



## Validation of the multidimensional model of the subjective orgasm experience in the context of same-sex relationships

Pablo Mangas<sup>a</sup>, Juan Carlos Sierra<sup>a,\*</sup>, Ana Álvarez-Muelas<sup>a</sup>, Oscar Cervilla<sup>a</sup>,  
Gracia M. Sánchez-Pérez<sup>a</sup>, Reina Granados<sup>b</sup>

<sup>a</sup> Mind, Brain, and Behavior Research Center (CIMCYC), University of Granada, Spain

<sup>b</sup> Department of Nurse, Health Sciences Faculty, University of Granada, Spain

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### ABSTRACT

**Background/objective:** The Multidimensional Model of the Subjective Orgasm Experience (MMSOE) has been validated in the context of heterosexual relationships, with no evidence in the context of same-sex relationships. This study aims to examine the association of its dimensions (Affective, Intimacy, Sensory, and Rewards) with the propensity for sexual excitation, rating of sexual arousal, rating of genital sensations, and genital response.

**Method:** Sixty-eight young adults (34 males and 34 females) who were sexually active with people of the same sex participated in a laboratory task in which they viewed content-neutral and sexually explicit gay films. Regression models were conducted to explain the dimensions of MMSOE from measures of sexual arousal.

**Results:** In males, the rating of sexual arousal explained the Sensory dimension, while the genital response explained the Affective dimension, with sexual arousal as a state gaining more prominence. In females, however, the propensity for sexual excitation explained the Sensory dimension, with more salience of sexual arousal as a trait.

**Conclusions:** The MMSOE is shown to be a valid theoretical framework for the study of orgasmic experience in the context of same-sex relationships, with clear implications for clinical practice.

From a psychophysiological point of view, orgasm can be understood as the climax of sexual pleasure, characterized by rhythmic contractions of the perineal organs and changes in the cardiovascular and respiratory systems, combined with the release of sexual tension (Schiavi & Segraves, 1995). The sensation of pleasure associated with orgasm creates an altered state of consciousness, producing well-being and satisfaction (Meston et al., 2004). This indicator of pleasure and sexual health (Kontula & Miettinen, 2016) represents a broader phenomenon than ejaculation, also linked to emotional reactions (Lorentzen, 2007). In addition, orgasm has also been understood as a sociocultural event and as a phenomenon that must also be understood through its socially embedded meaning (Frith, 2015). An underexplored dimension of orgasm is its subjective experience, which refers to its perception and evaluation at a psychological level (Arcos-Romero & Sierra, 2018; Mah & Binik, 2001). However, in recent years a trend is observed to put the focus on the subjective orgasm experience (SOE, henceforth; e.g., Arcos-Romero & Sierra, 2023; Sierra, Muñoz-García & Mangas, 2024), as opposed to its traditional study in terms of frequency and/or difficulty

in obtaining it (e.g., Bancroft et al., 2003; Simons & Carey, 2001; Wade et al., 2005), which left aside the psychological assessment of its intensity.

SOE constitutes an important dimension of sexual functioning given its association with different manifestations of sexual health, such as, for example, sexual satisfaction (Arcos-Romero & Sierra, 2020; Mangas, Sierra & Granados, 2024). Few studies have examined SOE in people who fall outside the traditional heterosexual schema (e.g., Mangas, Granados et al., 2022; Muñoz-García et al., 2023). In this line, Mangas, Granados et al. (2022) validated the Spanish version of the Orgasm Rating Scale (ORS; Arcos-Romero et al., 2018) -a scale that allows assessing SOE- in gay and lesbian population, showing ability to discriminate between people with and without orgasmic difficulties. For their part, Muñoz-García et al. (2023) reported that heterosexual people value, in general terms, their orgasms more intensely than gay people. In the present study we decided to focus on this collective, since there is recent evidence that SOE has differential manifestations between heterosexual and gay populations (e.g., Pérez-Amorós et al., 2024; Sierra,

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

Muñoz-García & Mangas, 2024).

The Multidimensional Model of Subjective Orgasm Experience (MMSOE; Mah & Binik, 2001) conceptualized SOE in sensory, evaluative, and affective terms. Arcos-Romero et al. (2018), in the validation of the Orgasm Rating Scale in Spanish population, supported in the context of heterosexual relationships this multidimensionality by proposing four distinctive dimensions of SOE: Affective (encompassing the emotions experienced during orgasm), Sensory (relating to the perception of physiological changes), Intimacy (reflecting the intimate aspect of the orgasmic experience), and Rewards (denoting the consequences derived from orgasm). Subsequently, Arcos-Romero et al. (2019), with the purpose of giving validity to this multidimensional model of SOE, observed that, in males, the propensity for sexual excitation correlated in a positive sense with the Affective, Sensory, and Rewards dimensions of SOE, while the genital response did so with the Intimacy dimension; in females, it was the subjective sexual arousal experienced to visual sexual stimuli that correlated with the Sensory dimension.

The importance of the MMSOE lies in the fact that it is the only consolidated theoretical model that conceptualizes orgasm based exclusively on the subjective appraisal of it. The semantic richness derived from the adjectives that compose it makes it possible to attend and assess the uniqueness of this experience. This model has notable implications for sexual well-being and the promotion of sexual health, highlighting the associations of SOE with sexual satisfaction (Arcos-Romero & Sierra, 2020; Mangas, Sierra & Granados, 2024). This clinical applicability stems from the fact that the model allows, among other aspects, to establish differences/similarities between sexes and to be used as a clinical tool (Mah & Binik, 2001). Despite being a classical model, it continues to be a theoretical reference in the study of orgasm, with the adjectives that compose it having also qualitative evidence (Mangas, da Silva Alves et al., 2024).

Moreover, sexual arousal is defined as an emotional or motivational condition that can be activated by internal and/or external stimuli, manifesting itself both physiologically and psychologically (Bancroft & Janssen, 2000; Janssen, 2011). In the present work we consider, on one side, sexual arousal as a state, being evaluated objectively (i.e., genital response) and subjectively (i.e., rating of sexual arousal and rating of genital sensations). This dimension refers to how sexual arousal is experienced in a transitory and present-focused way. In addition, we also consider sexual arousal as a trait (i.e., propensity for sexual excitation), referring to its experience in a more stable and dispositional way.

Taking as a reference the approach of Arcos-Romero et al. (2019), we consider that an adequate procedure to provide validity evidence to the MMSOE is to relate its dimensions to different measures of sexual arousal (Brody et al., 2013; Paterson et al., 2014), taking into account the association of these two dimensions of human sexual response (Arcos-Romero & Sierra, 2020; Cervilla et al., 2023; Mangas, Granados et al., 2022). We believe that certain constructs of sexuality (e.g., the subjective orgasm experience) are susceptible to receiving evidence of validity by relating them to objective or psychophysiological measures, being the genital response an excellent example of this (Korff & Geer, 1983; Sierra, Arcos-Romero et al., 2023).

The above precedents provided evidence of validity to the MMSOE only in the context of heterosexual relationships (Arcos-Romero et al., 2019), however this study extends the proposal of Arcos-Romero et al. (2018) to the context of same-sex relationships. To this end, the capacity to explain the four dimensions of the MMSOE (i.e., Affective, Sensory, Intimacy, and Rewards) by the propensity for sexual excitation, subjective sexual arousal, and the genital response experienced when viewing films -that include two people of the same sex having sexual relationships- will be examined in people who have relationships with same-sex partners. In line with the results of Arcos-Romero et al. (2019), sexual excitation/arousal is expected to explain part of the variance in SOE dimensions.

## Method

### Participants

Sixty-eight Spanish cisgender young adults (34 males and 34 females) aged 18 to 30 years participated. Their sexual relationships were with people of the same sex. Sociodemographic and sexual history characteristics of the participants are shown in Table 1. Inclusion criteria considered were having sexual relationships with people of the same sex and having had orgasmic experiences in such relationships in the last three months. The exclusion criteria were: (a) having medical problems, sexual dysfunctions, and/or psychological disorders; (b) taking medication that could interfere with sexual functioning (e.g., anxiolytics, antihypertensives, antidepressants); (c) drugs/alcohol abuse; and (d) history of sexual abuse.

### Instruments

Sociodemographic and Sexual History Questionnaire. Collected information on sex, age, nationality, sexual relationships, medical/psychological/sexological problems, pharmacological treatment, drug and alcohol use, and sexual abuse and victimization.

Spanish version of the Orgasm Rating Scale (ORS; Mah & Binik, 2020) by Arcos-Romero et al. (2018). This measure assessed SOE in the context of couple sexual relationships employing 25 adjectives distributed in four factors: Affective (e.g., “Blissful”), Sensory (e.g., “Pulsating”), Intimacy (e.g., “Tender”), and Rewards (e.g., “Relaxing”). It used a 6-point Likert scale to quantify how well each of the 25 adjectives described the most recent orgasmic experience experienced in the context of sexual relationships, from 0 (*does not describe it at all*) to 5

**Table 1**  
Sociodemographic and sexual history characteristics of the participants.

	Males (n = 34)		Females (n = 34)		t / $\chi^2$	d / V
	Range	M (SD)	Range	M (SD)		
Age (years)	18–30	22.24 (2.83)	18–26	20.94 (2.13)	2.13*	0.52
	n (%)		n (%)			
Education level					0.16	0.05
Graduate degree	31 (91.2)		30 (88.2)			
Postgraduate degree	3 (8.8)		4 (11.8)			
	M (SD)		M (SD)			
Age of first sexual relationship (in years)	16.91 (2.25)		15.62 (1.26)		2.93**	0.71
	n (%)		n (%)			
Current relationship					13.53***	0.45
Yes	12 (35.3)		27 (79.4)			
No	22 (64.7)		7 (20.6)			
	M (SD)		M (SD)		1.51	0.48
Relationship length (in months)	29.58 (25.30)		19.33 (16.67)			
	Me	M (SD)	Me	M (SD)		
Number of lifetime sexual partners	10 (23.31)		4 (8.89)		2.80***	0.68

Note. Me = median; M = mean; SD = standard deviation.

\* p < .05,

\*\* p < .01,

\*\*\* p < .001.

(describes it perfectly) so that the higher the score, the greater the subjective orgasm intensity. It had good reliability and validity indicators in its adaptation to Spanish heterosexual (Arcos-Romero et al., 2018) and gay (Mangas, Granados et al., 2022) populations. In this study, McDonald's omega ranged between .80 (Affective) and .94 (Sensory), and Cronbach's alpha ranged between .79 (Affective) and .94 (Sensory).

Spanish version of the Sexual Inhibition/Excitation Scales-Short Form (SIS/SES-SF; Carpenter et al., 2011) by Moyano and Sierra (2014). It is composed of 14 items distributed in three subscales, which evaluate the propensity to sexual excitation/inhibition: Sexual excitation (SES; e.g., "When a sexually attractive stranger accidentally touches me, I easily become aroused"), Sexual inhibition due to threat of performance failure (SIS1; e.g., "I cannot get aroused unless I focus exclusively on sexual stimulation"), and Sexual inhibition due to threat of performance 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"). It used a 4-point Likert scale from 1 (*strongly agree*) to 4 (*strongly disagree*). All scores were inverted, so that higher scores show a higher propensity for sexual excitation/inhibition. It had good internal consistency values, with a Cronbach's alpha between .66 and .84 in young people (Sierra, Cervilla et al., 2024). Only the SES subscale was considered in this study, whose McDonald's omega was .64 and Cronbach's alpha was .62.

Spanish version of the Rating of Sexual Arousal (RSA; Mosher, 2011) by Sierra et al. (2017). It assessed self-reported sexual arousal in a specific situation, such as when viewing sexually explicit material. Its five items (overall level of sexual arousal, intensity of genital sensations, sensations of warmth experienced, non-genital physical sensations, and level of sexual concentration) are answered on a 7-point Likert scale from 1 (*none*) to 7 (*extremely*). It presents adequate internal consistency (Cronbach's alpha of .90) and adequate evidence of validity (Sierra et al., 2017, 2019), with the McDonald's omega and Cronbach's alpha in this study being .92.

Spanish version of the Rating of Genital Sensations (RGS; Mosher, 2011) by Sierra et al. (2017). It assessed the self-reported genital sensations experienced by the person in response to explicit sexual stimuli. It consists of a list of 11 descriptions from "No genital sensation" to "Multiple orgasm: repeated orgasmic experiences in a single sexual episode". Its measures show adequate evidence of validity (Sierra et al., 2017, 2019).

## Materials

BIOPAC Model MP150 polygraph with 16 channels (BIOPAC Systems Inc., Goleta, CA, USA), with the AcqKnowledge 5.0 software. These were used for the acquisition and processing of psychophysiological data. Two different modules were used depending on the person's genitalia, in order to measure the genital response: a penile plethysmograph (Biopac amplifier DA100C and indium/gallium plethysmograph sensors) and a vaginal photoplethysmography (Biopac amplifier PPG100C and vaginal transducers). These two procedures represent the most common measures of genital vasocongestion. On the one hand, the penile plethysmograph consists of placing an extensometer around the penis to evaluate changes in penile tumescence (Janssen & Prause, 2016; Kuban et al., 1999). On the other hand, the vaginal photoplethysmograph is a tampon-sized intravaginal device that emits light and records back-scattered light to assess changes in vaginal pulse amplitude in the tissues surrounding the vaginal canal (Janssen & Prause, 2016; Prause & Janssen, 2005). We calculated the genital response from the difference between the scores of the explicit sexual stimulus and the baseline stimulus, in line with previous studies of this nature (Álvarez-Muelas et al., 2022; Arcos-Romero et al., 2019; Granados et al., 2020).

Visual stimuli. Neutral videos (nature documentaries) were used to establish the baseline. As sexually explicit stimuli, videos showing two people of the same sex having sexual relationships were used (two videos with gay relationships for the male participants, and two videos

with lesbian relationships for the female participants). All videos had a duration of three minutes and were previously validated at the Human Sexuality Laboratory at the University of Granada, showing capacity to generate sexual excitation, both subjectively (Mangas, Cervilla et al., 2022) and physiologically (Mangas & Sierra, 2021).

## Procedure

Through different communication channels of the University of Granada, young Spanish people who had sexual relationships with people of the same sex were invited to participate voluntarily. The recruitment of participants was carried out between November 2021 and March 2023. In the first phase, those interested in participating, once they had accepted an informed consent, completed a battery of screening instruments to ensure compliance with the inclusion/exclusion criteria. Those subjects who met the inclusion/exclusion criteria were referred to the Sexuality Laboratory. Females were not screened during menstruation, and all participants were required to abstain from caffeine, alcohol, and sexual encounters with others or alone for 24 h before the experiment. Of all the participants who responded to the screening phase and potentially met the inclusion criteria for participation in this study, 84 (55.26 % of total) were finally excluded. The main reasons for exclusion, in order of frequency, were the following: (1) inability to contact them for the second in-person phase of the study, (2) appointment cancellation or withdrawal, (3) mechanical or procedural errors in both the recording devices and the signal representation software, (4) excess of signals in any of the counterbalance sequences, and (5) voluntary abandonment. This study was previously approved by the Ethical Committee of Human Research of the University of Granada (reference 2308/CEIH/2021).

In the laboratory, before the start of the experimental task, participants accepted a second informed consent. Anonymity and confidentiality were guaranteed at all times. After this, an experienced researcher explained the functioning, placement, and adjustment of the genital response recording devices. Subsequently, the researcher retired to the control room to ensure a correct recording of the psychophysiological signal, and five minutes of adaptation were left before starting the experiment. The light and temperature of the experimental room were kept stable.

The experimental sequence consisted of viewing: (a) neutral baseline video; (b) neutral video 1 and sexual video 1; and (c) neutral video 2 and sexual video 2. To avoid order effects, the videos were randomized and counterbalanced (Álvarez-Muelas et al., 2022; Cervilla et al., 2024; Granados et al., 2020). After the neutral baseline video and each sexual video, participants responded to the Rating of Sexual Arousal and Rating of Genital Sensations. See Fig. 1. At the end of the experiment, participants were gifted with sexual health promotion kits containing single-dose lubricants and condoms.

## Data analysis

The necessary sample size calculation was conducted using the software G\*Power program (Faul et al., 2007) for regression models. Considering a power calculation ( $\alpha = .05$ , power = 0.80,  $d = 0.45$ , number of predictors = 4) a minimum of 32 participants per sex was determined. Pearson correlations were used to associate the four dimensions of SOE and the different measures of sexual arousal. Additionally, multiple regression models were conducted by the stepwise method to explain the SOE dimensions from the arousal measures separately in males and females. The predictor variables were divided into two blocks: (1) propensity for sexual excitation, and (2) rating of sexual arousal, rating of genital sensations, and genital response.

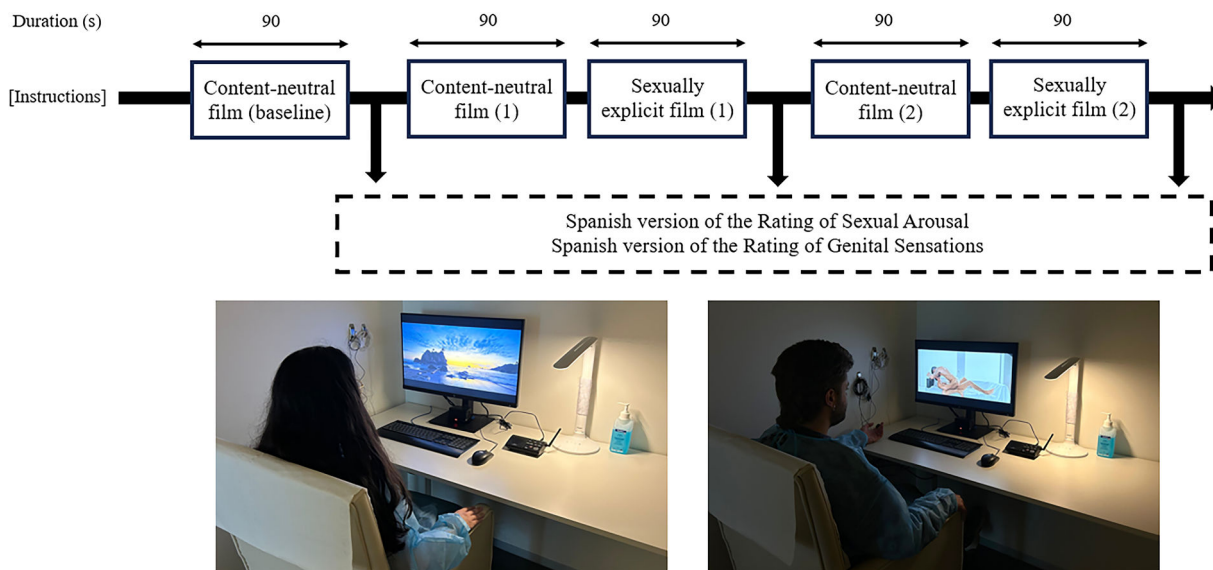


Fig. 1. Graphical Experimental Procedure and Position of the Participant.

**Results**

*Bivariate correlations*

In the male sample, statistically significant correlations were obtained, in a positive way, between rating of sexual arousal and the Sensory dimension of the subjective orgasmic experience ( $r = .41, p < .05$ ), between rating of genital sensations and the Affective ( $r = .40, p < .05$ ) and Sensory ( $r = .41, p < .05$ ) dimensions, and between genital response and the Affective dimension ( $r = .42, p < .05$ ). All these correlation coefficients are considered moderate (Cohen, 1988).

In the female sample, only a significant association was observed between the propensity for sexual excitation and the Sensory dimension of the subjective orgasmic experience ( $r = .36, p < .05$ ). This correlation coefficient is considered low (Cohen, 1988) (Table 2).

*Regression models*

In the male sample, 15 % of the variance of the Affective dimension of the subjective orgasmic experience was significantly and positively explained by the genital response ( $F_{1, 32} = 6.89, p < .05$ ), and 14 % of the variance of the Sensory dimension was significantly and positively explained by the rating of sexual arousal ( $F_{1, 32} = 6.52, p < .05$ ) (Table 3).

In the female sample, the propensity for sexual excitation ( $F_{1, 32} = 4.88, p < .05$ ) significantly explained, in a positive way, 11 % of the variance of the Sensory dimension (Table 3).

**Table 2**

Correlations between the subjective orgasm experience dimensions (Affective, Sensory, Intimacy, and Rewards) and different sexual arousal measures.

Variables	1	2	3	4	5	6	7	8
1. Affective	–	.72***	.34*	.34*	.09	.05	–.25	.01
2. Sensory	.57***	–	.27	.47**	.36*	.18	–.08	.14
3. Intimacy	.56**	.45**	–	.66***	.11	–0.01	–.11	–.08
4. Rewards	.55**	.35*	.31	–	.31	.21	.07	.14
5. Propensity for sexual excitation	.09	.13	.10	.19	–	.25	.26	.15
6. Rating of sexual arousal	.21	.41*	.20	.10	.09	–	.80***	.48**
7. Rating of genital sensations	.40*	.41*	.09	.13	.22	.77***	–	.47**
8. Genital response	.42*	.24	.23	.13	.09	.40*	.59***	–

Note. Values below the diagonal are based on male scores. Values above the diagonal are based on female scores.

\*  $p < .05$ ,  
 \*\*  $p < .01$ ,  
 \*\*\*  $p < .001$ .

**Table 3**

Multiple regression models for subjective orgasm experience dimensions.

Males								
Predictors	B	SE	$\beta$	95 % CI	t	p	R <sup>2</sup>	VIF
Affective							.15	
Genital response	0.20	0.08	.42	0.05, 0.36	2.63	.013		1.00
Sensory							.14	
Rating of sexual arousal	1.09	0.43	.41	0.22, 1.96	2.55	.016		1.00
Females								
Predictors	B	SE	$\beta$	95 % CI	t	p	R <sup>2</sup>	VIF
Sensory							.11	
Propensity for sexual excitation	1.91	0.86	.36	0.15, 3.66	2.21	.034		1.00

Note. B: non-standardized beta; SE: standard error;  $\beta$ : standardized beta; 95 % CI: 95 % confidence interval; R<sup>2</sup>: adjusted R-squared value; VIF: Variance inflation factor.

**Discussion**

The present study aimed to provide evidence for the validity of MMSOE in the context of same-sex relationships by examining the explanatory capacity of the propensity for sexual excitation, subjective sexual arousal, and genital response on the four dimensions of subjective

orgasmic experience (i.e., Affective, Sensory, Intimacy, and Rewards). Overall, our findings underline the relationship found between different measures of sexual arousal and SOE, especially in the case of males, a fact congruent with the results of previous studies, both in the context of heterosexual relationships (Arcos-Romero et al., 2019) and masturbation (Cervilla et al., 2024), as well as with evidence suggesting that orgasmic experience differs according to sex (e.g., Arcos-Romero & Sierra, 2020; Cervilla et al., 2024; Mangas, Granados et al., 2022). In this sense, and in the context of sexual relationships, it had been already seen that woman, both heterosexual (Arcos-Romero & Sierra, 2020, 2023) and non-heterosexual (Mangas, Granados et al., 2022; Sierra, Muñoz-García & Mangas, 2024), experience orgasm in general terms more intensely. Despite this, when discussing in terms of frequency, the evidence suggesting the existence of a male-female orgasmic gap to the detriment of women is well known (Andrejek & Fetner, 2019; Döring & Mohseni, 2022; Wetzel & Sanchez, 2022).

First, the propensity for sexual excitation was only related to the Sensory dimension of SOE in females, explaining 11 % of its variance. This finding is inconsistent with previous evidence in heterosexual population concerning that propensity for sexual excitation is associated with subjective orgasmic experience in males, but not in females (Arcos-Romero et al., 2019; Cervilla et al., 2024; Moyano & Sierra, 2014). These results seem to support the relevance of the propensity for sexual excitation in females who have sexual relationships with other females, a fact also recently reported by Sierra, Mangas et al. (2024), by pointing out that bisexual/lesbian females present a greater propensity for sexual excitation than heterosexual females. The finding that propensity for sexual excitation explains the Sensory dimension is also congruent with the findings of Sierra, Muñoz-García and Mangas (2024), who reported that bisexual/lesbian females experience orgasm significantly more intensely than bisexual/gay males in sensory terms.

The lack of effect of this variable found in gay males may be due to the fact that current models of sexual functioning are not entirely accurate in them, whose sexual relationships take place in a different relational and sociocultural context than that of heterosexual males (Cohen et al., 2008; Cove & Boyle, 2002; Sierra, Mangas et al., 2023). It should also be noted that propensity for sexual excitation -as proposed within the Dual Control Model (Janssen & Bancroft, 2023) and as assessed by the SIS/SES-SF (Janssen et al., 2020)- has hardly been studied in people belonging to sexual minorities. The few studies that include people with sexual diversities have focused on relating propensity for sexual excitation with risk behaviors, such as substance use (Lorenz, 2021), cybersex addiction (Lai et al., 2015), or lack of sexual control (Miner et al., 2016), forgetting its relationship with the orgasmic experience. Our finding may also be due to the fact that, compared to heterosexual females, those who engage in sexual relationships with other females exhibit significantly more sexual desire (Lippa, 2007), score higher on sociosexuality (i.e., degree of openness to engage in casual or noncommittal sex; Simpson & Gangestad, 1991) and on sexual sensation seeking, sexual curiosity, and arousability (Stief et al., 2014). It is possible that the erotica of lesbian and bisexual females, unlike heterosexual females, is more focused on the goals and consequences of sexual activity (in this case, reaching orgasm) (Sierra, Muñoz-García & Mangas, 2024), a disposition that has traditionally been associated with male sexuality.

Regarding the rating of sexual arousal and the rating of genital sensations, only significant associations were found with the orgasmic experience in males. Specifically, the rating of sexual arousal correlated significantly with the Sensory dimension of orgasm, explaining 14 % of its variance. Although without explanatory capacity, significant correlations of the rating of genital sensations with the Affective and Sensory dimensions were also found. The prominence of these two dimensions of arousal only in the case of males is consistent with Mah and Binik's (2002) hypothesis that they are more focused on their own genital reactions. The lack of salience, in females, of situational sexual arousal (i.e., rating of sexual arousal and rating of genital sensations), as opposed

to propensity for sexual excitation, differs from previous findings in heterosexual females by Arcos-Romero et al. (2019). This result should be further explored.

In non-heterosexual females, the weight of propensity for sexual excitation, as opposed to situational sexual arousal (i.e., subjective and objective sexual arousal recorded in the laboratory) may be due, on the one hand, to the fact that their socialization (see Adler et al., 2016; Clair, 2012) may have influenced the inhibition of their explicit sexual arousal, resulting in sexual arousal as a state playing no role. On the other hand, it could be due to factors associated with gender and/or sexual orientation directly related to the orgasmic experience, and may account for the fact that, although they have the predisposition to reach orgasm and are oriented to it (propensity for sexual excitation), it is not necessarily a detriment for them not to obtain it. This is congruent with the fact that females, regardless of their sexual orientation (Frederick et al., 2018), have lower expectations for orgasm compared to males (Wetzel et al., 2022). Moreover, they have less facility to obtain it (Andrejek & Fetner, 2019; Sánchez-Fuentes et al., 2019; Sierra et al., 2012), are characterized by subjectively experiencing it in a more complex way (Tavares et al., 2018), and prioritize other sexual activities beyond orgasm, such as kissing, cuddling and caressing (Garnets & Peplau, 2006), sometimes describing their best sexual encounters without reference to orgasm (Chatterji et al., 2017). In contrast, taking into account the social importance that has been given to male orgasm, sometimes considered as a need or right (Klein & Conley, 2022), coupled with the fact that males are much more encouraged to pursue their own sexual needs and desires (Miller & Byers, 2004; Sánchez-Fuentes & Santos-Iglesias, 2016), the association between sexual arousal as a state (i.e., appraisal of sexual arousal and genital sensations) and the orgasmic valuation made by them seems logical.

The genital response had a relevant role in the explanation of SOE only in males, correlating significantly with the Affective dimension of the orgasmic experience and explaining 15 % of its variance. This result is congruent with what was found in the context of heterosexual relationships, where also, only in males, the genital response was able to explain the Intimacy dimension (Arcos-Romero et al., 2019). In the present work, the genital response explained the Affective dimension, confirming again the importance of this orgasmic dimension in non-heterosexual males, something found in the few dyadic works that study SOE in same-sex couples (Mangas, Sierra & Granados, 2024; Pérez-Amorós et al., 2024).

In general, the dimensions of SOE that could be explained by sexual arousal were Affective and Sensory. Recently, it has been shown that the Affective dimension has the strongest link with sexual satisfaction in males with same-sex partners, and it has been observed that this dimension of orgasm has both an actor and partner effect on sexual satisfaction (Mangas, Sierra & Granados, 2024). In addition, a recent qualitative study has also revealed the notable prominence of the Affective dimension compared to the rest, something especially characteristic in the context of sexual relationships (Mangas, da Silva Alves et al., 2024), which argues in favor of the hypothesis that this dimension seems to mask the rest. For its part, the Sensory has also been shown to be a dimension of orgasm with outstanding dyadic salience in male couples (Mangas, Sierra & Granados, 2024), probably because it is the most physically evident orgasmic dimension (e.g., pulsating, flushing, trembling), which may cause males to focus on how their partners are physiologically experiencing their arousal and orgasm, and to take it as a marker of their own sexual satisfaction.

This study has some limitations that affect the generalizability of the results, since the sample consisted of young, healthy, with university studies and exclusively cisgender people. Additionally, we also consider it a limitation that we have not directly assessed or considered sexual orientation per se, only the sexual behavior of the participants, something that should be further explored in the future. Despite this, as Blair et al. (2017) point out, relationship configuration is a more influential factor than self-identified sexual orientation in explaining how sexual

activity and orgasm vary. In addition, the artificiality of the laboratory studies prioritizes internal validity to the detriment of external validity. It should also be noted that the scarcity of similar studies focused on the experiences of non-heterosexual people has meant that our findings have been equated, not always desirably, with what has been established in studies with heterosexual populations. Future research should include older people, people with sexual dysfunctions, as well as people with other identities that account for sexual diversity. Since the MMSOE allows the study of orgasmic experiences also in the context of masturbation, a good way to continue this line of research would be to validate this model in the context of solitary masturbation of non-heterosexual people. We also propose the possibility of conducting studies using scenarios, both neutral and erotic, presented through virtual reality.

## Conclusions

The results obtained are considered relevant from a clinical and research point of view, as they provide evidence of validity to the MMSOE in the context of same-sex relationships, confirming the utility of this model. In addition, we observed differential nuances compared to previous evidence in the context of heterosexual relationships provided by Arcos-Romero et al. (2019). Specifically, we found a relationship between the propensity for sexual excitation and the Sensory dimension of orgasm in females. In males, in contrast, and in line with previous evidence indicating that orgasm dimensions are explained by more measures of sexual arousal, we observed a greater number of sexual arousal-orgasm associations, with situational sexual arousal (i.e., rating of sexual arousal and rating of genital sensations) and genital response (i.e., penile circumference) having more relevance. Therefore, when it comes to explaining the subjective orgasmic experience, in females who have sexual relationships with other females, the propensity for sexual excitation would have a greater influence, while in males who have sex with other males, situational sexual arousal and genital response would have a greater impact. It is important to note that the results of this study should be interpreted with caution due to the absence of high correlation coefficients. Finally, at the clinical level, and because the LGBTIQ+ Affirmative Psychotherapy approach is becoming increasingly recognized, which leads the use of scientific knowledge about these minorities in psychological practice (Moradi & Budge, 2018; Pepping et al., 2018), our findings could provide health professionals with a solid theoretical model adapted to the population that relates sexually with people of the same sex. Therefore, this study makes a contribution to research that includes sexual minorities that fall outside the traditional heterosexual schema (Pollitt et al., 2023), this being even more relevant in the field of sexual health, where most works do not include these minority groups, particularly if they involve females who have sexual relationships with other females (Obón-Azuara et al., 2023).

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## Declaration of competing interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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