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Subjective orgasm experience in different-sex and same-sex couples: A dyadic approach

Carlos Pérez-Amorós
Juan Carlos Sierra
Pablo Mangas
University of Granada, Spain

Abstract

The subjective orgasm experience (SOE) refers to the perception, sensation and/or evaluation of orgasm from a psychological point of view, representing an important construct of sexual functioning rarely studied under a dyadic approach. This study analyzed SOE in the contexts of sexual relationships and solitary masturbation in 179 different-sex and same-sex couples. The results indicated the absence of differences in intradyadic discrepancies in SOE dimensions in both sexual contexts, varying according to the type of couple. Besides, the study also highlights the influence of some of these discrepancies of SOE in solitary masturbation on SOE discrepancies in sexual relationships among the members of male-female and female-female couples. Furthermore, the study revealed that the intensity of partners' orgasm experience during solitary masturbation influences the intensity of SOE during sexual relationships, with variations observed based on the type of couple. These findings highlight the importance of considering SOE from a dyadic approach, with the association of orgasmic experience in both sexual contexts gaining relevance, differing according to the couple type. The results also point to the clinical implications of the dyadic effects of such an individual practice as solitary masturbation on shared sexual experiences.

Keywords

Subjective orgasm experience, sexual relationships, solitary masturbation, different-sex couples, same-sex couples, dyadic analyses

Corresponding author:
Juan Carlos Sierra, Mind, Brain and Behavior Research Center (CIMCYC), Facultad de Psicología, Universidad de Granada, Campus Universitario de Cartuja, s/n, Granada 18011, Spain.
Email: jcsierra@ugr.es

Orgasm is a sensation of intense sexual pleasure accompanied by an altered state of consciousness, somatic experiences and the release of sexual tension (Schiavi & Segraves, 1995), which ultimately generates a sense of well-being and satisfaction (Meston et al., 2004). It is one of the most important components of sexuality, being considered as the normative marker of sexual pleasure (Opperman et al., 2014), the climax of sexual arousal (Döring & Mohseni, 2022), an important explanatory factor of sexual satisfaction (Arcos-Romero & Sierra, 2020; Edard & Rusinek, 2020; Kontula & Miettinen, 2016) and a characteristic element of optimal sexual functioning (Emhardt et al., 2016).

Traditionally, studies about orgasm have focused on its physiological dimension, leaving aside the psychological or subjective component, and those that have addressed it have mostly considered only the female orgasm (Arcos-Romero & Sierra, 2018; Mah & Binik, 2001, 2005). Despite this, the subjective orgasm experience (SOE, hereafter), which refers to the perception, sensation and/or evaluation of orgasm at a psychological level (Arcos-Romero & Sierra, 2018; Mah & Binik, 2001), is an important construct of sexual functioning (Arcos-Romero et al., 2020; Mangas et al., 2022).

Multidimensional Model of the Subjective Orgasm Experience

The Multidimensional Model of the Subjective Orgasm Experience (MMSOE) proposed by Mah and Binik (2001), in its Spanish validation, both in the context of sexual relationships (Arcos-Romero et al., 2019) and solitary masturbation (Cervilla et al., 2024), presented a tetra-dimensional structure: (1) Affective dimension, referred to the emotions experienced during orgasm (e.g., "exciting"); (2) Sensory dimension, or perception of physiological changes (e.g., "exploding"); (3) Intimacy dimension, reflecting the intimate aspect of the orgasm experience (e.g., "close"); and (4) Rewards dimension, understood as the consequences derived from orgasm (e.g., "relaxing"). This model stems from the Orgasm Rating Scale (ORS) for the context of sexual relationships and solitary masturbation (Mah & Binik, 2002, 2011), an instrument that allows the assessment of SOE. The ORS has been validated in the Spanish population, both in the context of heterosexual (Arcos-Romero et al., 2018) and gay (Mangas et al., 2022) relationships, as well as in the context of solitary masturbation in heterosexual (Cervilla et al., 2022) and gay and bisexual (Muñoz-García et al., 2023) populations.

The study of orgasmic experiences using the couple as the unit of analysis

Sexual activity can be with a partner or partners (e.g., sexual relationships) or with oneself (e.g., solitary masturbation). Its individual facet has been conceptualized as less context-dependent, complex and desirable than that experienced dyadically (Goldey et al., 2016; Levin, 2007). In reference to orgasm, Das (2007) reported that 96% of American men and 92% of American women had sexual relationships over the preceding year. Regarding solitary masturbation the percentages were 61% for men and 38% for women. King et al. (2011) pointed out that orgasms experienced by women in different relationship status

with someone else involve greater pleasure and sensations than those obtained in solitary, coinciding with the results of Mah and Binik (2002), who found that, in men and women, of all sexual orientations and partnered or not, orgasms with a partner are significantly more pleasurable and satisfying. Although studies aimed at comparing SOE in sexual relationships and solitary masturbation (SOE-R and SOE-M, hereafter respectively) are scarce, Sierra et al. (2021) reported a higher intensity of SOE in the context of sexual relationships for a heterosexual sample. It has been proposed that the association between both orgasmic experiences is complex (Cervilla & Sierra, 2022), observing a dependence between masturbation and satisfaction in sexual relationships posed in terms of a "masked" association, that is, an indirect association (Regnerus et al., 2017). The evidence for this association is therefore very limited and has led to the suggestion of a compensatory relationship between masturbation and the frequency of sexual relationships in men and a complementary relationship in women (Cervilla & Sierra, 2022; Rowland, Hevesi, et al., 2020; Rowland, Kolba, et al., 2020; Sierra et al., 2023). Specifically, Cervilla and Sierra's (2022) study pointed to a positive association between orgasmic satisfaction during sexual relationships and the subjective orgasmic intensity experienced by solitary masturbation in both heterosexual men and women, regardless of relationship status.

Couple relationships exist within a dyadic system where understanding the behaviors that occur between members is only possible by studying their complex associations (Bartholomew & Allison, 2006). According to Kenny et al. (2006), a dyad is defined as a type of social network consisting of two linked individuals. Social and behavioral science research has tended to focus on individuals in isolation, even though most of the phenomena studied are interpersonal in nature, with a dyadic approach being uncommon (Kenny et al., 2006). In this sense, it is known that discrepancies between partners in certain psychosexual variables, such as sexual desire (Jodouin et al., 2021), negatively affect sexual health, as well as that dyadic adjustment is negatively associated with sexual distress and poor sexual functioning (Tavares et al., 2022; Trudel et al., 2010). In this dyadic context, the conceptual framework Actor-Partner Interdependence Model (APIM; Kashy & Kenny, 2000; Kenny et al., 2002), was developed. It contemplates the actor-partner effects, allowing to examine not only the intrapersonal effect, that is, how certain phenomena at the individual level influence oneself (actor effect), but also at the interpersonal level, understood as the influence of the aspects of the partner on the actor (partner effect) (Kenny et al., 2006; Samios et al., 2012).

Current study

Despite the relevant role played by interpersonal variables in the context of the couple in explaining SOE (Arcos-Romero & Sierra, 2020), it has been addressed almost exclusively on an individual basis, both in the context of sexual relationships and solitary masturbation, except for the recent study by Mangas, Sierra, and Granados (2024), who analyzed same-sex couples from a dyadic perspective to explain their sexual satisfaction. Both in their study and in the current one, in addition to use as theoretical framework the Multidimensional Model of the Subjective Orgasm Experience (MMSOE; Mah & Binik, 2001) we relied on

the Gender-as-Relational (GAR) approach (Thomeer et al., 2020; Umberson et al., 2018). This provides an ideal framework for the dyadic study of heterosexual and sexual minority couples. The GAR approach proposes that human bonding is highly gendered, which translates into men and women experiencing their bonds very differently (Thomeer et al., 2013). Moreover, gender is performative not only individually, but in relation to the others (Reczek & Umberson, 2016). Hence, in this study we have interpreted each type of couple as a different relational framework, since the GAR lens suggests different manifestations of intimacy depending on the configuration of the couple: e.g., men with women, men with men, women with women (Thomeer et al., 2020). In this sense, Blair et al. (2017) argue that the relationship configuration is a more influential factor than self-identified sexual orientation to explain how sexual activity and orgasm vary. These differences by type of partner have also been found in other psychosexual variables, such as emotional intimacy (Guzmán-González et al., 2021; Šević et al., 2016).

This study intends to deepen the SOE in the context of sexual relationships, comparing it between both partners and examining its association with the intensity with which orgasm is subjectively experienced through solitary masturbation. Thus, the present study, based on the dimensions proposed by Arcos-Romero et al. (2018), aims to: (1) examine the discrepancy between partners on the four dimensions of SOE, in the context of sexual relationships and solitary masturbation, according to the type of couple (i.e., male-female, male-male, and female-female); (2) examine the association of intradyadic discrepancy in each SOE dimension in the context of solitary masturbation with the discrepancy in the global measure of the SOE in the context of sexual relationships; and (3) examine the actor-partner effect of SOE dimensions in the context of solitary masturbation on the intensity of the global SOE in the context of sexual relationships. Given the absence of studies that have addressed the analysis of intradyadic discrepancies in SOE intensity it is difficult to establish a priori hypotheses, so the following exploratory research questions are posed: (RQ1) will there be differences in intradyadic discrepancies in SOE according to the couple type (i.e., male-female, male-male, and female-female)?; and (RQ2) will intradyadic discrepancy in each dimension of SOE in the context of solitary masturbation be associated with intradyadic discrepancy in the global measure of the SOE in the context of sexual relationships? Considering the association between orgasm obtained in sexual relationships and that obtained through solitary masturbation (Cervilla & Sierra, 2022; Regnerus et al., 2017; Rowland, Hevesi, et al., 2020; Rowland, Kolba, et al., 2020; Sierra et al., 2023), the intensity with which orgasm is subjectively experienced in sexual relationships is expected to be explained by the intensity with which both partners experience it in solitary masturbation (i.e., actor-partner effects are expected).

Method

Participants

Using non-probabilistic incidental sampling, 179 different-sex and same-sex couples (N = 358 individuals) were recruited from the general Spanish population: (1) 58 male-female dyads, (2) 58 male-male dyads, and (3) 63 female-female dyads. Participants had an age

range of 18–57 years (M = 27.71; SD = 7.05) and a mean relationship length of 44.09 months (SD = 51.44). The inclusion criteria were: (a) having Spanish nationality; (b) being of legal age (≥18 years); (c) being cisgender; (d) having orgasmic experiences, both in couple sexual relationships and solitary masturbation, in the last three months; (e) maintaining a couple relationship of at least three months length; and (f) that the partner, who must also meet the inclusion criteria, participate in the study.

The sociodemographic characteristics of the participants are organized by couple type in Table 1.

Instruments

Sociodemographic and Sexual History Questionnaire. Aimed at collecting information regarding sex, age, nationality, educational level, type of sexual practices, existence or not of a couple relationship and data on this (i.e., sex and age of the partner, relationship length, cohabitation or not with the partner, sexual activity and presence of recent orgasmic experiences with them), variables of the shared sexual history (i.e., age of first sexual relationship, number of lifetime sexual partners and last orgasm achieved with another person) and solitary sexual history (i.e., solo masturbatory experience in the last three months).

Spanish version of the Orgasm Rating Scale for the context of sexual relationships (ORS-R; Arcos-Romero et al., 2018). Its 25 items, presented in the form of adjectives and distributed in four factors (Affective, Sensory, Intimacy, and Rewards), are answered on a 6-point Likert scale to quantify to what extent each item described the most recent orgasm experience, from 0 (*does not describe it at all*) to 5 (*describes it perfectly*). Higher scores indicated greater intensity of SOE. The scale has been shown to be invariant for sexual orientation (Mangas et al., 2022). It had good reliability and validity indicators, both in its original version (Mah & Binik, 2011) and in its adaptation to Spanish heterosexual (Arcos-Romero et al., 2018) and gay (Mangas et al., 2022) populations. In this study, McDonald's omega ranged from .64 (Intimacy in women with different-sex partners) to .94 (Sensory in men with different-sex and same-sex partners). Considering that the total scale presented good internal consistency (between .92 in women with different-sex partners and .95 in men with different-sex and same-sex partners), in the regression analyses and APIMs of this study (aims 2 and 3), for the sake of parsimony, we have considered the global view (total score).

Spanish version of the Orgasm Rating Scale for the context of solitary masturbation (ORS-M; Cervilla et al., 2022). The items and factorial structure are identical to its version in the context of sexual relationships, but are answered according to the last orgasmic experience obtained through solitary masturbation. Like the ORS-R, it has been shown to be invariant to sexual orientation (Muñoz-García et al., 2023). Similarly, it had good reliability and validity indicators in Spanish heterosexual (Cervilla et al., 2022) and gay and bisexual (Muñoz-García et al., 2023) populations. In this study, the McDonald's omega values obtained ranged from .72 (Intimacy in men with same-sex partners) to .97 (Sensory in men with different-sex).

Table 1. Sociodemographic characteristics of the participants.

	Male-female couples (n = 116; 58 dyads)		Male-male couples (n = 116; 58 dyads)		Female-female couples (n = 126; 63 dyads)	
	Rank	*M* (*SD*)	Rank	*M* (*SD*)	Rank	*M* (*SD*)
Age (years)	18–57	26.75 (6.68)	18–54	30.44 (7.71)	18–46	26.09 (5.97)
	n (%)		*n* (%)		*n* (%)	
Education level						
Primary education	2 (1.7)		1 (0.9)		0 (0.0)	
Secondary education	18 (15.5)		13 (11.2)		17 (13.5)	
University	96 (82.8)		102 (87.9)		109 (86.5)	
	M (*SD*)		*M* (*SD*)		*M* (*SD*)	
Age of first sexual relationship (years)	16.77 (2.13)		17.05 (3.01)		17.10 (2.60)	
	n (%)		*n* (%)		*n* (%)	
Cohabitation with the partner						
Yes	38 (32.8)		62 (54.4)		24 (19.0)	
No	78 (67.2)		54 (46.6)		102 (81.0)	
	M (*SD*)		*M* (*SD*)		*M* (*SD*)	
Relationship length (in months)	46.72 (62.43)		51.56 (50.75)		34.78 (38.16)	
	Mdn	*M* (*SD*)	*Mdn*	*M* (*SD*)	*Mdn*	*M* (*SD*)
Number of lifetime sexual partners	6	12.66 (25.20)	15	62.15 (152.49)	5	7.10 (7.48)
	n (%)		*n* (%)		*n* (%)	
Type of sexual practices						
Exclusively heterosexual	79 (68.1)		0 (0.0)		0 (0.0)	
Mostly heterosexual, only slightly homosexual	21 (18.1)		0 (0.0)		0 (0.0)	
Mostly heterosexual, but more than slightly homosexual	1 (0.9)		0 (0.0)		0 (0.0)	
Bisexual	15 (12.9)		15 (12.9)		44 (34.9)	
Mostly homosexual, but more than slightly heterosexual	0 (0.0)		1 (0.9)		8 (6.3)	
Mostly homosexual, only slightly heterosexual	0 (0.0)		14 (12.1)		22 (17.5)	
Exclusively homosexual	0 (0.0)		86 (74.1)		52 (41.3)	

Procedure

An online questionnaire battery was employed, as previous studies in the field of sexuality have indicated no differences between this and the traditional pencil-and-paper method (Álvarez-Muelas et al., 2021; Sierra et al., 2018). We generated digital posters that included the inclusion criteria, the link to the battery of instruments, as well as additional information about our research team. That battery of questionnaires was distributed through social media (Facebook®, Twitter® (now X®), Instagram®, Telegram®, WhatsApp®, LinkedIn®) and e-mail lists, using the open software LimeSurvey®, located on the servers of the University of Granada, among Spanish adults. The diffusion was carried out between the months of December 2022 and March 2023.

Participation was voluntary, without compensation, and data protection, anonymity, and confidentiality were guaranteed. No personal information was required beyond the initials and birth years of the participants and their partners in order to elaborate an alphanumeric code to identify and form the dyads. All participants were informed of the purpose and nature of the study, the characteristics of the evaluation, and the implications of their participation. Alongside the survey, the participants received an informed consent form in which they expressed, through their acceptance, their agreement and willingness to take part in the study. The average time to complete the questionnaire was approximately 20 minutes.

Automatic entries were controlled by a CAPTCHA based on a random arithmetic operation at the beginning of the battery. In addition, all responses were carefully examined to rule out cases with inconclusive responses or anomalous patterns. The study was approved by the Human Research Ethics Committee of the University of Granada, Spain (number 2308/CEIH/2021).

Each member of the couple had to individually complete the questionnaire battery, as their responses were independent; however, an access link was provided to facilitate the participation of the other partner. The alphanumeric code used to identify the dyads consists of the initials of the first and last names of both components of the dyad, followed by the last two digits of their years of birth, in both cases following the order from youngest to oldest, all according to recommendations of Mitchell et al. (2020). At the end of the study, we ensured that it met adequate quality indices by reviewing the STROBE Statements (von Elm et al., 2007).

Data analysis

The APIMPowerR software (Ackerman & Kenny, 2016) was used to calculate the required sample size. The necessary sample was estimated to be 58 dyads per group to obtain an adequate power capable of detecting both actor and partner effects ($\alpha = .05$, desired power = 0.95, actor and partner size = 0.30).

Missing data were imputed using an algorithm for nonparametric distributions. As the unit of analysis was the dyad, the non-inclusion of a participant for reasons of missing data or noncompliance with the inclusion criteria also implied the exclusion of their partner. The discrepancies between the members of each dyad in the items of the ORS-R and

ORS-M were calculated, obtaining the absolute values of intradyadic discrepancy in each of the dimensions of both instruments as a result. These values were used to perform ANOVA applying the Bonferroni correction in order to verify possible differences in the discrepancies in each dimension of SOE-R and SOE-M according to the type of dyad; in addition, the discrepancies in the dimensions of SOE-M were also used in regression analyses to estimate their explanatory capacity on the global measure of the SOE in the context of sexual relationships.

The data from the pairs were transformed into a dyadic structure using the ItoP and ItoD applications, employed for restructuring individual databases to pairwise and dyad types, respectively, developed by Ledermann and Kenny (2015). First, the interdependence of both partners' scores was examined using Pearson correlations to check that the data were suitable for dyadic analyses. The dyads in the male-female subgroup were considered distinguishable, as there was a significant factor (i.e., sex) that allowed the members to be identified (Kenny et al., 2006). Additionally, tests of distinguishability and non-independence (Dingy) were performed through structural equation modeling (Kenny, 2015) using the statistical package lavaan (Gana & Broc, 2019). For this type of dyad, the means of each variable under study and the correlations between pairs of variables were unequal, so there is sufficient evidence to consider them distinguishable. For their part, male-male and female-female dyads were considered indistinguishable according to the recommendations of Cook and Kenny (2005), that is, both members are actors and partners at the same time (Kenny et al., 2006). Therefore, for each association, there is only one actor effect and one partner effect per indistinguishable dyad (Olsen & Kenny, 2006). Each member of the pair was randomly assigned to the condition "partner 1/P1" or "partner 2/P2", and intraclass correlation coefficients were calculated to verify that the result of the intercorrelations was not due to the random assignment of the subjects to these conditions, following the recommendations of Kenny et al. (2006).

Actor-Partner Interdependence Models (APIM; Kenny et al., 2006) were used for the dyadic analyses, employing Multilevel Modeling (MLM), in which members were nested within pairs. As illustrated in Figure 1, this method allows for the simultaneous estimation of actor and partner effects, understood respectively as the association between one's own predictors or partner predictors and one's outcome. Before conducting the APIMs all predictor variables were grand mean centered to prevent multicollinearity problems (GMC; Hofmann & Gavin, 1998; Kreft et al., 1995). Statistical analyses were carried out using IBM SPSS Statistics software (version 22) and R® environment (version 4.2.1; R Core Team, 2022) with its RStudio® interface (version 2022.07.2 Build 576; RStudio Team, 2022) employing the Psych package (version 2.3.9; Revelle, 2023) to calculate the McDonald's omega.

Results

Effect of dyad type on SOE discrepancies

As can be seen in Table 2, comparisons according to dyad type of intradyadic discrepancies for each of the SOE dimensions did not report statistically significant differences.

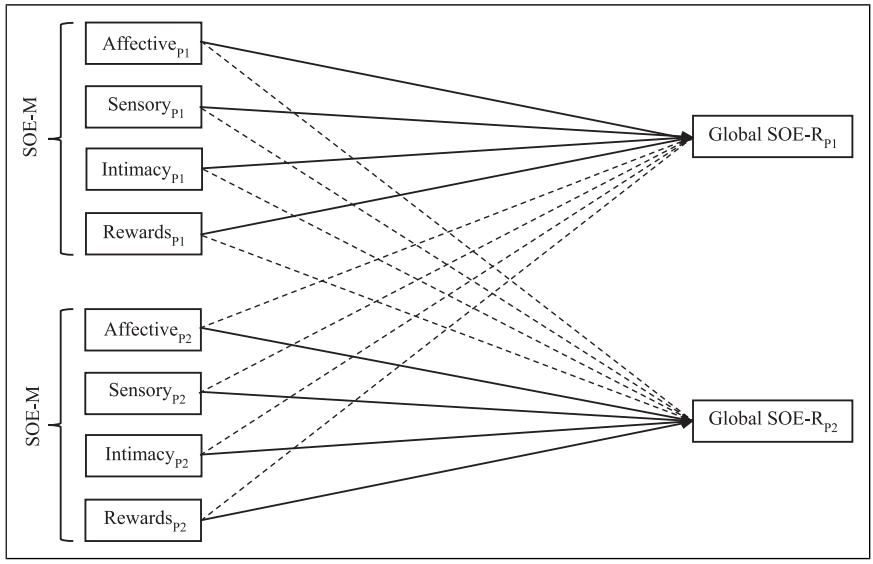

Figure 1. Conceptual model of the hypothesized associations between the dimensions of SOE in solitary masturbation context with the global measure of the SOE in sexual relationships context. *Note.* SOE-M = subjective orgasm experience in solitary masturbation context; SOE-R = subjective orgasm experience in sexual relationships context; P1 = partner 1; P2 = partner 2. Assignment to P1 and P2 was made according to sex in different-sex couples (distinguishable) and randomly in the case of same-sex couples (indistinguishable). Solid lines indicate the actor effect and dotted lines the partner effect.

Table 2. Effect of dyad type on intradyadic discrepancies in SOE-R and SOE-M dimensions.

		Male-female	Male-male	Female-female		
	Dimensions	*M (SD)*	*M (SD)*	*M (SD)*	$F_{(2, 176)}$	*p*
SOE-R	Affective	3.71 (3.05)	4.74 (3.84)	3.62 (3.51)	1.90	.153
	Sensory	20.02 (9.63)	21.34 (8.61)	20.21 (9.87)	0.34	.711
	Intimacy	3.34 (2.28)	4.12 (3.29)	3.40 (2.77)	1.40	.249
	Rewards	4.03 (3.34)	4.81 (3.67)	4.67 (2.86)	0.92	.402
SOE-M	Affective	6.78 (3.99)	7.69 (4.95)	7.22 (4.32)	0.62	.541
	Sensory	23.28 (12.26)	22.36 (13.02)	23.35 (9.90)	0.13	.879
	Intimacy	4.79 (2.73)	4.52 (3.14)	4.11 (2.48)	0.92	.400
	Rewards	4.19 (3.13)	4.79 (3.38)	4.32 (2.80)	0.61	.543

Note. SOE-R = subjective orgasm experience in sexual relationships context; SOE-M = subjective orgasm experience in solitary masturbation context.

Association of intradyadic discrepancies of SOE in solitary masturbation (SOE-M) with SOE in sexual relationships (SOE-R)

Three multiple linear regression models were performed -for individuals belonging to the three types of couples separately- to explain the discrepancy in the global SOE in sexual relationships (Table 3). For individuals with different-sex partners, the model was significant, accounting for 31% of the variance in SOE in relationships ($F_{(4,\ 111)} = 13.94$; $p < .001$) explained by the discrepancy in the Rewards dimension of SOE in masturbation ($\beta = .47$) in a positive direction. In contrast, the model for men with same-sex partners was not statistically significant ($F_{(4,\ 111)} = .86$; $p = .491$). For women with same-sex partners, the model was significant, explaining the discrepancy in the Affective ($\beta = .27$) and Rewards ($\beta = .38$) dimensions of SOE in masturbation, both in a positive sense, 35% of the variance in SOE in relationships ($F_{(4,\ 121)} = 17.94$; $p < .001$).

Actor-partner effects of SOE in solitary masturbation (SOE-M) on SOE in relationships (SOE-R)

As shown in Table 4, in all three types of dyads, positive correlations are observed between both partners, reflecting interdependence in the data and their suitability for dyadic analyses (Cook & Kenny, 2005; Kenny et al., 2006).

Following the recommendations of Kenny et al. (2006), when working with indistinguishable dyads, intraclass correlation coefficients were also calculated using single-factor random-effects models to verify that the correlation results were not due to the random assignment of the members of each dyad to the P1 and P2 conditions. In male-male dyads, the coefficients were mostly positive, except for the Affective dimension of the SOE-M and the Rewards dimension of both scales: SOE-R Affective ($r_I = .46$; $p = .011$), SOE-R Sensory ($r_I = .41$; $p = .024$), SOE-R Intimacy ($r_I = .17$; $p = .240$), SOE-R Rewards ($r_I = -.08$; $p = .620$), SOE-M Affective ($r_I = -.10$; $p = .643$), SOE-M Sensory ($r_I = .29$; $p = .102$), SOE-M Intimacy ($r_I = .20$; $p = .198$), and SOE-M Rewards ($r_I = -.25$; $p = .803$). In female-female dyads, except for the Affective dimension of SOE-M, all intraclass correlation coefficients were positive: SOE-R Affective ($r_I = .38$; $p = .030$), SOE-R Sensory ($r_I = .26$; $p = .114$), SOE-R Intimacy ($r_I = .27$; $p = .107$), SOE-R Rewards ($r_I = .38$; $p = .032$), SOE-M Affective ($r_I = -.14$; $p = .699$), SOE-M Sensory ($r_I = .02$; $p = .469$), SOE-M Intimacy ($r_I = .36$; $p = .039$), and SOE-M Rewards ($r_I = .43$; $p = .015$). A positive coefficient refers to the proportion of variation in the outcome measure that is explained by the dyad (Kenny et al., 2006), so the results reflect that, except for the Affective dimension of the SOE-M in both samples and the Rewards dimensions in men, the coefficients were positive. Moreover, none of these negative coefficients were statistically significant.

The APIM results for male-female dyads (Figure 2) indicated two significant actor effects in men, both positive, on the Sensory ($\beta = .42$; $SE = 0.19$; $p = .034$) and Rewards ($\beta = 2.07$; $SE = 0.98$; $p = .041$) dimensions of SOE in masturbation. Similar results were observed in women, with actor effects in a positive sense of the Sensory ($\beta = .44$;

Table 3. Multiple linear regression models for discrepancy in the global measure of the SOE in sexual relationships.

	Individuals in male-female couples (n = 116)							
Predictors	*B*	*SE*	β	95% CI	*t*	*p*	R^2	*VIF*
							.31	
Discrepancy SOE-M A	0.11	0.31	.03	−0.50; 0.71	0.35	.727		1.34
Discrepancy SOE-M S	0.16	0.10	.14	−0.03; 0.35	1.68	.096		1.21
Discrepancy SOE-M I	0.56	0.42	.11	−0.28; 1.40	1.31	.192		1.20
Discrepancy SOE-M R	2.07	0.37	.47	1.34; 2.79	5.65	**< .001**		1.18
	Individuals in male-male couples (n = 116)							
	B	*SE*	β	95% CI	*t*	*p*	R^2	*VIF*
							−.01	
Discrepancy SOE-M A	0.20	0.31	.07	−0.42; 0.82	0.63	.528		1.30
Discrepancy SOE-M S	0.15	0.14	.13	−0.12; 0.42	1.08	.284		1.73
Discrepancy SOE-M I	−0.06	0.53	−.01	−1.10; 0.99	−0.10	.917		1.50
Discrepancy SOE-M R	−0.24	0.41	−.06	−1.05; 0.56	−0.59	.554		1.02
	Individuals in female-female couples (n = 126)							
	B	*SE*	β	95% CI	*t*	*p*	R^2	*VIF*
							.35	
Discrepancy SOE-M A	0.89	0.28	.27	0.33; 1.44	3.16	**.002**		1.44
Discrepancy SOE-M S	0.14	0.11	.10	−0.90; 0.36	1.19	.237		1.25
Discrepancy SOE-M I	0.21	0.42	.04	−0.62; 1.04	0.51	.615		1.05
Discrepancy SOE-M R	1.89	0.41	.38	1.08; 2.70	4.60	**< .001**		1.30

Note. SOE-M = subjective orgasm experience in solitary masturbation context; A = Affective dimension; S = Sensory dimension; I = Intimacy dimension; R = Rewards dimension. *B* = non-standardized beta, *SE* = standard error, β = standardized beta, 95% CI = 95% confidence interval, R^2 = coefficient of determination, *VIF* = variance inflation factor.

SE = 0.10; $p < .001$) and Rewards (β = 1.98; *SE* = 0.38; $p = .041$) dimensions. No partner effect was obtained.

In the male-male dyads (Figure 3), two significant actor effects were found in the Affective (β = −.80; *SE* = 0.40; $p = .045$) and Sensory (β = .62; *SE* = 0.14; $p < .001$) dimensions of the SOE-M, in a negative and positive sense, respectively. In addition, a partner effect of the Intimacy dimension (β = 1.34; *SE* = 0.63; $p = .035$) was found, in a positive sense.

In the case of female-female dyads (Figure 4) the same significant actor effects were obtained, and in the same sense as in male-male couples: Affective (β = −.92; *SE* = 0.38; $p = .017$) and Sensory (β = .58; *SE* = 0.12; $p < .001$) and, additionally, a third effect of the Rewards dimension (β = 1.09; *SE* = 0.43; $p = .014$), in a positive sense. No partner effect was obtained.

Table 4. Correlations and descriptive statistics of SOE-R and SOE-M dimensions.

	Male-female couples							
Woman								
Man	1	2	3	4	5	6	7	8
1. SOE-R A	.10							
2. SOE-R S	.15	.29**						
3. SOE-R I	.23*	.14	.24**					
4. SOE-R R	.29**	.20*	.15	.13				
5. SOE-M A	.05	.09	.04	.22*	.14			
6. SOE-M S	.08	.20*	−.02	.14	.02	.10		
7. SOE-M I	.05	.01	.11	.11	.07	−.04	.14	
8. SOE-M R	.17	.08	.06	.15	.24**	.01	.14	.17
	Man (n = 58)							
M (SD)	27.10 (3.60)	40.00 (14.74)	11.98 (3.05)	11.93 (3.35)	22.53 (5.60)	25.00 (17.18)	5.38 (3.61)	11.10 (3.59)
	Woman (n = 58)							
M (SD)	27.50 (2.93)	41.29 (13.19)	11.36 (2.79)	10.31 (3.86)	23.66 (5.23)	32.55 (17.46)	6.38 (4.17)	10.95 (4.16)
Rank	0–30	0–65	0–15	0–15	0–30	0–65	0–15	0–15
	Male-male couples							
Man_{P2}								
Man_{P1}	1	2	3	4	5	6	7	8
1. SOE-R A	.29**							
2. SOE-R S	.20*	.25**						
3. SOE-R I	.11	.09	.09					
4. SOE-R R	.05	.02	−.01	−.05				
5. SOE-M A	−.07	−.14	.03	.09	−.06			
6. SOE-M S	.03	.12	.10	.04	−.10	.16		
7. SOE-M I	.17	.21*	.11	.08	.09	.17	.10	
8. SOE-M R	.07	.04	−.02	.01	.03	.06	.06	−.12

(continued)

Table 4. (continued)

	Male-male couples							
	Man (n = 116)							
M (SD)	25.75 (4.63)	36.05 (15.60)	11.16 (3.66)	10.75 (4.10)	22.45 (5.79)	25.34 (17.55)	5.33 (3.64)	10.95 (3.68)
Rank	0–30	0–65	0–15	0–15	0–30	0–65	0–15	0–15
	Female-female couples							
$Woman_{P2}$								
$Woman_{P1}$	1	2	3	4	5	6	7	8
1. SOE-R A	.23*							
2. SOE-R S	.09	.14						
3. SOE-R I	.14	.12	.15					
4. SOE-R R	.17	.19*	.13	.22*				
5. SOE-M A	.07	−.12	−.07	.02	−.07			
6. SOE-M S	.01	−.05	.03	.06	−.10	.00		
7. SOE-M I	.01	.00	.19*	.20*	.03	.01	.21*	
8. SOE-M R	.08	.15	.13	.12	.06	.02	.17	.26**
	Woman (n = 126)							
M (SD)	27.49 (3.74)	41.12 (13.79)	11.65 (3.17)	10.14 (3.92)	22.36 (5.17)	26.20 (15.59)	4.93 (3.46)	9.81 (4.02)
Rank	0–30	0–65	0–15	0–15	0–30	0–65	0–15	0–15

Note. SOE-R = subjective orgasm experience in sexual relationships context; SOE-M = subjective orgasm experience in solitary masturbation context; A = Affective dimension; S = Sensory dimension; I = Intimacy dimension; R = Rewards dimension; P1 = partner 1; P2 = partner 2. *$p < .05$, **$p < .01$.

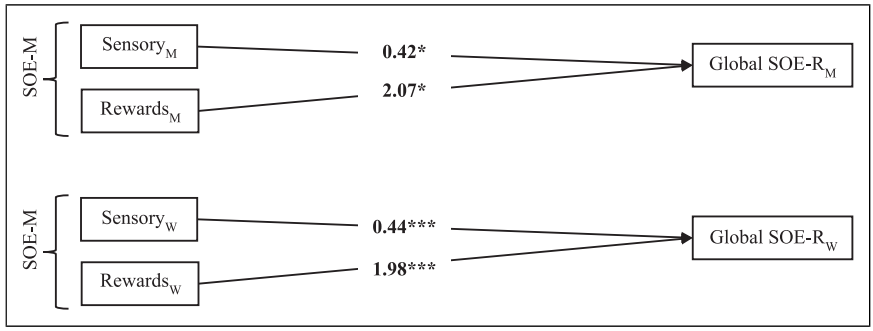

Figure 2. Path diagram in male-female couples. *Note*. SOE-M = subjective orgasm experience in solitary masturbation context; SOE-R = subjective orgasm experience in sexual relationships context; M = man; W = woman. Only significant paths are shown. Solid lines indicate actor effects. *p < .05, ***p < .001.

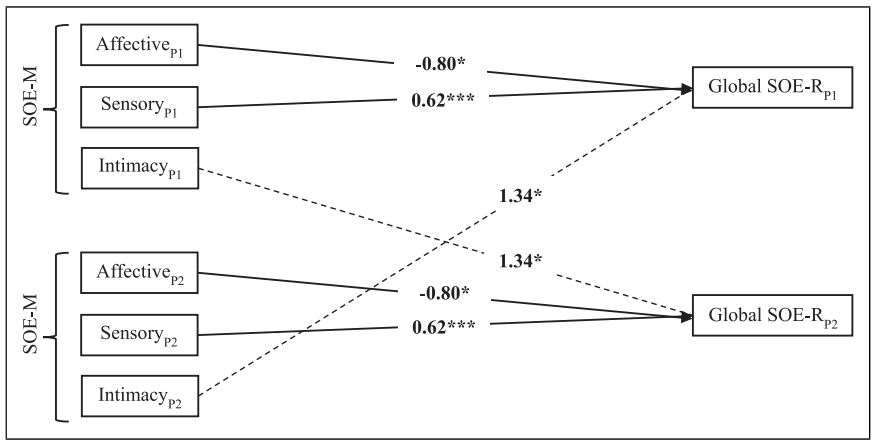

Figure 3. Path diagram in male-male couples. *Note*. SOE-M = subjective orgasm experience in solitary masturbation context; SOE-R = subjective orgasm experience in sexual relationships context; P1 = partner 1; P2 = partner 2. Only significant paths are shown. Solid lines indicate actor effects and dotted lines partner effects. As dyads were specified as indistinguishable, there is only one actor and one partner effect. Therefore, the results of the upper and lower halves are replicated. *p < .05, ***p < .001.

Discussion

The overall objective of this study was to examine the subjective orgasm experience (SOE) in the context of sexual relationships (SOE-R) and in the solitary masturbation context (SOE-M) in different-sex and same-sex couples from a dyadic approach.

Regarding the first objective, no differences are observed between the three types of dyads (i.e., male-female, male-male, and female-female) in the intradyadic discrepancy of

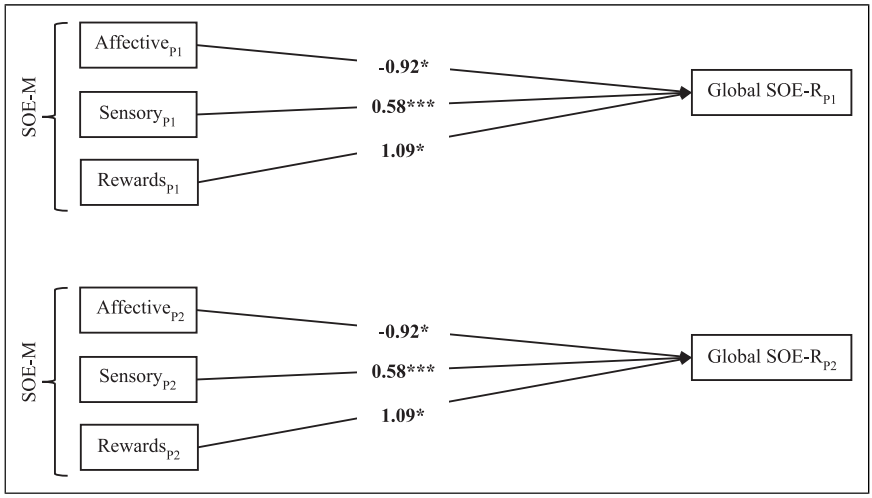

Figure 4. Path diagram in female-female couples. *Note.* SOE-M = subjective orgasm experience in solitary masturbation context; SOE-R = subjective orgasm experience in sexual relationships context; P1 = partner 1; P2 = partner 2. Only significant paths are shown. Solid lines indicate actor effects. As dyads were specified as indistinguishable, there is only one actor and one partner effect. Therefore, the results of the upper and lower halves are replicated. *p < .05, ***p < .001.

the SOE dimensions across both sexual contexts (relationships and masturbation). Nevertheless, it is crucial to approach the discussion of this results with caution, given the absence of equivalence testing demands careful interpretation, preventing the formulation of consistent conclusions. Considering previous evidence suggesting the existence of a male-female orgasmic gap to the detriment of women (Andrejek & Fetner, 2019; Döring & Mohseni, 2022; Wetzel & Sanchez, 2022), a higher intradyadic discrepancy in SOE-R could be expected in different-sex couples than in same-sex couples. This result could lead to hypothesize about the effect of the familiarity of the sexual partner, characteristic of stable couples -such as those in this study- in which a decrease in the orgasmic gap is observed in comparison with hookups (Armstrong et al., 2012). Concerning SOE-M, given women's broader repertoire for describing their orgasmic sensations (Arcos-Romero et al., 2018; Mangas et al., 2022), one would also expect a greater discrepancy in different-sex couples. The absence of differences could hypothetically support the proposition that descriptions of orgasmic experiences are not significantly different between men and women (Mah & Binik, 2002), but as noted above, it is essential to recognize the impossibility of drawing conclusions without equivalence testing.

Relating to the second objective, a positive association is found between the intradyadic discrepancy in some SOE-M dimensions and the intradyadic discrepancy in the global measure of SOE-R in the members of male-female and female-female dyads (i.e., couples in which a woman is present), while no association is found among men with a same-sex partner. In individuals belonging to different-sex couples, the discrepancy in the Rewards dimension of the SOE-M explains positively 31% of the variance of the

discrepancy in the global SOE-R; in other words, the greater the discrepancy in one context, the greater the discrepancy in the other. In women with same-sex partners, the discrepancies in the Affective and Rewards dimensions of the SOE-M explains 35% of the variance of the discrepancy in the global SOE-R, following the same interpretation.

The lack of discrepancy in SOE-M dimensions being associated with the discrepancy in the global measure of the SOE-R in men with same-sex partners, and the statistical significance of this association when a woman is included in the couple (i.e., one association in different-sex couples and two associations in female couples), could be explained by the effect of gender roles on different psychosexual dimensions (e.g., sexual satisfaction), which may be more closely related to this effect than to that of sexual orientation (Mangas et al., 2023; Sánchez-Fuentes & Santos-Iglesias, 2016). This absence of an association in the discrepancies between both contexts in male couples could reflect that, in general terms, men tend to experience their partnered sexuality in a more individualistic way, showing less care about their partner's pleasure or orgasm, being labelled as sexually selfish (Wetzel & Sanchez, 2022). Thus, it seems logical to think that the presence of at least one man in the couple implies that the discrepancy in SOE-M is not necessarily associated with the discrepancy in SOE-R. In addition, Wiederman (2005) pointed out that men direct sexual activity with partners towards their sexual pleasure, as they are socially encouraged more than women to satisfy their sexual needs and desires (Miller & Byers, 2004), reinforcing the previous idea. In contrast, women in relationships with men would value sex more to strengthen the relationship by fulfilling their partner's goals than to achieve their sexual pleasure (Blair et al., 2017), so this may explain the discrepancy found in male-female couples. On the other hand, women in same-sex couples exhibit more associations between the intradyadic discrepancy of SOE-M and SOE-R, aligning with the experience of a more horizontal sexuality that values equality in relationships (Holmberg & Blair, 2009). These women show high emotional closeness and intimacy (Guzmán-González et al., 2021; Spitalnick & McNair, 2005), stronger dyadic cohesion (Jordan & Deluty, 2000), and better communicative patterns about their sexual lives (Peixoto & Nobre, 2016), enhancing the effect of intradyadic discrepancies in female couples, where there are more significant effects.

About the last objective, the results obtained show actor effects in the global measure of the SOE-R coming from the following SOE-M dimensions: Sensory in the members of the three types of dyads, Rewards in the members of male-female and female-female couples, and Affective in male-male and female-female dyads members. Thus, regardless of the dyad type, higher levels of intensity in the global SOE-R are reported when individuals subjectively perceive the orgasm obtained through solitary masturbation as more intense in its Sensory dimension. This fact seems to reflect an association between the physiological assessment of orgasm in masturbation and the intensity of the subjective orgasm experience in sexual relationships, which is consistent with the results of Mah and Binik (2002), where the authors pointed out the coincidence of the Sensory component between both sexual contexts, as well as with works that pointed to physiological similarities between orgasms resulting from these two contexts (Masters & Johnson, 1966; Rowland et al., 2021; Tavares et al., 2017). The Rewards component plays a similar role in different-sex and female couples (i.e., couples involving a woman) but not in male

couples. This distinct pattern observed in men with male partners could be because these men prioritize the Intimacy dimension of the partner's SOE-M, which is the variable with the highest weight and might be masking the Rewards dimension of the actor's SOE-M. Remarkably, the Affective dimension of SOE-M is only associated with the global SOE-R in same-sex couples but negatively. In this sense, Mah and Binik (2002) found that the affective experience of orgasm achieved in both contexts was qualitatively different, which could be due to the presence of the partner and emotional closeness. To this fact could be added the prominence of a compensatory effect of masturbation versus partnered sexuality, most common in men (Cervilla & Sierra, 2022; Sierra et al., 2023). In addition, the higher level of emotional intimacy shown by same-sex couples versus different-sex couples (Guzmán-González et al., 2021; Šević et al., 2016) could also explain the negative association with the Affective dimension of SOE-M, so these couples might prioritize covering this affectivity together rather than in solitary masturbation, enjoying less the relationships with the partner when the opposite occurs.

A significant partner effect is only observed in male couples, specifically in the Intimacy dimension and in a positive sense. Consequently, these men experience orgasm more intensely in relationships when their partners experience the intimate dimension of orgasm more intensely in solitary masturbation. This partner effect in male dyads aligns with McClelland's (2011) findings regarding sexual satisfaction, where gay and bisexual men took their partner's satisfaction as an indicator or benchmark of themselves. This result differs from previous findings that suggest a more pronounced occurrence of partner effects in heterosexual dyads (Sánchez-Fuentes & Santos-Iglesias, 2016) and female couples (Mangas et al., 2023) -i.e., when a woman is involved-, and could be due to several reasons. Among them is the importance given to male orgasm, sometimes considered as a necessity or a right (Klein & Conley, 2022) compared to female orgasm, valued as incidental (Wade et al., 2005), which could lead men with a male partner to make an effort to ensure that his partner also reaches orgasm. Moreover, male couples practice penetration to a lesser extent than different-sex couples (Blair et al., 2017; Træen et al., 2023), with oral sex and mutual masturbation being the most prominent practices among male partners (Rosenberger et al., 2011; Træen et al., 2023). These differences in sexual practices could explain the presence of the partner effect in male couples but not in different-sex couples, due to the similarity between solitary and mutual masturbation practices, in contrast to penetration. Finally, the greater propensity of gay and bisexual men to establish relationships based on consensual non-monogamy (Fairbrother et al., 2019; Klesse, 2006; Starks et al., 2019) -characterized by greater satisfaction with communication and honesty with the partner (Mogilski et al., 2017)- could be another factor mediating the partner effect obtained in Intimacy dimension by enhancing closeness between members.

In the same way as Mangas, Sierra, and Granados (2024), we also want to be self-critical by highlighting that orgasm may not be the best indicator of sexual satisfaction, relationship satisfaction, or sexuality in general. Moreover, while it is a significant factor motivating men and women to engage in sexual relationships, it does not rank among the top five reasons (Meston & Buss, 2007). As Thorpe et al. (2021) noted, the absence of orgasm does not necessarily mean that people are not having pleasurable sexual

relationships (Fahs, 2014), just as the presence of orgasm does not make an encounter unquestionably ideal, positive, or pleasurable (Chadwick et al., 2019).

Strengths, limitations & future directions

So far, this is the first study to investigate SOE in the context of sexual relationships in different-sex and same-sex couples, comparing it between both partners and examining its association with the intensity with which orgasm obtained through solitary masturbation is subjectively experienced. The results point to the clinical implications of the dyadic effects of such an individual practice as solitary masturbation on shared sexual experiences. Considering that the ORS is a useful tool for detecting orgasmic difficulties in both sexual contexts in heterosexual individuals (Arcos-Romero et al., 2018; Cervilla et al., 2022) and in gay relationships (Mangas et al., 2022), this study makes it possible to evaluate SOE from a clinical point of view in the context of couple relationships. This study also complements the findings of Mangas, Sierra, and Granados (2024), which showed the dyadic effect of SOE in the context of sexual relationships on sexual satisfaction, and the significant mediating role that satisfaction with the couple's relationship played. Our findings may provide additional evidence for sex and couples therapists to pay attention to the individual erotic experiences of individuals. The practice of solitary masturbation favors learning and bodily self-knowledge (Matsick et al., 2016), so it would be possible for people to put all that learning into practice in shared sexual encounters. In addition, having incorporated experiences of people who fall outside the traditional heterosexual schema, this can provide LGBTIQA+ Affirmative Psychotherapy with scientific knowledge to use with this population (Moradi & Budge, 2018; Pepping et al., 2018), adapting to the needs of this collective through an affirmative stance towards their sexual and gender diversity (Hinrichs & Donaldson, 2017).

Despite meeting the established thresholds for sample size in studies of this type, as recommended by Kenny et al. (2006), the results cannot be generalized to the entire Spanish population due to the recruitment of participants through non-probabilistic incidental sampling. Unfortunately, we did not collect data on disability, ethnicity, class, and the percentage of students in our sample, which could affect the representativeness and generalizability of the findings. Additionally, all participants were cisgender, mostly young, and highly educated. On the other hand, the study combined dyads in relationships of different lengths and at different stages (e.g., cohabiting and non-cohabiting), factors that affect sexual activity (Altgelt & Meltzer, 2021; Ševčíková et al., 2021) and sexual satisfaction (Altgelt & Meltzer, 2021; Schmiedeberg & Schröder, 2016). The survey was distributed via social networks, creating difficulties for individuals who did not have access to these platforms and thereby limiting their participation. We would also like to highlight a methodological limitation by not performing equivalence tests in the first objective due to the impossibility of objectively justifying the establishment of the limits (Lakens et al., 2018). Future research should examine SOE within specific populations, such as older individuals, and encompass all the gender and sexual diversity, while also considering, in both cases, the relationship variables and applying this testing. Considering these limiting factors, especially those derived from the lack of demographic

diversity of our sample, could improve the external validity and applicability of the findings of this study. It would be of interest to encourage future work to incorporate: (1) a richer Sociodemographic and Sexual History Questionnaire that collects more accurate information from participants, (2) the use of some type of probability sampling, (3) the use of other methods of survey dissemination, with the objective of allowing a more diverse public to participate, especially the older age group, (4) raise the possibility of deepening the study of SOE in a dyadic-longitudinal way, (5) take into account the personal narratives, deepening the study of SOE through qualitative techniques (e.g., Mangas, da Silva Alves, et al., 2024).

Conclusions

This work demonstrates the association between subjective orgasm experience in the contexts of couple relationships and solitary masturbation raised in previous studies (Cervilla et al., 2022; Regnerus et al., 2017; Rowland, Hevesi, et al., 2020; Rowland, Kolba, et al., 2020; Sierra et al., 2023). It seems that SOE in couple relationships and in solitary masturbation overlap in certain aspects, but they are not identical constructs, coinciding with what was pointed out by Goldey et al. (2016) regarding sexual pleasure. Thus, the results evidence the absence of differences in the SOE intradyadic discrepancy, in both contexts, in function of the type of couple, as well as the association between the discrepancy in some dimensions of SOE-M and the discrepancy in the general measure of the SOE-R in couples formed by individuals belonging to male-female and female-female dyads (i.e., couples with some woman present). Furthermore, the association between orgasm obtained in sexual relationships and that achieved through solitary masturbation is also confirmed, varying according to the couple type, with female couples exhibiting the most actor effects and male couples being the only ones to display a partner effect.

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ORCID iDs

Carlos Pérez-Amorós https://orcid.org/0009-0001-4555-8134
Juan Carlos Sierra https://orcid.org/0000-0002-5593-9803
Pablo Mangas https://orcid.org/0000-0001-8915-2294

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