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# Sexual communication in Chinese heterosexual couples: the efficacy of online Sensate Focus intervention and correlations with relational and sexual outcomes

Ziyi Li<sup>a,b</sup>, Sijia Huang<sup>b#</sup> and Pekka Santtila<sup>a,b</sup>

<sup>a</sup>School of Psychology and Cognitive Science, East China Normal University, Shanghai, China; <sup>b</sup>Faculty of Arts and Sciences, New York University Shanghai, Shanghai, China

## ABSTRACT

The study aimed to explore the relationships between sexual communication, the immediate consequences of sexual communication, the reasons for avoiding sexual communication, and sexual and relational outcomes (intimacy, relationship satisfaction, sexual satisfaction, and sexual function) among Chinese heterosexual couples. Additionally, it examined the effectiveness of online Sensate Focus (SF) exercises in improving sexual communication. Forty-two heterosexual couples from China were recruited, and constructs related to sexual communication and sexual and relational outcomes were assessed at pre- and post-test. The experimental group underwent a five-week, animation-based SF intervention. Results revealed that sexual communication was linked to higher event-based sexual satisfaction and better female sexual function. During-sex sexual communication (i.e. sexual self-disclosure) exhibited reciprocity and was associated with higher female relationship satisfaction. Rigid gender role beliefs surfaced as a key barrier to sexual communication, further linked to poorer sexual function and, surprisingly, better male global sexual satisfaction. Additionally, SF intervention facilitated during-sex sexual communication but reduced post-sex sexual talk. These findings underscore the importance of sexual communication in maintaining healthy intimate relationships and provide valuable insights for the development and implementation of effective sexual communication interventions in China.

## LAY SUMMARY

This study of Chinese heterosexual couples found that better sexual communication improves sexual function and satisfaction. Rigid gender roles hinder communication, particularly for men. A five-week online intervention helped couples communicate more during sex, highlighting the importance of sexual communication for healthy relationships.

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Sexual communication; sexual function; sexual satisfaction; relationship satisfaction; Sensate Focus; China

**CONTACT** Ziyi Li [zl5676@nyu.edu](mailto:zl5676@nyu.edu) School of Psychology and Cognitive Science, Geo Building, East China Normal University, North Zhongshan Road Campus, 3663 N. Zhongshan Rd., Shanghai, China; Faculty of Arts and Sciences, New York University Shanghai, 567 W. Yangsi Road, Pudong New Area, 200126, Shanghai, China.

<sup>#</sup>Department of Psychology, Rowan University, 201 Mullica Hill Road, Glassboro, NJ, 08028, USA

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Good sexual communication plays a crucial role in intimate relationships, correlating closely with various positive sexual and relational outcomes, such as relationship and sexual satisfaction as well as sexual function (Mallory, 2022; Mallory et al., 2019). In China, research on sexual communication is limited and primarily focuses on promoting safe sexual behavior practices and preventing the spread of sexually transmitted diseases (Liu, 2012; Xiao et al., 2013). Research on how heterosexual (or non-heterosexual) partners communicate their sexual preferences and pleasure is still lacking Chinese samples. Traditional Chinese culture is deeply influenced by Confucianism and collectivism, both of which play potentially significant roles in shaping sexual communication among Chinese couples. The Confucian perspective on sexuality emphasizes procreation and social order rather than sexual fulfillment, with a tendency towards conservative and restrained sexual expression (Tang et al., 1996). In collectivist cultures, individual pleasure is subordinated to group needs, and strict norms regulate sexual behavior (Lo et al., 2010; Mortenson, 2002), which may lead to hesitation in expressing sexual preferences for fear of deviating from norms. Given the cultural differences in sexual expression, conducting research with the Chinese population is necessary to determine the extent to which existing findings reflect the situation among Chinese heterosexual couples in contemporary society, offering a cultural perspective distinct from Western societies.

Sexuality may be one of the least discussed and most challenging topics between partners (Rehman et al., 2011), which may hinder couples from enjoying sex and fostering closer relationships. Therefore, it is crucial to find economical and easily deployable interventions to promote effective sexual communication. Sensate Focus (SF), a widely utilized sex therapy, involves instructions on communication of sexual pleasure and displeasure between partners (Avery-Clark et al., 2019; Regev, 2004). However, there are no well-designed studies examining whether SF can improve sexual communication in a Chinese sample. As part of a larger study on SF intervention, this research examines the effects of SF on sexual communication.

### ***Sexual communication between partners***

Sexual communication between partners is a multidimensional construct (Séguin, 2024), with its definition varying depending on the research purpose. Sexual Self-disclosure (SSD) is one type of sexual communication, referring to individuals disclosing their preferences for specific sexual behaviors or activities to their partners (Byers & Demmons, 1999). While the two concepts share some conceptual overlap, SSD emphasizes one partner's unilateral sharing with the other, in contrast to sexual communication, which highlights dyadic interaction between partners (Tang et al., 2013). In other words, the level of SSD may vary between partners and SSD by one partner may impact that of the other partner. The present study focused on two specific forms of sexual communication. The first was during-sex SSD, which occurs in the course of sexual interaction (Denes et al., 2020; Merwin & Rosen, 2020). During-sex SSD can be verbal (e.g. verbally expressing a desired sexual behavior) or non-verbal (e.g. directly initiating a desired sexual behavior). The second form was post-sex sexual talk (PSST), which takes place in the post-sex time interval—after

sexual activity but before one partner leaves or falls asleep (Kruger & Hughes, 2010)—when partners may discuss the sexual activity that just occurred.

The literature robustly demonstrates that self-disclosure in intimate relationships is reciprocal (Manne et al., 2004; Sprecher & Hendrick, 2004; Yokotani & Yu, 2020). One partner's self-disclosure is positively associated with both perceived and actual self-disclosure from the other partner (Sprecher et al., 2013). Receiving disclosure can enhance the recipient's affection for the discloser and promote to the recipient's self-disclosure (Collins & Miller, 1994; Forgas, 2011). As this reciprocal process unfolds, romantic relationships can become more intimate and closer (Welker et al., 2014). Similar to general self-disclosure, sexual self-disclosure also features disclosure reciprocity: When individuals perceive their partners expressing their preferences more in terms of sexuality, they are also more likely to disclose their own sexual preferences to their partners (Grasson, 2018; Theiss, 2011). However, the reciprocity of SSD has not yet been examined in the context of a single sexual event, and few studies have explored the relationship between sexual communication during and post-sex. An exception is the work of Bennett and Denes (2019), who found that expressing deceptive affectionate messages during sex was associated with less post-sex communication. The present study aimed to fill this gap and hypothesized that individuals who engage in more SSD during sexual activities would report their partners as also engaging in more SSD and would be more likely to have sexual talk with their partners after sex (Hypothesis 1, H1).

Research findings regarding gender differences in SSD are varied. On the one hand, women are often presumed to be more inclined to disclose relevant information about themselves compared to men (Dindia & Allen, 1992). Consistent results have been found for SSD, albeit with a small effect size (Byers & Demmons, 1999). Similarly, Denes et al. (2020) discovered that women were more likely than men to disclose their positive feelings and thoughts during sex. On the other hand, heterosexual sexual scripts in most cultures depict women as passive and submissive, while portraying men as highly sexually driven and assertive (Sanchez et al., 2012). Individuals may internalize these sexual scripts, leading to women disclosing their desires and interests less than men. Fox et al. (2022) provided some evidence for this, finding that women were less likely than men to disclose sexual secrets to romantic partners. Additionally, no gender differences in SSD have been found in some studies, particularly regarding expressing what one likes sexually (Brown & Weigel, 2018; MacNeil & Byers, 2005).

Confucian culture in China emphasizes female submission to her male partner and modesty regarding her own needs (Zhan, 1996). Many young Chinese women perceive satisfying their husband's sexual demands as their duty, leading them to remain silent during sexual encounters rather than expressing their desires (Hu, 2016; Lau et al., 2006). Tang et al. (2013) proposed that Chinese women may engage in less SSD than men due to cultural differences. Accordingly, men may report their partner's SSD less than women. The present study aimed to test this hypothesis (H2) for the first time.

### ***Benefits of and barriers to sexual communication between partners***

Systematic reviews (Mallory, 2022; Mallory et al., 2019) indicate that good sexual communication contributes to individuals experiencing improved sexual function

(such as male ejaculation and female arousal), high sexual satisfaction (overall satisfaction with sexual relationships), relationship satisfaction (the subjective evaluation of one's romantic relationships), and intimacy (a feeling of closeness and connection within romantic relationships). These sexual and relational outcomes, while distinct (e.g. sexual relationships are distinct from romantic relationships), are often interconnected and collectively indicate a higher quality of romantic relationships (Schaefer & Olson, 1981; van den Brink et al., 2018; Zhan et al., 2022). MacNeil and Byers (2005, 2009) dual-pathway model (instrumental and expressive pathway) provides an explanation for the benefits of SSD. The instrumental pathway posits that partners gain a deeper understanding of each other's sexual preferences through SSD, leading them to experience more of what they prefer and less of what they do not prefer, thereby increasing sexual satisfaction (Byers, 2011). In this process, SSD offers opportunities for changes in sexual behavior, which may be instrumental in addressing sexual dysfunction potentially (Mallory et al., 2019). The expressive pathway suggests that reciprocal SSD fosters relationship satisfaction and intimacy between partners, contributing to higher levels of sexual satisfaction (MacNeil & Byers, 2009). Satisfactory relationships and intimacy are essential components of healthy sexual function (McCabe et al., 2010), therefore, SSD can also enhance sexual function by improving relational well-being.

In addition to disclosure during sex, communication happening immediately after sex plays a potentially critical role in relationship dynamics. The period following sexual events provides a valuable opportunity for partners to express affection and deepen their bond (Denes, 2012, 2018). Engaging in positive relational disclosures during this time can enhance commitment, trust, sexual satisfaction, and relationship satisfaction, while also mitigating uncertainty in the face of romantic infidelity (Bennett et al., 2019; Denes, 2021; Denes et al., 2018; Muise et al., 2014). Besides disclosing positive thoughts and feelings, discussing the recent sexual event itself may also be beneficial. One interview study found that many interviewees tend to engage in PSST, with this “debrief” session after sex contributing to better sexual experiences (Grasson, 2018). Therefore, the present study tested Hypothesis 3 (H3): Both during-sex SSD and PSST would be associated with better sexual function, higher sexual and relational satisfaction, as well as greater intimacy.

Despite the widespread benefits of sexual communication, it encounters substantial barriers in practice among partners. Rigid gender roles are one of the obstacles, whereas rejecting traditional gender roles can facilitate sexual communication (Séguin, 2024). Gender role norms dictate the behaviors that men and women should exhibit, including sexual behaviors (Nelson & Brown, 2019; Ward et al., 2022). Chinese Confucianism suggests that noble and polite individuals should avoid discussing sex (Yu, 2021), and emphasizes that the primary purpose of sex is procreation rather than pursuing sexual pleasure (Zhang et al., 1999). In this context, sexuality is repressed, making sexual communication regarding the expression of sexual preferences for better sexual experiences more challenging.

Compared to general communication, sexual communication may entail more potential relational and social risks and activate more threats related to the self (Rehman et al., 2019). Individuals may fear rejection or negative judgment from their partners upon expressing their sexual preferences and sexual feelings. In collectivist

China, where interpersonal harmony is emphasized, individuals may also be concerned that SSD could hurt others (Tang et al., 2013). This anxiety about communication and partner responses may diminish the willingness and actions related to sexual communication (Hullman et al., 2023; Séguin, 2024). Furthermore, individuals' desires and interests are dynamic and may change even from day to day or minute to minute (Byers, 2011). This implies that disclosures made by partners about preferences in non-sexual contexts may not fully apply to real sexual scenarios later on, necessitating the expression of thoughts during sex to obtain desired sexual activities at that moment. Unfortunately, during-sex sexual communication may be less frequent than sexual communication outside of sex (Lutmer & Walker, 2024).

However, does during-sex SSD really lead to the rejection feared by the discloser? The immediate outcomes individuals actually receive after expressing sexual preferences to their partners represent a gap that has not been explored in current literature. In the broader domain of interpersonal communication, people's predictions about others can often be biased; for instance, individuals expressing their desires may underestimate the likelihood of others satisfying them (Flynn & Lake, 2008). It may be that during-sex SSD is more likely to receive positive outcomes, such as having their sexual preferences fulfilled, rather than negative ones. Moreover, existing research has not delved into whether individuals who refrain from engaging in during-sex SSD have the willingness to disclose. Those who do not want to express themselves and those who are willing but opt not to express themselves may represent different groups, which could further impact the sexual and relational outcomes of couples. Therefore, we measured these aspects related to a specific sexual event in detail to gain deeper insights into the psychological processes underlying engaging in during-sex SSD, without making specific hypotheses.

### ***Sensate Focus and sexual communication***

SF was originally developed by Masters and Johnson (1970) as a sex therapy technique aimed at reducing performance anxiety that inhibits sexual response. It is effective for treating various sexual dysfunctions and concerns for both men and women across Western and non-Western contexts (Al-Abbadey et al., 2016; Anil et al., 2017; Huang et al., 2024; Pulverman et al., 2015; Seal & Meston, 2020). Besides improving sexual function, SF can effectively enhance sexual satisfaction between partners, marital satisfaction, and intimacy (Almås, 2016; Seliman et al., 2022; Tajik et al., 2022). However, SF is often combined with other therapeutic approaches (such as cognitive-behavioral therapy, mindfulness practices, etc.), making it challenging to accurately assess the effectiveness of SF itself (Avery-Clark et al., 2019). Research solely focusing on SF is needed to clarify this concern.

After approximately half a century of development, SF is divided into two components (SF1 and SF2) based on the recipients and goals of therapy (Avery-Clark et al., 2019). SF1 is consistent with the classic SF (Masters & Johnson, 1970) and targets couples with sexual dysfunction. It requires practitioners to focus on controllable sensations rather than uncontrollable performance, with communication being discouraged in this stage (Avery-Clark & Weiner, 2017). SF2 primarily targets couples seeking to enhance their sexual relationship without sexual difficulties, with sexual

communication as an integral part (Al-Abbadey et al., 2016; Hucker & McCabe, 2015). SF2 highlights the importance of sexual communication regarding personal and partner arousal, pleasure, and satisfaction, aiming to enhance long-term intimate connection (Avery-Clark et al., 2019). In this phase, practitioners are encouraged to actively and specifically communicate with their partners during practice about pleasant and unpleasant aspects of sexual interaction in any suitable way, including both verbal and non-verbal communication (Avery-Clark et al., 2019; Regev, 2004). Communication about sexual preferences is no longer perceived as taboo but rather as a necessary aspect of therapy, and new skills for communicating sexual preferences develop during this process (Regev, 2004). Following SF2, our SF intervention included instructions regarding communication.

However, there is limited empirical evidence regarding whether the communication skills learned by partners from SF exercises are transferred to sexual activities outside of the therapeutic setting. To our knowledge, only one mixed-methods contrasting case study (Vowels, 2023) has explored the effect of SF on sexual communication. In Vowels (2023) research, participants mentioned some degree of improvement in sexual communication with their partners during post-intervention interviews and reported higher sexual communication scores in a post-intervention survey. It should be pointed out that this study was conducted at the individual level rather than the couple level, and there is still a lack of well-designed quantitative research examining the impact of SF on sexual communication, particularly involving both partners.

Digital health interventions have become increasingly popular and diverse in recent years (Margariti et al., 2023). Generally, they provide users with a series of therapeutic exercises through structured text, audio, or/and video content (Vowels, 2023). Compared to face-to-face therapy, digital health interventions show unique advantages, particularly in providing a level of anonymity and privacy (Langarizadeh et al., 2018). They may be especially helpful in addressing sensitive topics such as sexual problems, which are still widely associated with widespread shame and stigma in China (Luo et al., 2023). Previous studies have found that online interventions containing SF can effectively improve women's sexual function (Adam et al., 2020; Hucker & McCabe, 2015). However, there is limited research using online SF to intervene in sexual communication between partners.

Therefore, we developed eleven animation videos to guide participants in taking part in online SF exercises without therapist contact. To our knowledge, this is the first semi-randomized controlled study testing the effect of online SF on sexual communication among non-clinical partners without combining other intervention measures. Based on the findings of Vowels (2023), we hypothesized that SF would enhance sexual communication, including participants' SSD during sex, their reporting of their partner's SSD during sex, and PSST (Hypothesis 4, H4).

### ***The present study***

Overall, the present study focused on two forms of sexual communication (during-sex SSD and PSST) and the immediate consequences and potential barriers of sexual communication among Chinese heterosexual partners. We also explored the associations of these constructs related to sexual communication with sexual function,



sexual and relational satisfaction, as well as intimacy. Additionally, this research contributes to the field of sexual communication and therapy by examining the impact of online-delivered animated SF exercises on enhancing sexual communication.

## Method

### Participants

The sample consisted of 42 Chinese heterosexual couples. The data are part of a longitudinal study with three waves and were taken from the first and second waves. Other results from the larger study have been published (Huang et al., 2024). Individuals in relationships were recruited through the screening survey first on two Chinese online research platforms: Wenjuanxing (<https://www.wjx.cn/>) and Credamo (<https://www.credamo.com>), then this person shared a recruitment invitation with their partner so that they could decide whether to join the intervention. In total, 3282 individuals were contacted for screening, and 42 couples proceeded to the Pre-test and intervention stage, with 18 pairs allocated to the experimental group and 24 pairs to the control group. No participants dropped out at the post-test. Informed consent was obtained from all participants. Research plans for data collections were approved by the Institutional Review Board at New York University Shanghai (2021–036).

Our inclusion criteria were: adults aged over 18; currently in a heterosexual relationship and in the last six months having had sex with their partner at least one time; willing to enhance their relationship and sexual satisfaction; not currently visiting a psychotherapist or taking medication because of mental health concerns. We also excluded participants who were experiencing physical abuse in the current relationship. Individuals were not screened based on childhood experiences of physical or sexual abuse.

The average age of the participants was 26.23 years ( $SD=4.60$ ; women: 25.57 years,  $SD=4.30$ , range 19–35; men: 26.88 years,  $SD=4.84$ , range 19–38). Participants' relationship length ranged from less than one year to ten years ( $M=3.16$  years,  $SD=2.70$ ), and the total number of sexual partners ranged from one to six ( $M=2.06$ ,  $SD=1.07$ ). Out of all participants, 59.5% ( $n=50$ ) were dating, and 40.5% ( $n=34$ ) were married. As for education level, 22.6% ( $n=19$ ) had no more than a college diploma, 70.2% ( $n=59$ ) had a bachelor's degree, and 7.1% ( $n=6$ ) had a master's degree.

### Design

The study employed a semi-randomized control design, with the experimental group being recruited first. All participants filled out a pre-test first. They were then assigned to either the experimental group, which started the intervention right away, or the control group, which had a five-week waiting period. After five weeks, both groups filled out the post-test questionnaire. See Figure 1 for the design and timeline of the study.

### Intervention

During the intervention, each couple was added to a separate WeChat group chat with the investigator, who then sent out instructions, animated videos, and reminders



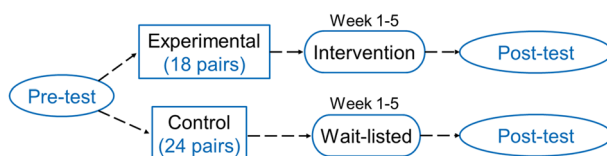
in the group chat. These contacts were not part of the intervention; instead, all interventions were practiced by the couples themselves. All couples followed the same exercise schedule, which lasted for approximately 2–4 hours per week, 5 weeks in total. Once participants completed each exercise, they reported to the investigator and responded to a brief question: “On a scale from 1 (*extremely uncomfortable*) to 7 (*extremely comfortable*), how comfortable did you feel while doing the exercise?” This question was used to track their progress and was not included in the statistical analysis. As previously indicated, the final stage of the exercises involves instructions on sexual communication, such as “take your partner’s hands and lead them to areas you wish to be touched” and “communicate with your partner about what frequency and pressure of the stimulation is pleasurable for you.” Exercise schedule and details of each exercise can be seen [supplementary materials](#).

## Instruments

Both Pre-test and Post-test contained the same questions, except that Pre-test also collected participants’ demographic information. The post-test data in this study only utilized the portion relevant to sexual communication to examine the intervention effect. All questions were asked in Chinese. The original English measures were translated into Chinese by the authors using back-translation except for the premature ejaculation measure.

## Variables related to sexual communication

The measures of variables related to sexual communication were specifically created for the present study using an event-based approach, which allows for precise assessment of dyadic sexual interactions between partners and introduces very little memory bias, thereby providing a more accurate understanding of the dynamics within the relationship. Participants were asked if the following ten sexual behaviors occurred during their last sexual event with their partner: genital stimulation by partner, stimulating partner’s genitals, stimulating own genitals, nipples stimulation by partner, stimulating partner’s nipples, stimulating own nipples, receiving oral sex, giving oral sex, vaginal intercourse, and anal intercourse. If a sexual behavior occurred, participants further indicated whether the behavior happened “after I expressed (*verbally or non-verbally*) that I wanted to” (except for two masturbation behaviors) or “I/he/she initiated it”. If a sexual behavior did not occur, participants indicated whether they actually would have wanted to engage in it, those who would have wanted to engage in the behavior were asked if they expressed their desire to their partner (except for two masturbation behaviors); those who would not have wanted to engage in the



**Figure 1.** Study design and timeline.

behavior, or actually wanted to engage but did not express their desire were asked if they considered participation (or expressing the desire) in this sexual behavior inappropriate for their own or their partner's gender roles (except for two masturbation behaviors). Additionally, participants who actually wanted to engage in the behavior but did not express their desire were also asked if they dared to express their desire. The [Appendix 1](#) presents the logic and options for these questions, using receiving oral sex as an example.

Participants' responses to these questions were used to calculate summary variables to measure during-sex SSD, as well as the immediate consequences and barriers of SSD. Before calculating, we conducted a Kappa test on the consistency of the sexual behaviors reported by the two persons in a pair. The free-marginal kappa ranged from .76 to 1.00 (see [Table 1](#)), suggesting high levels of consistency (Fleiss, 1981).

**Sexual communication.** During-sex SSD measures consisted of two dichotomous and one summary variable. Participants were asked to choose “Yes” or “No” to indicate whether they expressed their desires to their partner (individual SSD) and whether their partner expressed their desires to them (reported partner's SSD) during their latest sexual event. “Yes” was coded as 1, and “No” was coded as 0. Another summary variable, termed “initiated,” was created to capture nonverbal during-sex SSD, representing the number of times participants initiated a sexual behavior, ranging from 0 to 5 (theoretical range; for example, if a participant reports initiating three out of the five sexual activities—stimulating partner's genitals, stimulating own genitals, stimulating partner's nipples, stimulating own nipples, or giving oral sex—the participant is assigned 3; same below). An additional dichotomous item was used to measure PSST. Participants were asked to choose “Yes” or “No” to indicate whether they talked about the sex immediately after their last sexual event. “Yes” was coded as 1, and “No” was coded as 0.

**Immediate consequences of SSD.** Two summary variables captured the immediate consequences of SSD, termed “Expressed but rejected” and “Expressed and satisfied,” separately representing the number of times participants expressed a desire to engage in a sexual behavior and consequently the behavior did not occur or occurred, ranging from 0 to 8.

**Table 1.** Consistency in reporting sexual behavior between men and women (n=42).

Sexual behaviors	YES (M)		NO (M)		Free-marginal kappa	95% CI
	YES (W)	NO (W)	YES (W)	NO (W)		
Stimulating male genital	35	5	0	2	0.76	[0.56, 0.96]
Stimulating female genital	39	1	1	1	0.91	[0.77, 1.00]
Stimulating male nipples	26	5	2	9	0.67	[0.44, 0.89]
Stimulating female nipples	37	0	5	0	0.76	[0.56, 0.96]
Male reception of oral sex	30	0	0	12	1.00	[1.00, 1.00]
Female reception of oral sex	26	1	2	13	0.86	[0.70, 1.00]
Vaginal intercourse	40	0	1	1	0.95	[0.86, 1.00]
Anal intercourse	7	1	2	32	0.86	[0.70, 1.00]

Note. YES (M) indicates that male participants reported the corresponding sexual behavior occurred; YES (W) indicates that female participants reported the corresponding sexual behavior occurred; NO (M) indicates that male participants reported the corresponding sexual behavior did not occur; NO (W) indicates that female participants reported the corresponding sexual behavior did not occur.

**Reasons for non-disclosure.** Three summary variables captured reasons why couples refuse during-sex SSD. The first, termed “Afraid to express,” represents the number of times participants afraid to express their actual desire for sexual behavior to their partner, ranging from 0 to 10. The other two variables, “Inappropriate for partner’s gender role” and “Inappropriate for my gender role,” represent the number of times participants believed that participating (or expressing the desire to participate) in a certain sexual behavior did not align with their partner’s or their own gender roles separately, ranging from 0 to 8.

### **Sexual and relational outcomes**

**Relationship satisfaction.** We used the Relationship Assessment Scale to measure relationship satisfaction between the couple (Hendrick, 1988). It is a 7-item scale and participants were asked to rate items such as “*How well does your partner meet your needs?*” on a scale ranging from 1 (low satisfaction) to 5 (high satisfaction). The items were summed to yield a relationship satisfaction rating, with higher scores reflecting a higher relationship satisfaction ( $\alpha = .83$ ).

**Intimacy.** Personal Assessment of Intimacy in Relationships (Schaefer & Olson, 1981), a 36-item measure to assess relationship intimacy. An example item is “*My partner helps me clarify my thoughts.*” Participants answered each item on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items were summed to yield an intimacy rating, with higher scores reflecting a higher intimacy ( $\alpha = .91$ ).

**Sexual satisfaction.** One item, “*Think about last time you had sex with your partner, to what extent did you enjoy this event?*”, was used to assess event-based sexual satisfaction, and participants answered this item on a 7-point scale ranging from 1 (not enjoyable at all) to 7 (very enjoyable). Additionally, the Global Measure of Sexual Satisfaction (Lawrance & Byers, 1992) was used to assess general sexual satisfaction. The stem is: “*Overall, how would you describe your sexual relationship with your partner?*” Participants rated their sex life on five 7-point dimensions: Good-Bad, Pleasant-Unpleasant, Positive-Negative, Satisfying-Unsatisfying, Valuable-Worthless. The five items were summed to yield a sexual satisfaction rating, ranging from 5 to 35, with higher scores indicating higher sexual satisfaction ( $\alpha = .93$ ).

**Sexual function.** International Index of Erectile Function Questionnaire-5 (Rosen et al., 1999) was used to measure male erectile function. Responses are recorded on a 5-point scale, and the total scores ranged from 5 to 25, with higher scores reflecting higher levels of erectile function ( $\alpha = .90$ ). To assess ejaculation function, we employed the Chinese version (Niu et al., 2023) of the Checklist for Early Ejaculation Symptoms (Jern et al., 2013). Responses are recorded on a 5-point scale, and the total scores ranged from 5 to 25, with higher scores reflecting lower levels of ejaculation control ( $\alpha = .72$ ).

To measure female sexual function, we used the Female Sexual Function Index (Rosen et al., 2000), including the subscales of Desire, Arousal, Lubrication, Orgasm, Satisfaction, and Pain. Responses were recorded on a 5-point scale, and the total

scores ranged from 2 to 36, with higher scores reflecting higher levels of sexual function ( $\alpha = .94$ ).

### ***Statistical analyses***

Eight participants were missing information on relational and sexual outcomes due to a technical mistake. These missing values were imputed using the Expectation Maximization procedure prior to analyses. Due to the different ranges of the summary variables, we used proportions instead of counts in analyses. The intervention effect test was performed using R 4.3.1, while other analyses were conducted using SPSS 26. We began by conducting descriptive statistics and correlation analyses for the variables related to sexual communication and examining their correlations with demographic variables. Subsequently, we utilized chi-square tests and paired samples *t*-tests to examine gender differences in the variables related to sexual communication. Then, we analyzed the relationships between the variables related to sexual communication and relational and sexual outcomes. Finally, we performed the mixed-effects model to examine whether the intervention significantly improved participants' sexual communication.

## **Results**

### ***Preliminary analyses***

Descriptive statistics showed that 46 (54.8%) participants reported that they disclosed what they wanted to their partner, 45 (53.6%) participants reported that their partner disclosed what they wanted, and 36 (42.9%) participants reported they talked about sex with their partner after sexual activity.

Correlations between demographic variables and the variables related to sexual communication (see Table 2) showed that female participants with more sexual partners were less likely to disclose their sexual desires during sex and to engage in PSST, and younger male participants were more likely to believe sexual behaviors were inappropriate for their partner's gender role.

### ***Associations and gender differences in sexual communication, immediate consequences of SSD, and reasons for non-disclosure***

As presented in Table 2, for both men and women, individual SSD, reported partner's SSD, and PSST were positively correlated with each other. Participants who expressed their desires to their partner were more likely to report that their partners also expressed desires and were more likely to engage in PSST with their partner, which supported H1. For men, those who expressed their desires to their partner were less likely to experience expressing a desire for a sexual behavior that did not eventually occur. For women, those who initiated sexual behavior themselves were more likely to expressed their desires to their partner and engaging in PSST. Additionally, within couples, during-sex SSD and PSST were positively associated between men and women.

**Table 2.** Correlations among the variables related to sexual communication, age, relationship length, and the number of total sexual partners in male and female samples.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Individual SSD	.52***	.57***	.62***	.33*	-.016	.20	-.023	-.022	-.029	.00	.13	-.035*
2. Reported partner's SSD	.34*	.30	.59***	.29	-.013	.32*	-.005	-.021	-.024	.08	.19	-.006
3. Post-sex sexual talk	.38*	.43**	.73***	.46***	-.012	-.007	-.010	-.025	-.026	-.005	.05	-.031*
4. Initiated	.02	-.006	.20	.31*	-.012	-.021	-.014	-.030	-.026	-.010	.03	-.017
5. Expressed but rejected	-.035*	-.016	-.021	-.030	.15	-.009	.61***	.04	-.003	-.012	-.025	-.005
6. Expressed and satisfied	.00	.07	-.014	-.052***	.03	.27	-.014	-.014	-.014	-.014	.17	.12
7. Afraid to express	-.011	-.005	-.011	-.033*	-.010	.02	-.014	.01	-.005	.13	-.015	-.012
8. Inappropriate for my GR	-.001	.09	-.001	-.032*	-.020	-.009	.57***	.57***	.82***	-.016	-.013	.01
9. Inappropriate for partner's GR	.01	.00	.03	-.031*	-.022	.01	.72***	.80***	.73***	-.022	-.013	.14
10. Age	.11	.03	-.012	.01	.38*	-.005	-.009	-.023	-.033*	–	.55***	-.021
11. Relationship length	.30	.01	.06	.18	.10	-.019	.00	-.003	-.011	.44**	–	.07
12. Number of sexual partners	-.025	-.013	-.016	.14	-.003	.10	-.023	-.022	-.018	.10	-.014	–

*Note.* SSD = sexual self-disclosure; GR = gender role. Correlations for men are below the diagonal and correlations for women are above the diagonal. The diagonal values indicate the correlations within the pair.

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

**Table 3.** Descriptive statistics and gender differences in summary sexual communication variables.

Variables	Men (n=42)		Women (n=42)		t-value	Cohen's d
	Mean (%)	SD (%)	Mean (%)	SD (%)		
Initiated	60.48	22.73	65.08	34.49	-0.86	-0.27
Expressed but rejected	6.55	13.02	2.68	6.50	1.84	0.57
Expressed and satisfied	18.75	17.73	9.52	19.29	2.67*	0.83
Afraid to express	1.19	3.95	2.62	5.87	-1.23	-0.38
Inappropriate for my gender role	4.76	9.54	3.27	10.35	1.04	0.33
Inappropriate for partner's gender role	5.06	11.73	1.79	6.52	2.55*	0.80

Note. \* $p < .05$ .

To examine gender differences, we conducted chi-square tests on individual SSD and reported partner's SSD, and paired samples  $t$ -tests on summary variables. The results of chi-square tests showed no gender differences, rejecting H2. The results of paired samples  $t$ -tests (see Table 3) showed that men were more likely than women to experience a sexual behavior occurring after expressing their desire to engage in it, and men were more likely than women to choose not to express a desire to engage in a specific sexual behavior because they believed it did not align with their partner's gender role.

Additionally, paired samples  $t$ -tests were also used to compare the gender differences in the frequency of the belief that "the sexual behavior is inappropriate for male gender roles" and "the sexual behavior is inappropriate for female gender roles" as barriers to sexual activity. The results indicated that men ( $4.76\% \pm 9.54\%$ ) reported more instances of sexual behaviors being inappropriate for themselves compared to women reporting sexual behaviors being inappropriate for their partners ( $1.79\% \pm 6.52\%$ ),  $t(41) = 2.50$ ,  $p = .017$ , Cohen's  $d = 0.78$ . The other comparisons were not significant.

### ***Relationships between sexual communication, immediate consequences of SSD, reasons for non-disclosure, and sexual and relationship outcomes***

Table 4 presents the correlations among variables related to sexual communication and relational and sexual outcomes for male and female samples, partially supporting H3. For men, those who expressed their sexual preferences to their partner during sex and engaged in PSST reported higher event-based sexual satisfaction, while those who were afraid to express their actual desire for sexual behavior to their partner reported lower event-based sexual satisfaction. Interestingly, men who believed that more types of sexual behaviors were inappropriate for their gender role reported higher global sexual satisfaction. Additionally, those who expressed desire for sexual behaviors but ultimately did not realize them reported lower intimacy. For women, those who initiated more sexual behaviors reported higher relationship satisfaction and event-based sexual satisfaction. Women who engaged in PSST also reported greater event-based sexual satisfaction.

For male sexual function, men who believed that more types of sexual behaviors were inappropriate for their and their partner's gender roles reported worse erectile

**Table 4.** Correlations between variables related to sexual communication and relational as well as sexual outcomes among the male and female samples.

Variables	ISSD	RPSD	PSST	Initiated	EBR	EAS	AFE	IPGR	IMGR
Male sample (n = 42)									
Relationship satisfaction	-.03	.06	.02	.16	-.029	-.017	.12	.18	.19
Intimacy	.09	.04	-.02	.21	-.047**	.11	-.026	-.07	-.03
Event-based sexual satisfaction	.35*	.14	.31*	.29	-.025	-.025	-.044**	-.029	-.020
Global sexual satisfaction	-.02	-.014	.01	.20	-.021	-.027	-.012	.14	.34*
IIEF-5	-.02	-.011	-.030	.18	-.010	.08	-.026	-.041**	-.036*
CHEES	-.03	.16	.19	.00	.17	-.014	.10	.14	.01
Relationship satisfaction	.12	.00	.05	.44**	.06	-.07	-.014	.14	.13
Intimacy	.04	.00	-.00	.25	.08	.08	-.006	-.09	-.08
Event-based sexual satisfaction	.27	.22	.32*	.36*	-.005	.00	-.09	.00	-.07
Global sexual satisfaction	.16	-.001	.10	.21	.10	-.08	-.00	.08	.06
FSFI-Total	.46**	.33*	.25	.47**	.06	.09	-.03	-.028	-.031*
FSFI-Desire	.51***	.29	.36*	.40**	.00	.18	-.012	-.014	-.010
FSFI-Lubrication	.49**	.40**	.35*	.28	-.004	.09	-.06	-.07	-.06
FSFI-Arousal	.26	.18	.13	.30	.11	-.09	.14	-.050***	-.051***
FSFI-Orgasm	.34*	.28	.15	.31*	.07	.16	-.010	-.034*	-.043**
FSFI-Satisfaction	.27	.20	.14	.52***	.08	.10	-.09	-.00	-.03
FSFI-Pain	.21	.11	.01	.34*	.05	-.06	.13	-.018	-.022

Note. ISSD = individual sexual self-disclosure; RPSD = reported partner sexual self-disclosure; PSST = post-sex sexual talk; EBR = Expressed but rejected; EAS = Expressed and satisfied; AFE = Afraid to express; IPGR = Inappropriate for partner's gender role; IMGR = Inappropriate for my gender role; IIEF-5 = International Index of Erectile Function-5; CHEES = Checklist for Early Ejaculation Symptoms; FSFI-Total = The total score of Female Sexual Function Index (FSFI); FSFI-Desire = The subscale of Desire in FSFI; FSFI-Arousal = The subscale of Arousal in FSFI; FSFI-Lubrication = The subscale of Lubrication in FSFI; FSFI-Orgasm = The subscale of Orgasm in FSFI; FSFI-Satisfaction = The subscale of Satisfaction in FSFI; FSFI-Pain = The subscale of Pain in FSFI.

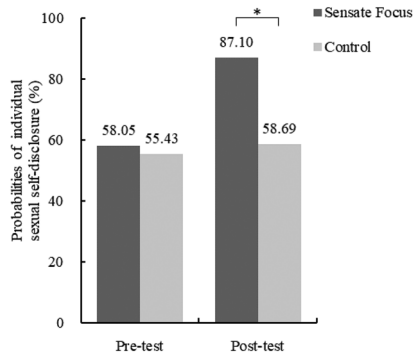
\*  $p < .05$ .

\*\*  $p < .01$ .

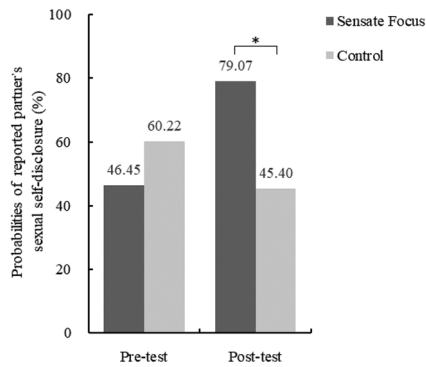
\*\*\*  $p < .001$ .



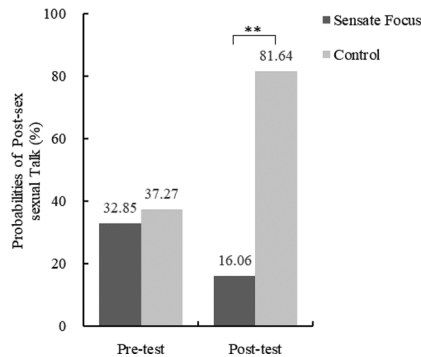
## a. Individual Sexual Self-disclosure



## b. Reported Partner's Sexual Self-disclosure



## c. Post-sex Sexual Talk



**Figure 2.** The intervention effect on sexual communication.

function. For female sexual function, women who disclosed their desires to their partner reported better overall sexual function and higher levels of desire, arousal, and orgasm. Similarly, those who reported their partners disclosed their desires also experienced better overall sexual function and arousal. Additionally, women who

engaged in PSST reported higher levels of desire and arousal. Women who initiated more sexual behaviors reported better overall sexual function, and higher levels of desire, orgasm, and satisfaction, as well as a lower level of pain. However, women who believed more sexual behaviors were inappropriate for their partner's or their own gender roles reported lower levels of lubrication and orgasm.

### ***The intervention effect of Sensate Focus on sexual communication***

For individual SSD, the interaction of intervention and time was significant ( $b = -1.45$ ,  $OR = 0.23$ , 95% CI [0.05, 1.18],  $p = .039$ , one-tailed). Simple effects analysis (see Figure 2(a)) indicated that SF (58.05%) and control groups (55.43%) had no significant difference at pre-test ( $b = 0.11$ ,  $SE = 0.69$ ,  $p = .88$ ). However, participants in the SF group (87.10%) were more likely to disclose what they want to do than those in the control group (58.69%) at post-test ( $b = 1.56$ ,  $SE = 0.78$ ,  $p = .046$ ), supporting H4. For reported partner's SSD, the interaction of intervention and time was also significant ( $b = -2.07$ ,  $OR = 0.13$ , 95% CI [0.03, 0.56],  $p = .003$ , one-tailed). Simple effects analysis (see Figure 2(b)) indicated that SF (46.45%) and control groups (60.22%) had no significant difference at pre-test ( $b = -0.56$ ,  $SE = 0.59$ ,  $p = .34$ ). However, participants in the SF group (79.07%) were more likely to report their partners' SSD than those in the control group (45.40%) at post-test ( $b = 1.51$ ,  $SE = 0.65$ ,  $p = .021$ ), supporting H4. For PSST, the interaction of intervention and time was also significant ( $b = 2.95$ ,  $OR = 19.15$ , 95% CI [2.33, 157.14],  $p = .003$ , one-tailed). Simple effects analysis (see Figure 2(c)) indicated that SF (32.85%) and control groups (37.27%) had no significant difference at pre-test ( $b = 0.19$ ,  $SE = 1.11$ ,  $p = .86$ ). However, participants in the SF group (16.06%) were less likely to talk about sex after the sexual activity than those in the control group (81.64%) at post-test ( $b = 3.15$ ,  $SE = 1.27$ ,  $p = .01$ ), contradicting H4. For another sexual communication summary variable "Initiated", the interaction effect of intervention and time points was non-significant.

## **Discussion**

The present study explored sexual communication between partners and its relational and sexual outcomes among Chinese heterosexual couples. Also, for the first time, this study employed a controlled experiment to examine the impact of SF alone, without combining it with other therapies, on sexual communication. SSD was found to be reciprocal with no gender differences. Nevertheless, men and women may have distinct reasons for non-disclosure and encounter different immediate consequences. Sexual communication was associated with intimacy, relational and sexual satisfaction, as well as sexual function, with different patterns based on gender. Online SF exercises facilitated during-sex SSD but reduced PSST. The potential explanations of these findings, research limitations, and practical implications were discussed.

In keeping with Hypothesis 1, individuals who reported that their partners disclosed sexual preferences were more likely to engage in SSD and PSST themselves. Furthermore, the more one partner engaged in during-sex SSD, the more the other partner did as well. These results suggest that SSD of one partner facilitates the disclosure of the other, indicating reciprocity of self-disclosure in sexual communication

during sex (Herold & Way, 1988; Lopez Portillo, 2019). However, our finding did not support the suggestion proposed by Tang et al. (2013) or our H2. The present study found no gender differences in individuals' disclosure of their own sexual desires and interests, nor in reporting of their partners' SSD. Aligning with previous research (Brown & Weigel, 2018; Sukhanova et al., 2022), our results support the gender similarities hypothesis (Hyde, 2005). Chiou and Wan (2006) found that male adolescents exhibited greater breadth and depth in SSD compared to their female counterparts in Taiwan. One possible explanation is that our measurement of SSD employed a binary approach, which may not sensitive enough to detect subtler gender differences in SSD.

We found that approximately half of the participants engaged in during-sex SSD or PSST, meaning that about half of the individuals did not participate in any sexual communication with their partners. This suggests that Chinese heterosexual couples face difficulties and barriers in discussing sexual desires and preferences with each other, similar to Western societies (Rehman et al., 2019). Lack of sexual communication aligns with traditional heterosexual sexual scripts, which commonly prioritize silence as the default mode during sexual episodes (Gagnon & Simon, 1973; Willis et al., 2020). Expressing particular sexual preferences and desires might be perceived as a sign that partners struggle to intuitively understand each other's wants and needs, a characteristic often associated with good sexual partners (Séguin, 2024). Individuals may refrain from communicating sexual preferences to avoid being perceived as inadequate sexual partners and avoid communicating to their partner that they may be inadequate.

The positive aspect is that our results were similar to previous findings, where disclosure of sexual secrets mostly resulted in positive outcomes (Fox et al., 2022). We found that men who chose to disclose their sexual preferences to their partners were unlikely to be rejected afterward. SSD seldom leads to the rejection that disclosers worry about (at least for men), extending the prediction bias in interpersonal interactions (Flynn & Lake, 2008) to the context of sexual communication. However, given the vulnerability of during-sex SSD, the recipient may perceive the disclosure as a reminder that they are not performing well. Future research could use larger samples and apply the Actor-Partner Interdependence Model to further investigate the potential impact of during-sex SSD on partners.

Particularly men were more likely than women to achieve their desired sexual activities after disclosing their sexual preferences. This tendency may be attributed to women being better at learning from their partner's SSD than men. SSD may be more effective in making women aware of their partner's sexual preferences than it is for men (MacNeil & Byers, 2009). From another perspective, this may also reflect the influence of Chinese Confucian culture and traditional heterosexual sexual scripts on women. These cultural norms often emphasize women's compliance with their partners in sexual activities and prioritize their partners' sexual needs and pleasure over their own (Satinsky & Jozkowski, 2015; Zhan, 1996). Furthermore, men were more likely than women to refrain from disclosing their sexual preferences during sex due to the belief that certain sexual behaviors diverge from their partner's or their own gender roles. In other words, compared to women, men's during-sex SSD is more constrained by rigid gender role attitudes. Men adhere strict standards regarding which sexual activities are suitable for their partners and for themselves, thereby hindering their engagement in SSD and sexual activities. For women, gender role

norms were not a significant barrier to their SSD, especially considering that women held more relaxed standards than men regarding which sexual behaviors were suitable for men. However, this may also reflect women's greater belief in traditional sexual expectations that men should always desire and consent to sex (Buday, 2013).

The relationship between sexual communication and sexual and relational outcomes in the present study was mixed, partially supporting Hypothesis 3. In contrast to previous research (Brown & Weigel, 2018; Øverup et al., 2024), the positive relationship between sexual communication and global sexual satisfaction was not observed in this study. Communication during a specific sexual event may only have a weak association with general sexual satisfaction over a period of time. However, participants who engaged in during-sex SSD and PSST reported greater event-based sexual satisfaction, similar to diary studies that have found increased sexual satisfaction on days with more communication (Leistner et al., 2024). Expressing sexual preferences or initiating sexual activities non-verbally during sex increases the likelihood of fulfilling desires, thereby enhancing sexual satisfaction, consistent with the instrumental pathway (MacNeil & Byers, 2009). Previous examinations of the instrumental pathway have primarily conceptualized sexual communication as verbal communication (MacNeil & Byers, 2005, 2009), while our results provide evidence for its applicability also to non-verbal sexual communication during sex.

The associations between sexual communication and relationship satisfaction, as well as sexual function, may be stronger in women than in men. Specifically, women (but not men) who initiated sexual behaviors during sex reported higher relationship satisfaction than those who did not initiate. It may be because relationship satisfaction is a more significant contributor to women engaging in sexual initiation compared to men. Previous research on sexual motivation has also found that women are more likely to engage in sexual activities for emotional reasons, such as expressing love, while men are more likely to do so for physical reasons, such as satisfying sexual desires (Meston & Buss, 2007). Additionally, sexual communication both during sex and in nonsexual contexts was associated with better sexual function in women, but not in men. Jones et al. (2018) reported a similar finding with the researchers finding that sexual communication predicted orgasm frequency only among women.

Associations between reasons for non-disclosure and sexual function and satisfaction were also observed. Individuals inhibited by rigid gender role attitudes from engaging in sexual activities or expressing sexual preferences reported poorer sexual function. It could be that individuals constrained by gender roles are more likely to observe and evaluate their own and their partners' performance during sex from a bystander's perspective. The shift in attentional focus may impede effective processing of erotic stimuli, leading to sexual dysfunction (Barlow, 1986; Clarke et al., 2015). In a specific sexual event, men who did not dare to disclose their sexual desires to their partner lost the opportunity to fulfill their desires and may feel distress from suppressing their thoughts (Omarzu, 2000), making it less likely for them to enjoy the sexual experience. However, men who refrained from expressing their desires due to beliefs that sexual behaviors were not appropriate for their gender roles reported higher sexual satisfaction. This may be because they are more likely to engage in sexual encounters that adhere to traditional gender roles and sexual scripts, which typically center on male sexual pleasure (Harvey et al., 2023). This is particularly

relevant when considering the influence of traditional Confucian values in China, which prioritize male sexual satisfaction in sexual interactions (Chi et al., 2015).

The results concerning the intervention partially supported Hypothesis 4. The online SF exercises significantly increased individual and reports of partner's SSD during sex. Previous study found that an online SF application with psychoeducation and communication sessions improved sexual communication among partners (Vowels, 2023). However, the research potentially confounding the effects of SF with other therapeutic approaches. Our findings clarify this point, indicating that SF exercises on their own can still contribute to SSD. In the last stage of SF exercises, partners are instructed to communicate to each other the ways they enjoy being touched and stimulated. These disclosures, which may typically make partners feel awkward or uncomfortable (Lutmer & Walker, 2024), are unlikely to occur frequently in natural sexual settings. However, SF exercises provide a practical opportunity for couples to engage in such communication (Regev, 2004). The new communication skills acquired by partners in therapy may ultimately transfer to their routine sexual activities, enabling them to more comfortably and frequently express their sexual desires and interests to each other. Alternatively, SF requires practitioners to focus on their own sensations rather than how their performance appears to their partner (Avery-Clark et al., 2019). It may promote greater emphasis on personal feelings and needs, thereby making individuals more comfortable in disclosing their sexual preferences without excessive concern about their partner's response and evaluations.

Interestingly, contrary to our H4, SF decreased couples' engagement in PSST. This is understandable given that the communication exercises in SF were conducted in a sexual context, and SF also promoted sexual communication during sex. As a result, partners may have engaged in sufficient sexual communication during the sexual activity, with their communication needs being fulfilled in the process, thereby eliminating the necessity for similar discussions afterward (Lutmer & Walker, 2024). Another potential explanation is based on the post sex disclosures model (Denes, 2018), where individuals who experience orgasms during sexual activity are more likely to disclose positive feelings and thoughts about their relationship to their partners after sex compared to those who do not experience orgasms. We speculate that SF exercises improved individuals' orgasms (Huang et al., 2024), thereby leading to more general positive relational disclosures rather than specifically discussing the just-completed sexual activity. However, these explanations are speculative and require further empirical research to examine why SF reduced PSST. Overall, our findings extend beyond previous non-Western SF intervention studies, which demonstrated improvements in sexual function and satisfaction (Hamdollahi et al., 2021; Huang et al., 2024; Tajik et al., 2022; Tajik et al., 2023), by highlighting the potential of SF interventions to enhance sexual communication between partners.

### ***Limitations and future research directions***

The primary limitation of the present study lies in its measurement methodology. First, we employed binary measures to assess sexual communication. In previous research, measures of sexual communication have typically required participants to respond globally, based on the overall situation (Byers & Demmons, 1999; Catania,

2013). There has not been research utilizing event-based measurement for sexual communication. However, the measures of this study have limited capacity to fully capture the depth and breadth of information. Additionally, we did not include measures of how couples disclosed their sexual dislikes, which may be more challenging to communicate to each other compared to disclosing sexual likes, and may have stronger associations with sexual and relational outcomes (MacNeil & Byers, 2009; Séguin, 2024). Furthermore, as women are often expected to assume communal roles (Proudfoot & Kay, 2023), and collectivist cultures emphasize interpersonal harmony more than individualist cultures (Huang, 2016), the disclosure of sexual dislike may exhibit gender and cultural differences. Therefore, future research could consider employing more comprehensive and systematic instruments.

Second, we created summary variables for the purpose of this study. Although they can further assist researchers in understanding the immediate outcomes of disclosure and reasons for non-disclosure, their measurement properties still need to be tested in more studies. Third, the measurement of sexual communication variables was event-based, while the measurement of sexual and relational outcomes was mostly based on the overall situation of the couple. Thus, the results of the present study can only reveal correlation and cannot infer the directionality of the relationship. Future research could explore causal effects by employing experimental methods.

In addition to the limitations of measurement, our sample size was small. Due to problems in recruiting a sufficient number of participants, the study was likely underpowered. The results of the present study may not be robust and require replication in future research. Moreover, the participants we recruited were mixed-gender couples, relatively young, and well-educated. As individuals age, they typically gain more experience in intimate relationships, which could influence the relationship between sexual communication and sexual or relational outcomes (Falgares et al., 2024; Mallory, 2022). Consequently, the homogeneity of the sample makes it difficult to generalize the results of this study to the entire Chinese population, and further examination is needed among older couples, those with lower levels of education, sexual minority groups, as well as clinical samples.

Despite these limitations, we believe that the current study makes a meaningful contribution to research on sexual communication between partners. First, we considered sexual communication both during and after sex, addressing a bias in previous research towards sexual communication in non-sexual contexts (Séguin, 2024) and expanding the application of the two-pathway model to different forms of sexual communication. Second, our study employed a semi-randomized controlled design to test the intervention effect of online SF exercises on sexual communication, making it one of the first well-designed intervention studies in the area of sexual communication. The online-delivered animated sexual therapy also makes it more accessible and efficient for a wider range of couples with relevant problems to seek help. Considering the demonstrated efficacy of integrating SF with other therapies such as mindfulness or cognitive-behavioral therapy in addressing sexual dysfunction and satisfaction (Hucker & McCabe, 2015; Kemerer et al., 2023), future research could embed the online SF employed in this study within other therapeutic frameworks to examine whether combined therapy is more effective and robust in enhancing effective sexual communication among partners. Additionally, our study focused on sexual

pleasure in a non-Western cultural context, an essential component of sexual health (World Health Organization (WHO), 2021) and an underexplored field in China. Therefore, we present a new perspective for relevant research in China.

### ***Practice implications***

In China, resources and accessibility to sexual psychological interventions are extremely limited, and many couples experiencing sexual communication difficulties are unwilling to seek face-to-face assistance from sex therapy experts (So & Cheung, 2005). Our study suggests that online self-help intervention programs for sexual communication can help break this impasse. SF, widely used as a sex therapy in Western societies, was tested for its effectiveness in improving sexual communication among Chinese heterosexual couples in this study. Thus, partners troubled by sexual communication issues can benefit from such intervention programs. Given Confucian culture's critique of sexual pleasure (Parish et al., 2007), openly discussing sexual pleasure may be challenging or unacceptable for some Chinese couples. To enhance cultural adaptability, future SF intervention programs in China could frame communication as a means of offering encouragement to one's partner or providing constructive feedback to help them better understand how to engage in sexual intercourse (Hall, 2020).

In addition to SF, our research provides insights for the development of other intervention programs aimed at enhancing sexual communication between partners. Previous sexual communication intervention programs have often focused on improving communication skills (Rashedi et al., 2022; Vowels, 2023), overlooking the importance of ideological factors such as traditional sexual scripts and gender role attitudes. We found that rigid gender role attitudes are significant barriers to SSD. This suggests that sexual health researchers may consider promoting sexual communication by shaping more egalitarian gender ideologies among couples.

### ***Conclusion***

Sexual communication is crucial for maintaining satisfying intimate relationships, yet disclosing sexual preferences between partners can be challenging. During-sex SSD exhibits reciprocity and gender similarity among Chinese heterosexual couples. However, male disclosure is more likely to yield positive outcomes but it is also more susceptible to being inhibited due to gender role beliefs. Sexual communication was closely linked to sexual satisfaction, as well as to female sexual function and relationship satisfaction. Rigid gender role attitudes emerged as a key barrier to sexual communication, further leading to poor sexual function. Additionally, we found that online SF therapy facilitated during-sex SSD but reduced PSST. These findings are essential for understanding sexual communication among Chinese couples and for promoting their relational and sexual well-being

### ***Disclosure statement***

No potential conflict of interest was reported by the author(s).



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## Notes on contributors

**Ziyi Li** is a PhD student in the New York University Shanghai—East China Normal University joint graduate training program. Her research interests focus on sexual communication among couples, particularly in the area of sexual self-disclosure.

**Sijia Huang** is a first-year doctoral student in the Clinical Psychology PhD program at Rowan University. She completed her undergraduate at New York University Shanghai and master's at Columbia University Teachers College. Her research interests include sexual dysfunction, sensate focus sex therapy, couple dynamics, and sexualized violence.

**Pekka Santtila** is a Professor of Psychology at New York University Shanghai. His research is focused on human sexuality and on legal psychology. His research into human sexuality aims to understand and develop treatments for sexual dysfunctions.

## Data availability statement

The data file can be obtained from the authors.

## ORCID

Pekka Santtila  <http://orcid.org/0000-0002-0459-1309>

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## Appendix 1

### *Logic and options for the second part of sexual communication questions with receiving oral sex as an example*

