




The Role of Mutual Masturbation within Relationships: Associations with Sexual Satisfaction and Sexual Self-Esteem

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ABSTRACT

Objectives: We explored mutual masturbation among women and men and investigated associations with sexual satisfaction and sexual self-esteem. **Methods:** 117 women and 151 men ($M_{\text{age}} = 29.7$ years), mostly heterosexual, all in current relationships, completed an online survey covering experiences of solo and partnered sexual activities, feelings about mutual masturbation, sexual self-esteem, and sexual satisfaction. **Results:** Mutual masturbation was common among both genders. Men reported significantly higher positive feelings about mutual masturbation than women. Recent mutual masturbation was positively associated with sexual satisfaction but not with sexual self-esteem. **Conclusions:** These findings have implications for sex and couple therapy and research.

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Mutual masturbation; sexual satisfaction; sexual self-esteem


Introduction

Masturbation is a conscious physical act of stimulating one's genitals or any parts of one's body with the purpose of orgasm and/or pleasure; it may or may not include the use of sex toys (American Psychological Association (APA), 2023; Bowman, 2017; Kirschbaum & Peterson, 2018). How people define masturbation differs and there is no one universal definition that is used consistently (Kirschbaum & Peterson, 2018), but the term is commonly used for solo masturbation (Bowman, 2017; Kirschbaum & Peterson, 2018). Solo masturbation refers to self-stimulation when individuals are physically alone (Bowman, 2017). In fact, although masturbation does not have a clear script (discussed below), a common script for masturbation is the expectation that “*masturbation happens alone and ends in orgasm*” (Kirschbaum & Peterson, 2018, p. 270). However, Kirschbaum and Peterson (2018) found that approximately 40% of their sample defined stimulation of a partner's genitals with

manual stimulation as masturbation. Most published research on masturbation has focused on solitary sexual activity (e.g., Bowman, 2014; Gerressu et al., 2008; Regnerus et al., 2017). When researchers have used the term “masturbation” or “self-stimulation”, typically solo sexual activity was assessed, although in some publications, it is unclear whether solo or mutual masturbation was considered (Bridges et al., 2004; Fischer et al., 2022; Rowland, Kolba, et al., 2020).

The aim of the current study was to explore experiences with, and feelings about, mutual masturbation and to investigate any associations between recent mutual masturbation and sexual satisfaction and sexual self-esteem. Although there is no uniformly accepted definition for mutual masturbation, mutual masturbation refers to when two or more people engage in self-stimulation (APA, 2023; Bowman, 2017). Bowman (2017) defined mutual masturbation as “*when two or more people manually stimulate their own body or each other's bodies*”, while APA

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described it as when “*two individuals stimulate each other’s genitals at the same time for the purpose of sexual gratification*” and considered mutual masturbation as a type of petting behavior. As we did not want to restrict individuals’ meanings of mutual masturbation, in the current study, mutual masturbation refers to the presence or involvement of a partner(s) during *self-stimulation*, which may occur before, during, after, or without any other sexual activity (Kılıç Onar et al., 2020). For instance, person A could masturbate while person B watches and/or also masturbates, or person A could stimulate their own body parts/genitals (with or without vibrators) for the purpose of pleasure during partnered penetration. Previous research on mutual masturbation, also referred to as partnered masturbation (Dodge et al., 2016; Herbenick et al., 2022), has mainly focused on it as a safer alternative to sexual intercourse and as an infection prevention behavior, primarily among men who have sex with men (Huber & Gillaspay, 2000; Reisner et al., 2009). Very little is known about mutual masturbation and its associations with sexual pleasure, satisfaction, and well-being.

Sexual script theory

Sexual scripts provide sexual cues and socially available messages for how one should act or feel in a particular sexual scenario (Gagnon & Simon, 1987; Wiederman, 2005). Sexual norms such as “men’s orgasm signals the end of sex” (Braun et al., 2003; Muehlenhard & Shippee, 2010; Opperman et al., 2014) and “men are the source of (or responsible for) female orgasm” (Fahs, 2011; Muehlenhard & Shippee, 2010; Salisbury & Fisher, 2014) are some of the sexual beliefs that might influence ideas about what are “acceptable” sexual behaviors in mixed-sex relationships. However, established sociocultural sexual scripts often overvalue penile-vaginal intercourse (PVI) and male pleasure (over women’s pleasure) (Klein & Conley, 2022; Laan et al., 2021; Mahar et al., 2020; Mintz, 2017), and only include these sexual behaviors: kissing, partner touching, oral genital contact, PVI, women’s orgasm (real or “faked”), and men’s orgasm (real) which indicates

sex is over (Braun et al., 2003; Gagnon & Simon, 1987; Muehlenhard & Shippee, 2010).

Yet, partly because of the traditional sexual norms of “*sex equals intercourse*” and “*orgasm should occur during intercourse*” (Muehlenhard & Shippee, 2010, p. 564), solo and mutual masturbation are not even included in the traditional sexual script; consequently, any type of masturbation might challenge one’s existing scripts. Due to the portrayal of masturbation in popular culture, a common but vague script for masturbation is the expectation that “*masturbation happens alone and ends in orgasm*” (Kirschbaum & Peterson, 2018, p. 270). Another common misconception about masturbation is that only single people masturbate (Kaestle & Allen, 2011; Kılıç Onar et al., 2020). As noted by Fahs and Frank (2014), an advantage of cultural silence and secrecy surrounding masturbation might be freedom from traditional scripts given that there is no single norm about how often one should masturbate, what behaviors occur during masturbation, and/or the method(s) used to masturbate (Fahs & Frank, 2014; Kirschbaum & Peterson, 2018). However, not having norms about masturbation might also be problematic as easily accessed traditional sexual scripts for heterosexual sex which overvalue male pleasure might be internalized and applied to individuals’ own meaning and stories of masturbation (e.g., heterosexual women may feel pressured to masturbate in front of their partner to please or provide stimulation for him; Fahs & Frank, 2014; Foust et al., 2022). Gendered sexual practices and scripts limit women’s opportunities for sexual pleasure (Laan et al., 2021), while sexual script flexibility has been associated with couples’ greater sexual satisfaction (Bouchard et al., 2023). In view of this, perhaps we need new, positive sexual scripts for solo and mutual masturbation to help couples develop a new definition of “sex” (Laan et al., 2021).

Mutual masturbation

Mutual masturbation (with or without vibrators) can increase one’s partnered sexual repertoire. Previous research has demonstrated a positive link between diverse sexual repertoires (i.e.,

behaviors beyond PVI), and sexual satisfaction, orgasm, and women's arousal (Frederick et al., 2017; Gillespie, 2017; Herbenick et al., 2010a). However, although in previous studies "using a vibrator (or sex toy) together with a partner" has often been included when assessing sexual repertoires, mutual masturbation has not (Frederick et al., 2017; Gillespie, 2017). Mutual masturbation can provide visual cues about pleasure triggers and may also help partners openly communicate about sexual needs, likes, and dislikes (Francis, 2004; Heiman & LoPiccolo, 2009; Mintz, 2017); however, as mentioned above, very little is known about this behavior and its association with sexual pleasure and satisfaction.

Only one qualitative study has explored young women's experiences with partnered and solo masturbation (Foust et al., 2022). While some women in this study reported desire to connect with their partner and improve intimacy as a motivation to engage in mutual masturbation, they also engaged in the behavior to arouse/stimulate and please their partner, sometimes upon the male partner's request without their own desire to do so or, occasionally, to guarantee their own pleasure during partnered sex. In addition, some women reported feeling awkward and/or embarrassed to masturbate in front of a partner due to the private nature of masturbation and/or body insecurities, while others described feeling powerful, attractive, and empowered from arousing and pleasing their partners. Feelings of guilt and shame were also discussed both in partnered and solo masturbation contexts but were less salient in partnered contexts. While some women talked about normalizing solo masturbation, none mentioned the need to normalize partnered masturbation (Foust et al., 2022). Therefore, while partnered masturbation is less commonly reported than solo masturbation (Dodge et al., 2016; Herbenick et al., 2022), it may be perceived more positively among women due to the sexual scripts and societal norms overvaluing partnered sexual activities (Foust et al., 2022; Muehlenhard & Shippee, 2010).

Sexual satisfaction and self-pleasure

Sexual satisfaction is an important aspect of sexual health and well-being (Anderson, 2013; Henderson et al., 2009). Rather than the absence of sexual

problems, definitions of sexual satisfaction include personal sexual well-being and aspects of the dyadic relationship, such as the presence of mutuality, orgasm, romance, creativity, and pleasure (Pascoal et al., 2014). Improvements in sexual satisfaction are associated with enhancements in overall romantic relationship satisfaction, and vice versa (Byers, 2002, 2005; Sprecher, 2002). Masturbation only partly contributes to one's satisfaction with overall sex life and research on sexual satisfaction has mainly focused on satisfaction with partnered sex; thus, our understanding of the association between masturbation and satisfaction with one's "own" sexuality is limited (Fischer & Træen, 2022).

For women, higher masturbation frequency has been associated with lower overall and sexual relationship satisfaction, and lower satisfaction during partnered sex, but also less orgasm difficulty and greater orgasmic pleasure during masturbation (Rowland, Kolba et al., 2020). However, when partners are aware of women's masturbation, there may be positive associations between overall and sexual relationship satisfaction and masturbation. In mixed-sex couples, women's masturbation may increase men's pleasure and desire through visual stimulation and thus may improve mutual satisfaction (Fahs & Frank, 2014; Foust et al., 2022). Gauvin et al. (2020) reported greater sexual satisfaction among women who reported using a vibrator in both solo and partnered contexts compared to those who only used a vibrator by themselves. Indeed, partner awareness, involvement or reactions might mediate the relationship between sexual satisfaction and masturbation. However, partners' involvement in women's masturbation (mutual masturbation) has been understudied (Foust et al., 2022; Kılıç Onar et al., 2020) and, to the best of our knowledge, no studies have explored this among mixed-sex and female same-sex couples, particularly the pleasure aspects or sexual enjoyment related to mutual masturbation.

Sexual self-esteem and self-pleasure

Sexual self-esteem is one of the important core domains of sexual well-being and may contribute to sexual pleasure (Anderson, 2013; Mitchell et al., 2021). Sexual self-esteem has been defined as the person's sense of self as a sexual being,

including self-appraisals of sexual feelings, thoughts, and behaviors as well as perceptions of sexual acceptability and sexual identity (Mayers et al., 2003; Zeanah & Schwarz, 1996, 2020). One's sexual self-esteem can range from sexually skilled to unskilled and from sexually appealing to unappealing (Mayers et al., 2003).

Masturbation is a way to explore and understand one's genital anatomy and might help in developing a positive relationship with one's body (Carvalho & Leal, 2013; Coleman, 2003; Shulman & Horne, 2003). Indeed, higher masturbation frequency has been linked to lower body shame and higher body appreciation (de Lima et al., 2022). Because of the relationship between body image/body satisfaction and sexual self-esteem (Carvalho & Leal, 2013; de Lima et al., 2022; Shulman & Horne, 2003), one might expect a positive link between masturbation and sexual self-esteem. In fact, the frequency of solitary masturbation has been associated with higher sexual self-esteem (Rodríguez-Domínguez et al., 2022). It is plausible that more sexual pleasure contributes to developing higher sexual self-esteem and vice versa, higher sexual self-esteem may increase opportunities for sexual pleasure (Anderson, 2013). But we know very little about the associations between mutual masturbation and sexual self-esteem. The current study answers the call from Coleman (2003) to assess the link between masturbation and sexual self-esteem.

Why is it important to study self-pleasure within relationships?

Recently, the World Association for Sexual Health's (WAS) declaration on pleasure highlighted the importance of sexual pleasure as an essential part of sexual health, well-being and sexual rights for all (Ford et al., 2021). Biopsychosocial evidence for gender similarities supports the fact that gender differences in sexual pleasure are not biological but are influenced by a societal context that places women at a disadvantage (see Laan et al., 2021). For example, while male masturbation is perceived as acceptable, or even encouraged, girls and young women receive no or negative messages about masturbation while growing up (Kaestle & Allen, 2011; Thorpe et al., 2023). Although women report

discovering the pleasures of the clitoris and orgasm primarily through masturbation, gendered scripts can have an influence on the feelings, use, and functions of masturbation as a pleasure source in relationships (Laan et al., 2021; Towne, 2019; Waskul et al., 2007). In fact, one sexual behavior that may help with pleasure inequalities is masturbation (solo and mutual) as orgasm rates and orgasm satisfaction do not differ between men and women, and between women in same-sex and women in mixed-sex relationships during self-stimulation (Blair et al., 2018; Wetzel & Sanchez, 2022). Also, although people report various reasons to masturbate, the primary cited motivation is *pleasure* (Carvalho & Leal, 2013; Herbenick et al., 2023; Rowland, Kolba, et al., 2020). As sexual pleasure is linked with diverse sexual experiences (Ford et al., 2021; Mitchell et al., 2021; Reis et al., 2021), understanding the joyful aspects of types of masturbation (solo and mutual) in relationships is important. Because Anderson (2013) proposed that the positive aspects of sexuality include sexual satisfaction, self-esteem, and sexual pleasure, we explored the link between mutual masturbation and sexual satisfaction and sexual self-esteem in the current study.

The orgasm gap, the well-established difference between heterosexual women's and men's frequency of orgasm during partnered intercourse, has gained popular media and research attention (Blair et al., 2018; Frederick et al., 2018; Mahar et al., 2020), but how to close the gap remains understudied, partly because of established sexual scripts valuing PVI and other types of penetrative sex. However, as most women do not experience orgasm and/or pleasure from penetration alone, research on masturbation and sexual activities other than penetration can help destigmatize diverse expressions of sexuality, contribute to breaking the cycle of pleasure inequality, and enhance sexual satisfaction (Herbenick et al., 2018; Mahar et al., 2020; Meiller & Hargons, 2019). Knowledge of the clitoris and its pleasure mechanisms, also known as "cliteracy" is associated with sexual pleasure and orgasm in women (Dienberg et al., 2023; Mintz, 2017); thus, incorporating sexual activities with clitoral stimulation, like mutual masturbation, into partnered sex is important to enhance mutual pleasure in relationships.

Within sexual relationships, sharing masturbation experiences might be good practice as information disclosed might facilitate an open discussion between partners regarding the location and stimulation of pleasure points (Francis, 2004; Heiman & LoPiccolo, 2009; Mintz, 2017). Mutual masturbation can also be useful in educating men about women's pleasure and anatomy in heterosexual relationships (Heiman & LoPiccolo, 2009; Klein et al., 2022; Mintz, 2017). Indeed, mutual masturbation has been recommended to increase women's pleasure in partnered sex by improving sexual communication about preferred stimulation techniques (Heiman & LoPiccolo, 2009; Mintz, 2017). A greater alignment between techniques used in women's masturbation and partnered sexual activities has been associated with less difficulty with orgasm and arousal, a greater likelihood of experiencing orgasm and orgasmic pleasure, and longer duration of sexual activities (with adequate arousal) (Rowland, Hevesi et al., 2020).

Mutual masturbation has also been described as a tool to enhance sexual experience by reducing the focus on penetration and a way to help develop couples' relationships (Kaestle & Allen, 2011). However, feelings about mutual masturbation are not well understood. Considering masturbation is one of the most common sources of orgasm and pleasure among women and a technique used in sex therapies for women's orgasm and men's ejaculation difficulties (Kontula & Miettinen, 2016; Laumann et al., 1994; Marchand, 2021; Shirai et al., 2023; Stravynski et al., 1997; Wade et al., 2005), it is important to understand the role of masturbation in relationships. Also, although we do not know how partners communicate about masturbation or how and why one partner initiates mutual masturbation, given the role of mutual masturbation in dyadic sexual communication, it is important to explore experiences of and feelings about mutual masturbation (Heiman & LoPiccolo, 2009; Mintz, 2017).

Aims and research questions

The aim of this study was to explore women's and men's feelings about and experiences with mutual

masturbation and to investigate any associations between mutual masturbation recency and sexual satisfaction and sexual self-esteem.

RQ1: What feelings and experiences do individuals report about mutual masturbation? Are there any gender differences?

RQ2: What are the associations between mutual masturbation recency and sexual satisfaction?

RQ3: What are the associations between mutual masturbation recency and sexual self-esteem?

Method

Participants

As part of a larger project on women's self-pleasure within relationships, couples were recruited into an online study. However, during data collection, a significant proportion of partners ($n = 164$) did not complete the survey, leaving a large sample of participants who provided only individual data. Consequently, we conducted an individual-level analysis using data from these participants. For the present study, to enhance the individual-level sample with respect to gender and sexual orientation, we also included one randomly selected partner from each female same-sex couple and all male partners from the mixed-sex couples in the larger study. Approximately half of the sample ($n = 138$) was recruited through social media and the remainder ($n = 130$) were recruited through Prolific (see online [supplementary material](#) for Participant Recruitment Flow Chart).

To be eligible for the larger study, both partners had to be at least 18 years old, in a relationship with each other for at least one year, and be able to read and understand English. Women of any sexual orientation, and from any country or region, and their partners were eligible. To increase sexual orientation diversity in the sample, recruitment notices were posted in LGBTQ+ Facebook groups. Initial recruitment via social media was slow so recruitment was expanded to Prolific. However, for these participants, the inclusion criteria of a minimum relationship length of one year was changed and instead, participants were eligible

if they had a romantic partner who had a Prolific account and would be willing to take part as a couple.

Procedure

Convenience and snowball sampling were used to recruit couples between January 2021 and January 2022 via social media (e.g., Facebook, Twitter) and Prolific. Advertisements were posted inviting women and their partners to complete a 20–30-minute survey on couple's sexual and relational satisfaction. Also, between April and May 2021, advertisements were displayed on callforparticipants.com. For participants recruited via social media, the advertisement gave a brief description of the study and provided a link for more information and to complete the survey. Participants recruited via Prolific received a description of the screening survey prior to the main survey. The screening survey took 1 to 3 minutes to complete and included questions about basic demographics, whether participants had a romantic partner who had a Prolific account, and if so, their partner's prolific ID. All participants received the same participant information sheet in which the research aim was stated as "investigating different aspects of sex and sexual practices within romantic relationships". All participants were informed that the project was for couples where both partners were willing to participate and answer the questions independently. A comfortable and private environment was suggested for completion of the survey.

Eligible couples independently accessed the survey link and indicated their consent by clicking a button at the bottom of the participant information sheet before proceeding with the online survey. After providing consent, all participants created a unique partner ID in order for partners to be matched. Then, participants were asked demographic questions followed by questions about romantic relationships, emotional intimacy, sexual experiences, experiences with masturbation and vibrators, attitudes toward masturbation, beliefs about vibrator use, clitoral self-stimulation during partnered sex, dyadic sexual communication, sexual self-

esteem, sexual satisfaction, sexual function, and general attitudes toward sexuality. Both members of the couple completed the same measures.

Upon completion of the survey, participants recruited through social media could enter a prize draw to win one of twenty £20 Amazon gift vouchers. Participants recruited via Prolific received £3.35 to their Prolific account upon completion. The main survey was the same in all recruitment platforms, the only exception being the prize draw question which was not shown to Prolific participants. Research procedures were approved by the University of Southampton Research Ethics Committee.

Measures

As this study was a part of a larger project, additional questions and validated scales such as the Emotional Intimacy Scale (Sinclair & Dowdy, 2005, see Procedure) were also included but were not analyzed for this article and are therefore not reported here.

Descriptive characteristics

Sociodemographic questions included ethnicity, education, employment, household income, occupation, and area of residence (city, metropolitan or town) (for all response options provided, see Table 1).

Sexual experiences

Participants were asked: "Over the past 4 weeks, did you engage in sexual activity of any kind with a partner and/or by yourself (masturbation)?" (Response options: 0 = No sexual activity (neither with a partner nor by myself); 1 = Sexual activity with a partner only; 2 = Sexual activity by myself only; 3 = Sexual activity both with a partner and by myself) (Meyer-Bahlburg & Dolezal, 2007).

Sociodemographic questions

To control for variables potentially related to study outcomes, participants were asked about: self-reported gender, age, sexual orientation, relationship status and length, living with a partner, children, long-standing illness,

Table 1. Characteristics of the study participants ($N = 268$).

	Total N (%)	Age $n = 258$	Total N (%) $M = 29.7, SD = 8.1$
Gender $N = 268$			
Women	117 (43.7)		
Men	151 (56.3)		
Non-binary	0 (0)		
Other	0 (0)		
Sexual orientation $N = 268$		Ethnicity $N = 268$	
Heterosexual	217 (81.0)	White British	68 (25.4)
Bisexual	31 (11.6)	Any other White background	136 (50.7)
Lesbian/gay	12 (4.5)	Black British	5 (1.9)
Asexual	2 (0.7)	Any other Black background	23 (8.6)
Pansexual	5 (1.9)	Asian or Asian British	11 (4.1)
Other ('Queer')	1 (0.4)	Any other mixed background/Multiracial	19 (7.1)
		Did not state	6 (2.2)
Relationship status $N = 268$		Do you have biological, adopted, foster or stepchildren? $N = 268$	
Married	101 (37.7)	No	205 (76.5)
In a relationship	161 (60.1)	No, but I am (or my partner is) pregnant	5 (1.9)
In a relationship but seeing others	3 (1.1)	Yes	58 (21.6)
Casually dating	2 (0.7)		
Other ('domestic')	1 (0.4)		
Partner gender $n = 267$		Income $N = 268$	
Women	158 (59.0)	Poverty level	4 (1.5)
Men	106 (39.6)	Lower income	31 (11.6)
Non-binary	3 (1.1)	Lower middle income	52 (19.4)
		Middle income	107 (39.9)
		Upper middle income	54 (20.1)
		Upper income	16 (6.0)
		I choose not to answer	4 (1.5)
Relationship duration $N = 268$		Do you have any long-standing illness, disability or infirmity? $N = 268$	
0 to less than 6 months	9 (3.4)	Yes	55 (20.5)
6 months to less than 1 year	17 (6.3)	No	213 (79.5)
1 year to less than 5 years	149 (55.6)		
5 years to less than 10 years	59 (22.0)		
10 years and more	34 (12.7)		
Do you live together with your partner? $N = 268$		Highest level of education $N = 268$	
Yes	184 (68.7)	Less than high school	2 (0.7)
No	84 (31.3)	High school or equivalent	53 (19.8)
		Technical or vocational college	22 (8.2)
		College/university	116 (43.3)
		Postgraduate university (MSc/PhD)	74 (27.6)
		Other: ('HND')	1 (0.4)
When did you first start living with your current partner? ($n = 184$)		Religious participation $N = 268$	
0 to less than 6 months	30 (11.2)	Once a week or more	24 (9.0)
6 months to less than 1 year	25 (9.3)	Less often but at least once in 2 weeks	12 (4.5)
1 year to less than 5 years	81 (30.2)	Less often but at least once a month	19 (7.1)
5 years to less than 10 years	32 (11.9)	Less often but at least twice a year	29 (10.8)
10 years and more	16 (6.0)	Less often but at least once a year	20 (7.5)
		Less often	22 (8.2)
		Never/practically never	138 (51.5)
		Varies	4 (1.5)
Currently live $N = 268$		Occupation (please tick all that apply) $n = 277$	
In a city	164 (61.2)	Full-time employed	142 (53.0)
In another metropolitan or suburban area	64 (23.9)	Part-time employed	49 (18.3)
In a small town or rural area	40 (14.9)	Full-time student	58 (21.6)
		Part-time student	9 (3.4)
		Other: Freelancer	1 (0.4)
		Other: Housewife	1 (0.4)
		Other: Unemployed	13 (4.8)
		Other: Retired	1 (0.4)
		Other: Self-Employed	3 (1.1)

and religious participation. Response options for age were included in a drop-down box showing numbers between 18 and 100 (see Table 1).

Experiences of solo and mutual masturbation

At the beginning of this section, participants were provided with a broad definition of masturbation ("Masturbation means stimulating your

own genitals to enjoy the pleasurable sensations or experience orgasm"; Mosher, 2011) and informed that the subsequent questions focused on solo masturbation. Questions were based on previous research (Regnerus et al., 2017) and included participants' last instance of masturbation (i.e., masturbation recency, "When did you last masturbate?"), with nine response options ranging from today to never ("last-instance" approach, see Regnerus et al., 2017).

After completing questions on solo masturbation experiences, a broad definition of mutual masturbation was provided ("Mutual masturbation is defined as partner involvement or partner presence during self-stimulation, which may occur without, before, during, or after sexual intercourse"; Kılıç Onar, 2020). As before, participants were asked about last time mutual masturbation experiences (i.e., the wording of the previous questions was changed from "masturbation" to "mutual masturbation"). Participants who reported masturbation between "today" up to "two weeks ago" were recoded as having "reported recent mutual (or solo) masturbation"; participants who reported "almost a month ago" to "never" were recoded as "did not report mutual (or solo) masturbation in the past two weeks."

Feelings about mutual masturbation

Feelings about mutual masturbation were measured with a revised *feelings about masturbation subscale* taken from the Attitudes Toward Masturbation Scale (F-ATMS; Young & Muehlenhard, 2011). The revised subscale measures satisfaction, anger, guilt, anxiety, and indifference toward mutual masturbation. Two composite scores were used in this analysis: positive-feelings composite (satisfaction subscale score, 8 items) and negative feelings composite scores (the mean of guilt, anxiety, anger, and indifference subscales; 15 items).

For the revision, the wording of the instruction was changed from "masturbation" to "mutual masturbation" ("People feel many different things when they masturbate mutually. Below is a list of possible feelings. How strongly, if at all, do you usually experience these feelings when you masturbate mutually?"). The subscale was shortened

from 45 feelings to 23 feelings to minimize response fatigue. Participants were asked to rate the strength of each feeling on a 5-point scale ranging from 1 (not at all) to 5 (very strongly); total scores for the positive subscale could range from 0 to 40, and from 0 to 75 for the negative subscale. Higher scores indicate greater intensity of feelings. In the current study, Cronbach's alpha was good (.89) for the positive feelings subscale and excellent (.95) for the negative feelings subscale.

The New Sexual Satisfaction Scale – Short Form (NSSS-S; Brouillard et al., 2020)

The NSSS-S was used to assess women's and their partner's sexual satisfaction. Twelve items are scored on a 5-point Likert scale ranging from 1 (not at all satisfied) to 5 (extremely satisfied). The NSSS-S has two subscales: *ego-centered* subscale (e.g., "The quality of my orgasms", "My mood after sexual activity"), and *partner/sexual activity-centered* subscale (e.g., "My partner's ability to orgasm", "My partner's sexual creativity"). Total scores (ranging from 12 to 60) are calculated by summing the items; higher scores indicate higher levels of sexual satisfaction (Brouillard et al., 2020). For the current study, Cronbach's alpha was excellent (.91).

The Sexual Self-esteem Inventory – Short Form (SSEI-S; Zeanah & Schwarz, 2020)

Sexual self-esteem was measured with the SSEI-S, developed to assess affective reactions to self-appraisals of sexual feelings, thoughts, and behaviors (Zeanah & Schwarz, 1996, 2020). The inventory has 35 items assessing five domains of overall sexual self-esteem: skill/experience, control, moral judgment, attractiveness, and adaptiveness. Responses are given on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). A sample item from the SSEI-S is: "My sexual behaviors are in line with my moral values.". Raw score items for each subscale and overall score are totaled, with the overall score ranging from 35 to 210; higher scores indicate higher sexual self-esteem. For the current study, Cronbach's alpha was excellent (.93).

Data analysis

Missing data

After removing participants who completed less than half of the survey items and/or those who missed at least one of the key outcome variables (e.g., sexual satisfaction) ($n = 80$), all items/variables were missing fewer than 2.2% responses. Six participants (2.2%) did not complete any of the items on the feelings about mutual masturbation measure. Missing data in general were handled using two strategies. Firstly, continuous variables, except feelings about mutual masturbation, were substituted with the mean score for that variable. Secondly, any other missing values (e.g., categorical variables, feelings about mutual masturbation) were deleted pairwise during the analyses.

Statistical analysis

To examine gender differences in feelings about mutual masturbation (RQ1), simple and multiple linear regressions were run, using positive- and negative-feelings composite scores as the outcome variables. In order to test for interaction among the variables (mutual masturbation recency and gender), a moderation analysis using PROCESS v.4.2, Model 1 (Hayes, 2018) was used. Because of the skewed distribution of negative-feelings, analyses including the negative feelings variable were bootstrapped. A chi-square test of independence was run to examine differences in reported recency of mutual masturbation experiences between women and men.

To examine associations between mutual masturbation (independent variable) and sexual satisfaction and sexual self-esteem as the outcome variables (RQ2 and RQ3), multiple linear regressions were conducted. All analyses were conducted with SPSS (Version 28.0.1.1) for Mac. A p -value less than .05 was considered significant.

For the analysis, variables were coded as follows: mutual masturbation recency (1 = did not report mutual masturbation in the past two weeks, 2 = reported mutual masturbation in the past two weeks), solo masturbation recency (1 = did not report solo masturbation in the past two weeks, 2 = reported solo masturbation in the past two weeks), gender (1 = women, 2 = men),

age (1 = <30 years, 2 = \geq 30 years), sexual orientation (1 = heterosexual, 2 = sexual minority), relationship status (1 = married, 2 = all other relationship types), relationship duration (1 = <5 years, 2 = \geq 5 years), living with a partner (1 = yes, 2 = no), illness/disability (1 = yes, 2 = no), children (1 = no children, 2 = yes or pregnant) and religious participation (1 = at least some reported, 2 = never or practically never). The age variable was kept as a continuous variable for the analyses.

Control variables

For demographic variables, simple univariable linear regression analyses were conducted to identify potential relationships with outcome variables. Variables with $p < .05$ in univariable analyses were included as control variables in the final multiple linear regression models. Also, solo masturbation recency was considered as a key independent variable and was therefore controlled for in multiple regression models regardless of the p -value in univariable analyses. The results of the univariable analyses are presented in the online supplementary file.

Results

Participant characteristics

268 participants (117 women and 151 men) ranging in age from 18 to 65 years ($M = 29.7$, $SD = 8.1$) completed the survey. Most (60.1%) were in a relationship but not married, 37.7% were married, and 55.6% reported a relationship length between 1 and 5 years. Most (70.9%) reported having completed a college/university or postgraduate degree and their ethnic background as White (76.1%). Full demographics are reported in Table 1.

Mutual masturbation experiences

Across the sample, 50.7% ($n = 136$) reported recent mutual masturbation (i.e., in the past two weeks). Among men, 48.3% ($n = 73$) reported recent mutual masturbation and among women, 53.8% ($n = 63$) did. Table 2 provides data on reported experiences of solo and partnered sexual activities. No associations were identified between

Table 2. Sexual history background details ($N = 268$).

		Women $n = 117$ (43.7)	Men $n = 151$ (56.3)	Total $N = 268$
Any sexual activity (solo or partnered)/last 4 weeks	No sexual activity (neither with a partner nor by myself)	5 (4.3)	4 (2.6)	9 (3.4)
	Sexual activity with a partner only	40 (34.2)	47 (31.1)	87 (32.5)
	Sexual activity by myself only	12 (10.3)	14 (9.3)	26 (9.7)
	Sexual activity both with a partner and by myself	60 (51.3)	86 (57.0)	146 (54.5)
	Total (N)	117 (100.0)	151 (100.0)	268 (100.0)
Last time solo masturbation	Today	14 (12.0)	19 (12.6)	33 (12.3)
	Yesterday	24 (20.5)	34 (22.5)	58 (21.6)
	Several days ago	28 (23.9)	42 (27.8)	70 (26.1)
	One week ago	12 (10.3)	15 (9.9)	27 (10.1)
	Two weeks ago	12 (10.3)	12 (7.9)	24 (9.0)
	Almost a month ago	8 (6.8)	8 (5.3)	16 (6.0)
	Couple of months ago	10 (8.5)	9 (6.0)	19 (7.1)
	Over a year ago	8 (6.8)	9 (6.0)	17 (6.3)
	Never	1 (0.9)	3 (2.0)	4 (1.5)
	Total (N)	117 (100.0)	151 (100.0)	268 (100.0)
	Last time mutual masturbation	Today	2 (1.7)	4 (2.6)
Yesterday		11 (9.4)	10 (6.6)	21 (7.9)
Several days ago		20 (17.1)	32 (21.2)	52 (19.5)
One week ago		22 (18.8)	18 (11.9)	40 (15.0)
Two weeks ago		8 (6.8)	9 (6.0)	17 (6.4)
Almost a month ago		10 (8.5)	14 (9.3)	24 (9.0)
Couple of months ago		16 (13.7)	22 (14.6)	38 (14.2)
Over a year ago		6 (5.1)	19 (12.6)	25 (9.4)
Never		21 (17.9)	23 (15.2)	44 (16.5)
Total (N)		116 (99.1)	151 (100.0)	267 (99.6)

Table 3. Descriptive statistics for key variables in regression models by gender ($N = 268$).

Variable	Total $N = 268$		Women $n = 117$		Men $n = 151$		Bivariate analysis	
	M (or %)	SD	M (or %)	SD	M (or %)	SD	t (or χ^2)	p
Sexual satisfaction	45.35	9.52	44.14	9.71	46.30	9.30	-1.85	.065
Sexual self-esteem	159.61	27.97	154.95	28.59	163.22	27.02	-2.42	.016
Positive feelings composite	29.58	7.17	28.11	7.31	30.71	6.87	-2.92	.003
Negative feelings composite	24.41	12.15	25.40	12.07	23.65	12.20	1.16	.240
Mutual masturbation recency	50.7% ($n = 136$)		53.8% ($n = 63$)		48.3% ($n = 73$)		.93	.334
Solo masturbation recency	79.10% ($n = 212$)		76.9% ($n = 90$)		80.8% ($n = 122$)		.59	.439

Note. Independent samples t -tests between women's and men's scores were conducted for continuous variables (the NSSS-S, SSEI-S) and χ^2 analysis was done for the categorical variables (e.g., mutual masturbation recency). Mutual/solo masturbation recency referred to mutual/solo masturbation in the past two weeks.

gender and recent mutual masturbation ($p = .334$, Table 3).

Feelings about mutual masturbation

Positive feelings

Across all participants, the mean positive feelings score was 29.58/40 ($n = 260$, $SD = 7.17$; see Table 3). The most commonly reported positive feelings by both women and men were happy ($n = 123$ reported "very strongly"), good ($n = 126$ reported "very strongly") and satisfied ($n = 114$ reported "very strongly"). In a multivariable regression model (including mutual masturbation recency, solo masturbation recency, gender, illness/disability, and religious participation, see Table 4), gender was independently associated with positive

Table 4. Results of the multiple regression model for positive feelings about mutual masturbation (satisfaction subscale) among men and women ($n = 262$).

	B	Multivariable 95%CI	Model		
			p	sr	sr^2
Mutual masturbation recency	3.59	1.91, 5.28	<.001	.24	.06
Solo masturbation recency	1.29	-.80, 3.38	.227	.07	.005
Gender	2.24	.55, 3.94	.010	.15	.02
Illness/disability	3.23	1.12, 5.34	.003	.17	.03
Religious participation	1.76	.09, 3.43	.039	.12	.01

Note. Mutual/solo masturbation recency referred to mutual/solo masturbation in the past two weeks.

feelings ($B = 2.24$, 95%CI: .55, 3.94, $sr^2 = 0.02$, small effect size). Men ($M = 30.71/40$, $SD = 6.87$) reported significantly higher positive feelings about mutual masturbation than women ($M = 28.11/40$, $SD = 7.31$). The overall model was significant and explained 15% of the variance for positive feelings ($R^2 = .15$, $F(5,255) = 8.99$,

Table 5. Results of the multiple regression model for sexual satisfaction among men and women ($n = 267$).

	<i>B</i>	Multivariable		Model		
		95%CI		<i>p</i>	<i>sr</i>	<i>sr</i> ²
Mutual masturbation recency	3.90	1.64, 6.16	<.001	.20	.04	
Solo masturbation recency	-2.44	-5.22, .34	.086	-.10	.01	
Age	-.16	-.33, -.006	.042	-.12	.01	
Relationship status	.90	-2.10, 3.91	.554	.03	.0009	
Living with partner	1.11	-1.68, 3.91	.434	.05	.002	
Illness/disability	3.79	.89, 6.69	.011	.15	.02	
Child	-.11	-3.17, 2.94	.941	-.004	.00002	

Note. Mutual/solo masturbation recency referred to mutual/solo masturbation in the past two weeks.

$p < .001$). Participants who reported recent mutual masturbation ($B = 3.59$, 95%CI: 1.91, 5.28), not having any illness/disability ($B = 2.23$, 95%CI: 1.12, 5.34), and not attending religious practices ($B = 1.76$, 95%CI: .09, 3.43) were also more likely to report higher positive feelings about mutual masturbation.

The relationship between mutual masturbation recency and positive feelings about mutual masturbation was moderated by gender ($B = -3.47$, 95%CI: -6.78 , -0.16 , $p = .040$) (after controlling for solo masturbation, gender, illness/disability, and religious participation; $R^2 = .16$; $F(6, 261) = 8.11$, $p = .0000$). For both men ($B = 2.17$, 95%CI: .01, 4.34, $p = .049$) and women ($B = 5.64$, 95%CI: 3.08, 8.21, $p = .000$), there was a significant association between mutual masturbation recency and positive emotions such that those who reported more recent mutual masturbation reported more positive emotions. The difference was more prominent for women (the slope was steeper) than it was for men because among those who did not report mutual masturbation in the past two weeks, men reported higher levels of positive emotions than women (see Figure 1 in the online supplementary file).

Results indicated a significant effect of gender for people who did not report masturbation in the past two weeks but not for people who reported mutual masturbation in the past two weeks. In other words, among participants who did not report mutual masturbation in the past two weeks, men reported significantly higher positive feelings about mutual masturbation than women ($t = -3.12$, $p = .002$). Among participants who reported mutual masturbation in the past two weeks, no significant gender difference in positive feelings was found ($t = -1.34$, $p = .183$).

Negative feelings

Across all participants, the mean negative feelings score was 24.41/75 ($n = 262$, $SD = 12.15$). In general, negative emotions were not endorsed by many people. Only 12 participants reported that they felt “very strongly” that mutual masturbation was “strange” and only nine reported that they felt very “tense” about it. Other negative emotions were even less endorsed. There was no statistically significant difference between men ($M = 23.65/75$, $SD = 12.20$) and women ($M = 25.40/75$, $SD = 12.07$) in negative feelings about mutual masturbation ($B = -1.75$, 95%CI: -4.65 , 1.10, $p = .240$).

Associations between mutual masturbation recency and sexual satisfaction

Among all participants, the mean sexual satisfaction score was 45.35/60 ($SD = 9.52$; see Table 3). In multivariable regression (including mutual masturbation recency, solo masturbation recency, age, relationship status, living with a partner, illness/disability, and children; see Table 5), recent mutual masturbation was independently associated with higher sexual satisfaction ($B = 3.90$, 95%CI: 1.64, 6.16, $sr^2 = 0.04$, small effect size). The overall model was significant and explained 12% of the variance for sexual satisfaction ($R^2 = .12$, $F(7,259) = 5.07$, $p < .001$). Younger age ($B = -.16$, 95%CI: $-.33$, $-.006$) and not reporting any illness/disability ($B = 3.79$, 95%CI: -3.17 , 2.94) were also associated with higher sexual satisfaction.

Associations between mutual masturbation recency and sexual self-esteem

The mean sexual self-esteem score for the total sample was 159.61/210 ($SD = 27.97$ see Table 3). In univariable analyses, no association was identified between mutual masturbation and sexual self-esteem ($p = .797$). When tested in multivariable analysis, associations between sexual self-esteem and recent mutual ($p = .716$) or solo masturbation ($p = .623$) remained non-significant.

Discussion

Prevalence of mutual masturbation

In the current study, recent solo masturbation was more common than recent mutual masturbation. However, mutual masturbation was also prevalent: 48.3% of men and 53.8% of women reported mutual masturbation within the past two weeks. Although consistent gender differences in the prevalence of solo masturbation have been reported in previous research, with men more likely to report masturbation than women (Frankenbach et al., 2022; Gerressu et al., 2008), no associations were identified between gender and recent solo or mutual masturbation in the current study. The high prevalence of solo and mutual masturbation among our partnered sample challenges the idea that only single people masturbate (Kaestle & Allen, 2011; Kiliç Onar et al., 2020).

Similar to our results, in the U.S. National Survey of Sexual Health and Behavior (NSSHB), solo masturbation was more common than partnered masturbation (assessed as “masturbated with a partner”) (Dodge et al., 2016; Herbenick et al., 2022). Among adult participants, 42.0% reported partnered masturbation at least once in the past year in 2009 compared with 33.8% in 2018 (Herbenick et al., 2022). Similarly, among predominantly heterosexual men in the 2012 NSSHB, Dodge et al. (2016) reported that solo masturbation was more common than partnered masturbation: 92% reported lifetime solo masturbation compared with 52% who reported lifetime partnered masturbation; 57% reported solo masturbation within the past 30 days compared with 16% who reported partnered masturbation during the same time frame. Additionally, in the 2009 NSSHB, partnered masturbation was reported at the most recent sexual event by 28.9% of men and 23.6% of women (Herbenick et al., 2010b).

Using data from the 2020 U.S. Campus Sexual Health Survey (CSHS), prior to the COVID-19 pandemic, Herbenick et al. (2021) reported higher rates of partnered masturbation (compared to NSSHB data) among American undergraduate students, with 46.2% of women, 46.7% of men, and 52% of trans/non-binary individuals reporting partnered masturbation in the past

month; these figures are closer to our findings. Previous research has highlighted that partnered masturbation is associated with having a partner and younger age (most common among 25 to 49-year-olds; Dodge et al., 2016; Herbenick et al., 2010b). As our current sample was comprised mainly of young people, all of whom were in relationships, this might be one reason for the differences in frequency of recent mutual masturbation compared with previous studies. Methodological differences (e.g., how the question was asked, the time frame) might also be relevant.

Data collection for the current study lasted one year (2021) and largely occurred while COVID-19 restrictions were in place in most countries (e.g., U.K., U.S., Spain). It is important to acknowledge changes in solitary sexual behaviors related to the global COVID pandemic (Gleason et al., 2023). Although we did not ask about the prevalence of solo/mutual masturbation before COVID-19 restrictions, in our study, similar to pre-COVID surveys, recent solo masturbation was more common than recent mutual masturbation. Mercer et al. (2022) reported that a perceived increase in the frequency of masturbation and using sex toys was more common than a decrease following the initial UK national lockdown in 2020. Similarly, Hensel et al. (2020) found that more participants reported an increase in solo masturbation and some virtual sexual behaviors, but a decrease in partnered masturbation, genital touch with a romantic/sexual partner, and vibrator or sex toy use. A similar decrease in partnered sexual activities but no change in the frequency of masturbation were reported in a study conducted in Spain (Rodríguez-Domínguez et al., 2022). Possible explanations for the increase in sexual behaviors not requiring the physical presence of a partner might be due to being apart or to gain control over the environment (Arafat & Kar, 2021). However, some studies also reported a reduced frequency of solo and mutual masturbation during lockdown (Lehmiller et al., 2021; Luetke et al., 2020). In sum, depending on the method, time frame, and differences in restrictions, previous research on the effects of COVID on sexual behaviors have reported differing results, and our

results might partly reflect the unusual circumstances of the pandemic.

Feelings about mutual masturbation

Both men and women reported more positive than negative feelings about mutual masturbation, although men reported significantly higher positive feelings than women. Similarly, among all participants, “happy”, “good”, and “satisfied” were the most frequently reported feelings about mutual masturbation. Among those who reported no mutual masturbation in the past two weeks, men reported relatively higher positive feelings than women, while among those who reported recent mutual masturbation, there were no gender differences in positive feelings. Women’s lower positive emotions in the not recent group might be explained by the Sexual Double Standard (SDS). The SDS refers to judging men’s and women’s sexual behaviors based on different criteria (Crawford & Popp, 2003; Endendijk et al., 2020). For example, while the SDS places more restrictions on women’s sexual behaviors, men’s sexual freedom, exploration and curiosity are accepted (Endendijk et al., 2020; Kiefer & Sanchez, 2007; Milhausen & Herold, 2002). Consequently, for some, masturbation is perceived as only acceptable for boys and men (Kaestle & Allen, 2011; Thorpe et al., 2023).

For mixed-sex relationships, these results challenge the traditional sexual norms about sexual activities other than PVI (e.g., women’s orgasm is a “gift” they “receive” from a partner, men “give” their partner an orgasm) (Braun et al., 2003; Fahs, 2011). While attitudes toward women’s solo masturbation have shifted toward more liberal and empowering approaches (Bowman, 2014; Dekker & Schmidt, 2003; Fahs & Frank, 2014; Foust et al., 2022), even relatively recent studies have highlighted that some women report secrecy surrounding their own masturbation and feel more stigmatized and reliant on their partner’s approval than do men in mixed-sex relationships (Foust et al., 2022; Kaestle & Allen, 2011; Kılıç Onar et al., 2020). However, our finding of men’s positive feelings toward mutual masturbation challenges the partner- and/or relationship-related concerns about women’s masturbation

that some women hold (Kılıç Onar et al., 2020). While some people may feel awkward or embarrassed to engage in mutual masturbation or to suggest it to a partner (Foust et al., 2022; Heiman & LoPiccolo, 2009), or think their partner would not want to engage in the activity, in reality, the experience is reported as quite positive.

Some of our results (e.g., men’s higher scores on positive feelings about mutual masturbation) also suggest that some men might prioritize their partner’s pleasure more so than their own. Thus, future research is needed that explores sexual scripts regarding mutual masturbation and women’s masturbation in mixed-sex couples. Because women’s masturbation is a more reliable method of orgasm compared to PVI alone (Kontula & Miettinen, 2016; Laumann et al., 1994), and women’s orgasm is important for men’s sexual satisfaction (Leonhardt et al., 2018; Watson et al., 2016), research with mixed-sex couples and qualitative approaches with men is also needed to understand how women navigate the role of masturbation, and how their partner accommodates women’s sexual pleasure in their relationships.

Mutual masturbation and sexual satisfaction

One of the most noteworthy findings was that, while solo masturbation may be negatively linked with sexual satisfaction for some women and men (Bridges et al., 2004; Miller et al., 2019), recent mutual masturbation was associated with *higher* sexual satisfaction for both women and men (although the effect size was small). In fact, mutual masturbation was associated with positive emotions and greater sexual satisfaction, while solo masturbation was not associated with sexual satisfaction, either positively or negatively. These results challenge the compensatory model of masturbation in which masturbation is perceived as a substitute for unsatisfactory partnered sex (Gerressu et al., 2008; Regnerus et al., 2017; Rowland, Kolba, et al., 2020).

In a qualitative study exploring women’s experiences with solo and partnered masturbation, Foust et al. (2022) suggested that partnered masturbation shares relational features with other partnered sexual activities, while also having similarities with solo masturbation due to the act of

self-stimulation. However, previous research on mutual masturbation has mainly focused on it as a safer sex practice and infection prevention behavior among men who have sex with men (for example, see Reisner et al., 2009). It is surprising how little research attention has been given to the positive aspects of mutual masturbation, despite the fact that sex educators and sex therapists have created guides and techniques for mutual masturbation (most recently, mainly published in online magazines or as posts on social media e.g., Harris & Girdwain, 2021; Morse, 2022, 2023). To the best of our knowledge, the present study is the first to report associations between recent mutual masturbation and higher sexual satisfaction.

Conflicting findings regarding the link between masturbation and sexual satisfaction might be because most studies did not specify or define masturbation, or note whether it was solo or partnered, and some participants might not consider masturbation with a partner present to “count” as masturbation (Bridges et al., 2004). Alternatively, some might consider stimulating their partner’s genitals for pleasure (a behavior which does not include self-stimulation) to be masturbation (Kirschbaum & Peterson, 2018). The term masturbation can include many different behaviors depending on the person asked and how the question is asked, and it does not have a universal definition (Kirschbaum & Peterson, 2018). Our results support the idea that the association between sexual satisfaction and masturbation might differ depending on the context (solo vs. mutual) and we encourage future researchers to specify whether solo or partnered masturbation is being asked about in their questions to participants.

Sexual self-esteem

Although previous research has not investigated mutual masturbation and its associations with sexual self-esteem, Foust et al.’s (2022) study highlighted that the performative nature of mutual masturbation for women might influence women’s sexual self-esteem. In their study, partnered masturbation triggered some women’s existing insecurities about their bodies along with

concerns about “putting on a show”, sometimes resulting in feeling awkward and embarrassed, but also sometimes resulting in feeling sexually skilled by being able to arouse their partner. However, in the current study, no association was found between mutual masturbation and sexual self-esteem for either women or men.

Implications of findings

Because many people know exactly what type of stimulation they like, mutual masturbation can be considered an important source of education about one’s own and one’s partner’s sexual likes/dislikes. Mutual masturbation can also help partners understand their own and their partner’s sexual pleasure and learn (and teach) new stimulation techniques. Sex and couple therapists can recommend mutual masturbation to enhance sexual satisfaction after exploring personal feelings and values about solo and partnered masturbation.

Sexuality does not have to follow a traditional sexual script and broadening one’s sexual repertoire with mutual masturbation can create diverse sexual opportunities with a partner that may uncover new pleasure resources and help to close the orgasm gap. Individuals can improvise and translate cultural sexual scripts to fit their unique situations at an individual- and/or dyadic-level because sexual norms and sexual scripts can change over time and place (Carpenter, 2010; Masters et al., 2013; McCabe et al., 2010; McCormick, 2010). As a case in point, our findings challenge the traditional expectation that “masturbation happens alone” (Kirschbaum & Peterson, 2018).

Additionally, as mutual masturbation is a form of non-verbal communication which provides cues such as physical demonstration, facial expression, and sound about pleasure triggers (Séguin, 2022; Towne, 2019), it can enhance sexual communication between partners. Better sexual communication might in turn increase the likelihood of women’s orgasm and/or pleasure in relationships (Jones et al., 2018; Mallory et al., 2019). Specifically, communication during sexual activity can increase sexual pleasure and emotional intimacy (Séguin, 2022). Although dyadic

sexual communication was not analyzed in the current study, it is important to consider that improved sexual communication may enable couples to try new sexual activities and conversely, the experience of mutual masturbation may help them to open a discussion about sexual preferences and thus improve sexual satisfaction. The mediating role of sexual communication should be explored in future research.

Strengths and limitations

To the best of our knowledge, the current study is the first to report data on both women's and men's experiences of mutual masturbation through a positive lens. The current findings help to close the gap in previous research about the link between masturbation and sexual satisfaction as most studies have only assessed sexual satisfaction within a dyadic context (partnered intercourse and sexual satisfaction; Fischer & Træen, 2022). And, when masturbation was assessed, most researchers did not make a clear distinction between solo and mutual masturbation (Bridges et al., 2004; Regnerus et al., 2017).

However, the current study also had limitations. Due to the nature of cross-sectional data, interpretations and generalizability of the results should be made with caution. The causal direction of the associations cannot be determined and as such, the experience of mutual masturbation may increase sexual satisfaction or people who are sexually satisfied might be more likely to engage in mutual masturbation, or both. Additionally, the sample consisted mainly of White, highly educated, and predominantly young individuals who reported low attendance at religious services.

The influence of social desirability, especially in relation to partner-related and sexual satisfaction questions (Bridges et al., 2004), should be considered. However, as this was an anonymous online survey and participants were advised to complete the survey when alone, social desirability is less likely than in interview-based studies or if completing questionnaires in the presence of a partner.

The questionnaire used in the current study was also subject to interpretation bias. Mutual

masturbation was defined as “*partner involvement or partner presence during self-stimulation...*” but we did not differentiate between the online vs. physical presence of a partner. Future qualitative research exploring the meanings and definitions of mutual masturbation would be useful to better understand the functions of mutual masturbation among mixed and same-sex couples.

Also, because the survey asked for initials and birthday/month to create a couple ID and match couples, and snowball sampling was used through researchers' social media accounts, to maintain anonymity we did not ask the country of residency, and thus could not examine possible cultural differences. Data collection took place during the COVID-19 pandemic but we did not include any questions related to lockdown restrictions. It is therefore unknown how pandemic-related restrictions may have influenced the results.

Finally, we did not measure participants' own attitudes toward their own masturbation which potentially could be a relevant variable. Future research can investigate attitudes toward and motivations for mutual masturbation, and the possible mediating role of an individual's own feelings and attitudes about their masturbation in the relationships between attitudes toward mutual masturbation, mutual masturbation behavior and sexual satisfaction.

Conclusion

The current findings suggest that mutual masturbation is common among couples and many people report positive feelings about the behavior. Engaging in mutual masturbation might increase couples' sexual repertoire and enhance sexual satisfaction. Clinical practitioners could use these findings to debunk myths about partners' negative views of self-pleasure in relationships. Future research is needed to further clarify the nature of the relationship between mutual masturbation and sexual satisfaction. Dyadic and mixed method approaches would be useful to explore partners' experiences, ideas, and interactions about solo and partnered self-pleasure and to better understand sexual scripts at a couple level.

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Compliance with ethical standards

Research procedures were approved by the University of Southampton Research Ethics Committee (Ergo number: 62245-A3). This study complied with the University's Policy on the Ethical Conduct of Studies Involving Human Participants. Informed consent was obtained from all individual participants included in the study.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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Data availability statement

The anonymized data used in this study are available from the corresponding author upon request.

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