

Vol 16, N° 2

<https://revistas.usb.edu.co/index.php/IJPR>

ISSN 2011-2084

E-ISSN 2011-7922

Validation of the Spanish Version of the Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ) with Sexual Arousal Measures in Men

Validación de la versión española del Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ) mediante medidas de excitación sexual en hombres

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 OPEN ACCESS

Manuscript received: 28-09-2022

Revised: 10-07-2023

Accepted: 15-07-2023

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Declaration of data availability: All relevant data are within the article, as well as the information support files.

Conflict of interests: The authors have declared that there is no conflict of interest.

How to Cite:

Sierra, J. C., Arcos-Romero, A. I., Granados, R., Cervilla, O., Mangas, P., Muñoz-García, L. E., & Álvarez-Muelas, A. (2023). Validation of the Spanish version of the Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ) with Sexual Arousal Measures in Men. *International Journal of Psychological Research*, 16(2), 42–50. <https://doi.org/10.21500/20112084.6551>



Abstract.

Objective. Provide new validity evidence of the Spanish version of the Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ) by associating its scores with measures of sexual arousal. **Method.** In a sample of 48 men, using a quasi-experimental design, sexual functioning, propensity for sexual inhibition/excitation, subjective sexual arousal, and genital response (penile plethysmography recorded with Biopac MP150 equipment) were evaluated. **Results.** Arousal and erection scores correlated with sexual inhibition due to the threat of performance failure ($r = -.29$; $p < .05$) and genital response ($r = .31$; $p < .05$), respectively. Participants with difficulties in sexual functioning indicated greater sexual inhibition due to the threat of performance failure ($p = .04$) and lower intensity in their genital response ($p = .05$). **Conclusions.** The validity of the measures obtained with the Spanish version of the MGH-SFQ is supported, showing the erection item to be useful for the detection of possible erectile disorders.

Resumen.

Objetivo. Aportar nuevas evidencias de validez a la versión española del Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ), asociando sus puntuaciones a medidas de la excitación sexual. **Método.** En una muestra de 48 hombres, mediante un diseño cuasiexperimental, se evaluó el funcionamiento sexual, la propensión para la excitación/inhibición sexual, la excitación sexual subjetiva y la respuesta genital (pletismografía peniana registrada con un equipo Biopac MP150). **Resultados.** Las puntuaciones en excitación y erección del MGH-SFQ correlacionaron significativamente con la inhibición sexual por miedo al fallo en el rendimiento sexual ($r = -.29$; $p < .05$) y con la respuesta genital ($r = .31$; $p < .05$), respectivamente. Los participantes con dificultades en el funcionamiento sexual, en comparación con los que mostraron un adecuado funcionamiento, indicaron mayor inhibición sexual por miedo al fallo en el rendimiento sexual ($p = .04$) y menor intensidad en su respuesta genital ($p = .05$). **Conclusiones.** Se avala la validez de las medidas obtenidas con la versión española del MGH-SFQ, mostrándose el ítem de erección útil para la detección de posibles trastornos eréctiles.

Keywords.

MGH-SFQ, Sexual Functioning, Sexual Arousal, Plethysmography, Validity Evidence.

Palabras Clave.

MGH-SFQ, funcionamiento sexual, excitación sexual, pletismografía, evidencias de validez.

1. Introduction

Sexual functioning is closely related to sexual health, constituting a relevant element in interpersonal relationships, sexual well-being, and quality of life. Adequate sexual functioning is characterized by the absence of difficulties in the ability to respond sexually or experience sexual pleasure (American Psychiatric Association, 2013) without altering the sexual response components, and is associated with subjective satisfaction regarding individual and partner sexual behavior (Fielder, 2013).

In recent years, there has been a growing interest in the study of problems associated with sexual functioning (c.f., Alidost et al., 2021; Irfan et al., 2020). The American Psychiatric Association (2013) establishes explicitly the diagnostic category “Sexual Dysfunctions”, including disorders related to desire, arousal, orgasm, pelvic or genital pain, erection, and ejaculation. The current International Classification of Diseases ICD-11 (World Health Organization, 2022) is positioned in the same line. Worldwide, sexual dysfunctions have a high prevalence, both in women (Alidost et al., 2021) and men (Irfan et al., 2020), estimated to be between 20% and 40% (Lewis et al., 2004; Sierra et al., 2012). In the specific case of the younger population, the overall symptomatology percentages range between 48-53% in women and 23-31% in men (Ljungman et al., 2020; Moreau et al., 2016).

In the clinical setting, standardized assessment questionnaires help detect symptoms of sexual dysfunctions, their periodic follow-up, and the evaluation of the efficacy of different treatments (Grover & Shouan, 2020). The assessment of sexual functioning requires instruments that provide reliable and valid measures and, if possible, have a brief and simple application (Sierra et al., 2014). The Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ; Labbate & Lare, 2001) is among the assessment instruments that meet these requirements. It is a five-item scale that measures desire, arousal, orgasm, erection, and sexual satisfaction. This instrument has been adapted and validated in different countries: Spain (Sierra et al., 2012), Colombia (Marchal-Bertrand et al., 2016), Portugal (Pereira, 2018), and Mexico (Hernández-Soberón et al., 2022). It is also a highly versatile measure used to identify sexual dysfunctions in the general population (Sierra et al., 2012) or to assess sexual functioning in different medical conditions (Domínguez et al., 2015; Lermann et al., 2019). Although the original version of the scale was intended to assess male sexual dysfunctions (Fava et al., 1998; Labbate & Lare, 2001), the Spanish validation of the MGH-SFQ was conducted in both men and women, obtaining reliability values of .90 and .93, respectively (Sierra et al., 2012). Evidence of the validity of its measures was also provided, in men and women, by significantly correlating its scores positively with sex-

ual assertiveness, sexual desire, and sexual satisfaction (Sierra et al., 2012).

An essential labour in constructing or validating a test is to collect evidence about its validity, including the association of its measures with others (American Educational Research Association et al., 2014; Muñiz & Fonseca-Pedrero, 2019). The use of laboratory measurements helps to reduce uncertainty and provide better monitoring of variables in a more controlled manner (Wawersik, 2000). In the field of human sexuality, psychophysiological assessments of sexual arousal stand out among these measures (Arcos-Romero et al., 2020). Sexual arousal is an emotional/motivational state that can be activated by internal and external stimuli and can be inferred from central, peripheral, and behavioral responses (Janssen, 2011). According to this definition, on the one hand, the deduction or appraisal of that state of arousal has been categorized as subjective arousal (Sierra et al., 2017) and, on the other hand, in reference to the aroused responses, the most specific physiological reaction of sexual arousal is genital response (Velten, 2017). The latter is usually assessed through penile plethysmography (i.e., registration of changes in penile circumference as erection occurs; Janssen, 2002) and vaginal photoplethysmography (i.e., registration of changes in vaginal pulse amplitude as vasocongestion occurs; Sintchak & Geer, 1975). Its use has been reported on numerous occasions in the scientific literature to associate sexual arousal with other constructs or variables related to sexual functioning. Such is the case of sexual desire (Cervilla, Jiménez-Antón et al., 2023; Sierra et al., 2019) or orgasmic experience (Arcos-Romero et al., 2019; Cervilla, Sierra et al., 2023). In addition, from this consideration of sexual arousal as a state, the Dual Control Model of sexual response also describes it as an individual trait in the propensity to become sexually aroused or inhibited (c.f., Bancroft et al., 2009). Overall, the various measures of sexual arousal that can be assessed in a laboratory setting are useful for providing evidence of the validity of a scale that evaluates sexual functioning, as is the case of the MGH-SFQ.

Therefore, the general objective of the present study was to provide evidence of clinical validity to the Spanish version of the MGH-SFQ, to provide a useful assessment instrument for detecting difficulties in sexual functioning. For this aim, the specific objectives were (a) to associate MGH-SFQ scores with the propensity for sexual inhibition/excitation (i.e., trait excitation) and the subjective assessment of sexual arousal and genital sensations, and objective (genital response) sexual arousal to sexual film viewing (i.e., state arousal); and (b) to determine the ability of MGH-SFQ scores to differentiate between trait and state sexual arousal. It is hypothesized that MGH-SFQ scores for arousal and erection—as opposed to desire, orgasm, and satisfaction—will correlate positively with the propensity for sexual exci-

tation, and subjective and objective sexual arousal in response to visual sexual stimuli, and negatively with the propensity for sexual inhibition. In addition, men whose MGH-SFQ arousal and erection scores reflect sexual difficulties will manifest lower levels of sexual excitation (trait and state) and greater sexual inhibition, compared to functional ones (Sánchez-Fuentes et al., 2019; Sarin et al., 2014).

2. Method

2.1 Participants

The sample consisted of 48 heterosexual men aged 18-28 years ($M = 21.40$; $SD = 2.89$). By considering the statistical power calculation ($\alpha = .05$, power = .85, correlation $\rho H1 = .40$) performed with the program G*Power (Faul et al., 2007), a minimum of 42 participants was estimated to be necessary to perform the analysis. Inclusion criteria were: (a) being between 18 and 30 years of age, (b) having Spanish nationality, and (c) engaging in heterosexual sexual relationships. Exclusion criteria were: (a) having medical problems and/or psychological disorders, (b) using medication (e.g., antidepressants, antihypertensives or antipsychotics), (c) abusing drugs and/or alcohol, and (d) having a history of sexual abuse (i.e., sexual contact, sexual coercion, attempted rape, and rape). In this sample, 29 men were found to have difficulties in some dimension of sexual response (i.e., desire, arousal, orgasm, erection and/or satisfaction) and 19 men with no difficulties in sexual response. No significant differences in sociodemographic characteristics were found between the two groups (see Table 1).

2.2 Instruments and Materials

- Sociodemographic and Sexual History Questionnaire. Items were created *ad hoc* to collect information about sex, age, nationality, sexual orientation, romantic relationship, age of first sexual relationship, number of sexual partners, and exclusion criteria.
- Spanish version of the Massachusetts General Hospital Sexual Functioning Questionnaire (MGH-SFQ; Labbate & Lare, 2001) by Sierra et al. (2012). Assessed sexual functioning in the last month through five items about desire, arousal, orgasm, erection, and satisfaction (e.g., “How has your ability to get sexually aroused or excited been over the past month?”), which are answered on a 5-point Likert scale, from 0 (*totally impaired*) to 4 (*normal*). In the present study, Cronbach’s alpha coefficient was .67.
- Spanish version of the Sexual Inhibition/Sexual Excitation Scales-Short Form (SIS/SES-SF; Carpenter et al., 2011) by Moyano and Sierra (2014). They assessed the propensity for sexual inhibition and excitation through 14 items answered on a 4-point Likert scale, from 1 (*completely agree*) to 4 (*completely disagree*). These items are divided into three subscales: Sexual excitation (SES;

e.g., “When I talk to someone on the telephone who has a sexy voice, I become sexually aroused”), Sexual inhibition 1 or inhibition due to fear of failure in sexual performance (SIS1; e.g., “When I have a distracting thought, I easily lose my erection/my arousal”), and Sexual inhibition 2 or inhibition due to the fear of sexual activity consequences (SIS2; e.g., “If I am having sex in a secluded, outdoor place and I think that someone is nearby, I am not likely to get very aroused”). Cronbach’s alpha coefficients range from .60 to .72 (Moyano & Sierra, 2014). In this study, the ordinal alpha was .78 for SES, .75 for SIS1 and .67 for SIS2.

- The Spanish version of the Rating of Sexual Arousal (RSA) and the Spanish version of the Rating of Genital Sensations (RGS; Mosher, 2011) by Sierra et al. (2017). RSA assessed subjective sexual arousal using five items (e.g., “A subjective estimate of your overall level of sexual arousal”) that are answered on a 7-point Likert scale, from 1 (*no arousal at all*) to 7 (*extreme aroused*): the global rating of sexual arousal, rating of the intensity of genital sensations, rating of the sensation of warmth, rating of non-genital physical sensations, and rating of the level of sexual absorption. RGS evaluated with one item the level of intensity of genital sensations from 1 (*no genital sensations*) to 11 (*multiple orgasm*). RSA presented a Cronbach’s alpha of .90 (Sierra et al., 2017), a value similar to the one obtained in this study.
- Penile plethysmography. An indium/gallium ring registers changes in penile circumference expressed in millimetres when an erection occurs (Janssen et al., 2002).
- Biopac Polygraph MP150 (Biopac Systems Inc., Goleta, CA, USA) using the software Acqknowledge 5.0 for psychophysiological data processing. Genital response was identified in terms of differences between scores on the sexual film and the neutral or baseline film (Grados et al., 2021).
- Films. A 3-minute neutral content video (nature documentary) was used as a baseline for the genital response. This was followed by a 3-minute sexually explicit video (heterosexual sexual relationship scenes). The sexually explicit films had been previously shown to induce sexual arousal (Sierra et al., 2015).

2.3 Procedure

This quasi-experimental study (Montero & León, 2007) was approved by the Human Research Ethics Committee from the University of Granada (code 109/CEIH/2015). Participation was entirely voluntary without compensation, and anonymity and confidentiality were guaranteed. Young male students at the University of Granada (Spain) were invited to participate through e-mails, publications on social media, paper flyers, and posters. In the first phase, participants responded to an online survey through the *LimeSurvey* platform in which inclusion/exclusion criteria, the propensity for sexual inhibition/excitation, and sexual functioning were assessed,

Table 1

Sociodemographic Characteristics of the Participants

	Total sample N = 48	No difficulties in sexual functioning (n = 19)	Difficulties in sexual functioning (n = 29)	U/χ^2
Age <i>M (SD)</i>	21.40 (2.89)	22.42 (0.77)	20.72 (2.36)	197.50
Current relationship status <i>n (%)</i>				1.01
Yes	21 (43.80)	10 (52.6)	11 (37.90)	
Age of first sexual experience <i>M (SD)</i>	16.22 (2.25)	16.37 (2.14)	16.11 (2.36)	252.50
Sexual partners number <i>M (SD)</i>	4.45 (8.18)	4.95 (6.48)	5.79 (9.26)	261.00

accepting beforehand informed consent that included the aim of the study and the methods used in the experiment. All eligible participants were invited to the laboratory. They were asked to abstain from consuming caffeine, alcohol and engaging in sexual activity during the 24 hours before the experimental session to minimize possible factors that could vary the physiological response. Once in the laboratory, a researcher individually explained all the information related to the study, and the participant signed a new informed consent form. The plethysmograph was then shown, and the participant was instructed on its correct positioning. After this, the researcher left the experimental room, and, once the participant was alone, the plethysmograph was placed to record the genital response. Once the device was in place, a five-minute adjustment period was given. The experimental task consisted of the viewing of two videos: (a) one of neutral content to obtain a baseline and (b) a video of explicit sexual content in order to induce sexual arousal. The genital response was recorded throughout the session. At the end of the sexual content stimulus, participants answered the RSA and RGS scales.

2.4 Data Analysis

Non-parametric statistical analyses were performed because the sample did not meet the normality criteria (Kolmogorov-Smirnov, $p < .001$, and Shapiro-Wilks, $p < .001$). First, using Spearman’s correlation, the association between the MGH-SFQ item scores and the different dimensions of sexual arousal was examined. Second, according to the score on each MGH-SFQ item, participants were distributed into two groups: functional (score of 4: *Normal*) and impaired (scores below 4, from *Totally impaired* to *Minimally impaired*). Comparisons in sexual arousal of both groups were performed using the Mann-Whitney U test. SPSS® v.22 statistical software was used.

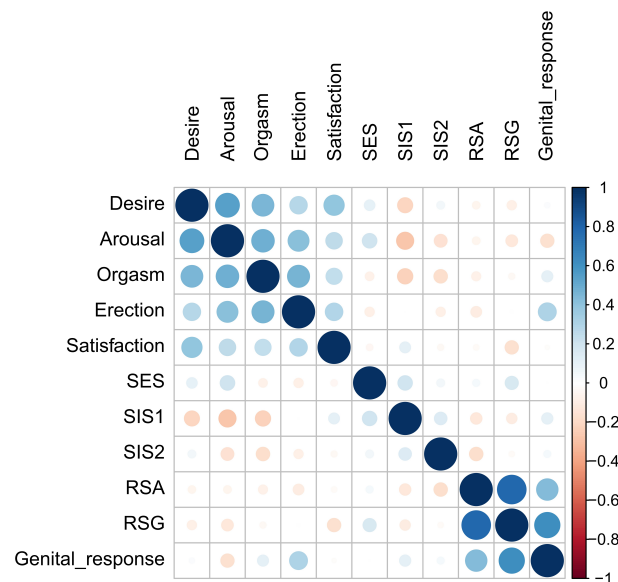
2.5 Results

The MGH-SFQ arousal item score correlated significantly negative with the propensity for sexual inhibition due to fear of performance failure (SIS1; $r = .29, p < .05$). The MGH-SFQ erection score correlated positively with the genital response ($r = .31, p < .05$). No correlations were obtained between the scores of the desire, orgasm, and

satisfaction items and the different variables related to sexual arousal (see Table 2 and Figure 1).

Figure 1

Correlations between Dimensions of Sexual Functioning and Measures of Sexual Arousal



The comparison between groups of men with and without difficulties in sexual functioning, based on MGH-SFQ scores, is shown in Table 3. Significant differences in propensity to sexual inhibition due to fear of performance failure (SIS1) were found between men with and without difficulties in arousal ($U = 149.50, p = .04$) and orgasm ($U = 100.5, p = .09$), with higher scores in the groups with difficulties. The group with difficulties presented lower scores in the penile response to sexual films. No significant differences were observed for the items related to sexual desire and satisfaction.

3. Discussion

The MGH-SFQ (Labbate & Lare, 2001) is a brief and easily applied assessment scale adapted to several countries—including Spain—to provide a tool that quickly identifies possible sexual dysfunctions. Although, in some of the validations conducted, its measures were

Table 2

Correlations between MGH-SFQ Item Scores and Sexual Arousal

Sexual excitation	Desire	Arousal	Orgasm	Erection	Satisfaction
SES	.10	.19	-.08	-.08	-.02
SIS1	-.23	-.29*	-.23	.00	.15
SIS2	.05	-.17	-.18	-.08	.00
RSA	-.05	-.05	-.07	-.11	-.05
RSG	-.10	-.15	-.05	-.01	-.13
Genital response	.01	-.18	.10	.31*	.01

Note. SES= propensity for sexual excitation; SIS1= propensity for sexual inhibition due to fear of failure in sexual performance; SIS2= propensity for sexual inhibition due to fear of the consequences of sexual activity; RSA= rating of sexual arousal; RGS= rating of genital sensations. * $p < .05$.

Table 3

Comparison of Sexual Arousal between Men without and with Difficulties in Sexual Functioning

MGH-SFQ item	No difficulties in sexual functioning	Difficulties in sexual functioning	U	p	Cohen d
	M (SD) n = 36	M (SD) n = 12			
Desire					
SES	16.03 (3.15)	14.92 (4.12)	179.5	.38	–
SIS1	7.69 (2.27)	8.67 (2.35)	157.5	.16	–
SIS2	11.03 (2.62)	10.33 (2.84)	198	.66	–
RSA	3.08 (1.7)	3.17 (1.27)	206.5	.82	–
RGS	17.86 (7.03)	18.33 (6.01)	193.5	.58	–
Genital response	11.74 (10.52)	9.92 (8.10)	207	.83	–
Arousal					
SES	16.15 (3.39)	14.79 (3.38)	179.5	.18	–
SIS1	7.50 (2.25)	9 (2.15)	149.5	.04*	-.68
SIS2	10.56 (2.78)	11.57 (2.31)	185.5	.22	–
RSA	2.97 (1.62)	3.43 (1.51)	225.5	.77	–
RSG	17.79 (7.36)	18.43 (5.17)	193.5	.29	–
Genital response	9.88 (8.83)	14.7 (11.84)	179	.18	–
Orgasm					
SES	15.60 (3.51)	16.5 (2.93)	138.5	.55	–
SIS1	7.73 (2.39)	9 (1.51)	100.5	.09†	-.64
SIS2	10.65 (2.8)	11.87 (1.64)	110	.16	–
RSA	3.08 (1.62)	3.25 (1.49)	143	.63	–
RSG	17.77 (7.1)	19 (5.01)	145	.66	–
Genital response	11.78 (10.34)	8.78 (7.52)	138	.54	–
Erection					
SES	15.7 (3.43)	16.2 (3.52)	163.5	.57	–
SIS1	8 (2.43)	8 (1.76)	179	.87	–
SIS2	10.78 (2.69)	11.3 (2.75)	167	.63	–
RSA	3.14 (1.60)	3.2 (1.55)	160	.51	–
RGS	17.57 (7.12)	19.1 (5.45)	184.5	.98	–
Genital response	12.71 (10.18)	6.82 (7.83)	111	.05†	.65
Satisfaction					
SES	15.67 (4.03)	15.81 (2.91)	271.5	.80	–
SIS1	7.95 (2.29)	7.93 (2.35)	281.5	.96	–
SIS2	10.71 (2.37)	10.96 (2.91)	258	.59	–
RSA	3.1 (1.87)	3.11 (1.37)	268.5	.75	–
RGS	18.29 (7.82)	17.74 (5.88)	265	.69	–
Genital response	12.21 (11.19)	10.56 (8.96)	267	.73	–

Note. SES= propensity for sexual excitation; SIS1= propensity for sexual inhibition due to fear of failure in sexual performance; SIS2= propensity for sexual inhibition due to fear of the consequences of sexual activity; RSA= rating of sexual arousal; RGS= rating of genital sensations. † $p < .10$; * $p < .05$.

related to other similar variables, such as sexual self-esteem, sexual assertiveness, erotophilia or sexual satisfaction (Marchal-Bertrand et al., 2016; Sierra et al., 2012), they have not been related to psychophysiological measures of sexual response to date.

Therefore, the present study extends the validity evidence of the MGH-SFQ based on relationships with other measures, thus following current guidelines in the construction and validation of assessment tests (American Educational Research Association et al., 2014; Muñiz & Fonseca-Pedrero, 2019). Specifically, scores on each of the MGH-SFQ items were correlated with subjective and objective measures of sexual arousal: (a) propensity to become sexually excited/inhibited (i.e., trait excitation) and (b) rating of sexual arousal and genital sensations, and genital response to sexual film viewing (i.e., state excitation). In addition, based on the scores on each of the MGH-SFQ items (i.e., desire, arousal, orgasm, erection, and satisfaction), groups of men without and men with difficulties in sexual functioning were established to compare them on the different measures of sexual arousal.

Overall, the results support the initial hypotheses, although not fully for all measures of sexual arousal. As hypothesized, scores on the MGH-SFQ arousal item correlate negatively with the propensity for sexual inhibition due to fear of failure in sexual performance (SIS1), but not with the rest of the variables associated with sexual excitation, specifically with the propensity for sexual arousal (SES), the propensity for sexual inhibition due to fear of the consequences of sexual activity (SIS2), the assessment of sexual arousal and genital sensations, and the genital response. On the other hand, the MGH-SFQ erection item scores correlate positively, as expected, with the intensity of erection of the participants in the presence of sexually explicit films, but not contrary to what was hypothesized, with the rest of the variables related to sexual arousal, i.e., propensity for sexual excitation, propensity for sexual inhibition due to fear of failure in sexual performance, propensity for sexual inhibition due to fear of the consequences of sexual activity, and rating of sexual arousal and genital sensations. These results are further supported by the fact that the groups of men without and men with difficulties in sexual functioning—formed from the scores on the MGH-SFQ arousal and erection items—differ in the propensity for sexual inhibition due to fear of failure in sexual performance and genital responsiveness, respectively.

The results found regarding inhibition due to fear of failure in sexual performance are consistent with previous studies in which this trait was related to difficulties in sexual functioning (Bancroft & Janssen, 2000; Sánchez-Fuentes et al., 2019; Velten, 2017). Sierra et al. (2019) previously found identical results when comparing the propensity for sexual inhibition/excitation be-

tween men with and without difficulties in sexual arousal assessed using the MGH-SFQ: both groups differed in the propensity for sexual inhibition due to fear of failure in sexual performance, but not in the propensity for sexual excitation nor in the propensity for inhibition due to fear of consequences derived from sexual activity. Furthermore, this inhibition trait (SIS1) showed a capacity of 81.7% to classify functional and dysfunctional men in terms of their sexual arousal (Sierra et al., 2019). Difficulties in sexual arousal would be associated with an excessive focus on sexual performance, which is counterproductive for adequate sexual functioning (Barlow, 1986; McCabe, 2005). In short, the role of trait sexual inhibition in sexual functioning is once again ratified (Bancroft et al., 2009; Bancroft & Janssen, 2000; Hodgson et al., 2016), as well as its potential ability to discriminate between men with and without difficulties in sexual functioning (Sierra et al., 2019).

Regarding erection, it was expected that the scores on this item of the MGH-SFQ would be those most clearly associated with the intensity of erection experienced by the participants when viewing sexual films. We assume that the ability of this item to discriminate the intensity of erection registered in men without a diagnosis of sexual dysfunction, such as those in this study, would be significantly increased if we compare functional and dysfunctional men with a diagnosis of an erectile disorder. Similar laboratory studies have already evidenced that men with erectile difficulties present smaller increases in their genital response compared to sexually functional men (Sarin et al., 2014; Stone et al., 2009). This result enhances the importance of this item in identifying possible cases of erectile dysfunction, making it an excellent screening tool in clinical sexology.

It is essential to note some limitations of this study, which lead us to be cautious when generalizing the results. When selecting the sample, a non-probabilistic sampling technique was used, which included a group of young heterosexual college men exclusively without a diagnosis of sexual dysfunction, so future research should ensure the representativeness of the sample (Díaz-Gutiérrez et al., 2022; Riveros Munévar et al., 2021). On the other hand, the artificiality of laboratory studies prioritizes internal validity at the expense of external validity. Finally, it should be mentioned that the artificiality of the evaluation context could influence the results, since the measurement is performed in a room that differs from a context in which viewing erotic images would commonly occur. Despite these limitations, the presence of sexual arousal was observed in the participants. Future research should include individuals with diverse sexual identities and sexual orientations. In addition, examining clinical samples with diagnosed sexual dysfunctions would yield relevant and useful information.

4. Conclusions

This study provides additional validity evidence to the assessment provided by the Spanish version of the MGH-SFQ, especially highlighting the ability of the erection item to discriminate between different levels of penile psychophysiological response. The findings support its use as a valid measure to assess sexual functioning in men. Therefore, the Spanish version of the MGH-SFQ can be used as a useful tool in assessing the dimensions of sexual functioning in heterosexual men and for detecting the possible presence of difficulties, providing an opportunity to advance research and intervention in sexual response.

5. Funding

This research has been funded by Bursaries FPU16/04429, FPU18/03102, and FPU19/00369, corresponding to authors A. A.-M., O. C., and P. M., respectively.

References

- Alidost, F., Pakzad, R., Dolatian, M., & Abdi, F. (2021). Sexual dysfunction among women of reproductive age: A systematic review and meta-analysis. *International Journal of Reproductive BioMedicine*, *19*, 421–432. <https://doi.org/10.18502/ijrm.v19i5.9251>
- American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). *Standards for Educational and Psychological Testing*. AERA Publications Sales.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing.
- Arcos-Romero, A. I., Calvillo, C., Granados, R., Álvarez-Muelas, A., & Sierra, J. C. (2020). The Spanish version of the Sexual Opinion Survey (SOS-6): Evidence of validity of short version. *International Journal of Psychological Research*, *13*, 40–49. <https://doi.org/10.1111/andr.12751>
- Arcos-Romero, A. I., Granados, R., & Sierra, J. C. (2019). Relationship between orgasm experience and sexual excitation: Validation of the Model of the Subjective Orgasm Experience. *International Journal of Impotence Research*, *31*, 282–287. <https://doi.org/10.1038/s41443-018-0095-6>
- 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. <https://doi.org/10.1080/00224490902747222>
- Bancroft, J., & Janssen, E. (2000). The dual control model of male sexual response: A theoretical approach to centrally mediated erectile dysfunction. *Neuroscience & Biobehavioral Review*, *24*, 571–579. [https://doi.org/10.1016/S0149-7634\(00\)00024-5](https://doi.org/10.1016/S0149-7634(00)00024-5)
- Barlow, D. H. (1986). Causes of sexual dysfunction: The role of anxiety and cognitive interference. *Journal of Consulting and Clinical Psychology*, *54*, 140–148. <https://doi.org/10.1037/0022-006X.54.2.140>
- Carpenter, D. L., Janssen, E., Graham, C. A., Vorst, H., & Wicherts, J. (2011). The Sexual Inhibition/Sexual Excitation Scales-Short Form. In T. D. Fisher, C. M. Davis, W. L. Yarber, & S. L. Davis (Eds.), *Handbook of sexuality-related measures* (pp. 236–239). Routledge
- Cervilla, O., Jiménez-Antón, E., Álvarez-Muelas, A., Mangas, P., Granados, R., & Sierra, J. C. (2023). Solitary Sexual Desire: Its relation to subjective orgasm experience and sexual arousal in the masturbation context within a Spanish Population. *Healthcare*, *11*, Article 1805. <https://doi.org/10.3390/healthcare11060805>
- Cervilla, O., Sierra, J. C., Álvarez-Muelas, A., Mangas, P., Sánchez-Pérez, G. M., Granados, R. (2023). *Validation of the Multidimensional of the Subjective Orgasm Experience in the context of masturbation* [Manuscript submitted to publication].
- Díaz-Gutiérrez, C., Pérez, B., & Concha-Salgado, A. (2022). Psychometric properties of the Sexual Double Standard Scale (DSS) in Chilean university students: Differences according to sex, gender attitudes, and religiosity. *International Journal of Psychological Research*, *15*, 26–37. <https://doi.org/10.21500/20112084.5435>
- Domínguez, E., Ruiz, L., Hernández, M. S., Muñoz, I., Ruiz-Piñero, M., Uribe, F., Guerrero, A. L., & Toribio-Díaz, M. E. (2015). Disfunción sexual en pacientes migrañosos que reciben tratamiento preventivo: Identificación mediante dos tests de cribado. *Revista de Neurología*, *60*, 10–16. <https://doi.org/10.33588/rn.6001.2014352>
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175–191. <https://doi.org/10.3758/BF03193146>
- Fava, M., Rankin, M. A., Alpert, J. E., Nierenberg, A. A., & Worthington, J. J. (1998). An open trial of oral sildenafil in antidepressant-induced sexual dysfunction. *Psychotherapy and Psychosomatics*, *67*, 328–331. <https://doi.org/10.1159/000012299>
- Fielder, R. (2013). Sexual functioning. In M. D. Gellman & J. R. Turner (Eds.), *Encyclopedia of behavioral medicine* (pp. 1774–1777). Springer.
- Granados, R., Carvalho, J., & Sierra, J. C. (2021). Preliminary evidence on how the dual control model predicts female sexual response to a bogus neg-

- ative feedback. *Psychological Reports*, *124*, 502–520. <https://doi.org/10.1177/0033294120907310>
- Grover, S., & Shouan, A. (2020). Assessment scales for sexual disorders. A review. *Journal of Psychosexual Health*, *2*, 121–138. <https://doi.org/10.1177/2631831820919581>
- Hernández-Soberón, J. C., Torres-Obregón, R., Carrillo-Cervantes, A. L., Medina-Fernández, I. A., Sierra, J. C., & Onofre-Rodríguez, D. J. (2022). Psychometric properties of the Massachusetts General Hospital-Sexual Functioning Questionnaire in elderly people. *Revista Internacional de Andrología*, *20*, 170–177. <https://doi.org/10.1016/j.androl.2020.12.001>
- Hodgson, B., Kukkonen, T. M., Binik, Y. M., & Carrier, S. (2016). Using the Dual Control Model to investigate the relationship between mood, genital, and self-reported sexual arousal in men and women. *Journal of Sex Research*, *53*, 979–993. <https://doi.org/10.1080/00224499.2015.1110107>
- Irfan, M., Hussain, N. H. N., Noor, N. M., Mohamed, M., Sidi, H., & Ismail, S. B. (2020). Epidemiology of male sexual dysfunction in Asian and European regions: A systematic review. *American Journal of Men's Health*, *14*, Article 1557988320937200. <https://doi.org/10.1177/1557988320937200>
- Janssen, E. (2002). Psychophysiological measures of sexual response. In M. W. Wiederman & B. E. Whitley (Eds.), *Handbook for conducting research on human sexuality* (pp. 139–171). Erlbaum.
- Janssen, E. (2011). Sexual arousal in men: A review and conceptual analysis. *Hormones and Behavior*, *59*, 708–716. <https://doi.org/10.1016/j.yhbeh.2011.03.004>
- Labbate, L. A., & Lare, S. B. (2001). Sexual dysfunction in male psychiatric outpatients: Validity of the Massachusetts General Hospital Functioning Questionnaire. *Psychotherapy and Psychomatics*, *70*, 221–225. <https://doi.org/10.1159/000056257>
- Lermann, J., Topal, N., Renner, S. P., Beckmann, M. W., Burghaus, S., Adler, W., & Heindl, F. (2019). Comparison of preoperative and postoperative sexual function in patients with deeply infiltrating endometriosis with and without bowel resection. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *239*, 21–29. <https://doi.org/10.1016/j.ejogrb.2019.05.007>
- Lewis, R. W., Fugl-Meyer, K. S., Laumann, E. O., Lizza, E., & Martín-Morales, A. (2004). Epidemiology/risk factors of sexual dysfunction. *Journal of Sexual Medicine*, *1*, 39–39. <https://doi.org/10.1111/j.1743-6109.2004.10106.x>
- Ljungman, L., Lampic, C., & Wettergreen, L. (2020). Sexual dysfunction among young adults in Sweden—A population-based observational study. *Sexual Medicine*, *8*(4), 631–642. <https://doi.org/10.1016/j.esxm.2020.08.010>
- 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 Spanish version. *Revista Latinoamericana de Psicología*, *48*, 88–97. <https://doi.org/10.1016/j.rlp.2016.01.001>
- McCabe, M. P. (2005). The role of performance anxiety in the development and maintenance of sexual dysfunction in men and women. *International Journal of Stress Management*, *12*, 379–388. <https://doi.org/10.1037/1072-5245.12.4.379>
- Montero, I., & León, O. G. (2007). A guide for naming research studies in psychology. *International Journal of Clinical and Health Psychology*, *7*, 847–862.
- Moreau, C., Kågesten, A. E., & Blum, R. W. (2016). Sexual dysfunction among youth: An overlooked sexual health concern. *BMC Public Health*, *16*, 1170. <https://doi.org/10.1186/s12889-016-3835-x>
- Mosher, D. L. (2011). Multiple indicators of subjective sexual arousal. In T. D. Fisher, C. M. Davis, W. L. Yarber, & S. L. Davis (Eds.), *Handbook of sexuality-related measures* (pp. 59–61). Routledge.
- Moyano, N., & Sierra, J. C. (2014). Validation of the sexual inhibition/sexual excitation scales-short form (SIS/SES-SF). *Terapia Psicológica*, *32*, 87–100.
- Muñiz, J., & Fonseca-Pedrero, E. (2019). Diez pasos para la construcción de un test. *Psicothema*, *31*, 7–16. <https://doi.org/10.7334/psicothema2018.291>
- Pereira, H. (2018). Validação psicométrica da versão portuguesa do Massachusetts General Hospital-Sexual Functioning Questionnaire. *Revista Internacional de Andrologia*, *16*, 102–106. <https://doi.org/10.1016/j.androl.2017.06.003>
- Riveros Munévar, F. R., Prieto Patiño, L. E., Ortegón, L. M., Rodríguez, M. C., Zapata, C. D., & Niño, Y. R. (2021). Validation of the multidimensional inventory of infidelity (IMIN) in Colombian population. *International Journal of Psychological Research*, *14*, 33–47. <https://doi.org/10.21500/20112084.4710>
- Sánchez-Fuentes, M. M., Moyano, N., Granados, R., & Sierra, J. C. (2019). Validation of the Spanish version of the Arizona Sexual Experience Scale (ASEX) using self-reported and psychophysiological measures. *Revista Iberoamericana de Psi-*

- cología y Salud*, 10, 1–14. <https://doi.org/10.23923/j.riips.2018.02.021>
- Sarin, S., Amsel, R., & Binik, Y. M. (2014). How hot is he? A physiological and psychosocial examination of the arousal patterns of sexually functional and dysfunctional men. *Journal of Sexual Medicine*, 11, 1725–1740. <https://doi.org/10.1111/jsm.12562>
- Sierra, J. C., Díaz, G., Álvarez-Muelas, A., Calvillo, C., Granados, R., & Arcos-Romero, A. I. (2019). Relación del deseo sexual con la excitación sexual objetiva y subjetiva. *Revista de Psicopatología y Psicología Clínica*, 24, 173–180. <https://doi.org/10.5944/rppc.23932>
- Sierra, J. C., Arcos-Romero, A. I., Granados, M. R., Sánchez-Fuentes, M. M., Calvillo, C., & Moyano, N. (2017). Escalas de Valoración de Excitación Sexual y Valoración de Sensaciones Genitales: propiedades psicométricas en muestras españolas. *Revista Internacional de Andrología*, 15, 99–107. <https://doi.org/10.1016/j.androl.2016.10.008>
- Sierra, J. C., de la Rosa, M. D., Granados, R., Calvillo, C., Arcos-Romero, A. I., Sánchez Fuentes, M., & Moyano, N. (2019). Evidencias de validez de la versión española de las Sexual Inhibition/Sexual Excitation Scales-Short Form (SIS/SES-SF). *Revista Iberoamericana de Diagnóstico y Evaluación - e Avaliação Psicológica*, 50, 173–184. <https://doi.org/10.21865/RIDEP50.1.14>
- Sierra, J. C., Granados, R., Sánchez-Fuentes, M. M., Moyano, N., & López, C. (2015, July). *Sexual activation during exposure to visual sexual stimuli: Comparison between men and women* [Poster presentation]. XXX Congreso Interamericano de Psicología, Lima, Perú.
- Sierra, J. C., Santos-Iglesias, P., Vallejo-Medina, P., & Moyano, N. (2014). *Autoinformes como instrumento de evaluación en Sexología Clínica*. Síntesis.
- Sierra, J. C., Vallejo-Medina, P., Santos-Iglesias, P., & Lameiras-Fernández, M. (2012). Validación del Massachusetts General Hospital-Sexual Functioning Questionnaire (MGH-SFQ) en población española. *Atención Primaria*, 44, 516–526. <https://doi.org/10.1016/j.aprim.2012.02.004>
- Sintchak, G., & Geer, J. H. (1975). A vaginal plethymograph system. *Psychophysiology*, 12, 113–115. <https://doi.org/10.1111/j.1469-8986.1975.tb03074.x>
- Stone, J. M., Clark, R., Sbrocco, T., & Lewis, E. L. (2009). The effects of false physiological feedback on tumescence and cognitive domains in sexually functional and dysfunctional men. *Archives of Sexual Behavior*, 38, 528–537. <https://doi.org/10.1007/s10508-008-9370-9>
- Velten, J. (2017). The Dual Control Model of sexual response: Relevance of sexual excitation and sexual inhibition for sexual function. *Current Sexual Health Reports*, 9, 90–97. <https://doi.org/10.1007/s11930-017-0108-3>
- Wawersik, W. R. (2000). The value of laboratory experiments for code validations. *International Journal of Rock Mechanics and Mining Sciences*, 37, 307–316.
- World Health Organization. (2022). *ICD-11. International Classification of Diseases 11th Revision*. <https://icd.who.int/en>