Evidence of the Male Sexual Function Index (MSFI) for the Brazilian Context

Mauro Dias Silva Júnior[1]
Universidade de Brasília, Brasília-DF, Brasil
Adna Janaína de Araújo Silva
Universidade Federal do Pará, Belém-PA, Brasil
Jean Carlos Natividade
Pontifícia Universidade Católica do Rio de Janeiro, Rio de Janeiro-RJ, Brasil
Paulo Roney Kilpp Goulart
Universidade Federal do Pará, Belém-PA, Brasil
Maria Luíza Rodrigues Sampaio de Souza
Universidade de Brasília, Brasília-DF, Brasil

ABSTRACT

The Male Sexual Function Index (MSFI) is an instrument that assesses five domains of male sexual function: desire, arousal, erection, orgasm, and satisfaction. This study aimed to adapt and seek validity evidence for the MSFI for the Brazilian context. The participants comprised 449 men aged 18 to 65 years. The results showed an adequate fit of the data to the instrument's five-factor model, according to the original version of the MSFI. Configural, metric, and scalar invariance for the MSFI was also found across heterosexual, bisexual, and gay participants. Correlations with other variables were also as expected, for example, a positive correlation between the factor desire from MSFI and the sexual excitation. The Brazilian version of the MSFI showed to be adequate to measure the construct in men of different sexual orientations.
Keywords: male sexual function index; sexual function; sexual orientation; heterosexual and gay men.

RESUMO – Evidências de validade do Male Sexual Function Index (MSFI) para o Contexto Brasileiro

O *Male Sexual Function Index* (MSFI) é um instrumento que avalia cinco domínios da função sexual masculina: desejo sexual, excitação, ereção, orgasmo e satisfação. Esta pesquisa teve o objetivo de adaptar o MSFI e buscar evidências de validade para o contexto brasileiro. Participaram 449 homens com idade entre 18 e 65 anos. Os resultados mostraram um ajuste adequado dos dados ao modelo de cinco fatores do instrumento, de acordo com a versão original do MSFI. Demonstrou-se invariância configural, métrica e escalar para o MSFI entre participantes heterossexuais, bissexuais e gays. Correlações com outras variáveis também coincidiram com o esperado, por exemplo, uma correlação positiva entre o fator desejo do MSFI e a excitação sexual. A versão brasileira do MSFI mostrou-se adequada para mensurar o construto em homens de diferentes orientações sexuais.
Palavras-chave: índice da função sexual masculina; função sexual; orientação sexual; heterossexuais e homossexuais.

RESUMEN – Evidencias de Validez del Male Sexual Function Index (MSFI) para el Contexto Brasileño

El Índice de Función Sexual Masculina (MSFI) es un instrumento que evalúa cinco dominios de la función sexual masculina: deseo sexual, excitación, erección, orgasmo y satisfacción. Esta investigación ha tenido como objetivo adaptar el MSFI y buscar evidencias de validez para el contexto brasileño. Han participado de la encuesta 449 hombres entre 18 y 65 años. Los resultados mostraron un ajuste adecuado de los datos al modelo de cinco factores del instrumento, según la versión original del MSFI. Ha sido demostrada la invariancia de configuración, métrica y escala para el MSFI entre participantes heterosexuales, bisexuales y homosexuales. Las correlaciones con otras variables también están de acuerdo a las expectativas, por ejemplo, una correlación positiva entre la variable deseo del MSFI y la excitación sexual. Ha quedado demostrado que la versión brasileña del MSFI es adecuada para medir el constructo en hombres de diferentes orientaciones sexuales.
Palabras-clave: índice de función sexual masculina; función sexual; orientación sexual; hombres heterosexuales y homosexuales.

Sexual function refers to the interaction of an individual's physiological and psychological aspects with external stimuli that may cause a sexual response (American Psychiatric Association [APA], 2013). In men, the sexual response consists of six stages or domains: desire, beginning (arousal) and keeping the erection, ejaculation, orgasm, and refractory period (Moghalu et al., 2020; Trovão & Serefoglu, 2018). The

investigation of sexual function also includes how satisfied individuals are with their sexual performance and affective/sexual relationship with their partners.

There are two instruments translated and adapted to Brazilian Portuguese that measure the sexual function of men, the International Index of Erectile Function – IIEF (Segundo & Glina, 2020) and the Male Sexual Quotient – MSQ (Servantes et al., 2018). However, these instruments do not evaluate all domains of the male sexual response, such as desire, arousal, orgasm, and satisfaction. IIEF does not assess arousal, while MSQ does not assess arousal and satisfaction. Considering the limitations of existing instruments and the lack of studies on the sexual function of healthy men, especially gays, the present study aimed to adapt the Male Sexual Function Index – MSFI (Kalmbach et al., 2015) to the Brazilian context and seek its evidence of validity.

The MSFI was adapted by Kalmbach et al. (2015) based on the Female Sexual Function Index (FSFI; Hentschel et al., 2007; Kalmbach et al., 2015), enabling an adequate comparison of sexual function between women and men. The MSFI is a self-reported scale that evaluates the sexual function in the last four weeks, and contains 16 items encompassing five factors: desire, arousal, erection, orgasm, and satisfaction. The internal consistency (Cronbach's αs) for the domains in the study of Kalmbach et al. (2015) was .66, .76, .82, .82, and .82 for orgasm, erection, arousal, satisfaction, and desire, respectively. The MSFI does not include items to assess ejaculation, a limitation of the instrument that can be overcome by using it in conjunction with instruments that specifically address this aspect.

Previous studies have found that erectile and ejaculatory function are among the main issues regarding sexual activities of men (Barbonetti et al., 2019; Flynn et al., 2017) and to the occurrence of anal pain in gay men (Flynn et al., 2017). Issues with premature ejaculation and erectile dysfunction are the most investigated topics and seem to be the central complaints of the heterosexual male Brazilian population. Since the existing instruments are restricted to evaluating only one or a few domains of the male sexual function, mainly erectile and ejaculatory function, it would benefit the Brazilian context the availability of instruments covering other domains.

Previous studies have documented relevant relations between various domains of sexual functioning, as measured by the International Index of Erectile Function (IIEF-5), and measures of sexual excitation and inhibition provided by the Sexual Inhibition/Sexual Excitation Scale (SIS/SES; Efrati & Mikulincer, 2018; Lucas et al., 2010; Segundo & Glina, 2020). Lucas et al. (2010) reported a positive correlation between erectile function and sexual excitation; and a negative correlation between erectile function and sexual inhibition by fear of failure. Recently, Quinta Gomes et al. (2018) found that for men, sexual excitation was positively correlated with sexual desire and erectile function, and sexual inhibition by fear of failure was negatively correlated with sexual desire, erectile function, and orgasm. Pechorro et al. (2011) also highlighted the negative correlation between erectile function and self-esteem.

A typical bias of instruments for assessing sexual function in males is that gays and bisexuals are neglected in the supporting studies. For example, the study from Janssen et al. (2002) used four samples, only one of which indicated that gay and bisexual men participated, being respectively 1% and 2% out of a total of 408 men. The study of the SIS/SES adaptation for Brazil (Lucas et al., 2010), with 252 participants, did not classify the participants according to sexual orientation, except for the indirect indication that they were asked to provide the age of a female partner. Given such heterosexual bias, it is necessary to investigate whether sexual orientation is a factor related to differences in the scores of the MSFI domains and the measures used for its validation. For example, gays showed significant differences in sexual excitation and sexual inhibition by fear of failure compared with heterosexuals; however, not in sexual inhibition by fear of low performance (Bártová et al., 2021). However, Bártová et al. (2021) did not differentiate between gay and bisexual men in their sample.

Studies involving gay men usually select clinical samples, mainly of gay men living with human immunodeficiency virus (HIV), which leads to an improper association of homosexuality with HIV (Silva, 2018). There is also a lack of information on the sexual behavior of gay men by healthcare professionals, who lack access to systematic studies on the sexual behavior of healthy gay men to offer orientation, and by gay men themselves, thus limiting them to inform about their doubts or difficulties with a qualified professional (Silva, 2018). The relevance of investigating sexual function in healthy gay men goes beyond the potential gain for validation studies. All of these limitations in previous studies further underscore the importance of an instrument that provides evidence of validity for non-heterosexual men as well.

This study aims to adapt and seek evidence of validity of the MSFI for the Brazilian context. For this purpose, translation procedures of the instrument were carried out and, in this process, evidence of validity based on content was sought. After administrating the instrument to a sample of men, evidence of validity based on the internal structure and relationships with other variables was sought. Relationships with directly correlated constructs (e.g., sexual excitation and sexual inhibition) and non-directly correlated (e.g., self-esteem) were tested. The invariance of the test parameters for heterosexual, gay, and bisexual men was also tested.

Method

Participants

The following inclusion criteria were required to compose the sample: biological male sex, and at least 18 years old. Regarding the exclusion criteria: Six participants were excluded from the analyses for being less than 18 years old, 19 for self-declaring as HIV-positive, 66 for using medication for anxiety and/or depression, 29 for being diabetic, and 14 for having urinary incontinence. The exclusion of these participants from the analysis occurred because the literature indicates that individuals with those characteristics may have sexual function issues, such as erectile dysfunction (Allen & Walter, 2018). Some participants were part of two or more exclusion criteria.

Finally, the study comprised 449 men from the five Brazilian regions, mean age of 28.6 years ($SD=9.39$). Regarding education, most had completed an undergraduate degree, 58.1%, the other 41.9% had until an incomplete undergraduate level (36.1% were undergraduate students). Most were white, 49.4%, mixed/brown were 36.5%, blacks, 10.9%, Asian, 2%, 0.7%, indigenous, and the remaining 0.4% reported another race/color/ethnicity. Of all participants, 206 identified themselves as heterosexual (45.9%), 165 as gay (36.7%), and 78 as bisexual (17.4%).

Instruments

An online questionnaire on the internet was used containing sociodemographic questions (biological sex, age, educational level, race/color/ethnicity, etc.) and the scales described below.

Male Sexual Function Index (MSFI; adapted in this study from the original of Kalmbach et al., 2015). It measures five domains of the sexual function in men: desire, the frequency and degree of desire to have sexual intercourse; arousal, the frequency, degree, confidence and satisfaction of being sexually aroused; erection, the frequency and difficulty of keeping the penis erect during intercourse; orgasm, the frequency, difficulty and satisfaction of reaching orgasm; and satisfaction, how much the individual is satisfied with the emotional proximity and sexual relationship with the partner and how satisfied the individual is with his sexual life. The original instrument from Kalmbach et al. (2015) showed internal consistency indices for the domains ranging from .66 (orgasm) to .85 (desire). The instrument encompasses 16 items referring to the last four weeks. The items should be answered on a scale ranging from 1 (almost never or never) to 5 (almost always or always); for 13 items there was also the answer option "No activity in the last four weeks", which we imputed value zero. The psychometric properties for our sample are described in the results.

Male Sexual Inhibition/Sexual Excitation Scale (Brazilian version used by Lucas et al., 2010). It assesses the tendency for sexual inhibition and for sexual excitation (SES). Sexual inhibition is divided into two factors: Inhibition due to the fear of having an unsatisfactory sexual performance (SIS1) and inhibition due to the consequence of the performance (SIS2), such as "If I feel that a sexual response is expected from me, it's harder getting aroused" or "If someone can see me having sex, it's likely that I won't remain aroused." SES corresponds to how sexually aroused an individual feels during a potential sexual stimulus, such as fantasies, visual stimuli, sexual partner, etc. It is based on the theoretical dual control model of male sexual response, based on the existence of neurophysiological mechanisms that result in an excitatory and inhibitory sexual response (Trovão & Serefoglu, 2018). It contains 45 statements to be answered in a 4-point Likert scale, ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*). Brazilian version from Lucas et al. (2010) showed acceptable-to-good reliability coefficients: (SIS1, $\alpha=.82$; SIS2, $\alpha=.79$; and SES, $\alpha=.88$). For our sample, the measurement model with three correlated factors and the Diagonally Weighted Least Squares estimation method were: CFI=0.90, TLI=0.89, RMSEA=0.058 (CI90%=0.055 – 0.061). The reliability coefficients were: SES, $\alpha=\omega=.91$; SIS1, $\alpha=.80$, $\omega=.81$; SIS2, $\alpha=\omega=.70$.

Rosenberg Self-Esteem Scale (Brazilian version used by Hutz & Zanon, 2011). The 10-item instrument measures the evaluation of self-concept and self-perception on how much one is satisfied with themselves. The items should be answered on a 4-point Likert scale, ranging from 1 (Strongly disagree) to 4 (Strongly agree). Hutz and Zanon's version showed an internal consistency coefficient of .90. For our sample, the measurement model of one factor and the Diagonally Weighted Least Squares estimation method were: CFI=0.97, TLI=0.96, RMSEA=0.088 (CI90%=0.074 – 0.102). The reliability coefficients were: $\alpha=\omega=.91$.

Klein Sexual Orientation Grid (Brazilian version used by Brandão, 2017). It assesses aspects of sexual orientation such as sexual attraction, sexual behavior, sexual fantasies, emotional preference, social preference, life preference, and sexual identity in three life periods (past, the whole life until one year ago; present, up to 12 months ago; and ideal, how the individual would like it to be). In this study, we used only the answers to the present period of sexual identity (just one item), which should be answered on a 7-point scale, ranging from 1 (*Exclusively heterosexual*) to 7 (*Exclusively homosexual*).

Procedure

Translation. First, the MSFI was translated by three bilingual experts in the field. The second author conducted the first translation, whereas the first and third authors conjointly suggested corrections to this first version, comparing it with the English version. Afterward, the second author made corrections and created a new version. The other two authors suggested

corrections again, which were made by the second author. This process was repeated five times until a version that was considered adequate was obtained. Second, the final translated version was presented to four heterosexual men and four gay men, undergraduate and graduate students from a convenience sample to evaluate whether the instrument was understandable. Later, the items that were pointed out as complex to understand were reformulated, and this final reformulated version was used in the next steps of the study.

Data collection. Participants were recruited by e-mail and social networks invitations. Data collection was conducted via the internet. Participants were not required to identify themselves, register or log in to participate, thus assuring their anonymity. The present study is a sub-project of the project entitled "Sexual Function, Affective Development and Sociosexuality in heterosexual and gay men", submitted to the National Research Ethics Commission and accepted with protocol no. 2.599.713. The Informed Consent Form was available on the first page of the set of questionnaires.

Data Analyses

The categorization of the participants according to sexual orientation occurred through self-declaration in the Klein Sexual Orientation Grid (Brandão, 2017) for the present time (up to 12 months ago). Those that selected the options exclusively or predominantly heterosexual were categorized as heterosexual, those that selected the options much more heterosexual, both sexualities, or much more homosexual were categorized as bisexual, and those that selected the option exclusively or predominantly homosexual were categorized as gay.

The confirmatory factor analyses were conducted to test whether the data adjusted to the five-factor structure of the original instrument (Kalmbach et al., 2015). These analyses were run with package lavaan (Rosseel, 2012), version 0.6.9, in the software R, version 4.1.1 (R Core Team, 2021). The covariance matrix was used to estimate the parameters, and the Robust Maximum Likelihood (MLR) estimator was chosen. Using that same estimator and package, we run multigroup confirmatory factor analyses to test the configural, metric, and scalar invariance for the MSFI across heterosexuals, gays, and bisexuals. We used ΔCFI and ΔRMSEA <.01 as criteria to consider the models invariant (Cheung & Rensvold, 2002). This analysis was performed to verify if the construct measurement model has the same configuration and equal parameters among the three groups. We also tested the model using the Weighted Least Square Mean and Variance Adjusted (WLSMV) estimator, given the ordinal nature of the data. Additionally, we calculated the average variance extracted (AVE) for the factors (Fornell & Larcker, 1981).

Searching for validity evidence based on relationships with other variables we calculated the Pearson correlation coefficients between the five factors of sexual function and self-esteem, sexual excitation, sexual inhibition due to the fear of having an unsatisfactory sexual performance, sexual inhibition due to the consequence of the performance. Finally, we tested for means differences in the factors of MSFI between heterosexuals, gays, and bisexuals by one-way ANOVA using SPSS 23.0. Post hoc Bonferroni tests were used when appropriate.

Results

Initially, we searched for validity evidence based on the instrument's structure. For this purpose, we conducted a confirmatory factorial analysis. We tested the adjustment of the data to five-factors model, as found in the original study (Kalmbach et al., 2015). The adjustment indices obtained considering the MLR estimator were: χ^2=440.5, df=94, χ^2/df=4.69, CFI=0.96, TLI=0.95, RMSEA=0.099 (CI90% = 0.090 – 0.108); and considering the WLSMV estimator were: χ^2=205.1, df=94, χ^2/df=2.18, CFI=0.95, TLI=0.93, RMSEA=0.051 (CI90%=0.042 – 0.061).

The factor loadings of the MSFI items ranged from 0.98 to 0.62, and their standard errors (CI95%) ranged from .005 to .05, except for the Orgasm factor where standard errors ranged from .11 to .14. The correlations between the factors ranged from .17 (desire and satisfaction; desire and orgasm) to .96 (excitation and erection). The average variance extracted (AVE) for the Desire factor was .70, for the Arousal factor was .88, for the Erection factor was .93, for the Orgasm factor was .78, for the Satisfaction factor was .74. The model, factor loadings, and correlations between factors can be seen in Figure 1.

The multigroup confirmatory factor analyses showed configural, metric, and scalar invariance for the MSFI across heterosexuals, gays, and bisexuals (ΔCFI and ΔRMSEA <.01). The fit indices can be seen in Table 1.

We assessed the reliability of the MSFI scale factors using Cronbach's alpha and McDonald's omega coefficients. For the Desire factor the α=ω=.82 (CI95% = .78 – .86). For Arousal factor α=ω=.97 (CI95% = .96 – .98). For Erection factor α=ω=.98 (CI95% = .97 - .99). For Orgasm factor α=.91 (CI95%=.88 – .93), and ω=.91 (CI95%=.87 – .94). For Satisfaction factor α=.88 (CI95%=.85 – .90), and ω=.93 (CI95% = .92 – .94).

To seek validity evidence based on the relationships with other variables, we tested correlation between the factors of MSFI and factors of SIS/SES and self-esteem. The results are shown in Table 2. We highlight the positive correlation between the desire of the MSFI and sexual excitation, and the negative correlation between arousal of the MSFI and sexual inhibition – performance.

Figure 1
The five-factor model for Male Sexual Function Index (MSFI), for MLR estimator
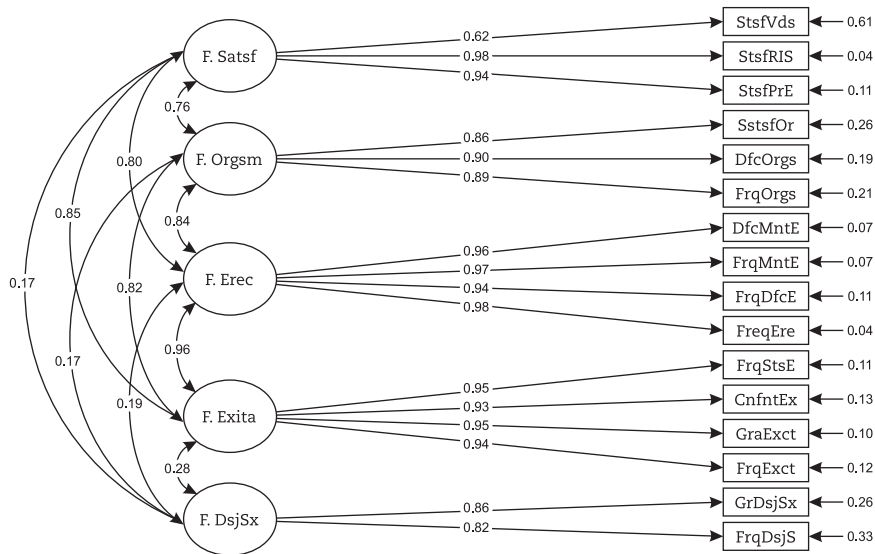
Note. F.Satsf=Satisfaction; F.Orgsm=Orgasm; F.Erec=Erection; F.Exita=Arousal; and F.DsjSx=Desire.
The dotted lines indicate that for these items the loading was fixed at 1, as default in lavaan.

Table 1
Fit Indices of Multigroup Confirmatory Factor Analyses, the Measure Invariance Test

	χ^2	$\Delta\chi^2$	$p(\Delta\chi^2)$	CFI	ΔCFI	RMSEA	ΔRMSEA
Configural (model)	803.2			0.94		0.097	
Metric (loadings)	824.2	26.6	.23	0.93	.002	0.095	.002
Scalar (intercepts)	855.8	34.0	.05	0.93	.002	0.093	.002

Note. $p(\Delta\chi^2)$=p-value for the scaled chi-squared difference test using Satorra–Bentler method (Satorra & Bentler, 1994). CFI=comparative fit index. TLI=Tucker–Lewis index. RMSEA=root mean square error of approximation

Table 2
Relations Between Male Sexual Function, Self-Esteem, and Sexual Excitation and Inhibition

	1	2	3	4	5	6	7	8
1. MSFI – Desire	-							
2. MSFI – Arousal	.25**	-						
3. MSFI – Erection	.17**	.94**	-					
4. MSFI – Orgasm	.15**	.79**	.82**	-				
5. MSFI – Satisfaction	.13**	.79**	.74**	.71**	-			
6. Self-esteem	.07	.20**	.17**	.23**	.30**	-		
7. SES – Excitation	.41**	.10*	.07	.08	-.02	-.06	-	
8. SIS – Inhibition failure	-.06	-.08	-.06	-.06	-.10*	-.13**	.19**	-
9. SIS – Inhibition performance	-.20**	-.15**	-.11*	-.09	-.13**	-.07	.03	.43**

Note. MSFI=Male Sexual Function Index. SES=Sexual Excitation Scale. SIS=Sexual Inhibition Scale. N=449; *p<.05; **p<.01

Additionally, we ran analyses to verify possible differences across heterosexuals, gays and bisexuals in the MSFI factors (Table 3). We found no difference between groups in the factors of desire and orgasm; however, heterosexuals had significantly higher means than gays in arousal (p=.009), erection (p=.015), and satisfaction (p=.027) domains. Cohen's d effect sizes of those differences were 0.3; 0.29; and 0.27, respectively.

Table 3
Means and Standard Deviations of MFSI Domains for Sexual Orientation

	Gay	Bisexual	Heterosexual	F	p	η²
	M(SD)	M(SD)	M(SD)			
MSFI – Desire	3.90(0.98)	3.97(0.86)	3.90(0.94)	0.16	.85	-
MSFI – Arousal	3.24(1.92)	3.45(1.68)	3.78(1.58)	4.50	.012	.02
MSFI – Erection	3.54(2.05)	3.86(1.82)	4.10(1.70)	4.00	.02	.02
MSFI – Orgasm	3.63(1.73)	3.64(1.65)	3.86(1.6)	0.98	.38	-
MSFI – Satisfaction	3.05(1.60)	3.44(1.55)	3.50(1.58)	3.71	.025	.016

Discussion

Considering that in Brazil there is still no instrument that encompasses the specificities of the sexual response in men of different sexual orientations, through this study we aimed to adapt and verify the evidence of the validity of the MSFI (Kalmbach et al., 2015). Fit indices showed that the data adequately fit the five-factor structure (McDonald & Ho, 2002; Ullman, 2013). This five-factor structure is the same as the original instrument study by Kalmbach et al. (2015). This result indicates that the adaptation of the MSFI for Brazil shows satisfactory validity evidence related to the instrument's structure. The Brazilian version of the MSFI also presented factors with satisfactory indices of internal consistency (DeVellis, 2016).

The correlations between the MSFI factors were also similar to the values found by Kalmbach et al. (2015), except for the correlations between the factors desire and arousal (r = .94; and .98 for latent factors). This result indicates that these factors agree with the model of male sexual response (Moghalu et al., 2020; Trovão & Serefoglu, 2018). The instrument also showed configural, metric, and scalar invariance across heterosexual, gay and bisexual groups (Cheung & Rensvold, 2002). This result allows us to assume that the instrument is equivalent in these three groups. Therefore, we can assume that the possible differences between the groups are not due to differences in the structure or parameters of the instrument.

The correlations found between the MSFI factors agree with the stages of the male sexual response: desire, arousal, erection, and orgasm, where one stage triggers the next one, with the possibility of them co--occurring (Moghalu et al., 2020; Trovão & Serefoglu, 2018). Similarly, sexual difficulties in one of the stages of the sexual response may lead to failure in the following stages (Bártová et al., 2021). Regarding satisfaction, we found strong correlations. Orgasm, for example, can be essential for satisfaction (Barnett et al., 2018).

Concerning the relationships with other variables, the factors desire and arousal of MSFI positively correlated with sexual excitation (SES). On the other hand, in the Inhibition Scale (SIS), we found a negative correlation between SIS1 and satisfaction from MSFI, and between SIS2 and desire, arousal, erection, and satisfaction from MSFI. Thus, we demonstrate that there is an association between the two instruments, that is, the higher the level of SES, the higher the desire and arousal; and the higher the level of SIS1/SIS2 (i.e., the probability of sexual inhibition to occur), the lower the desire, arousal, erection, and satisfaction. These results were similar to Lucas et al.'s (2010) study that aimed to validate the SIS/SES and found a correlation with the International Index of Erectile Function.

Therefore, even if the correlations ranged from weak to moderate, they occurred in the expected direction considering the overlap of both instruments. These data also meet the theoretical model of the dual control of the male sexual response, in which neurophysiological mechanisms trigger excitatory and inhibitory sexual responses. The individual can control his excitatory or inhibitory response, depending on external emotional/psychological aspects, such as a potential sexual partner (Dang et al., 2019; Velten, 2017).

We also found positive correlations with arousal, erection, orgasm, and satisfaction MSFI factors and self-esteem. According to Nimbi et al. (2018), negative emotional factors also affect sexual response. For example, when a man believes that his sexual performance is unsatisfactory, this may result in erectile difficulties. Therefore, the correlations with self-esteem could be explained because self-esteem refers to how much an individual accepts himself and feels capable and good with himself (Dweck, 2017), so that low self-esteem may be associated with sexual difficulties (APA, 2013). This result may explain why Pechorro et al. (2011) have found a negative correlation between self-esteem and erectile function, as well as the association found in our study.

Although our results have demonstrated that heterosexual men differed significantly from gay men in arousal, erection, and satisfaction, it is important to stress that effect sizes of those differences were small (Ellis, 2010). Small effect sizes were also found when we sought for differences between gay and bisexual men and heterosexuals in SES. In spite of these results, there were neither theoretical nor empirical reasons to suspect differences should be found among sexual orientations. For

now, it is not possible to contrast the differences between sexual orientations found in our study with previous evidence from similar studies. This is the case because most previous studies sampled only heterosexual men, while the few studies including gay and bisexual participants merged them into a single non-heterosexual group.

It was found that non-heterosexuals had significantly higher means in SES and SIS1 than heterosexuals, but not in SIS2 (Bártová et al., 2021). It is noteworthy, however, that this study did not differentiate between gays and bisexuals in the sample. In the study of Kalmbach et al. (2015) only 10.7% of participants were identified as gay or bisexual, but there was no distinction between women and men in this percentage (the study included women to validate a different measure for female participants). Finally, it is not of our knowledge that any other study has used the MSFI in gay and bisexual participants in order to verify possible differences between sexual orientations.

This study was the first attempt to seek evidence of the validity of a Portuguese version of the MSFI for a Brazilian sample and agreed with the instrument's original version. More investigations need to be conducted to improve this instrument. This includes increasing sample size and including men that are older than the participants of this study (more than 40 years old). In the following studies, we expect that it will be possible to include the factor ejaculation to better evaluate the male sexual response using the MSFI. Finally, despite the limitations, the adapted Brazilian Portuguese version of the MSFI can be a valuable instrument to evaluate the sexual function of the male population of different sexual orientations.

Authors' Contributions

We declare that all authors participated in the preparation of the manuscript. Specifically, the authors Mauro Silva Júnior and Adna Silva participated in the initial writing of the study - conceptualization, investigation, visualization; Adna Silva, Jean Natividade and Mauro Silva Júnior participated in the data analysis, and Mauro Silva Júnior, Adna Silva, Jean Natividade, Paulo Goulart, and Maria Luísa Rodrigues participated in the final writing of the work – revision and editing. All authors declared that they agreed with the content of the manuscript submitted to the journal Avaliação Psicológica.

Data availability

All data and syntax generated and analyzed during this research will be treated with complete confidentiality due to the requirements of the Human Research Ethics Committee. However, the dataset and syntax supporting the conclusions of this article are available upon reasonable request from the study's lead author.

Conflict of Interest

The authors declare that there are no conflicts of interest.

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Sobre os autores

Mauro Dias Silva Júnior is a Professor at Institute of Psychology and Behavioral Sciences Program, University of Brasília, Brazil.

Adna Janaína de Araújo Silva is Master in Neurosciences and Behavior from the Federal University of Pará.

Jean Carlos Natividade is a Professor at the Department of Psychology, Pontifical Catholic University of Rio de Janeiro, Brazil.

Paulo Roney Kilpp Goulart is a Professor at the Graduate Program in Neurosciences and Behavior, Center of Behavior Theory and Research, Universidade Federal do Pará, Brazil.

Maria Luíza Rodrigues Sampaio de Souza is a PhD student in Behavioral Sciences at the University of Brasília, Brazil.

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