & Sierra, 2015).

The new instrument, the Sexual Excitation/Sexual Inhibition Inventory for Women (SESII-W; Graham et al., 2006) was developed from data obtained from nine focus groups with women of different ages, ethnicity, and sexual orientation. The data elicited from these groups explored the concept of sexual arousal, the relationship between excitation and sexual interest, and the factors that activate or inhibit sexual excitation (Graham et al., 2004). A total of 115 items were obtained and were administered to 655 female university students and university workers. An exploratory factor analysis (EFA) was performed and it resulted in a version of 36 items divided into eight factors (cf. Graham et al., 2006): Arousability, Relationship Importance, Sexual Power Dynamics, Concerns about Sexual Function, Arousal Contingency, Partner Characteristics, Setting, and Smell. An EFA was then performed with the eight factors. This resulted in the identification of two higher-order factors: Sexual Excitation (SE) and Sexual Inhibition (SI). The coefficients of internal consistency were .70 and .55 for SE and SI, respectively, and ranged between .63 and .80 for the different sub-factors. Test-retest reliability was adequate for the eight-factor model as well as the two-factor model. Although the higher-order structure was simpler and more closely related to the underlying theoretical model, the authors decided to use the multifactorial structure in subsequent investigations because the eight factors were more informative and better predicted variables of interest compared with higher-order factors (Graham et al., 2006).

The evidence of convergent and discriminant validity was also appropriate (Graham et al., 2006). Erotophilia and sexual sensation seeking positively correlated with SE and negatively correlated with SI. These results were similar to those of Bloemendaal and Laan (2015), and Velten, Scholten, Graham, and Margraf (2016). In women from the general population, Concerns about Sexual Function and Arousal Contingency were found to predict general sexual problems, such as low sexual interest, as well as the difficulty of becoming aroused and having an orgasm (Sanders, Graham, & Milhausen, 2008). Moreover, difficulty to orgasm was negatively predicted by Relationship Importance and positively by Sexual Power Dynamics (Sanders et al., 2008). Bloemendaal and Laan (2015) observed lower levels of SE and higher levels of SI in women with sexual problems, as compared with the control group. Conversely, SE scores also positively correlated with the Female Sexual Function Index whereas, in the case of SI scores, the correlation was negative. Similar results were subsequently obtained by Velten et al. (2016). Furthermore, high SE and low SI predicted sexual risk-taking (Turchik, Garske, Probst, & Irvin, 2010).

The SESII-W has been translated, adapted, and validated in several countries. These adaptations of SESII-W in other

contexts showed adequate indicators of reliability and an eight-factor structure, similar to the original study. This was true for both the Dutch validation (Bloemendaal & Laan, 2015) and German validation (Velten et al., 2016). In Spain the SESII-W had not been adapted to the Spanish population. Therefore, the objective of this study was to investigate the psychometric properties of the Spanish version of the SESII-W: factor structure, reliability of internal consistency, test-retest reliability, and some evidences of the validity of its measures. The following hypotheses will be tested:

- Factorial structure similar to the original version (Graham et al., 2006). Eight primary factors -four factors of sexual excitation and four factors of sexual inhibition- and two higher order factors (*Sexual Excitation-SE* and *Sexual Inhibition-SI*) will be obtained.
- SE and sub-factors will be related positively with sexual sensation seeking, erotophilia (Bloemendaal & Laan, 2015; Del Río, Cabello, & Fernández, 2015; Graham et al., 2006; Velten et al., 2016) and number of sexual partners (Granados & Sierra, 2016), and negatively with age at first sexual intercourse (Granados & Sierra, 2016). SI and sub-factors will be related in a manner contrary to these variables.

Method

Participants

The sample, obtained by convenience sampling, consisted of 1,380 Spanish heterosexual women, divided into two subsamples: university students (Sample 1; 50.72%) and general population (Sample 2; 49.28%). Inclusion criteria were: being female, being 18 years old or older and being heterosexual. These criteria were based on the characteristics of the sample from the original study, in which women were adults and heterosexual orientation was predominant (Graham et al., 2006). Table 1 shows the socio-demographic characteristics of both samples. In this study, 130 participants from Sample 1 and 54 participants from Sample 2 answered the scale at three different times (at 4 and 8 weeks after the first time). University students (n = 130)who answered three times did not differ from those who answered only once in: age $(t_{711} = 0.76, p = .446)$; age at first intercourse (t_{641} = -1.27, p = .204); number of sexual partners (t_{619} = -0.98, p=.326); and current relationship status (χ^2 = 3.01, p = .08). In the same way, general population women (n=54) who answered three times did not differ either from those who answered only once in: age ($t_{64,79}$ = -0.13, p = .188); age at first intercourse ($t_{58.54} = -0.43$, p = .669); number of sexual partners ($t_{61.02} = -0.39$, p = .699); and current relationship status ($\chi^2 = 0.53$, p = .467).

Instruments

- Socio-demographic and Sexual History Questionnaire, which was used to collect information regarding the participants' age, education level, sexual orientation, relationship status, age at first intercourse, and number of sexual partners.

Variables	Sample 1. University students (<i>n</i> = 700)	Sample 2. General population (<i>n</i> = 680)		
Mean age (SD)	20.13 (1.80)	34.12 (9.86)		
Range	18-25	18-52		
Education				
None	-	0.3%		
Primary Education	-	5.9%		
Secondary Education	-	30.5%		
Some college or college degree	100%	63.3%		
Mean age at first sexual intercourse (SD)	16.56 (1.54)	18.36 (2.83)		
Currently in a relationship				
Yes	53.4%	71.6%		
No	46.6%	28.4%		
Mean number of sexual partners (SD)	3.71 (4.27)	6.21 (6.20)		

- Sexual Excitation/Sexual Inhibition Inventory for Women (SESII-W; Graham et al., 2006), consisting of 36 items rated on a four-point Likert scale: 1 = strongly disagree; 2 = disagree; 3 = agree; and 4 = strongly agree. The characteristics of this questionnaire have been described in the Introduction.
- Spanish version of the Sexual Sensation Seeking Scale (SSSS; Kalichman, 2011) of Sierra et al. (2013). The scale was composed of 10 items assessing sexual sensation seeking with a Likert scale from 1 (*not at all like me*) to 4 (*very much like me*). Higher scores indicated greater sensation seeking. The authors reported appropriate reliability, with Cronbach's alpha values greater than .75. In this study the reliability was .76 and .78 in Sample 1 and Sample 2, respectively.
- Spanish short version of the Sexual Opinion Survey (Fisher, White, Byrne, & Kelley, 1988) of Vallejo-Medina, Granados, and Sierra (2014) in which the six items that assess erotophilia are rated on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Its internal consistency reliability is .74, and it has excellent validity indicators. In this study, Cronbach's alpha values of .72 in Sample 1 and .74 in Sample 2 were obtained.

Procedure

As recommended by Muñiz, Elosua, and Hambleton (2013), a forward-translation of the items was made from English into Spanish. This translation was executed by two experts in sexuality research with high English proficiency and knowledge in psychometrics and in the construction of questionnaires. This initial translation was then revised by a bilingual psychologist, expert in sexuality. Once the translation was executed, the original version and the Spanish version were sent to a panel of five experts in psychological assessment and sexuality research to assess understanding and the conceptual equivalence degree of each item. When there was not at least 85% agreement in regards to the content comprehension or equivalence of an item, it was changed as suggested by the experts. This occurred in the case of 19 items. The Spanish scale was then given to 10 women university students and 10 women from the Spanish general population to test whether the items were clearly expressed and understandable. After modifying one of the items, the final version of the scale was obtained.

From January to April 2013, the final Spanish version of the SESII-W was administered by well-trained evaluators to university students and general population in southern Spain. Participation was voluntary, and the anonymity and confidentiality of answers was guaranteed. Students were evaluated collectively in a classroom and the general population both individually (shopping malls, parks, stations, etc.) and collectively (community centers and associations). Both evaluations were always carried out in the presence of an evaluator in case doubts arose. Everyone who decided to contribute to the study, read and signed an informed consent. After answering the scales, participants returned them in a sealed envelope to the evaluators. The estimated time to complete the questionnaires was 15 minutes.

The test-retest reliability was carried out with university students in their respective classrooms at three different times in the presence of an evaluator. In the first session, each participant was given three copies of the SESII-W, along with the informed consent form. All documents had the same code, as well as the exact date of the second and third administrations (at 4 and 8 weeks, respectively) that had to be administered in a group in class. After answering the scales, students put them in a sealed envelope and delivered them to the evaluator. Unlike the university population, data collection for the test-retest reliability in the general population was performed individually at the three established time intervals. This study was approved by the Ethics Committee on Human Research of the University of Granada.

Data analysis

CFA of Sample 1 was used to test the factorial solution in Graham et al. (2006), which consisted of eight primary factors and two higher-order factors. Items with a low load

were then eliminated, and an alternative model was proposed. Following the recommendations on scale validation (Neukrug & Fawcett, 2014) and generalization of models (Delgado-Rico, Carretero-Dios, & Ruch, 2012), the selection of items was carried out, based on the adjusted model in the sample of university students. Subsequently, this same model was applied to a sample of subjects from the general population. Sample 1 was used with university students for being more homogeneous in terms of socio-demographic characteristics (age, education level, etc.). The factorial structure was put to test in Sample 2 with similar characteristics to the ones in the Graham et al. (2006) study. The factorial analyses were performed with M-plus version 7.3 (Muthén & Muthén, 2004/2008) using polychoric correlations with a WLSMV estimator because of the ordinal nature of the items. Items with loads lower than .40 and a high error variance were eliminated. The goodness of fit of the models was evaluated by estimating the χ^2 /degree freedom (χ^2/df) , Root Mean Square Error (RMSEA), Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI).

Results

Factor structure: Confirmatory Factor Analysis

The fit indices of the two higher-level dimensions of the model proposed by Graham et al. (2006) were found to be inadequate in Sample 1 (Kaplan, 2009): adjustment coefficient χ^2 = 2402.35, *df* = 582, *p* < .001; RMSEA = .065 (.062, .068), CFI = .779 and TLI = .761. The reason was the low load of almost half of the items in the factors. Consequently, an alternative model was proposed removing the items with low variance and inconsistent with the content of factors in which they loaded, such as the following: item 3 (Having sex in a different setting than usual is a real turn on for me); item 15 (Seeing an attractive partner's naked body really turns me on); and item 30 (Certain hormonal changes definitely increase my sexual arousal). The final version of the scale consisted of 33 items. Furthermore, it was believed that some items could load in two factors. Thus, the model included two items that loaded in Arousability and Relationship Importance; one item that loaded in Arousability and Sexual Power Dynamics; and another that loaded in Arousability and Partner Characteristics. Still another item loaded in Sexual Power Dynamics and Setting, and another in Arousal Contingency and Concerns about Sexual Function. Regarding the second-order structure, three sub-factors Sexual Power Dynamics, Setting, and Concerns about Sexual Function loaded in both SE and SI.

As shown in Figure 1, the 33-item model included in SE: Arousability (items 11, 15, 17, 18, 22, 23, 24, and 29); Sexual Power Dynamics (items 2, 5, 25, and 26); Smell (items 20 and 21), and Partner Characteristics (items 4, 7, and 9). And the model included in SI factor: Setting (items 3, 6, and 12); Relationship Importance (items 1, 10, 13, 14, 19, and 30); Arousal Contingency (items 27, 31, 32, and 33), and Concerns about Sexual Function (items 8, 16, and 28). Subsequently, the fit of this same model was examined for Sample 2 (see Figure 2 and Appendix). It was decided to cluster the items that loaded in two sub-factors into the one with higher factorial weight. The global adjustment coefficient improved substantially in Sample 1 (χ^2 = 1047.06, df = 477, p < .00001, and Sample 2 (χ^2 = 1206.79, df = 477, p < .00001). The indices show a good fit to this model, both in Sample 1: RMSEA = .041 (.038, .045), CFI = .920 and TLI = .912, and in Sample 2: RMSEA = .048 (.044, .051), CFI = .911 and TLI = .901.

The correlations between the two higher-order factors were significant and negative in both samples (Sample 1: r = -.19, p < .001; Sample 2: r = -.34, p < .001). Table 2 shows the correlations between the eight factors in both samples, which in general were in the expected direction.

Item analysis and reliability

Table 3 shows the analysis of the items in the Spanish version of SESII-W (i.e., means, standard deviations, corrected itemtotal correlations, and Cronbach's alpha if the items were deleted) clustered into the factors derived by means of CFA. The results show the mean around the theoretical midpoint of the scale (i.e., 2.00; a minimum value is 1.72 and a maximum value is 3.23 in Sample 1, and a minimum is 1.74 and a maximum is 3.42 in Sample 2) and standard deviations very close to 1.00. The corrected item-total correlations were equal/greater than .30 (Nunnally & Bernstein, 1995), except for items 1 and 25 in Sample 1, and item 15 in Sample 2.

As for the reliability of the scales, we examined both their internal consistency (Cronbach's alpha; Table 3), and the 4-week (Time 1 to Time 2) and 8-week (Time 1 to Time 3) test-retest reliabilities. Table 4 shows the correlations between Time 1 to Time 2 and Time 1 to Time 3.

External validity

As reflected in the results from both samples, erotophilia and sexual sensation seeking positively correlated with SE and its sub-factors, and negatively with SI and its sub-factors, except for *Concerns about Sexual Function*. In general, the correlations between age at first sexual intercourse and number of sexual partners with different SESII-W factors showed the direction expected. There was no relationship between age at first sexual intercourse and *Arousability, Smell, Partner Characteristics* and *Setting* in Sample 1, and *Smell* and *Partner Characteristics* in Sample 2. Regarding the number of sexual partners, no relationship was found with *Smell* and *Concerns about Sexual Function* in Sample 1 (Table 5).

Discussion

After translating and linguistically adapting the SESII-W, we tested the model of eight factors grouped into two higher-order dimensions of *Sexual Excitation* (SE) and *Sexual Inhibition* (SI) as proposed in the original study (Graham et al., 2006). A CFA for a population of university students resulted in a version of the scale consisting of 33 items, divided into eight factors: four for SE (*Arousability, Sexual Power Dynamics, Smell*, and *Partner Characteristics*) and four for SI (*Setting, Relationship Importance, Arousal Contingency*, and *Concerns about Sexual Function*). A second CFA for women from the general population also showed good fit indices. This factorial structure fit the DCM

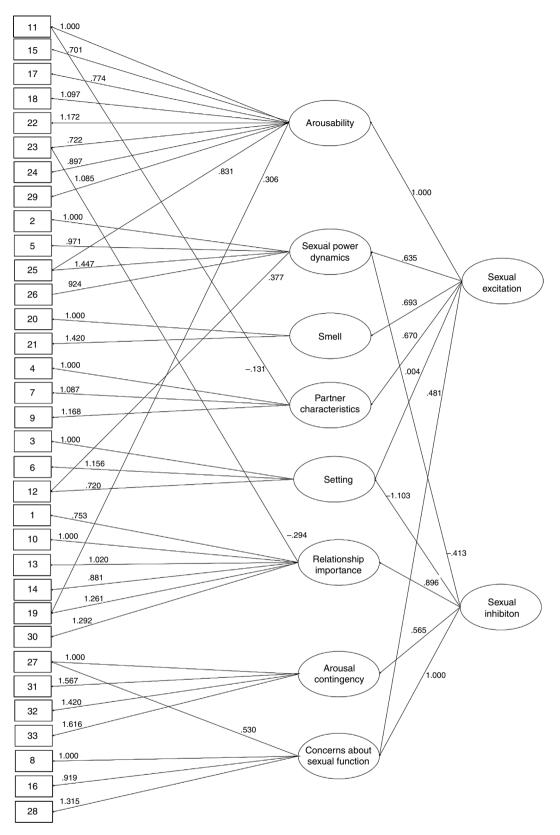


Figure 1 Standardized factor loadings of Confirmatory Factor Analysis in Sample 1.

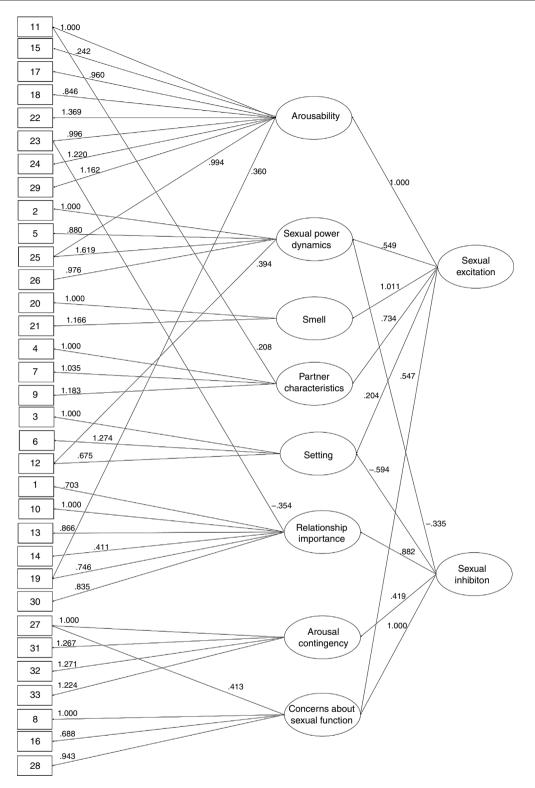


Figure 2 Standardized factor loadings of Confirmatory Factor Analysis in Sample 2.

(Bancroft, 1999; Bancroft et al., 2009), which was the theoretical model on which the SESII-W is based. Previous studies recommend the use of eight sub-factors for they provide more information about the different manifestations of sexual excitation and inhibition in women and because the fit of the model worsened by including higher order factors (Bloemendaal & Laan, 2015; Graham et al., 2006; Velten et al., 2016). According to the results of this work, the use of the two-factor structure is recommended because it is simpler and shows a good fit and better indicators of

	Arousability	Sexual power dynamics	Smell	Partner charac- teristics	Setting	Relationship impor- tance	Arousal contin- gency	Concerns about sexual function
Arousability	-	.40**	.43**	.41**	20**	17**	10**	.11**
Sexual power dynamics	.37**	-	.22**	.20**	26**	- .21 **	17**	01
Smell	.54**	.26**	-	.33**	14**	07	03	.13**
Partner characteristics	.45**	.21**	.42**	-	08*	04	01	.17**
Setting (unusual/ unconcealed)	35**	35**	29 **	20**	-	.38**	.24**	.18**
Relationship importance	24 **	29**	- . 21**	07	.36**	-	.21**	.23**
Arousal contingency	19 **	15**	16 ^{**}	05	.20**	.26**	-	.37**
Concerns about sexual function	.05	07	.03	.11*	.14**	.24**	.29**	-

Note. Sample 1 = university students (data above the diagonal); Sample 2 = general population (data under the diagonal).

^{**} р<.01. * р<.05.

reliability and external validity, as well as eight factors if more specific information about the sexual excitation and sexual inhibition in women is required.

Although the factor structure of this study is very similar to the original one, it should be noted that the sub-factor Setting, which belonged to SE in the original, is part of SI in the adaptation. The items in Setting evaluate the ability to become sexually excited/inhibited in anticipation of possible external threats that can affect sexual response (Janssen & Bancroft, 2007). Sexual inhibition is thus expected to increase in the presence of a perceived external threat (Bancroft & Janssen, 2000). Moreover, one of the most important mechanisms of sexual inhibition in women is social pressure (Bancroft et al., 2009; Graham et al., 2006), which is part of the content of these items. According to Bancroft (1999), the possibility of the existence of different types of sexual inhibition due to a lack of understanding of the nature and specificity of this response should be left open; especially in women. Therefore, we propose to further study sexual inhibition in women.

In accordance with the DCM, sexual excitation and sexual inhibition are relatively independent. As in the original version, its adaptation for the German population (Velten et al., 2016) and the present study, the correlations between the excitation and inhibition factors were low or nonexistent in both samples. This confirms the relative independence between sexual excitation and sexual inhibition (Bancroft et al., 2009). Furthermore, the present study revealed positive correlations between the SE sub-factors *Arousability, Smell,* and *Partner Characteristics,* with the SI sub-factor, *Concerns about Sexual Function* in Sample 1 and *Partner Characteristics with Concerns about Sexual Function* in Sample 2 (similar to Velten et al., 2016). Almost in all cases, the items *Arousability, Smell,* and *Partner Characteristics, Smell,* and *Partner Characteristics, Smell,* and *Partner Characteristics, Smell,* and *Partner Characteristics, Smell,* and *Partner Characteristics about Sexual Function* in Sample 2 (similar to Velten et al., 2016).

another person. This is not incompatible with a certain inhibition stemming from concern about one's own sexual functioning, which can be derived, among other things, from performance anxiety (Dove & Wiederman, 2000), high expectations (Sánchez-Fuentes, Salinas, & Sierra, 2016) or high sexual perfectionism (Stoeber & Harvey, 2016).

Overall, the reliability of the Spanish version of the SESII-W was adequate. Both the two higher-order factors as well as the eight sub-factors showed satisfactory internal consistency, except for Sexual Power Dynamics in Sample 1 and Concerns about Sexual Function in Sample 2. Items 5, 25, and 26 in Sexual Power Dynamics evaluate the potential impact of the use of physical force or domination in a sexual situation (Graham et al., 2006). All of the women in Sample 1 were born in the nineties, a decade in Spain in which there was a generational change in behaviors and attitudes (Fernández-Llebrez González & Camas-García, 2012). In recent years, young people have become more progressive and increasingly in favor of a more equal relationship between men and women (García-Cueto et al., 2015). This is particularly true of women, especially those with a higher education level (Ajenjo-Cosp & García-Román, 2014). As for the low reliability of Concerns about Sexual Function in Sample 2, this may be due to the higher mean age of this group. This factor may involve a better understanding of the body, of desire, of the couple and an increased acceptance of sexuality (Beckman, Waern, Gustafson, & Skoog, 2008). Consequently, these items may not represent them faithfully. Low reliability in factor Concerns about Sexual Function is consistent with the results obtained in the original study (Graham et al., 2006) and in Dutch (Bloemendaal & Laan, 2015) and German (Velten et al., 2016) adaptations. Both in this study and in the original (Graham et al., 2006), sexual excitation factors showed higher reliability values than those of sexual inhibition.

Table 3 Item analyses.

		Sample 1						Sample 2		
Factor/items	М	SD	r ^c _{i-t}	α-i	α	М	SD	r ^c _{i-t}	α-i	α
Sexual Excitation (SE)	45.15	6.99			.82	48.71	7.94			
Arousability	22.08	3.93			.75	23.89	3.89			.7
11	2.96	0.80	.47	.72		3.15	0.77	.50	.70	
15	2.83	0.77	.33	.75		2.93	0.84	.17	.76	
17	3.04	0.76	.38	.74		3.26	0.77	.38	.72	
18	3.07	0.75	.48	.72		3.42	0.70	.42	.72	
22	2.68	0.79	.58	.70		2.88	0.83	.59	.68	
23	2.50	0.91	.37	.75		2.85	0.94	.41	.72	
24	2.35	0.82	.46	.73		2.54	0.79	.50	.70	
29	2.65	0.87	.54	.71		2.87	0.90	.53	.69	
Sexual Power Dynamics	10.36	2.60			.58	10.96	2.77			.(
2	2.72	0.96	.44	.44		3.08	0.95	.42	.58	
5	2.81	0.98	.43	.44		2.93	1.02	.50	.51	
25	2.21	1.05	.28	.57		2.25	1.06	.39	.60	
26	2.62	0.93	.30	.55		2.70	0.96	.39	.60	
Smell	5.71	1.56			.67	5.94	1.58			
20	3.02	0.86	.50	-		3.13	0.83	.57	-	
21	2.69	0.94	.50	-		2.80	0.95	.57	-	
Partner Characteristics	7.61	2.15			.70	7.94	2.35			
4	2.26	0.98	.48	.65		2.41	1.04	.52	.69	
7	2.48	0.89	.52	.59		2.64	0.96	.53	.67	
9	2.87	0.84	.54	.57		2.89	0.91	.61	.58	
Sexual Inhibition (SI)	43.32	6.97			.78	42.01	6.99			
Setting (unusual or unconcealed)	8.86	2.27			.63	8.41	2.29			
3	2.97	1.08	.42	.55		2.85	1.03	.46	.47	
6	2.71	1.02	.46	.49		2.66	0.99	.40	.56	
12	3.18	0.89	.43	.54		2.90	1.01	.43	.53	
Relationship Importance	18.08	3.53			.68	17.49	3.60			
1	3.01	0.88	.26	.68		2.98	0.95	.37	.64	
10	2.63	1.11	.44	.63		2.45	1.11	.39	.64	
13	3.19	1.02	.38	.65		3.02	1.02	.37	.64	
14	3.23	0.93	.38	.65		3.16	0.97	.39	.63	
19	3.04	0.81	.47	.62		2.91	0.87	.43	.62	
30	3.00	0.93	.54	.59		2.97	0.90	.47	.61	
Arousal Contingency	7.84	2.53			.75	7.82	2.51			
27	2.14	1.00	.46	.73		2.02	0.96	.45	.70	
31	1.87	0.79	.61	.64		1.89	0.81	.55	.63	
32	2.11	0.84	.53	.68		2.16	0.86	.54	.64	
33	1.72	0.74	.55	.67		1.74	0.76	.50	.66	
Concerns about Sexual Function	8.37	2.02			.61	8.35	2.03			.!
8	2.61	0.95	.40	.55		2.60	1.00	.36	.46	
16	2.83	0.90	.39	.56		2.79	0.93	.38	.43	
28	2.93	0.85	.48	.30		2.97	0.85	.36	.46	

To obtain evidence of external validity, the SESII-W scores were correlated with sexual sensation seeking, erotophilia, age at first sexual intercourse, and number of sexual partners. The effect of age was controlled in the general population sample (Sample 2), since its effect on sexual excitation and sexual inhibition has been demonstrated (Bancroft et al., 2009; Velten et al., 2016), as well as on sexual difficulties in women (e.g., Hunter, Nakagawa, Van Den Eeden, Kuppermann, & Huang, 2016; Sierra et al., 2014). Correlations between SESII-W scores and the aforementioned variables revealed adequate evidence of validity of its measures, following the expected direction according to the hypotheses. Similarly to what happens in the original study (Graham et al., 2006) and Bloemendaal and Laan (2015) and Velten et al. (2016) adaptations, the lowest correlations are obtained between the sub-factor *Concerns*

Table 4 Four-week and eight-week test-retest reliability for SESII-W.

	Sam	nple 1	Sample 2		
	T1-T2	T1-T3	T1-T2	T1-T3	
	(4 weeks) n = 130	(8 weeks) n = 130	(4 weeks) n = 54	(8 weeks) n = 54	
Sexual Excitation (SE)	.79	.72	.83	.80	
Arousability	.69	.64	.86	.72	
Sexual Power Dynamics	.81	.73	.79	.78	
Smell	.59	.57	.76	.70	
Partner Characteristics	.73	.63	.77	.75	
Sexual Inhibition (SI)	.84	.80	.80	.70	
Setting (unusual or unconcealed)	.65	.65	.56	.48	
Relationship Importance	.77	.76	.83	.66	
Arousal Contingency	.83	.74	.65	.64	
Concerns about Sexual Function	.68	.60	.57	.57	

Note. T1 = Time 1; T2 = Time 2 (at four weeks); T3 = Time 3 (at eight weeks). Sample 1 = university students; Sample 2 = general population. Significance of all correlations *p* < .01.

about Sexual Function, sexual sensation seeking and erotophilia. As hypothesized, higher scores for SE were related to a younger age of sexual debut, whereas the opposite occurred in the case of SI scores. These results are in line with other studies (Granados & Sierra, 2016; Piña-López & Rivero-Icedo, 2009), in which participants indicated sexual excitation as a factor that predisposed an early initiation of sexual intercourse. On the other hand, in both samples, SE was positively associated with the number of sexual partners. These results are consistent with previous studies, where sexual excitation is a predisposing factor for

..

having sex with a higher number of sexual partners (see Granados & Sierra, 2016). Thus, sexual excitation positively predicted sex with multiple partners in a sample of university women (Piña-López & Rivero-Icedo, 2009), and a higher number of sexual partners was associated with higher SE in women from the general population (Nguyen et al., 2012).

In short, the Spanish version of the SESII-W has adequate psychometric guarantees and is a reliable and useful instrument for the assessment of sexual excitation in Spanish women, both in research and clinical practice. This scale

Factors	Sample 1				Sample 2				
	Erotophilia	Sexual sensation seeking	Age at first sexual inter- course	Number of sexual partners	Erotophilia	Sexual sensation seeking	Age at first sexual inter- course	Number of sexual partners	
Sexual Excitation	.46**	.61**	10 [*]	.21**	.48**	.64**	16**	.31**	
Arousability	.43**	.53**	04	.17**	.44**	.58**	19 ^{**}	.26**	
Sexual Power Dynamics	.29**	.52**	— .15 **	.14**	.35**	.54**	12**	.22**	
Smell	.24**	.31**	03	.08	.32**	.40**	08	.20**	
Partner Characteristics	.28**	.30**	03	.20**	.25**	.28**	02	.23**	
Sexual Inhibition	20**	34**	.17**	22 ^{**}	34**	40**	.21**	39**	
Setting (unusual/ unconcealed)	- .19 **	37**	.07	13**	26**	44**	.11*	23**	
Relationship Importance	20**	34**	.14**	28**	29**	33**	.20**	38**	
Arousal Contingency	- .19 **	18**	.12**	10 [*]	29**	24**	.13**	24**	
Concerns about Sexual Function	.11**	.02	.12**	02	02	.01	.11*	12**	

Note. Sample 1: university students. Sample 2: general population.

** p < .01.

* *p* < .05.

provides a global score of SE and SI, as well as each of its sub-factors, and permits the interpretation of various components of sexual excitation and sexual inhibition. However, this study also had certain limitations. Although the participants were women with different sociodemographic characteristics, the sample was incidental, which does not allow the generalization of the results to the general Spanish population. In addition, all participants were heterosexual. Likewise, a measure of sexual functioning like the Female Sexual Function Index (FSFI; Rosen et al., 2000), that would allow to know the prediction capacity and to bring validity clues on the Spanish version SESII-W, was not included. Another aspect to consider is the limited privacy of participants while answering the scales in class or in centers, as well as the possible social desirability that may be present. It is recommended to consider these aspects in future studies. Future research should expand the study of SI in women. The scale should also be improved to include more items in the sub-factor Smell. The review of those factors with lower reliability is suggested in future studies. Additionally, it would be necessary to apply the scale to a sample of nonheterosexual women, a clinical population, and also females at sexual risk.

Funding

This research was funded by the Spanish Ministry of Education, Culture and Sports through grant AP2010-4843 for the training of university teachers awarded to the first author.

Acknowledgments

The authors express their gratitude to Cynthia A. Graham for the review of the final version of the article.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.ijchp.2016. 09.003.

References

- Ajenjo-Cosp, M., & García-Román, J. (2014). Cambios en el uso del tiempo de las parejas. ¿Estamos en el camino hacia una mayor igualdad? *Revista Internacional de Sociología*, 2, 453–476. http://dx.doi.org/10.3989/ris.2012.05.28
- Bancroft, J. (1999). Central inhibition of sexual response in the male: A theoretical perspective. *Neuroscience and Biobehavioral Reviews*, 23, 763–784. http://dx.doi.org/10.1016/ S0149-7634(99)00019-6
- Bancroft, J., Carnes, L., Janssen, E., Goodrich, D., & Long, J. S. (2005). Erectile and ejaculatory problems in gay and heterosexual men. Archives of Sexual Behavior, 34, 285–297. http://dx. doi.org/10.1007/s10508-005-3117-7
- Bancroft, J., Graham, C. A., Janssen, E., & Sanders, S. A. (2009). The dual control model: Current status and future directions. *Journal of Sex Research*, *46*, 121–142. http://dx.doi.org/ 10.1080/00224490902747222
- Bancroft, J., Herbenick, D., Barnes, T., Hallam-Jones, R., Wylie, K., Janssen, E., & Members of BASRT. (2005). The relevance of the dual control model to male sexual dysfunction:

The Kinsey Institute/BASRT collaborative project. Sexual and Relationship Therapy, 20, 13–30. http://dx.doi.org/10.1080/14681990512331298275

- Bancroft, J., & Janssen, E. (2000). The dual control model of male sexual response: A theoretical approach to centrally mediated erectile dysfunction. *Neuroscience and Biobehavioral Review*, 24, 571–579. http://dx.doi.org/10.1016/S0149-7634(00)00024-5
- Bancroft, J., Janssen, E., Carnes, L., Strong, D. A., Goodrich, D., & Long, J. S. (2004). Sexual activity and risk taking in young heterosexual men: The relevance of sexual arousability, mood, and sensation seeking. *Journal of Sex Research*, 41, 181–192. http://dx.doi.org/10.1080/00224490409552226
- Bancroft, J., Janssen, E., Strong, D., Carnes, L., Vukadinovic, Z., & Long, J. S. (2003). Sexual risk-taking in gay men: The relevance of sexual arousability, mood, and sensation seeking. *Archives of Sexual Behavior*, 32, 555–572. http://dx.doi.org/ 10.1023/A:1026041628364
- Beckman, N., Waern, M., & Gustafson Skoog, I. (2008). Secular trends in self-reported sexual activity and satisfaction in Swedish 70 year olds: Cross sectional survey of four populations, 1971-2001. British Medical Journal, 337, 151–154. http://dx.doi.org/10.1136/bmj.a279
- Bjorklund, D. F., & Kipp, K. (1996). Parental investment theory and gender differences in the evolution of inhibition mechanisms. *Psychological Bulletin*, 120, 163–188. http://dx.doi.org/ 10.1037/0033-2909.120.2.163
- Bloemendaal, L. B., & Laan, E. T. (2015). The psychometric properties of the sexual excitation/sexual inhibition inventory for women (SESII-W) within a Dutch population. *Journal of Sex Research*, 52, 69–82. http://dx.doi.org/10.1080/ 00224499.2013.826166
- Carpenter, D., Janssen, E., Graham, C., Vorst, H., & Wicherts, J. (2008). Women's scores on the sexual inhibition/sexual excitation scales (SIS/SES): Gender similarities and differences. *Journal of Sex Research*, 45, 36–48. http://dx.doi.org/ 10.1080/00224490701808076
- Carvalho, J., Quinta-Gomes, A., & Nobre, P. J. (2013). The sexual functioning profile of a nonforensic sample of individuals reporting sexual aggression against women. *The Journal of Sexual Medicine*, 10, 1744–1754. http://dx.doi.org/10.1111/jsm. 12188
- Del Río, F. J., Cabello, F., & Fernández, I. (2015). Influence of substance use on the erectile response in a sample of drug users. *International Journal of Clinical and Health Psychology*, 15, 37–43. http://dx.doi.org/10.1016/j.ijchp.2014.10.002
- Delgado-Rico, E., Carretero-Dios, H., & Ruch, W. (2012). Content validity evidences in test development: An applied perspective. International Journal of Clinical and Health Psychology, 12, 449–459.
- Dove, N. L., & Wiederman, M. W. (2000). Cognitive distraction and women's sexual functioning. *Journal of Sex and Marital Therapy*, 26, 67–78. http://dx.doi.org/10.1080/009262300278650
- Fernández-Llebrez González, F., & Camas-García, F. (2012). Cambios y persistencias en la igualdad de género de los y las jóvenes en España (1990-2010). Retrieved January 20, 2016. http://www.injuve.es/sites/default/files/2012/42/ publicaciones/estudio%20cambios%20igualdad%20genero.pdf
- Fisher, W. A., White, L. A., Byrne, D., White, L. A., & Kelley, K. (1988). Erotophobia-erotophilia a dimension of personality. *Journal of Sex Research*, 25, 123–151. http://dx.doi.org/10.1080/ 00224498809551448
- García-Cueto, E., Rodríguez-Díaz, F. J., Bringas-Molleda, C., López-Cepero, J., Paíno-Quesada, S., & Rodríguez-Franco, L. (2015). Development of the Gender Role Attitudes Scale (GRAS) amongst Young Spanish people. *International Journal of Clinical and Health Psychology*, 15, 61–68. http://dx.doi.org/10.1016/ j.ijchp.2014.10.004

- Graham, C. A., Sanders, S. A., & Milhausen, R. R. (2006). The sexual excitation/sexual inhibition inventory for women: Psychometric properties. *Archives of Sexual Behavior*, 35, 397–409. http://dx.doi.org/10.1007/s10508-006-9041-7
- Graham, C. A., Sanders, S. A., Milhausen, R. R., & McBride, K. R. (2004). Turning on and turning off: A focus group study of the factors that affect women's sexual arousal. *Archives* of Sexual Behavior, 33, 527–538. http://dx.doi.org/10.1023/ B:ASEB.0000044737.62561.fd
- Granados, M. R., & Sierra, J. C. (2016). Excitación sexual: una revisión sobre su relación con las conductas sexuales de riesgo. *Terapia Psicológica*, 34, 59-70.
- Hunter, M. M., Nakagawa, S., Van Den Eeden, S. K., Kuppermann, M., & Huang, A. J. (2016). Predictors of impact of vaginal symptoms in postmenopausal women. *Menopause*, 23, 40–46. http://dx. doi.org/10.1097/GME.00000000000482
- Janssen, E. J., & Bancroft, J. (2007). The dual control model: The role of sexual inhibition and excitation in sexual arousal and behavior. In E. Janssen (Ed.), *The psychophysiology of sex* (pp. 197–222). Bloomington: Indiana University Press.
- Janssen, E., Vorst, H., Finn, P., & Bancroft, J. (2002). The sexual inhibition (SIS) and sexual excitation (SES) scales:
 I. Measuring sexual inhibition and excitation proneness in men. *Journal of Sex Research*, 39, 114–126. http://dx.doi.org/10.1080/00224490209552130
- Kalichman, S. C. (2011). Sexual sensation seeking scale. In T. D. Fisher (Ed.), *Handbook of sexuality-related measures* (pp. 564–565). New York, NY: Routledge.
- Kaplan, D. (2009). Structural equation modeling: Foundations and extensions (2nd ed.). Thousand Oaks, CA: Sage.
- Lykins, A. D., Janssen, E., Newhouse, S., Heiman, J. R., & Rafaeli, E. (2012). The effects of similarity in sexual excitation, inhibition, and mood on sexual arousal problems and sexual satisfaction in Newlywed couples. *The Journal of Sexual Medicine*, 9, 1360–1366. http://dx.doi.org/10.1111/j.1743-6109.2012.02698.x
- Moyano, N., & Sierra, J. C. (2014). Validación de las escalas de inhibición sexual/excitación sexual-forma breve (SIS/SES-SF). *Terapia Psicológica*, 32, 87-100.
- Moyano, N., & Sierra, J. C. (2015). Descifrando las disfunciones sexuales femeninas en el DSM-5. Revista Argentina de Clínica Psicológica, XXIV, 277–286.
- Moyano, N., & Sierra, J. C. (2016). Sexual victimisation, sexual cognitions, desire and excitation/inhibition in community Spanish male and female sexual aggressors. *Journal* of Sexual Aggression, 22, 36–51. http://dx.doi.org/10.1080/ 13552600.2014.996614
- Moyano, N., Vallejo-Medina, P., & Sierra, J. C. (2016). Sexual Desire Inventory: Two or three dimensions? *Journal of Sex Research*, http://dx.doi.org/10.1080/00224499.2015.1109581. Advance online publication.
- Muñiz, J., Elosua, P., & Hambleton, R. K. (2013). Directrices para la traducción y adaptación de los tests: segunda edición. *Psicothema*, 25, 151–157. http://dx.doi.org/10.7334/psicothema 2013.24
- Muthén, B. O., & Muthén, L. K. (2004/2008). *Mplus. User manual*. Los Angeles, CA: Muthén & Muthén.
- Neukrug, E., & Fawcett, R. (2014). Essentials of testing and assessment: A practical guide for counselors, social workers, and psychologists. Stamford, CT: Cengage Learning.

- Nguyen, H. V., Koo, K. H., Davis, K. C., Otto, J. M., Hendershot, C. S., Schacht, R. L., George, W. H., Heiman, J. R., & Norris, J. (2012). Risky sex: Interactions among ethnicity, sexual sensation seeking, sexual inhibition, and sexual excitation. *Archives* of Sexual Behavior, 41, 1231–1239. http://dx.doi.org/10.1007/ s10508-012-9904-z
- Nunnally, J. C., & Bernstein, I. H. (1995). *Teoría psicométrica*. Madrid: McGraw-Hill.
- Peterson, Z. D., Janssen, E., & Heiman, J. R. (2010). The association between sexual aggression and HIV risk behavior in heterosexual men. *Journal of Interpersonal Violence*, 25, 538–556. http://dx.doi.org/10.1177/0886260509334414
- Piña-López, J. A., & Rivero-Icedo, B. M. (2009). Predictores del comportamiento sexual con múltiples parejas en estudiantes de educación superior: un análisis por género. Acta Colombiana de Psicología, 12, 53–65.
- Rosen, R., Brown, C., Heiman, J., Leiblum, S., Meston, C., Shabsigh, R., Ferguson, D., & 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 and Marital Therapy*, 26, 191–208. http://dx.doi.org/ 10.1080/009262300278597
- Sánchez-Fuentes, M. M., Salinas, J. M., & Sierra, J. C. (2016). Use of an ecological model to study sexual satisfaction in a heterosexual Spanish sample. Archives of Sexual Behavior, 45, 1973–1988. http://dx.doi.org/10.1007/s10508-016-0703-9
- Sanders, S. A., Graham, C. A., & Milhausen, R. R. (2008). Predicting sexual problems in women: The relevance of sexual excitation and sexual inhibition. Archives of Sexual Behavior, 37, 241–251. http://dx.doi.org/10.1007/s10508-007-9235-7
- Sierra, J. C., Granados, R. M., Santos-Iglesias, P., Moyano, N., Sánchez-Fuentes, M. M., & Vallejo-Medina, P. (2013, September). Validation of Sexual Sensation Seeking Scale (SSSS) in adult Spanish population. Poster presented at the 21st Congress of the World Association for Sexual Health, Porto Alegre. (Brasil).
- Sierra, J. C., Vallejo-Medina, P., Santos-Iglesias, P., Moyano, N., Granados, M. R., & Sánchez-Fuentes, M. M. (2014). Funcionamiento sexual en personas mayores: influencia de la edad y de factores psicosexuales. *Revista Internacional de Andrología*, 12, 64–70. http://dx.doi.org/10.1016/j.androl.2013.10.002
- Stoeber, J., & Harvey, L. N. (2016). Multidimensional sexual perfectionism and female sexual function: A longitudinal investigation. Archives of Sexual Behavior, 45, 2003–2014. http://dx.doi. org/10.1007/s10508-016-0696-4
- Turchik, J. A., Garske, J. P., Probst, D. R., & Irvin, C. R. (2010). Personality, sexuality, and substance use as predictors of sexual risk taking in college students. *Journal of Sex Research*, 47, 411–419. http://dx.doi.org/10.1080/00224490903161621
- Vallejo-Medina, P., Granados, M. R., & Sierra, J. C. (2014). Propuesta y validación de una versión breve del sexual opinion survey en población española. *Revista Internacional de Andrología*, 12, 47–54. http://dx.doi.org/10.1016/j.androl.2013.04.004
- Velten, J., Scholten, S., Graham, C. A., & Margraf, J. (2016). Psychometric properties of the sexual excitation/sexual inhibition inventory for women in a German sample. Archives of Sexual Behavior, 45, 303–314. http://dx.doi.org/10.1007/s10508-015-0547-8