Regulate and Communicate:

Associations Between Emotion Regulation and Sexual Communication among Men with Hypoactive Sexual Desire Disorder and their Partners

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Abstract

Hypoactive Sexual Desire Disorder (HSDD) is characterized by a persistent and distressing lack of sexual desire. Affected men report lower sexual well-being and romantic partners may also experience consequences. According to the Interpersonal Emotion Regulation Model of sexual dysfunction, how couples manage their emotions in relation to sexual problems may promote or hinder sexual communication. In the first dyadic study to date of men with HSDD and their partners (n = 64 couples), we investigated associations between two emotion regulation strategies—reappraisal and suppression—and couples' communication about their sexual relationship. Participants completed measures assessing use of reappraisal and suppression about their sexual relationship, sexual communication, and sexual assertiveness. Men with HSDD who reported greater suppression also reported lower sexual assertiveness and both partners reported poorer sexual communication. Partners of men with HSDD who used greater suppression were less sexually assertive. In contrast, while reappraisal was only marginally associated with perceived quality of sexual communication, men with HSDD who employed more reappraisal were also more sexually assertive. While suppression may hinder sexual communication, reappraisal may allow men with HSDD to better assert their sexual needs. Findings may inform interventions to help couples navigate impactful emotional experiences associated with HSDD.

Keywords: Male hypoactive sexual desire disorder, couples, emotion regulation, sexual communication, sexual dysfunction

Male Hypoactive Sexual Desire Disorder (HSDD) is defined in the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*) as deficient or absent sexual thoughts or fantasies and desire for sexual activity (American Psychiatric Association, 2013). These symptoms must persist for a minimum of six months, be separate from another disorder or condition, and cause clinically significant distress as determined by a clinician with consideration for contextual factors (e.g., age, culture, personal history; American Psychiatric Association, 2013). Lack of interest in sex is a common issue affecting many men, reported by 15% of men over the past year in the National Survey of Sexual Attitudes and Lifestyles (NATSAL), a population-based study in the United Kingdom (Mitchell et al., 2013). Although other studies report that the rates of low desire in adult men range from 14% to 41% (e.g., Laumann et al., 1999; Najman et al., 2003; Fugl-Meyer & Sjögren, 1999), there are currently no established prevalence rates of HSDD that account for the DSM-5 criteria of both persistence and distress. The approximate rate may fall between 1% and 20% depending on age, country, and method of assessment (see Brotto, 2010 for a review). Affected men experience greater stress and negative affect and less self-confidence pertaining to sexual performance as compared to unaffected men (Carvalheira et al., 2014). Despite low desire being a common reason for seeking sex and couples therapy (Doss et al., 2004), men are less likely to seek treatment than women, perhaps because they find it less acceptable to do so (Bringle & Byers, 1997; Doss et al., 2003). Indeed, low desire in men is a persistent and challenging sexual difficulty to treat in couples, underscoring the importance of identifying treatment targets that can improve interventions. In the current dyadic study, we investigated whether the ways in which partners coping with HSDD manage their emotional experiences about sex were linked to their sexual communication.

Although the cause of HSDD is often unknown (Segraves & Balon, 2007) and research on the etiology of HSDD is scarce, available evidence suggests a combination of biopsychosocial factors contribute to HSDD. Biological influences, including hormonal levels and medical conditions (e.g., low testosterone), have been implicated in the development of HSDD and low sexual desire more generally (e.g., Bancroft, 2005; Lew-Starowicz & Rola, 2014). Clinical diagnoses of mental health disorders (e.g., depression and anxiety) have been linked to men's desire problems across several studies (e.g., Corona et al., 2004; Pastuszak et al., 2013; Carvalheira et al., 2014; McCabe & Connaughton, 2014). Further, while the presence of mood disorders commonly instigates declines in sexual interest (Laumann et al., 2009), low desire can also engender depressive symptoms (e.g., low self-esteem), particularly in relation to the sexual relationship. For instance, men with HSDD may experience heightened stress and concerns over their self-image, especially related to concerns about sexual performance (Corona et al., 2004; McCabe & Connaughton, 2014), which, in turn, may negatively impact their romantic relationships.

Relationship factors also have implications for the experience of HSDD for affected individuals and their partners. For instance, men are more likely to report low sexual desire when in a long-term relationship (i.e., more than 5 years) than in a shorter relationship (Carvalheira et al., 2014). Indeed, the potential for sexual dysfunction to affect both members of the couple is well-documented: partners of women with sexual interest/arousal disorder (SIAD) or genito-pelvic pain/penetration (GPP) disorder and partners of men with erectile dysfunction (ED) report poorer sexual and relationship functioning relative to partners of individuals without sexual dysfunctions (Rosen et al., 2019; Smith & Pukall, 2014; Fisher et al., 2005). Each individual's reaction to the low desire can impact their own and their partner's response to the problem. Lack

of sexual interest, for example, may cause men to avoid sexual activity in their relationship, potentially leading their partners to feel sexually undesirable. Despite the interpersonal nature of desire problems in partnered relationships, previous work focused on men with HSDD has not included both members of the couple.

One crucial determinant of sexual well-being that may be important when navigating HSDD is how couples communicate about their sexual relationship. Despite the importance of sexual communication for sexual and relationship satisfaction (e.g., Vowels & Mark, 2020), couples navigating HSDD may find it particularly challenging to engage in conversations about sexual difficulties or conflict due to the negative emotions that such topics tend to provoke (Rehman et al., 2017). In the current study, we investigated how the use of two commonly studied emotion regulation strategies, cognitive reappraisal and expressive suppression, related to sexual communication and sexual assertiveness as reported by both men with HSDD and their partners. The results may have implications for couples coping with HSDD by informing interventions used by couples and sex therapists aimed at promoting couples' sexual communication.

Sexual Communication and Sexual Assertiveness

Sexual communication refers to whether and how couples communicate about their sexual relationship, including the extent to which partners perceive their communication as positive and open (Catania, 1986). One specific aspect of sexual communication is sexual assertiveness, which is conceptualized as a person's level of comfort and directness when communicating about sex with an intimate partner (Hurlbert, 1991). Sexual communication and sexual assertiveness are each positively related to one's own and one's partner's sexual and relationship wellbeing (Greene & Faulkner, 2005; Jones et al., 2018; Leclerc et al., 2015; Apt et

al., 1993; Pierce & Hurlbert, 1999). However, romantic partners tend to avoid discussing their sexual relationship in daily life (e.g., Byers, 2011), possibly because conversations about sex tend to pose a greater threat to the self and evoke more intense negative emotions (e.g., anxiety) as compared to conversations about nonsexual topics (Rehman et al., 2017; Rehman et al., 2019). While sexual communication and assertiveness are key to navigating low desire and often targeted in treatments of sexual difficulties (Johnson & Zuccarini, 2010; Vowels & Mark, 2020), these strategies may be especially difficult to employ for couples coping with HSDD. Men with HSDD may be hesitant to communicate about their sexual needs due to the potential of experiencing negative emotions (e.g., anxiety, guilt, fear of rejection). It is also possible that some men with HSDD may simply not have any sexual needs or desires to share with their partners, thus leading them to avoid sexual conversations altogether. Indeed, couples affected by other sexual dysfunctions report a poorer quality of sexual communication relative to unaffected couples (Rosen et al., 2019; Smith & Pukall, 2014). Couples coping with HSDD may find it challenging to initiate conversations about sex or openly express their sexual needs (or lack thereof), making the ability for partners to assert their desires particularly important in ensuring their needs are being met.

In the only study to our knowledge examining sexual communication in the context of HSDD, Apt et al. (1993) found that men with HSDD whose partners reported lower levels of sexual assertiveness tended to report lower sexual desire. Such findings suggest that men with HSDD may benefit from their partners asserting their desires more directly and openly, underscoring couples' interdependence. As such, we aimed to examine factors that promote or hinder multiple dimensions of sexual communication—quality of sexual communication and sexual assertiveness— in men with HSDD and their romantic partners. Given the strong negative

emotional valence associated with coping with HSDD, an investigation of men's and romantic partners' use of emotion regulation strategies when navigating sexual topics appears promising for identifying targets of intervention.

Emotion Regulation Strategies

Emotion regulation refers to the ways in which people influence their emotional experience and expression (Gross, 1998). Coping with low desire is associated with strong negative emotions (e.g., guilt, anxiety, depression) for both partners (Dubé et al., 2019; Schreiner-Engel & Shiavi, 1986), which may make partners more reluctant to partake in conversations about sex (Rehman et al., 2019). Thus, it may be particularly important for couples coping with HSDD to successfully regulate their emotional experiences (i.e., in ways that engender open and positive sexual communication or facilitate goal-directed behaviour). While links between emotion regulation strategies and sexual communication have yet to be established, the Interpersonal Emotion Regulation Model of sexual dysfunction posits that how couples manage their emotions is a key determinant of their adjustment to sexual dysfunction (Rosen & Bergeron, 2019). Specifically, while the use of reputedly maladaptive emotion regulation strategies is thought to promote greater distress and less adaptive communication behaviours, employing more adaptive strategies is thought to help reduce negative emotion and encourage more effective sexual communication.

Cognitive reappraisal involves reinterpreting an emotionally evocative situation in a way that alters its emotional meaning or impact, such as thinking about an emotional event in a more positive way to reduce negative emotion (Gross & John, 2003). Use of reappraisal has been associated with the experience of more positive and less negative emotion (e.g., Troy et al, 2018; Xu et al., 2020), more satisfying relationships (Mazzuca et al., 2019), and enhanced memory

during emotionally provoking social interactions (Richards et al., 2003). In a study of couples navigating SIAD, greater use of reappraisal among women with SIAD was associated with fewer symptoms of depression and anxiety, and greater use of reappraisal by their male partners was linked to their own greater sexual desire, greater relationship satisfaction, lower depression and anxiety, and lower dyadic conflict (Dubé et al., 2019). Adopting a more positive view of the situation (e.g., thinking about the potential relationship benefits of sex such as intimacy as compared to the potential costs such as feelings of anxiety or guilt) may help men with HSDD and their partners mitigate distress associated with low desire and more directly and effectively communicate their sexual needs to one another.

In contrast to reappraisal, expressive suppression involves inhibiting one's emotional response to an emotion-eliciting situation, such as maintaining a neutral facial expression to hide inner feelings (Gross & John, 2003). Suppression has been linked to more negative emotion (Butler et al., 2003), poorer relationship quality (English & John, 2013; Sasaki et al., 2021), and more stressful social interactions (Chervonsky & Hunt, 2017; John & Gross, 2004). As such, people who employ greater suppression tend to be perceived as poor communicators (Peters et al., 2014). In dyadic communication, suppression has been linked with less perceived partner responsiveness (Low et al., 2019), perceived partner support (Low et al., 2017) and conflict resolution (Low et al., 2019; Thomson et al., 2018). These patterns extend to couples navigating low desire: greater use of suppression in women with SIAD was linked to higher levels of depression and anxiety and lower relationship satisfaction, and use of suppression in their male partners predicted higher levels of depression, lower relationship satisfaction, and lower sexual desire (Dubé et al., 2019). In the context of HSDD, inhibiting emotions may amplify distress and interfere with the ability to articulate their desires clearly to their partner.

The different consequences of reappraisal and suppression may also extend to romantic partners. Perhaps because of the ability for reappraisal to alleviate negative emotion, interacting with a person who employs reappraisal is perceived by interaction partners as less stressful compared to interacting with a person employing suppression (Butler et al., 2003; Richards et al., 2003). Greater use of reappraisal in individuals coping with SIAD, for instance, was linked to their romantic partner reporting lower levels of dyadic conflict (Dube et al., 2019). Thus, men with HSDD who employ emotion regulation strategies that allow them to reframe the low desire problem may have partners who experience less intense negative emotions, helping them to communicate more effectively. In contrast, partners of individuals who report more emotional suppression experience more negative emotion (Ben-Naim et al., 2013) and reduced intimacy (Peters & Jamieson, 2016), which may contribute to heightened conflict and emotional distance (Butler et al., 2003) in sexual conversations over time. For those navigating HSDD, employing greater suppression could result in amplified negative feelings and emotional distance between men with HSDD and their partners, thereby disrupting effective sexual communication (Rosen & Bergeron, 2019).

In summary and in line with the Interpersonal Emotion Regulation Model of sexual dysfunction (Rosen & Bergeron, 2019) applied to HSDD, individuals who employ less adaptive emotion regulation strategies (e.g., suppression) may experience greater distress and exhibit less adaptive behaviours, such as avoidance of sexual activity, resulting in fewer opportunities to share their sexual needs with their partner. On the other hand, the use of more adaptive strategies (e.g., reappraisal) may help to mitigate intense negative emotions and facilitate more productive conversations between partners. Thus, more successfully managing emotional experiences may be an important tool for couples coping with HSDD to maintain open and effective

communication, which may in turn enhance their ability to effectively navigate HSDD and reduce its negative interference with their lives.

Current Study

The current study examined whether and how two common emotion regulation strategies employed in a sexual context—reappraisal and suppression—were associated with the overall quality of sexual communication as well as sexual assertiveness of couples navigating HSDD. Prior studies of HSDD have not included both members of the couple and the associations between emotion regulation strategies and sexual communication have yet to be investigated. Further, while previous work has linked reappraisal to positive emotional and relational outcomes and suppression to negative ones (e.g., Gross & John, 2003), how these strategies relate to the emotionally evocative context of sexual communication has not been established.

We expected that individuals who employ greater reappraisal in the context of their sexual relationship would perceive their sexual communication with their partner as being more positive and report being more sexually assertive in their relationships. In contrast, we predicted that individuals who report greater use of suppression would report poorer sexual communication and lower sexual assertiveness. Given the interpersonal nature of intimate relationships, we expected that the benefits and costs of individuals' reappraisal and suppression would extend to their romantic partners, such that individuals who reappraised more would have partners who reported more positive sexual communication outcomes and individuals who suppressed more would have partners who reported more negative sexual communication outcomes.

Method

Participants

Couples were recruited throughout Canada and the United States via online postings,

social media platforms (e.g., Facebook.com, Kijiji.com, Respondent.io), flyers, and word of mouth between November 2016 and September 2021. All participants met the following criteria: 18 years or older; fluent in English; in a committed romantic relationship for at least six months; and were living together or saw each other in-person at least four times a week. Eligible couples also had one member that either received a diagnosis consistent with *DSM-5* criteria for HSDD via a clinical interview with a member of our clinical team (*n* = 25 couples; American Psychiatric Association, 2013) or self-reported symptoms consistent with this diagnosis in a survey that were then reviewed by our clinical research team (*n* = 39 couples), described further in the Procedure section. No significant differences were found between the two above groups on core symptoms of HSDD (i.e., sexual desire and sexual distress) or sociodemographics.

Participants were ineligible if they met any of the following criteria: no prior sexual experience; were pregnant, breastfeeding, or one year postpartum; or undergoing hormonal therapy. A total of 285 individuals contacted the laboratory and completed a screening call with a research assistant (*n* = 79) or an online screening survey (*n* = 206) to determine eligibility. Of the 114 men who were deemed eligible following the initial screening process, 52 were directly enrolled in the study (i.e., after the clinical team reviewed the online screener), 53 participated in a clinical interview to further confirm their eligibility, and 9 were no longer interested in participating. Following the clinical interview, 14 men did not meet the *DSM-5* diagnostic criteria for HSDD, 1 did not report any prior sexual experience with their partner, and 1 was currently undergoing hormonal treatment for their sexual difficulties, and were thus determined ineligible. Six eligible and enrolled couples did not complete the survey within four weeks (i.e., lost contact). Nineteen eligible couples were excluded from final analyses due to failed attention checks or evidence of disingenuous responses (*n* = 10 couples), incomplete questionnaires (*n* = 1

couple), or because one partner did not complete the survey in time (n = 8 couples). We conducted an a priori Actor Partner Interdependence Model (APIM) power analysis using the following app: https://robert-ackerman.shinyapps.io/APIMPowerR/, which determined that a sample size of 64 couples was needed to establish a medium actor effect (b = .24; Dubé et al., 2019) with 80% statistical power at an alpha of .05. Thus, we continued recruitment until we reached a final sample of 64 couples (n = 128 individuals)[1] with valid and complete data. Our final sample was inclusive of gender- and sex-diverse couples; see Table 1 for participant characteristics.

Procedure

This study was approved by the Social Sciences and Humanities Research Ethics Board at [masked for review]. For couples recruited between November 2016 to December 2019, men who were interested in participating completed an initial screening call with a research assistant. Men who met the basic eligibility requirements were scheduled for a semi-structured clinical interview (30 to 45 min) by phone with a clinical psychologist or senior Ph.D. student in Clinical Psychology to confirm the diagnosis of HSDD. After December 2019, due to the slow pace of recruitment, potential participants were sent an online eligibility screening survey (~15 min) on Qualtrics, a secure online survey platform, covering the same key questions as in the diagnostic interview, which was then reviewed by our clinical team. If our team required additional information or clarification to confirm the HSDD diagnosis, men were scheduled for a clinical interview (n = 9 individuals). The clinical interview was developed based on prior studies (e.g., Paterson et al., 2016; Sarin et al., 2016), and adapted by our team and validated in our prior research of women coping with SIAD (Dube et al., 2019). The clinical interview and online

[1] All men with HSDD enrolled in our study identified as men (n = 63) or identified as non-binary but were assigned male at birth (n = 1).

eligibility screening survey are available on the Open Science Framework (OSF): https://osf.io/qsbx8/?view_only=f0f4f23916c14f569cf4c9061b54b8c4.

Eligible men and their partners were then sent individual links to the online consent form and independently completed an online survey comprised of standardized self-report questionnaires (45 to 60 min). Participants received a reminder phone call from a research assistant at 48 hours and at 2 weeks after being sent the link if they had not yet completed the survey. Reminder emails were sent to participants who had not completed the survey at 1 and 3 weeks. For couples that completed the survey between December 2016 and June 2021 (n = 56 couples), each individual was compensated $10 CAD for completing the survey. Due to the slow pace of recruitment and in an effort to encourage participation, for couples that completed the survey from July 2021 onwards, each individual was compensated $15 CAD ($n$ = 7 couples), with the exception of participants recruited through Respondent.io (n = 1 couple), who were each compensated $15 USD or equivalent[2]. Following participation, couples were provided with information on how to access treatment resources.

Measures

Sociodemographics

Participants self-reported their gender, sexual orientation, relationship status and duration, education, income, and ethnicity in an investigator-made survey.

Emotion Regulation Strategies

Participant engagement in emotion regulation strategies was assessed with an adapted version of the Emotion Regulation questionnaire (ERQ; Gross & John, 2003), a 10-item scale assessing individual differences in the use of cognitive reappraisal and expressive suppression.

[2] Respondent.io guidelines require that participants are compensated in increments of $5 USD.

The ERQ has previously demonstrated good validity, internal consistency, and test-retest reliability (Gross & John, 2003). We used instructions that were previously adapted (Dubé et al., 2019) to assess emotion regulation strategies in the context of the sexual relationship (i.e., when thinking or talking about sex, or in the context surrounding a sexual experience). Participants reported the extent to which they typically engaged in reappraisal (6 items; e.g., "I control my emotions by changing the way I think about the situation I'm in") and suppression (4 items; e.g., "I control my emotions by not expressing them"). Items were assessed on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Total scores for the reappraisal subscale ranged from 6 to 42, while total scores for the suppression subscale ranged from 4 to 28, with higher scores reflecting greater use of each strategy. The ERQ has been shown to have two factors, the first defined by the reappraisal items and the second defined by the suppression items (Gross & John, 2003). Cronbach's alphas for the reappraisal subscale were .90 for men with HSDD and .82 for partners, and Cronbach's alphas for the suppression subscale were .74 for men with HSDD and .76 for partners.

Sexual Communication

Sexual communication was assessed using the Dyadic Sexual Communication Scale (DSC; Catania, 1986). Participants responded to 13 items assessing perceptions of their sexual communication with their partner (e.g., "Talking about sex is a satisfying experience for both of us") on a scale from 1 (*disagree strongly*) to 6 (*agree strongly*). Some items were reverse-coded (e.g., "My partner rarely responds when I want to talk about our sex life"). Total scores ranged from 13 to 78, with higher scores indicating more positive perceptions of sexual communication. The DSC has been shown to have good internal consistency, test-retest reliability, and discriminant validity between individuals with and without sexual problems, and is composed of

a single factor (Catania, 1986). Cronbach's alphas for the current sample were .84 for men with HSDD and .85 for partners.

Sexual Assertiveness

The Hurlbert Index of Sexual Assertiveness (HISA; Hurlbert, 1991) was used to assess how frequently participants assert themselves sexually (e.g., "I speak up for my sexual feelings") and experience discomfort or reluctance when communicating about their sexual relationship (e.g., "I feel uncomfortable telling my partner what feels good"; reverse-coded). Participants rated 25 items on a scale from 0 (*all the time*) to 4 (*never*). Total scores ranged from 0 to 100, with higher scores indicating greater levels of sexual assertiveness. The HISA has been previously validated and shown to have good reliability and construct validity (Hurlbert, 1991; Pierce & Hurlbert, 1999). It was conceptualized as a single factor (Hurlbert, 1991) and prior studies consistently use its total score (e.g., Pierce & Hurlbert, 1999; Wongsomboon et al., 2022; Lyons et al., 2022). Cronbach's alphas for the current sample were .89 for men with HSDD and .91 for partners.

Data Analysis

We conducted multilevel modeling (Kenny et al., 2006) utilizing SPSS Version 26.0. We first examined bivariate correlations between sociodemographics of the sample, diagnosis (i.e., whether men had been formally diagnosed with HSDD via clinical interview or self-reported symptoms consistent with HSDD via the online eligibility screening survey) and emotion regulation strategies (i.e., reappraisal and suppression), and the study outcomes (i.e., sexual communication and sexual assertiveness) to determine any relevant covariates. Correlations between sample characteristics and outcome variables were examined using a two-tailed test of significance. To account for interdependence between romantic partners, we used a two-level

model in which participants were nested within couples. Analyses were conducted in accordance with the APIM (Cook & Kenny, 2005) using a distinguishable dyads approach based on the diagnosis of HSDD (i.e., men with HSDD vs. partners). Utilizing the APIM allowed for an examination of how an individual's emotion regulation was linked to both their own sexual communication outcomes (i.e., actor effects) and to their partner's sexual communication outcomes (i.e., partner effects). Although previous work has found moderate to high correlations among the use of different emotion regulation strategies (e.g., Côté & Morgan, 2002), reappraisal and suppression were not significantly correlated in the present study for either member of the couple (r = -.01 for men with HSDD and r = .21 for partners). However, to isolate their unique effects, all models described below include both emotion regulation strategies. A separate APIM was conducted for each of the two dependent variables.

Results

Descriptives for the study measures are reported in Table 2. Bivariate correlations for emotion regulation and sexual communication outcomes are reported in Table 3.

Reappraisal and Sexual Communication Outcomes

In line with our hypotheses and as reported in Table 4, men with HSDD who reported greater emotional reappraisal about sex also reported being more assertive in their sexual relationship. Men's reappraisal was not significantly associated with sexual communication or partners' sexual assertiveness.

Suppression and Sexual Communication Outcomes

As reported in Table 4 and in support of our hypotheses, men with HSDD who reported greater use of suppression to manage emotions about sex also reported poorer overall sexual communication with their partner and lower sexual assertiveness. Partners of men with HSDD

who reported greater suppression about sex also reported lower sexual assertiveness. In addition, as expected, men with HSDD who reported greater use of suppression had partners who reported poorer sexual communication. Men with HSDD's emotional suppression was not linked to their partner's sexual assertiveness. Partners' emotional suppression was also unrelated to sexual assertiveness as reported by men with HSDD and sexual communication as reported by either member of the couple.

Ruling Out Alternative Hypotheses

To rule out alternative hypotheses and provide evidence for the generalizability of our findings, we conducted an additional set of analyses including covariates. Specifically, because sexual desire and satisfaction are known to decline over time (Huston et al., 2001; Klusman, 2002), which may impact couples' sexual communication, we tested whether our effects could be attributed to the length of the relationship. We also considered whether our effects were driven by the duration of the low desire problem as reported by the man with HSDD. Finally, given that some men received a clinical diagnosis by interview and others self-reported symptoms consistent with this diagnosis that was then reviewed by our team, we also wanted to rule out the possibility that our effects were impacted by the method of diagnosis. All of our effects remained significant when controlling for relationship length, duration of the desire problem, and diagnostic procedure. Results from these analyses are available in Supplemental Table 1 on OSF: https://osf.io/qsbx8/?view_only=f0f4f23916c14f569cf4c9061b54b8c4.

Discussion

In one of the few dyadic studies of men with HSDD to date, we demonstrated that emotion regulation strategies are associated with how couples navigating HSDD communicate about their sexual relationship. Specifically, our results revealed that men with HSDD's greater

use of reappraisal to regulate emotions about sex was linked to their own greater sexual assertiveness. In contrast, men with HSDD's greater use of suppression as a regulation strategy in sexual contexts was linked to their own lower sexual assertiveness and their own and their partner's poorer sexual communication. Further, greater use of suppression by partners of men with HSDD was linked to their own lower sexual assertiveness. The results of this study are the first to empirically support the Interpersonal Emotion Regulation Model of sexual dysfunction applied to men's sexual dysfunction (i.e., HSDD) and can inform interventions aimed at helping couples coping with HSDD to better manage their emotional experiences and maintain open and effective sexual communication.

Consistent with our predictions, men who employed greater reappraisal about sex reported being more assertive in their sexual communication with their partner and reported more positive overall sexual communication, though the latter effect was only marginally significant. In line with findings that greater reappraisal is linked with lower dyadic conflict for couples experiencing sexual difficulties (e.g., SIAD; Dubé et al., 2019), cognitively reframing sex in a more adaptive way (e.g., as an opportunity to enhance relationship closeness) may help men to mitigate the negative emotions (e.g., worry, guilt) associated with experiencing low desire. Consequently, experiencing less intense negative emotions may allow men with HSDD to become more comfortable communicating their needs and desires to their partners and to do so more effectively, facilitating more open and direct sexual conversations within the relationship. It is also possible that some reframing attempts (e.g., "sex is not the only reason my partner loves me") might increase men's willingness to communicate their lack of desire to their partner (i.e., assertiveness). However, this type of reappraisal may be less strongly related to their perceptions of the overall quality of their sexual communication, particularly among couples in long-term

relationships (M = 8.09 years in our sample) who may be less motivated to engage in ongoing sexual communication about persistent sexual problems. Importantly, however, the association between men's reappraisal and their own perceptions of sexual communication was marginal (p = .07), highlighting the possibility of a smaller effect that the sample was not sufficiently powered to detect.

We also found no significant associations between men's reappraisal about the sexual relationship and their partner's sexual assertiveness or sexual communication. Further, the partners of men with HSDD's use of reappraisal about sex was not significantly linked to sexual communication or assertiveness as reported by either member of the couple. These findings were unexpected, given previous results underscoring that sexual conversations are likely to evoke intense negative emotion and threatening thoughts about the self (Rehman et al., 2017), and the previously established potential for reappraisal to alleviate such unpleasant feelings (e.g., Gross & John, 2003; Troy et al., 2018) and facilitate better interpersonal communication (Megías-Robles et al., 2019; Cutuli, 2014).

While these findings were surprising, they point to potential limits of when reappraisal is beneficial and underscore the importance of addressing these limitations in a clinical context. Reappraisal may be hard to employ when people experience strong emotions or feel as if they have little control over the situation (Troy et al., 2018; Ford & Troy, 2019); partners of men with HSDD may therefore find it challenging to successfully reframe intense emotions in this context and reap the benefits for themselves or their partners. In fact, the benefits of reappraisal may depend on the content of the reappraisals, which we did not assess in this study. In the context of HSDD, individuals may reinterpret the situation in ways that facilitate greater sexual assertiveness as we saw in the men with HSDD (e.g., viewing their situation as an opportunity to

communicate their needs more directly with their partner). However, others may generate reappraisals that offer little benefit for communication, such as viewing sex as unimportant for their relationship. Given that different ways of reframing an emotional experience can result in different emotional and relational outcomes (e.g., Uusberg et al., 2021; McRae et al., 2012), future research should examine the content of individuals' reappraisals to better understand its potential in the context of navigating HSDD, as well as the relevance to clinical practice.

In contrast to the positive implications of reappraisal for sexual assertiveness, our results revealed that suppression was linked to poorer sexual communication outcomes for couples navigating HSDD. Consistent with our predictions, men's greater use of suppression in sexual contexts was linked to their own and their partners' lower perceptions of the quality of sexual communication and their own lower sexual assertiveness. Partners' greater use of suppression was also linked to their own lower sexual assertiveness. These results are in line with the process model of emotion regulation (Gross, 1998), which posits that suppression can damage relationships by disrupting the signals of interest conveyed by emotional expressions, resulting in more stressful interactions (Butler et al., 2003). Employing suppression can also *increase* the negative emotion it is intended to regulate (Wegner et al., 1987; Low et al., 2017), and doing so may backfire for men with HSDD, increasing the intensity of their negative emotions and resulting in more conflict and poorer communication (Roberton et al., 2012; Low et al., 2019). As such, to avoid unpleasant feelings or conflict with their partner, men with HSDD who employ suppression may be more likely to avoid such conversations about sex altogether. Indeed, while topics with negative emotional valence (e.g., sexuality) tend to be avoided most frequently, the avoidance of such topics is linked to greater anxiety and stress (Yu & Sherman, 2015), which may result in greater inhibition of sharing one's sexual needs and harbouring a more negative

view of their sexual communication. The amplification of negative emotion may similarly thwart one's attempts to express needs and desires to a partner, translating into lower sexual assertiveness. As such, frequently inhibiting their emotions may make partners navigating HSDD feel less confident or motivated to assert their sexual needs. Indeed, suppression has been linked to less effort and success in achieving personal goals (Low et al., 2017).

Consistent with the Interpersonal Emotion Regulation Model of sexual dysfunction (Rosen & Bergeron, 2019), men with HSDD's greater use of suppression in relation to sex was also linked to their partner's lower sexual communication. Recent research has highlighted the negative interpersonal implications of suppression; for instance, conversational partners of individuals who engaged in suppression exhibited greater threat responses (Peters et al., 2014) and increased physiological responses (Butler et al., 2003) during the interaction. Concealing emotions when navigating sexual difficulties may lead men with HSDD to appear indifferent or disinterested, making sexual conversations more stressful for romantic partners. This increased stress may in turn result in avoidance of sexual topics, thereby limiting opportunities to communicate openly about their sexual needs and desires to their partners.

Interestingly, overall we found more significant effects of suppression than reappraisal for sexual communication outcomes. It is possible that the immediate benefits of avoiding distress inherent to suppression may be particularly appealing when coping with HSDD, whereas reappraisal may be more effortful to employ successfully (e.g., Troy et al., 2018). When navigating sexual difficulties, people may instinctually hide their negative emotions from their romantic partners in attempts to avoid relationship conflict or protect their partner from experiencing distress. Our results suggest this strategy may backfire by hindering the quality of their sexual communication—one of the most effective tools for managing sexual problems

together. Our results highlight the potential value of introducing more adaptive strategies to manage negative emotions in order to reduce reliance on suppression in clinical interventions for HSDD. In comparison, reappraisal may require more active and ongoing work, and couples coping with HSDD might need to be taught this strategy more explicitly in therapeutic interventions in order to use it effectively and reap its benefits.

Strengths and Limitations

To our knowledge, this is the first dyadic study involving men with HSDD and their partners and the first to demonstrate how the use of emotion regulation strategies is associated with their communication about their sexual relationship. Notably, our study included partners of men with HSDD, highlighting the interpersonal effects of reappraisal and suppression for couples' sexual communication. Our study also examines two dimensions of sexual communication (i.e., overall perceptions of sexual communication and sexual assertiveness), allowing us to measure different facets of how couples navigating HSDD communicate about sex. Our sample was inclusive of gender/sex diverse participants and was comprised of both mixed- and same-gender relationships, extending the generalizability of our findings. The extended period of time that it took to recruit this sample with sustained recruitment efforts underscores how hard couples affected by HSDD are to reach, despite the reported prevalence for this sexual problem. Thus, our sample size, while small, is still a strength of this study.

This study also has limitations to note. First, our findings are correlational, which limits our ability to make causal interpretations. Second, couples' willingness to participate in dyadic studies of sexual dysfunction has been theorized to exclude more distressed couples (Corsini-Munt et al., 2017), thus, our sample may be biased to include individuals in less distressed and more satisfying relationships. The recruitment of our sample was a particularly challenging

aspect of conducting this research, spanning six years (i.e., 2016 to 2021). As such, despite low desire being a relatively common problem for men, the difficulty we experienced in recruiting this sample suggests that many men with low desire are still not comfortable sharing their experiences. Thus, the men who participated in our study may be more open to sharing their experiences with sexual difficulties (i.e., either with their partner or by participating in sexuality research) relative to those who do not participate. Third, our sample was underpowered to detect partner effects. Fourth, although our sample was relatively diverse with respect to age, ethnicity, education, and relationship length, and included gender- and sex-diverse couples, the majority of participants identified as cisgender and heterosexual and all couples resided in Canada or the United States. Further, our sample size may have been too small to detect any potential differences between different types of dyads. Future work should strive to reflect the experiences of HSDD for more diverse couples. Fifth, the current study focuses only on two emotion regulation strategies, and it is possible and indeed likely that couples affected by HSDD use other strategies that were not assessed. Strategies such as distraction, acceptance, perspective taking, catastrophizing, or problem solving may also be utilized in sexual contexts and could have implications for sexual well-being (Fischer et al., 2022), and should be considered in future research. Finally, the retrospective nature of questions assessing emotion regulation may have led participants to rely on retrospective recall, and may not have accurately captured their use of emotion regulation strategies as they occurred. As such, future work should incorporate objective measures of emotion regulation, such as observational and physiological measures, or employ daily diary or longitudinal research designs.

Conclusions

Our findings identify how the use of two emotion regulation strategies were linked to how couples navigating HSDD communicate about their sexual relationship. While employing suppression in the context of sex can have negative implications for overall sexual communication, employing reappraisal may be linked to the ability for affected men to be more sexually assertive. Treatments for HSDD often highlight communication training (Johnson & Zuccarini, 2010), such as conversations about the impact of low desire on their sexuality, disclosure of sexual preferences, and enhancing skills for more effectively supporting one another. Our results suggest that targeting emotion regulation strategies might further contribute to communication interventions for HSDD. In sum, couples who employ greater reappraisal and less suppression to manage their emotions may be better able to communicate openly and directly about their sexual relationship, and in turn may adjust better to HSDD.

Compliance with Ethical Standards

Conflict of Interest

The authors have no conflict of interest.

Human and Animal Rights and Informed Consent

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

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Table 1

Sociodemographic characteristics for the sample (*n* = 64 couples)

Variable	*M* (range)	*N*	*SD*	%
Age (years)				
Men with HSDD	38.26 (23.05 – 60.87)	59[1]	9.48	
Partners	34.55 (19.30 – 60.09)	59	8.71	
Education (years)				
Men with HSDD	16.30 (10–30)	64	3.17	
Partners	15.59 (10–21)	64	2.56	
Ethnicity				
Men with HSDD				
White		44		68.75
Asian American/Asian		7		10.94
Additional ethnicities*		13		20.31
Partners				
White		52		81.25
Asian American/Asian		6		9.38
Additional ethnicities		6		9.38
Gender (partners)				
Man		5		7.80
Woman		58		90.6
Transgender (identify as women)		1		1.6
Relationship status				
Dating		8		12.50
Cohabitating		17		26.60
Common-law		12		18.80
Engaged		2		3.10
Married		25		39.10
Relationship length (months)	97.06 (9–480)	64	8.14	
Men's low desire duration (months)	40.23 (6–180)	64	33.22	

Note. M mean of sample, *N* total number of observations, *SD* standard deviation, *%* percentage of sample. **Additional* ethnicities included the following: African American/Black, East Indian, Hispanic/Latino/Latina, Middle Eastern/Central Asian, Biracial/Multiracial.

[1] Five couples did not report their date of birth and are excluded from age calculations reported here.

Table 2

Descriptives for study measures for men with HSDD and partners (*n* = 64 couples)

Variable	*M*	Range	SD
Cognitive reappraisal			
Men with HSDD	28.58	(11–42)	7.42
Partners	27.52	(12–42)	6.85
Expressive suppression			
Men with HSDD	17.03	(4–28)	5.26
Partners	12.48	(4–23)	4.90
Sexual communication			
Men with HSDD	51.03	(27–78)	12.35
Partners	48.45	(27–78)	12.34
Sexual assertiveness			
Men with HSDD	51.72	(12–88)	15.15
Partners	64.02	(20–95)	15.82

Table 3

Bivariate correlations between emotion regulation strategies and sexual communication variables in men with HSDD and their partners

Variables	1	2	3	4
1. Cognitive reappraisal	**.10**	-.01	.21	.43**
2. Expressive suppression	.21	**-.09**	-.50**	-.51**
3. Sexual communication	.12	-.18	**.56***	.70**
4. Sexual assertiveness	.06	-.44**	.40**	**.10**

Note. Correlations above the diagonal are for men with HSDD; correlations below the diagonal are for partners; bold correlations on the diagonal are between men with HSDD and partners.
* = $p < .05$, ** = $p < .01$

Table 4

Actor–partner interdependence model with emotion regulation strategies as independent variables and all outcomes

	Cognitive reappraisal (*n* = 64)					Expressive suppression (*n* = 64)				
	b	*SE*	*df*	*t*	*p*	*b*	*SE*	*df*	*t*	*p*
Model 1: Sexual Communication										
Actor effects										
Men with HSDD	.34	.18	59	1.84	.07	**-1.12**	**.26**	**59**	**-4.28**	**< .001**
Partners	.17	.23	59	.76	.45	-.56	.31	59	-1.82	.07
Partner effects										
Men with HSDD	.16	.21	59	.79	.43	-.03	.28	59	-.12	.90
Partners	-.08	.20	59	-.40	.69	**-.74**	**.29**	**59**	**-2.57**	**.01**
Model 2: Sexual Assertiveness										
Actor effects										
Men with HSDD	**.84**	**.20**	**59**	**4.28**	**< .001**	**-1.35**	**.28**	**59**	**-4.77**	**< .001**
Partners	.31	.26	59	1.19	.24	**-1.53**	**.36**	**59**	**-4.26**	**< .001**
Partner effects										
Men with HSDD	.31	.22	59	1.39	.17	.07	.30	59	.22	.83
Partners	-.42	.23	59	-1.80	.08	-.61	.34	59	-1.81	.08