



# Motivation When Desire Is Low: Associations Between Sexual Motivation and Sexual Intimacy, Sexual Satisfaction, and Sexual Distress for Men with Hypoactive Sexual Desire Disorder and Their Partners

Erin McClung<sup>1</sup> · Natalie O. Rosen<sup>2,3</sup> · Justin P. Dubé<sup>2</sup> · Grace A. Wang<sup>2</sup> · Serena Corsini-Munt<sup>1</sup>

Received: 18 April 2023 / Revised: 23 September 2023 / Accepted: 10 November 2023 / Published online: 19 December 2023  
© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

## Abstract

Hypoactive sexual desire disorder (HSDD) in men, characterized by chronically low sexual desire, is associated with poor sexual well-being, such as lower sexual satisfaction and higher sexual distress. Additionally, despite their low desire, men with HSDD often report wanting sexual intimacy and validation within their sexual lives/relationships. Studies that apply self-determination theory to sexual relationships demonstrate that adopting more autonomous (e.g., engaging in sex for its inherent pleasure) and less controlled (e.g., engaging in sex for some external reward or consequence) motives for engaging in sex is associated with greater sexual well-being for both members of the couple. Given that autonomous motivation in relationships is associated with intimacy and sexual satisfaction, and lower sexual distress, having sex for autonomous reasons may allow men with HSDD and their partners to feel more sexually intimate despite their lower sexual desire, whereas having sex for controlled reasons may hinder sexual intimacy and satisfaction and augment sexual distress. In this dyadic cross-sectional study, we examined the associations between types of sexual motivation and sexual intimacy, sexual satisfaction, and sexual distress for men with HSDD and their partners ( $n = 64$  couples). Men with HSDD who reported having sex for more autonomous reasons reported more sexual satisfaction and both partners reported more sexual intimacy. Men with HSDD who had sex for more controlled reasons had partners who felt less sexual intimacy and satisfaction, and both partners were more sexually distressed. Promoting autonomous sexual motivation and decreasing controlled motivation may help couples navigating HSDD to feel closer in their relationship, more sexually satisfied, and less sexually distressed.

**Keywords** Hypoactive Sexual Desire Disorder · Sexual motivation · Self-determination theory · Sexual satisfaction · Sexual distress · DSM-5

## Introduction

Low sexual desire is a distressing sexual problem estimated to affect up to 30% of men in their lifetime (Segraves & Segraves, 1991). Lack of sexual desire is not only distressing

but may also contribute to relational problems such as lack of intimacy and lower sexual satisfaction (Birnbaum et al., 2016; Rosen et al., 2019; van Lankveld et al., 2018). Despite their low or absent sexual desire, qualitative research has indicated that men with low desire report a strong need for intimacy within their sexual relationship (i.e., feeling as though one's partner shares their thoughts and emotions, and feeling understood, validated, and cared for by one's partner related to sexual experiences; Murray et al., 2017; Reis & Shaver, 1988). Research suggests sexual motivation is a pathway through which couples can promote intimacy and sexual satisfaction and reduce sexual distress for couples coping with sexual dysfunction (Bockaj et al., 2019; Gaine & Guardia, 2009; Muise et al., 2018; Rosen et al., 2015). Applied to sexuality, self-determination theory demonstrates

✉ Serena Corsini-Munt  
serena.corsini-munt@uottawa.ca

<sup>1</sup> Department of Social Sciences, School of Psychology, University of Ottawa, 136 Jean Jacques Lussier Private, Ottawa, ON K1N 6N5, Canada

<sup>2</sup> Department of Psychology and Neuroscience, Dalhousie University, Halifax, NS, Canada

<sup>3</sup> Department of Obstetrics and Gynaecology, Dalhousie University, Halifax, NS, Canada

that adopting more autonomous motives for engaging in sexual activities (e.g., engaging in sex for its inherent pleasure) and less controlled motives (e.g., engaging in sex for an external reward or consequence) has positive implications for sexual and relational outcomes for both members of the couple (Brunell & Webster, 2013; Gravel et al., 2016, 2019, 2020; Wood et al., 2018). Similarly, autonomous motivation in relationships (i.e., an authentic willingness to engage in a relationship) predicts greater commitment and intimacy (Gaine & La Guardia, 2009). In contrast, controlled motivation (i.e., engaging in a relationship for some external consequence, such as status) contributes to lower relational quality, lower engagement and trust in the relationship, and lower intimacy (Gaine & La Guardia, 2009; Kasser & Ryan, 2001; Wild et al., 1997). Given the potential for sexual motivation to enhance sexual well-being and closeness, this study examined the associations of autonomous and controlled sexual motivation with sexual intimacy, sexual satisfaction and sexual distress for men coping with clinically low sexual desire and their partners. Findings have the potential to identify factors that may have implications for couples' intimacy and closeness when coping with low desire.

### Low Sexual Desire

Male hypoactive sexual desire disorder (HSDD) is characterized by chronically low or absent desire for sexual activity, accompanied by marked distress and interpersonal difficulty (American Psychiatric Association [APA], 2013). HSDD is estimated to have a prevalence of around 5% in men (Bhasin & Basson, 2016) and due to the increase in prevalence with age, it is estimated that up to 30% of men may meet the diagnostic criteria for HSDD in their lifetime (Segraves & Segraves, 1991). Further, HSDD is significantly associated with distress for affected men, as evidenced by greater levels of depression, anxiety, and stress (Corona et al., 2004; McCabe & Cobain, 1998; McCabe & Connaughton, 2014). Although low desire is a common reason for couples to seek sex and couples therapy (Doss et al., 2004), treatment for low desire often focuses on pharmacotherapies that neglect the subjective aspects of sexual relationships (Brotto, 2010). As such, identifying links between types of motivation for sexual activities and sexual outcomes may be an important step in developing psychological interventions that target the subjective aspects of sexual relationships, such as satisfaction and feeling close.

When sexual desire is directed toward one's partner, termed dyadic desire, it is helpful to examine low sexual desire within the relationship and in terms of its impact on the relationship (Herbenick et al., 2014; Mark & Lasslo, 2018). While low desire is associated with greater distress and poorer sexual and relational satisfaction for affected individuals (Rosen & Bergeron, 2019; Rosen et al., 2019), it

also has implications for their partners. Partners of individuals coping with female sexual interest and arousal disorder (FSIAD), genito-pelvic pain/penetration disorder, and erectile dysfunction also report negative consequences, such as lower sexual and relationship satisfaction and more sexual distress, compared to couples without sexual dysfunctions (Fisher et al., 2005; Rosen & Bergeron, 2019; Rosen et al., 2019; Smith & Pukall, 2014). Further, lack of desire may have specific implications for couples' feelings of closeness and intimacy, and vice versa. A daily diary study found that intimacy plays a key role in the maintenance of sexual desire over time (Lankveld et al., 2018), and thus may be a particularly important outcome to consider for couples coping with low desire. Considering the interpersonal nature of the problem, dyadic studies will expand our knowledge of this understudied population.

### Sexual Intimacy

Given that intimacy in romantic relationships is hypothesized to behave as both a trigger and reward for sexual desire (Basson, 2000), it may be a crucial factor for couples coping with HSDD to navigate their low desire. The interpersonal process model of intimacy posits that intimacy involves both disclosure and perceived partner responsiveness, in which disclosure involves feeling as though one's partner shares their personal thoughts and emotions; while perceived partner responsiveness involves feeling understood, validated, and cared for by one's partner within relationships (Reis & Shaver, 1988). Couples who report high disclosure and perceived partner responsiveness also report high sexual desire (Birnbaum et al., 2016; van Lankveld et al., 2018). Further, a qualitative study, which focused on the factors implicated in men's desire, identified intimate communication about sex as a factor that can promote desire, while a lack of emotional connection was identified as an inhibiting factor (Murray et al., 2017). However, this may be especially challenging for couples coping with low desire as expressing low desire to a partner comes with consequences not only for the individual (e.g., as a threat to masculine virility), but for partners as well (e.g., perceptions of rejection or disinterest in them more generally; Murray et al., 2017). As such, identifying factors that are linked with high levels of intimacy may be particularly important for couples coping with HSDD.

### Sexual Satisfaction

Sexual satisfaction is defined as "an affective response arising from one's subjective evaluation of the positive and negative dimensions associated with one's sexual relationship" (Lawrence & Byers, 1995, p. 268). Couples who are sexually satisfied are more likely to report high levels of relationship satisfaction and commitment, making it integral to the quality

of romantic relationships (Sprecher et al., 2002). However, couples coping with one partner's sexual dysfunction often report low sexual satisfaction (Bois et al., 2016; Fisher et al., 2005; Parish & Hahn, 2016; Rosen & Bergeron, 2019). A cross-sectional comparison indicated that in couples where one member was diagnosed with FSIAD, both members of the couple reported lower sexual satisfaction than control couples with no sexual dysfunction reported by either partner (Rosen et al., 2019). Further, research has shown that couples who report high levels of sexual desire are more sexually and relationally satisfied than couples with low or discrepant desire (Kim et al., 2021). Moreover, sexual satisfaction may play a role in maintaining levels of desire over time, with some research suggesting that sexual dissatisfaction is a risk factor for low desire, especially for men (Hurlbert & Apt, 1994; Mark, 2012, 2015; Mark & Murray, 2012). In fact, a common approach to treating low desire in couples is to promote sexual satisfaction, rather than prescribing medications for low desire (Mark & Lasslo, 2018). As such, identifying a factor that is linked to higher sexual satisfaction may have significant implications for couples coping with HSDD.

### Sexual Distress

Sexual distress refers to one's concerns or negative feelings (e.g., worry, frustration) about their sexual experiences and relationships (Santos-Iglesias et al., 2018). One common cause of sexual distress in committed relationships is the decline in sexual desire after the relationship has been established (Birnbaum, 2018; Ellison, 2002; Parish & Hahn, 2016). Consequently, this distress may be augmented and particularly challenging for couples coping with one partner's desire disorder, who generally experience higher levels of distress than control couples (Rosen & Bergeron, 2019). A cross-sectional comparison indicated that in couples where one member was diagnosed with FSIAD, both members of the couple reported higher sexual distress than control couples with no persistent sexual difficulties (Rosen et al., 2019). For women experiencing low sexual desire, having a partner was predictive of the presence of distress (Shifren et al., 2008), but no corresponding evidence exists for men with low sexual desire, to our knowledge. Given that societal pressure to have normal or high levels of desire can further contribute to the distress experienced when desire wanes or is discrepant for couples (Clement, 2002), sex therapists have proposed that distress, rather than the low sexual desire itself, be the treatment target (Frost & Donovan, 2015). Given that low sexual desire can be present without distress, the marker of distress becomes an important target for intervention, particularly for men experiencing low sexual desire and couples coping with HSDD, for whom there are little data about their experiences of distress.

### Sexual Motivation

Since low sexual desire can hinder men's and partners' sense of sexual intimacy and satisfaction, and contribute to their sexual distress, identifying pathways through which overall sexual well-being can be promoted are paramount. Previous research on sexual motivation has identified various motives for engaging in sex, including sexual attraction, physical pleasure and expression of love to curiosity, pleasing a partner and mere opportunity (Meston & Buss, 2007). However, motivational theories, such as approach-avoidance and communal motivation frameworks have identified that some motives for engaging in sex may be more beneficial for sexual and relational well-being than others (for a review, see Muise et al., 2013a, 2013b; Muise et al., 2017; Impett et al., 2008). For example, Muise et al. (2013a), identified that engaging in sex for avoidance motives (e.g., to avoid a fight) was associated with increased conflict in the relationship, lower sexual and relationship satisfaction, and lower desire for both them and their partner. Whereas, engaging in sex for approach motives (e.g., because it feels good) was associated with higher sexual and relationship satisfaction and higher desire for both members of the couple (Muise et al., 2013a). Despite these meaningful findings, the approach-avoidance framework tends to neglect how our personal values impact our motivation (e.g., the personal value one attributes to a behavior). Self-determination theory may provide a framework for motivation and well-being that moves beyond approach-avoidance motives to understand how one's personal values relate to their sexual motives. For example, if high sexual desire is valued as an important aspect of male virility, men might engage in sex to prove themselves sexually. While an approach-avoidance framework might suggest that this is an approach motive and thus result in positive outcomes, for men with low desire, it may also be seen as a controlled motive and therefore cause distress. Recent work applying self-determination theory to sexual motivation may present a potential avenue to address the impact of low levels of sexual desire for men with HSDD and their partners (see Gravel, 2017; Gravel et al., 2016, 2019, 2020; Brunell & Webster, 2013; Hadden et al., 2015; Knee et al., 2005; Shoikhedbrod et al., 2023). According to self-determination theory, autonomous motivation in relationships (i.e., an authentic willingness to participate in the relationship) contributes to higher satisfaction and psychological well-being for both members of the couple as well as high partner responsiveness, one of the building blocks of intimacy (Hadden et al., 2015; Knee et al., 2005; Ryan & Deci, 2014, 2017). Controlled motivation, on the other hand, involves engaging in relationships for some internal or external reward or punishment (e.g., engaging in a relationship for status or to please others) and is associated with more negative emotions and lower life satisfaction and psychological well-being (Gravel et al., 2016;

Knee et al., 2002; Ryan & Deci, 2014). While autonomous motivation is generally guided by one's own interests and desires, those of a romantic partner may also be relevant, as caring for a partner in a strong manner may encourage integration of a partner's interests and desires into one's own motivation (i.e., one's personal interest is to nurture the relationship through adopting their partners' interests as either their own, or as their shared interests; Gaine & La Guardia, 2009; Gore et al., 2009). This differs from controlled motivation in that the act of nurturing one's relationship is in itself rewarding rather than something that is performed for some other, external consequence. The motives that an individual adopts for engaging in the relationship can have an impact on their feelings of closeness and intimacy (Gaine & La Guardia, 2009; Knee et al., 2002, 2005). When couples were asked to discuss differences in their relationship, romantic partners who were autonomously motivated communicated with behaviors that promoted closeness and intimacy, such as more expression of emotion, acceptance, emotional support, and less behavioral disengagement. In contrast, partners who were controlled in their motivation communicated with more denial and more venting of emotions (Knee et al., 2002), which may hinder intimacy.

Applied to sexuality, engaging in sex for more autonomous reasons (e.g., "because I enjoy sex" or "because sexuality is a meaningful part of my life") is associated with higher sexual satisfaction, more positive sexual affect and less negative sexual affect (i.e., feelings, emotions, or mood toward sex), and a greater feeling of belonging in one's relationship (Gravel et al., 2016, 2020). In contrast, engaging in sex for more controlled reasons is associated with lower sexual satisfaction, higher sexual distress, and higher negative sexual affect (Gravel et al., 2016, 2020). Further, dyadic analyses have identified that an individual's motivation has implications for their partners' outcomes (Brunell & Webster, 2013; Hadden et al., 2015; Knee et al., 2005). For example, a daily diary study found that men's self-determined sexual motivation was positively related to their partners' relationship satisfaction and psychological well-being (Brunell & Webster, 2013). For couples coping with HSDD, understanding how autonomous and controlled sexual motivation is associated with sexual intimacy, sexual satisfaction and sexual distress for both partners may help identify a correlate through which sexual intimacy and satisfaction can be promoted, and sexual distress can be reduced in targeted interventions. Interventions grounded in self-determination theory may protect a sense of autonomous choice in a distressed group of couples who may feel a lack of control or pressure to show desire for their partner.

## The Current Study

The current study utilized self-determination theory as a theoretical framework to examine the dyadic associations between sexual motivation and sexual intimacy, sexual satisfaction, and sexual distress among men with HSDD and their partners. Previous research on self-determination theory has identified that autonomous and controlled motivation have implications for intimacy, sexual satisfaction, and sexual distress. However, these associations have not yet been applied to the context of couples coping with HSDD. We hypothesized that when men with HSDD report having sex for more autonomous reasons (e.g., "because it is pleasurable" or "because sexuality is a key part of who they are"), they and their partners would report higher sexual intimacy and sexual satisfaction, and lower sexual distress. Conversely, we hypothesized that when men report having sex for more controlled reasons (e.g., to meet their partners' expectations or because they want to prove something to themselves), they and their partners would report lower sexual intimacy and sexual satisfaction, and higher sexual distress. Similarly, for partners of men with HSDD, we hypothesized that for those who report more autonomous reasons for having sex both themselves and men with HSDD would report higher sexual intimacy and sexual satisfaction, and lower distress. Whereas for partners who report more controlled reasons for having sex, both themselves and men with HSDD would report lower sexual intimacy and satisfaction and higher sexual distress.

## Method

### Participants

Participants were recruited throughout Canada and the United States via social media advertisements (e.g., through posts on Instagram, Facebook, and Reddit), flyers posted around university campuses and local neighborhoods, and word-of-mouth (i.e., through friends and family of researchers, through staff at therapy clinics) and online survey platforms (i.e., respondent.io) from November 2016 to September 2021. Advertisements specified that the study was recruiting couples, with one partner experiencing low desire, for a paid, online study where both partners are 18 years or older, and, in a committed relationship for at least 6 months. To be eligible, couples were required to be at least 18 years of age, in a committed relationship of six months or more, either living together or with a minimum of four in-person contacts per week, fluent in English, and both members of the couple had to agree to participate. One member of the couple had to meet the diagnostic criteria for HSDD as defined by the DSM-5 (American Psychiatric Association [APA], 2013) and determined via a clinical interview or an online clinical screening

form, described below in Procedure. There were no significant differences on the core symptoms of HSDD (i.e., sexual desire and sexual distress) or sociodemographic characteristics between couples whose diagnoses were confirmed via the clinical interview compared to couples who completed the screening form. Additionally, there were no significant differences in the variables of interest (i.e., sexual motivation, sexual satisfaction, sexual desire, sexual intimacy, and sexual distress) reported by participants when compared year to year throughout the recruitment period. Exclusion criteria for men reporting low sexual desire included: low sexual desire attributed to another psychiatric or medical condition or medication; undergoing hormonal therapy; pregnant or breastfeeding partner; undergoing psychological treatment; and no previous sexual experience.

A total of 310 partnered individuals (where at least one member of the couple identified as a man with low desire) contacted the laboratory and completed an initial screening call with a research assistant ( $n = 84$ ; November 2016 to December 2019) or an online screening survey ( $n = 226$ ; January 2020 to September 2021) to determine eligibility. Of the 84 individuals that contacted the laboratory between November 2016 and December 2019, 44 individuals reporting low desire participated in a clinical interview. Following the clinical interview, 8 individuals were deemed ineligible (i.e., did not meet the DSM-5 diagnostic criteria for HSDD, undergoing hormonal treatment for their sexual difficulties, did not report prior sexual experience, and no longer interested in participating in the study). Thus 36 individuals and their partners were recruited during this period. Of the individuals ( $n = 226$ ) that contacted the study between January 2020 and September 2021, 158 individuals were removed (i.e., did not meet diagnostic or eligibility criteria, or disingenuous participants). Of the 68 deemed potentially eligible, 7 were contacted by telephone for a clinical interview clarification before determining final eligibility, and a total of 66 couples were enrolled during this time. Together, 102 ( $n = 36$  and  $n = 66$ ) men (and their partners) were deemed eligible following the initial screening process. Of those 102 couples, 79 completed the survey (a response rate of 77.5%). Fifteen eligible couples were excluded from the final analyzes due to failed attention checks, evidence of disingenuous responses, or incomplete key measures. Therefore, the final sample for this study was 64 couples ( $n = 128$  individuals)<sup>1</sup> with valid and complete data.

Our final sample was primarily White ( $n = 96$  individuals) though there were participants in the sample who identified

as Asian American/Asian, African American/Black, East Indian, Hispanic/Latino/Latina, Middle Eastern/Central Asian, Biracial/Multiracial. Although the sample was inclusive of gender- and sex-diverse couples, participants were largely cisgendered ( $n = 121$  individuals; 2 individuals identified as transgender) and heterosexual ( $n = 57$  couples; 10 individuals identified as gay, 8 as bisexual, and 2 as asexual). Relationship length ranged from 6 months to 40 years ( $M = 7.68$  years). Additionally, the duration of men's HSDD symptoms ranged from 6 to 180 months with the average length of 40.2 months. Participant demographics are listed in Table 1.

## Procedure

This study was part of a larger study, with one prior publication (Wang et al., 2023), investigating predictors of psychological, sexual, and relationship well-being in couples where a man has HSDD. In the first phase of recruitment, men with HSDD who were interested in the study completed a structured telephone screening with a research assistant to assess initial eligibility. Those who met basic eligibility criteria were then scheduled for a semi-structured clinical interview via telephone (approximately 30–45 min) with a member of our clinical team to confirm low desire consistent with HSDD. A diagnosis of HSDD is characterized as: (1) persistently or recurrently deficient (or absent) sexual/erotic thoughts or fantasies and desire for sexual activity; (2) these symptoms have persisted for a minimum duration of approximately 6 months; (3) symptoms cause clinically significant distress for the individual; not better explained by a non-sexual mental disorder, consequence to severe relational distress (e.g., intimate partner violence), other significant stressors, and not attributable to substance/medication or medical condition. The clinical interview was modeled after prior studies of FSIAD (Paterson et al., 2017; Sarin et al., 2016; Wang et al., 2023) and revised based on the clinical expertise of the research team. Eligible men were asked to confirm their partners' eligibility and willingness to participate. Due to the slow pace of recruitment, in the second phase of recruitment, potential participants completed eligibility questions via an online survey that covered the same set of questions as the clinical interview. Their answers were reviewed by a clinical psychologist and a senior PhD student in clinical psychology. If necessary, potential participants were contacted for a clinical interview to confirm diagnostic information (e.g., timing of low sexual desire in relation to other reported symptoms). The clinical interview and online eligibility screening survey are available on the Open Science Framework (OSF): [https://osf.io/vfrgx/?view\\_only=8452190e2e9a41ffbb8bbc8d274f28ad](https://osf.io/vfrgx/?view_only=8452190e2e9a41ffbb8bbc8d274f28ad).

Eligible couples were e-mailed individual links to the online consent form and survey, hosted via Qualtrics XM

<sup>1</sup> All men with HSDD enrolled in this study identified as a either man ( $n = 63$ ) or transgender (identify as man  $n = 1$ ). All participants approved of the terminology "men with HSDD" for the purposes of this study.

**Table 1** Sociodemographic characteristics for the sample

Variable	<i>M</i> (range)	<i>N</i>	<i>SD</i>	%
Age (years)				
HSDD	39 (23–61)	59 <sup>b</sup>	9.52	
Partners	36 (20–60)	59 <sup>b</sup>	8.67	
Education (years)				
HSDD	16.3	64	3.17	
Partners	15.6	64	2.56	
Gender				
HSDD				
Man		63		49.2
Transgender (identify as man)		1		0.8
Partners				
Man		5		3.9
Woman		58		45.3
Transgender (identify as woman)		1		0.8
Ethnicity				
HSDD				
Asian American/Asian		7		5.5
White		44		34.3
Additional ethnicities <sup>a</sup>		13		10.2
Partners				
Asian American/Asian		6		4.7
White		52		40.6
Additional ethnicities <sup>a</sup>		6		4.7
Relationship status				
Married		49		38.3
Dating		16		12.5
Living together		32		25.0
Common-law		27		21.1
Engaged		4		3.1
Relationship length (years)	7.68 (0–40)	64	8.19	
HSDD duration (months)	40.2 (6–180)	64	33.4	

*N* = 128 participants

<sup>a</sup>Additional ethnicities included the following: African American/Black, East Indian, Hispanic/Latino/Latina, Middle Eastern/Central Asian, Biracial/Multiracial

<sup>b</sup>Five participants did not report their date of birth and were excluded from the reported age calculations

software, which took approximately 45 to 60 minutes to complete. Couples were instructed to complete their surveys independently from each other. Participants who did not complete the survey within one week received a reminder phone call. Reminder emails were sent two and three weeks thereafter, and the survey expired four weeks after being sent to participants. For couples that completed the survey between December 2016 and June 2021 (*n* = 44 couples), each individual was compensated \$10 CAD for completing the survey. Due to the slow pace of recruitment and to encourage participation, for couples that completed the survey from July 2021 onwards, each individual was compensated \$15

CAD, with the exception of participants recruited through Respondent.io (*n* = 1 couple), who were each compensated \$15 USD.<sup>2</sup> Following participation, participants were sent a debrief email that included information on the study purpose and treatment resources.

## Measures

### Sociodemographics

Participants self-reported their age, gender, sexual orientation, sexual frequency, education, race/ethnicity, relationship status (i.e., dating, living together or married) and length, and household income and men with HSDD reported the duration of their low desire/arousal problem. Reports of partnered sexual frequency and relationship duration should be consistent across couples. However, since couples may differ slightly in their self-reports of partnered sexual frequency and relationship duration (e.g., due to recall discrepancies), couple-level averages were calculated for sexual frequency (defined as giving and receiving manual and oral stimulation, and vaginal and anal intercourse) and relationship duration.

### Sexual Motivation

The Sexual Motivation Scale (Gravel et al., 2016) is a 24-item measure of sexual motivation that corresponds with the six regulation styles of motivation outlined by Ryan and Deci's (2000) self-determination theory. Participants rated the extent to which each statement corresponded to their motives for engaging in sex on a 7-point Likert scale from 1 (*does not correspond at all*) to 7 (*corresponds completely*). Scores range from 4 to 28 on each subscale, with higher scores indicating greater endorsement of that regulation style. Separate measures of autonomous (e.g., because sex is fun) and controlled (e.g., because my partner demands it of me) sexual motivation were created by averaging all autonomous items (intrinsic, integrated, and identified) into one scale and all controlled items (introjected and external) into another scale (Gravel et al., 2019). Cronbach's alpha on the autonomous motivation subscale was 0.93 for men with HSDD and 0.94 for partners. Cronbach's alpha on the controlled motivation subscale was 0.81 for men with HSDD and 0.89 for partners.

### Sexual Intimacy

Sexual intimacy was measured using a 7-item sexual intimacy measure (Bois et al., 2013), which was adapted to the sexual context based on Shaver's (1988) interpersonal

<sup>2</sup> Respondent.io guidelines require that participants be compensated in increments of \$5 USD.

process model of intimacy. The measure assessed self-disclosure (e.g., With regard to your sexual relationship with your partner, how much do you disclose your private sexual thoughts to your partner?), perceived partner disclosure (e.g., With regard to your sexual relationship with your partner, how much does your partner disclose his or her feelings about sex to you?), and partner responsiveness (e.g., During or immediately following sexual activity, how much do you feel your partner accepts you as you are?). The measure is rated on a 7-point scale of 1 = *not at all* to 7 = *a lot*. Scores range from 12 to 49, where higher scores represent higher sexual intimacy. Cronbach's alpha was 0.83 for men with HSDD and 0.86 for partners.

### Sexual Satisfaction

The Global Measure of Sexual Satisfaction (Lawrance & Byers, 1995) was used to measure sexual satisfaction (i.e., the overall evaluation of the positive and negative aspects of the sexual relationship). Participants selected the number that best described their sexual relationship on a 7-point scale using 5 bipolar items (e.g., *very bad-very good*; *unsatisfying-satisfying*). Scores ranged from 5 to 35, with higher scores indicating greater sexual satisfaction. Cronbach's alpha was 0.94 for men with HSDD and 0.93 for their partners.

### Sexual Distress

The Female Sexual Distress Scale–Revised (Derogatis et al., 2002) uses gender neutral language and was used to measure sexual distress. Participants rated how frequently they experienced an emotion (e.g., How often do you feel worried about sex) or sexuality related problem (e.g., How often do you feel inferior because of sexual problems) on a 5-point Likert scale from 1 (*never*) to 5 (*always*). Scores ranged from 13 to 62, with higher scores indicating greater sexual distress. Cronbach's alpha was 0.91 for men with HSDD and 0.90 for their partners.

### Sexual Frequency

Partnered sexual frequency was measured using six items from the Sexual Behaviors Questionnaire (SBQ) developed for us as a descriptive variable and used in previous research assessing sexual outcomes (Rosen et al., 2018). The SBQ consists of nine items that assess how often in the last 4-weeks participants engaged in various sexual behaviors (i.e., kissing, caressing/touching, oral sex, manual stimulation, and sexual intercourse) on a 7-point scale (ranging from 0 = *Not at all* to 6 = *more than once a day*). In the present study, items pertaining to oral and manual stimulation, and vaginal and anal penetration were retained, and items pertaining to kissing, and caressing/touching were removed. Scores are

summed, with higher scores indicating higher frequency of sexual behavior and lower scores indicating lower frequency of sexual behavior. Since there may be slight discrepancies between partners' self-reported sexual frequency, scores were averaged within each couple for consistency.

### Data Analysis

Analyses were conducted using RStudio 4.1.0. Due to the lack of diversity in the sample, couples were not differentiated in the analysis based on sociodemographic characteristics (e.g., sexual orientation), with the exception of sexual frequency. Bivariate correlations between sociodemographic characteristics of the sample (e.g., sexual frequency), sexual motivation (i.e., autonomous and controlled motivation), and outcome variables (i.e., sexual intimacy, sexual satisfaction, and sexual distress) were examined to determine any relevant covariates. Correlations between sample characteristics and outcome variables were examined using a two-tailed test of significance. A two-level modeling technique that nests individual data (Level 1) within dyads (Level 2) was used to account for the non-independence of dyadic data (Kenny et al., 2006). The associations between sexual motivation (autonomous and controlled simultaneously) and outcome variables for men with HSDD and partners were analyzed using multilevel modeling guided by the Actor-Partner Interdependence Model (Kenny et al., 2006). This model distinguished between members of the couple based on HSDD diagnosis and identified actor effects (e.g., the associations for both autonomous and controlled sexual motivation in men with HSDD and their own outcomes) as well as partner effects (e.g., the associations for both autonomous and controlled sexual motivation in men with HSDD and their partner's outcomes). All predictors in the models were grand-mean centered and represent between-person differences. Coefficients (*b*) are unstandardized and can be interpreted as the change in the dependent variable for every one-unit change in the participant's average predictor value. Separate models were conducted for sexual intimacy, sexual satisfaction, and sexual distress.

## Results

### Descriptives and Intercorrelations

Descriptive information for each of the study measures are reported in Table 2. Autonomous motivation was significantly lower ( $t(126) = -7.00, p < .001$ ) for men with HSDD ( $M = 4.31, SD = 1.21$ ) than their partners ( $M = 5.74, SD = 1.10$ ). Men with HSDD ( $M = 3.77, SD = 1.16$ ) scored significantly higher than their partners ( $M = 3.07, SD = 1.36$ ) on controlled motivation ( $t(123) = 3, p = .002$ ).

**Table 2** Descriptives for study measures for men with HSDD and partners

Variable	<i>M</i>	Range	SD
Autonomous motivation			
HSDD	4.31	(1.92–6.83)	1.21
Partners	5.74	(3–7)	1.10
Controlled motivation			
HSDD	3.77	(1.25–6.88)	1.16
Partners	3.07	(1–6.75)	1.36
Sexual intimacy			
HSDD	32.5	(15–45)	7.27
Partners	32.4	(12–49)	8.92
Sexual satisfaction			
HSDD	20.2	(5–35)	6.81
Partners	20.9	(5–35)	7.20
Sexual distress			
HSDD	43.5	(19–62)	9.20
Partners	38.6	(13–60)	9.96
Sexual frequency			
	4.66	(0–15)	4.00

*N* = 128 participants

Men with HSDD (*M* = 43.5, *SD* = 9.20) were significantly more sexually distressed ( $t(125) = 3.00, p = .005$ ) than their partners (*M* = 38.60, *SD* = 9.96). There were no significant differences for sexual intimacy ( $t(121) = 0.08, p = .90$ ) or sexual satisfaction ( $t(126) = -0.60, p = .60$ ) between men with HSDD (*M* = 32.50, *SD* = 7.27; *M* = 20.20, *SD* = 6.81, respectively) or their partners (*M* = 32.4, *SD* = 8.92; *M* = 20.90, *SD* = 7.20, respectively). Bivariate correlations for autonomous and controlled motivation and outcome measures are reported in Table 3.

### Sexual Intimacy

As reported in Table 4, when men with HSDD reported more autonomous motivation, both they and their partners reported higher levels of sexual intimacy. However, when

men with HSDD reported more controlled motivation, their partners reported lower sexual intimacy. No significant associations were found between controlled motivation in men with HSDD and their own sexual intimacy, nor were any associations found between partners’ sexual motivation and their own sexual intimacy or sexual intimacy in men with HSDD (see Fig. 1).

### Sexual Satisfaction

When men with HSDD reported more autonomous motivation for sex, their partners reported higher levels of sexual satisfaction (see Table 4). However, when men with HSDD reported more controlled motivation for sex, their partners reported lower levels of sexual satisfaction. No associations were found between men’s sexual motivation (autonomous or controlled) and their own sexual satisfaction, nor were any associations found between partners’ sexual motivation and their own or men’s sexual satisfaction (see Fig. 2).

### Sexual Distress

When men with HSDD reported more controlled motivation for sex, both they and their partners reported higher levels of sexual distress (see Table 4). No associations were found between men’s autonomous motivation for sex and sexual distress for men or their partners. Similarly, no associations were found between partners’ sexual motivation and sexual distress for either member of the couple (see Fig. 3).

### Ruling Out Alternative Hypotheses

To rule out alternative hypotheses and provide evidence for the generalizability of our findings, we conducted an additional analysis including covariates. Since sexual frequency has been shown to be highly correlated with

**Table 3** Bivariate correlations between autonomous and controlled motivation and outcome variables in men with HSDD and partners

Measure	1	2	3	4	5	6
1. Autonomous motivation	<b>.09</b>	.03	.26*	.13	-.01	.12
2. Controlled motivation	.19	<b>.31**</b>	.02	-.10	.36**	.20
3. Sexual intimacy	.23	.13	<b>.36**</b>	.57***	-.11	.20
4. Sexual satisfaction	.03	-.06	.54***	<b>.31**</b>	-.27*	.26*
5. Sexual distress	.26*	.29*	-.25*	-.38**	<b>.36**</b>	.01
6. Sexual frequency	.23	.12	.24	.22	-.05	NA

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 their partners, with the exception of sexual frequency which is the averaged sexual frequency within couples. Bivariate correlations in the ranges of .10, .30, and .50 indicate small, medium, and large effect sizes, respectively. NA = Not Applicable

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001



**Table 4** Actor-partner Interdependence models with autonomous and controlled sexual motivation as independent variables, sexual intimacy, sexual satisfaction, and sexual distress as outcomes, and sexual frequency as a control variable

	Autonomous motivation					Controlled motivation				
	<i>b</i>	SE	df	<i>t</i>	<i>p</i>	<i>b</i>	SE	df	<i>t</i>	<i>p</i>
Model 1: sexual intimacy										
Actor effects										
HSDD	<b>1.5</b>	<b>0.755</b>	126	<b>2.04</b>	.044	−0.1	0.826	126	−0.14	.888
Partner	1.6	0.925	126	1.76	.081	1.2	0.776	126	1.49	.139
Partner effects										
HSDD	0.0	0.850	126	−0.03	.974	0.6	0.713	126	0.82	.412
Partner	<b>2.8</b>	<b>0.822</b>	<b>126</b>	<b>3.45</b>	<b>.001</b>	<b>−2.2</b>	<b>0.899</b>	<b>126</b>	<b>−2.42</b>	<b>.017</b>
Model 2: sexual satisfaction										
Actor effects										
HSDD	0.84	0.717	126	1.17	.243	−0.64	0.784	126	−0.81	.419
Partner	0.30	0.812	126	0.37	.715	0.08	0.682	126	0.12	.904
Partner effects										
HSDD	−0.86	0.807	126	−1.07	.286	0.35	0.677	126	0.52	.602
Partner	<b>1.62</b>	<b>0.722</b>	<b>126</b>	<b>2.24</b>	<b>.027</b>	<b>−1.65</b>	<b>0.790</b>	<b>126</b>	<b>−2.1</b>	<b>.038</b>
Model 3: sexual distress										
Actor effects										
HSDD	−0.3	0.912	126	−0.3	.765	<b>2.7</b>	<b>0.997</b>	<b>126</b>	<b>2.66</b>	<b>.009</b>
Partner	1.8	1.090	126	1.61	.111	1.3	0.915	126	1.39	.167
Partner effects										
HSDD	1.5	1.026	126	1.48	.141	−0.2	0.861	126	−0.19	.853
Partner	−0.4	0.970	126	−0.46	.648	<b>2.2</b>	<b>1.060</b>	<b>126</b>	<b>2.07</b>	<b>.041</b>
Model 4: sexual satisfaction controlling for sexual frequency										
Actor effects										
HSDD	0.68	0.692	126	0.98	.329	−0.92	0.763	126	−1.21	.229
Partner	−0.01	0.805	126	−0.01	.991	0.03	0.665	126	0.05	.962
Partner effects										
HSDD	−1.22	0.789	126	−1.55	.124	0.30	0.651	126	0.45	.650
Partner	<b>1.48</b>	<b>0.707</b>	<b>126</b>	<b>2.09</b>	<b>.039</b>	<b>−1.90</b>	<b>0.778</b>	<b>126</b>	<b>−2.44</b>	<b>.016</b>

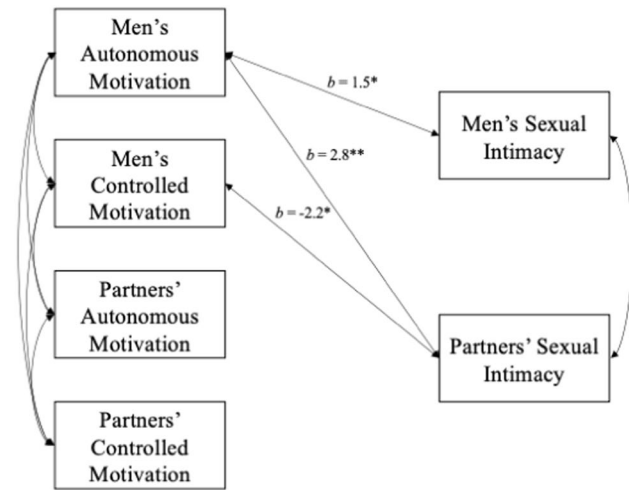
*N* = 128 individuals. The coefficients reported are unstandardized betas (*b*) and interpreted as the change in outcome for every one unit increase in the predictor from the sample mean. Actor effects refer to the association between men's or partners' sexual motivation and their own outcomes, whereas partner effects refer to the association between men's or partners' sexual motivation and their partners outcomes (e.g., the association between men's greater autonomous motivation and men's greater sexual satisfaction). Significant effects are bolded

sexual outcomes, such as sexual satisfaction, sexual motivation and sexual distress (Muise et al., 2016, 2018), it was tested and used as a covariate in the current study (for studies assessing sexual frequency as a covariate for sexual outcomes see Corsini-Munt et al., 2020; Muise et al., 2017, 2018; Rosen et al., 2019). Bivariate correlations (see Table 3) indicated that sexual frequency was only significantly positively associated with sexual satisfaction. Therefore, the main analyzes presented above did not control for sexual frequency, however, an additional model was conducted for sexual satisfaction to assess the associations between sexual motivation and sexual satisfaction

controlling for sexual frequency. Both effects (i.e., the association between men's higher autonomous motivation for sex and their partners' higher sexual satisfaction and the association between men's higher controlled motivation and their partners' lower sexual satisfaction) remained significant when controlling for sexual frequency.

## Discussion

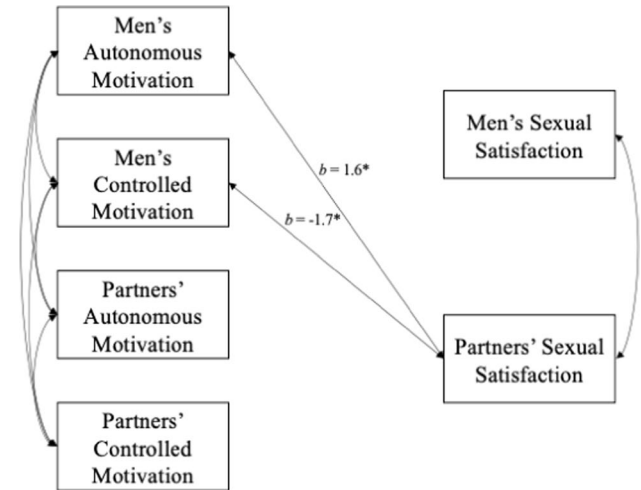
This study reports on the dyadic associations between sexual motivation and sexual outcomes for men with HSDD and their partners. Specifically, results revealed that higher autonomous motivation in men with HSDD was associated with higher reports of sexual intimacy for both members of



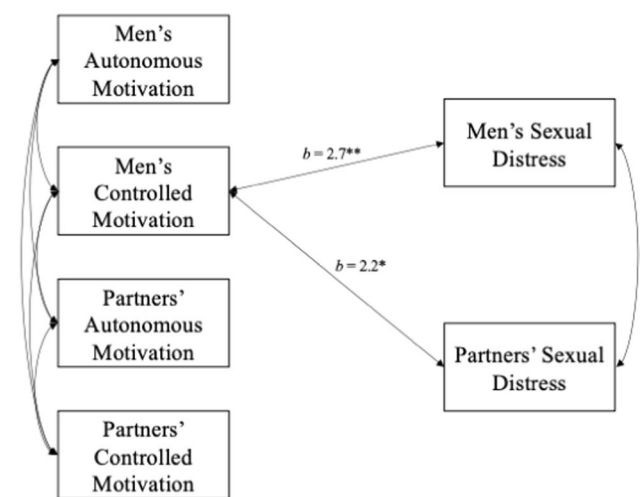
**Fig. 1** Actor-partner interdependence models of autonomous and controlled sexual motivation on sexual intimacy. *Note*  $N=128$  individuals. The coefficients reported are unstandardized betas ( $b$ ) and interpreted as the change in outcome for every one unit increase in the predictor from the sample mean.  $*p < .05$ ;  $**p < .01$

the couple and higher sexual satisfaction for their partners, even when accounting for sexual frequency. Conversely, men's higher controlled motivation was associated with their partners' lower sexual intimacy and sexual satisfaction (controlling for sexual frequency), and more sexual distress for their partner. Finally, higher controlled motivation in men with HSDD was also associated with their own higher levels of sexual distress. No associations were found between partners' sexual motivation and their own or the sexual well-being of men with HSDD.

Consistent with our predictions, when men with HSDD were more autonomously motivated for sex, they and their partners reported more sexual intimacy and their partners were more sexually satisfied. These results are in line with research demonstrating that autonomous motivation in romantic relationships is associated with more positive relational outcomes such as greater levels of intimacy and relationship satisfaction for both members of the couple (Brunell & Webster, 2013; Gaine & La Guardia, 2009). Individuals who adopt more autonomous motives in relationships have been found to be more responsive to their partners' needs (Hadden et al., 2015). Therefore, when men with HSDD have sex for more autonomous reasons (e.g., because they enjoy sex or they feel that sex is a meaningful part of their life) it may encourage an intimate interaction whereby men may be more responsive to the sexual needs of their partner and feel more comfortable disclosing their own sexual needs. This responsiveness and disclosure may in turn provide their partner with opportunity to be responsive to those sexual needs while simultaneously feeling as though their own sexual needs have been met. It is also possible that when men



**Fig. 2** Actor-partner interdependence models of autonomous and controlled sexual motivation on sexual satisfaction. *Note*  $N=128$  individuals. The coefficients reported are unstandardized betas ( $b$ ) and interpreted as the change in outcome for every one unit increase in the predictor from the sample mean.  $*p < .05$



**Fig. 3** Actor-partner interdependence models of autonomous and controlled sexual motivation on sexual distress. *Note*  $N=128$  individuals. The coefficients reported are unstandardized betas ( $b$ ) and interpreted as the change in outcome for every one unit increase in the predictor from the sample mean.  $*p < .05$ ;  $**p < .01$

with HSDD are more autonomously motivated for sex it may signal to their partners that despite their low desire, men care about their partners' sexual needs and enjoy pleasuring their partner, which may contribute to more sexual satisfaction for partners, regardless of the frequency of their sexual activity. As our results are correlational, it could also be that when men with HSDD and their partners are feeling more sexually intimate and satisfied, men with HSDD may adopt more autonomous reasons for engaging in sex in the future (e.g.,

sex for pleasure or connecting with their partner sexually). In fact, semi-structured interviews, analyzed using grounded theory methodology, of men's sexual desire indicated that intimate communication (involving disclosure and understanding of sexual interests) is important for men's sexual desire and often leads to sexual activity (Murray et al., 2017).

In contrast, greater controlled sexual motivation in men with HSDD was linked to lower levels of sexual intimacy and satisfaction for their partners and higher levels of distress for themselves and their partners. It is well-documented that controlled motivation is associated with poorer psychosocial outcomes (Ryan & Deci, 2017). Controlled motivation, in relationships, is associated with lower levels of intimacy (Gaine & La Guardia, 2009). In a sexual context, controlled motivation is associated with lower sexual and relationship satisfaction, and higher negative affect, depression, and anxiety (Brunell & Webster, 2013; Gravel et al., 2016). It may be the case that when men with HSDD have sex for controlled reasons (e.g., to prove themselves sexually) partners may focus on being responsive to the sexual needs of men with HSDD, while neglecting to disclose their own sexual needs, resulting in lower sexual intimacy and satisfaction. Indeed, across a set of two dyadic studies, higher controlled sexual motivation was associated with higher endorsement of meeting a partner's sexual needs at the expense of one's own, and those partnered with someone who reported undermining their own needs to meet their partner's needs also reported more controlled sexual motivation (Shoikhedbrod et al., 2023). Further, when men with HSDD have sex for controlled reasons, partners may feel pressure to ensure that the sexual encounter is perceived as positive by the men with HSDD, in order to promote future motivation for sexual activity. For example, partners of individuals with low desire have been shown to have higher sexual distress than those partnered with individuals without sexual desire difficulties (Rosen et al., 2019). Finally, when men with HSDD have sex for controlled reasons, they may feel pressure to prove themselves sexually or to live up to their partners' expectations, resulting in greater anxiety around sexual experiences and consequently greater sexual distress when those experiences are unsuccessful. In fact, men with sexual desire difficulties have reported that their primary motivating factor when engaging in sex is providing sexual pleasure to their partner (Murray, 2019). This may create a cycle where their controlled motives for sex lead to sexual distress, which further promotes their use of controlled motives, making controlled sexual motivation a particularly important factor to consider regarding sexual desire.

We found no significant associations between men's autonomous motivation and their own sexual satisfaction and distress or men's controlled motivation and their own sexual intimacy and satisfaction. Additionally, no significant associations were found between partners' autonomous or

controlled motivation and their own sexual outcomes (intimacy, satisfaction, and distress) or the sexual outcomes of men with HSDD. These findings were unexpected, given previous findings indicating that one's sexual motivation is directly associated with their own sexual outcomes (Gravel et al., 2016), and the previously established benefits of autonomous sexual motivation for sexual satisfaction and sexual distress of both partners (Brunell & Webster, 2013; Gravel et al., 2020; Sanchez et al., 2011; Wood et al., 2018). It may be the case that when partners of men with HSDD engage in sex for any reason, their intimacy and satisfaction is dependent on other relational or sexual factors (e.g., erectile performance, orgasm quality, partner's pleasure). In addition, a narrative exists for heterosexual men where they feel a social pressure (based in traditional masculinity norms) to display high levels of sexual desire (Murray, 2018). As such, it may be the case that men with HSDD and their partners are motivated to feel desire for sexual activity, but are inhibited by desire difficulties. Therefore, despite the endorsement of motivation, autonomous or controlled, men with HSDD and their partners may not experience the typical need fulfillment and subsequent outcomes of well-being because of the low desire. This lack of need fulfillment may be particularly salient for partners of men with HSDD given that they may seldom be able to act on their own sexual motivation for partnered sexual activity. Future research should examine additional aspects of self-determination theory (e.g., fulfillment of basic psychological needs for competence or feeling like a good sexual partner) alongside motivational considerations of men coping with HSDD.

## Strengths and Limitations

This study adds to the growing body of research on low desire in men. Additionally, this study adds to the growing body of literature on self-determined motivations within the field of sexuality, and one of the first studies to our knowledge to assess self-determined motivation in a clinical sample of couples coping with one partner's desire difficulty. Notably, our study included partners of men with HSDD, highlighting the dyadic aspect of sexual motivation for couples sexual intimacy, satisfaction, and distress. Recruitment efforts for this study extended over a period of 6 years, underscoring the difficulty of reaching this population despite the reported prevalence of HSDD. Thus, although our sample size is small, it remains a strength of this study.

This study, however, is not without limitations. First, due to the cross-sectional nature of the study, we cannot make causal interpretations. While self-determination theory posits the direction of the associations as motivation precedes emotions, cognitions and behaviors, the cross-sectional nature of the study cannot determine whether this is the case. It may

be that when men with HSDD perceive their partners' sexual intimacy, satisfaction and/or distress it contributes to their sexual motivation. For example, greater perceived partner satisfaction may provide men with HSDD the reassurance they need to adopt autonomous motives for sex. Second, the willingness to participate in dyadic studies relating to sexual difficulties has been theorized to exclude more distressed couples (Corsini-Munt et al., 2017), therefore the sample may be biased to include individuals who are in less distress and in more satisfying sexual relationships. Third, most participants identified as white, cisgender and heterosexual and all couples resided in Canada or the United States, meaning the generalizability of this study is limited. Future work should aim to reflect the experiences of couples coping with HSDD over a diverse sample, or more specifically in minority samples in order to gain more insight into couples' experiences on a sociocultural level. This means designing studies using targeted sampling of minority groups and providing a safe and comfortable environment from which to conduct this research. Fourth, despite recruitment efforts sustained over an extended period of time (i.e., 6 years), the current sample may be underpowered, and the results should thus be considered within this context.

## Conclusions

The purpose of this study was to examine the associations of autonomous and controlled motives for engaging in sexual activity with sexual intimacy, sexual satisfaction, and sexual distress for couples coping with HSDD. Results from this study identified sexual motivation in men with HSDD as having implications for sexual satisfaction, intimacy, and distress. Specifically, autonomous motivation in men with HSDD was associated with higher intimacy for both members of the couple and higher satisfaction for partners, and controlled motivation reported by men with HSDD was associated with lower intimacy and satisfaction for partners and higher distress for both members of the couple. We did not find support for hypothesized associations for the controlled motivation of men with HSDD for their own intimacy or satisfaction, or for partners' autonomous or controlled motivation and both members' outcomes. However, our results highlight the importance of capturing the interpersonal aspect when analyzing the relationship between sexual motivation and outcomes and may help to inform interventions for couples coping with HSDD. Findings from this study extend our knowledge of self-determination theory in sexual experiences, specifically for individuals with difficulties with sexual desire disorders and their partners. Given only sexual motivation for men with HSDD (and not their partner's sexual motivation) was related to significant outcomes, it may be most suitable for clinicians to adopt a self-determined approach targeted toward men with HSDD. Specifically by

encouraging autonomous motivation for the partner with lower sexual desire, clinicians may be promoting intimacy and satisfaction and reducing distress for both members of the couple. Finally, it remains unclear whether the pattern of results is unique to HSDD given that we did not have a control sample of couples without this diagnosis. Future research may consider use of a control group to examine whether the current findings are unique to men with HSDD or whether they extend to the general population.

**Funding** Funding was provided by Canadian Institutes of Health Research (Grant No. 141986).

**Data and Materials Availability** The clinical interview and online eligibility screening survey are available on the Open Science Framework (OSF): [https://osf.io/vfrgx/?view\\_only=8452190e2e9a41ffbb8bbc8d274f28ad](https://osf.io/vfrgx/?view_only=8452190e2e9a41ffbb8bbc8d274f28ad).

**Code Availability** Analyses were conducted using RStudio 4.1.0.

## Declarations

**Conflict of interest** No potential conflict of interest was reported by the authors.

**Ethical Approval** This study was approved by the Research Ethics Board at Dalhousie University.

## References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Publishing.
- Basson, R. (2000). The female sexual response: A different model. *Journal of Sex & Marital Therapy*, 26(1), 51–65. <https://doi.org/10.1080/009262300278641>
- Bhasin, S., & Basson, R. (2016). Sexual dysfunction in men and women. *Williams Textbook of Endocrinology*, 13, 785–830.
- Birnbaum, G. E. (2018). The fragile spell of desire: A functional perspective on changes in sexual desire across relationship development. *Personality and Social Psychology Review*, 22(2), 101–127. <https://doi.org/10.1177/108886831771535>
- Birnbaum, G. E., Reis, H. T., Mizrahi, M., Kanat-Maymon, Y., Sass, O., & Granovski-Milner, C. (2016). Intimately connected: The importance of partner responsiveness for experiencing sexual desire. *Journal of Personality and Social Psychology*, 111(4), 530–546. <https://doi.org/10.1037/pspi0000069>
- Bockaj, A., Rosen, N.O., & Muise, A. (2019). Sexual motivation in couples coping with female sexual interest/arousal disorder: A comparison with control couples. *Journal of Sex & Marital Therapy*, 45(8), 796–808. <https://doi.org/10.1080/0092623X.2019.1623356>
- Bois, K., Bergeron, S., Rosen, N., Mayrand, M., Brassard, A., & Sadjak, G. (2016). Intimacy, sexual satisfaction and sexual distress in vulvodynia couples: An observational study. *Health Psychology*, 35(6), 531–540. <https://doi.org/10.1037/hea0000289>
- Bois, K., Bergeron, S., Rosen, N. O., McDuff, P., & Grégoire, C. (2013). Sexual and relationship intimacy among women with provoked vestibulodynia and their partners: Associations with sexual

- satisfaction, sexual function, and pain self-efficacy. *Journal of Sexual Medicine*, 10(8), 2024–2035. <https://doi.org/10.1111/jsm.12210>
- Brotto, L. (2010). The DSM diagnostic criteria for hypoactive sexual desire disorder in men. *Journal of Sexual Medicine*, 7, 2015–2030. <https://doi.org/10.1111/j.1743-6109.2010.01860.x>
- Brunell, A., & Webster, G. (2013). Self-determination and sexual experience in dating relationships. *Personality and Social Psychology Bulletin*, 39(7), 970–987. <https://doi.org/10.1177/0146167213485442>
- Clement, U. (2002). Sex in long-term relationships: A systemic approach to sexual desire problems. *Archives of Sexual Behavior*, 31, 241–246. <https://doi.org/10.1023/A:1015296718952>
- Corona, G., Mannucci, E., Petrone, L., Giommi, R., Mansani, R., Fei, L., Forti, G., & Maggi, M. (2004). Psycho-biological correlates of hypoactive sexual desire in patients with erectile dysfunction. *International Journal of Impotence Research*, 16(3), 275–281. <https://doi.org/10.1038/sj.ijir.3901158>
- Corsini-Munt, S., Bergeron, S., & Rosen, N. O. (2020). Self-focused reasons for having sex: associations between sexual goals and Women's pain and sexual and psychological wellbeing for couples coping with provoked vestibulodynia. *Journal of Sexual Medicine*, 17(5), 975–984. <https://doi.org/10.1016/j.jsxm.2020.01.017>
- Corsini-Munt, S., Rancourt, K. M., Dubé, J. P., Rossi, M. A., & Rosen, N. O. (2017). Vulvodynia: A consideration of clinical and methodological research challenges and recommended solutions. *Journal of Pain Research*, 10, 2425–2436. <https://doi.org/10.2147/JPR.S126259>
- Derogatis, L. R., Rosen, R., Leiblum, S., Burnett, A., & Heiman, J. (2002). The Female Sexual Distress Scale (FSDS): Initial validation of a standardized scale for assessment of sexual related personal distress in women. *Journal of Sex and Marital Therapy*, 28, 317–330. <https://doi.org/10.1080/00926230290001448>
- Doss, B. D., Simpson, L. E., & Christensen, A. (2004). Why do couples seek marital therapy? *Professional Psychology: Research and Practice*, 35(6), 608–614. <https://doi.org/10.1037/0735-7028.35.6.608>
- Ellison, C. R. (2002). A research inquiry into some American women's sexual concerns and problems. *Women and Therapy*, 24(1–2), 147–159. [https://doi.org/10.1300/J015v24n01\\_17](https://doi.org/10.1300/J015v24n01_17)
- Fisher, W. A., Rosen, R. C., Eardley, I., Sand, M., & Goldstein, I. (2005). Sexual experience of female partners of men with erectile dysfunction: The Female Experience of Men's Attitudes to Life Events and Sexuality (FEMALES) study. *Journal of Sexual Medicine*, 2(5), 675–684. <https://doi.org/10.1111/j.1743-6109.2005.00118.x>
- Frost, R. N., & Donovan, C. L. (2015). Low sexual desire in women: Amongst the confusion, could distress hold the key? *Sexual and Relationship Therapy*, 30(3), 338–350. <https://doi.org/10.1080/14681994.2015.1020292>
- Gain, G., & La Guardia, J. (2009). The unique contributions of motivations to maintain a relationship and motivations toward relational activities to relationship well-being. *Motivation & Emotion*, 33, 184–202. <https://doi.org/10.1007/s11031-009-9120-x>
- Gore, J. S., Cross, S. E., & Kavangawa, C. (2009). Acting in our interests: Relational self-construal and goal motivation across cultures. *Motivation and Emotion*, 33(1), 75–87. <https://doi.org/10.1007/s11031-008-9113-1>
- Gravel, E. (2017). *On the benefits of being sexually autonomous and costs of being sexually pressured: The contributions of different motives for sex to experiences of sexual wellbeing* (Doctoral dissertation, Université d'Ottawa/University of Ottawa).
- Gravel, E., Pelletier, L., & Reissing, E. (2016). "Doing it" for the right reasons: Validation of a measurement of intrinsic motivation, extrinsic motivation, and motivation for sexual relationships. *Personality and Individual Differences*, 92, 164–173. <https://doi.org/10.1016/j.paid.2015.12.015>
- Gravel, E. E., Reissing, E. D., & Pelletier, L. G. (2019). Global, relational, and sexual motivation: A test of hierarchical versus heterarchical effects on well-being. *Journal of Happiness Studies*, 20(7), 2269–2289. <https://doi.org/10.1007/s10902-018-0047-3>
- Gravel, E., Reissing, E., & Pelletier, L. (2020). The ebb and flow of sexual wellbeing: The contributions of basic psychological needs and autonomous and controlled sexual motivation to daily variations in sexual wellbeing. *Journal of Social and Personal Relationships*, 37(7), 2286–2306. <https://doi.org/10.1177/026540752092155>
- Hadden, B. W., Rodrigues, L. M., Knee, C. R., & Porter, B. (2015). Relationship autonomy and support provision in romantic relationships. *Motivation and Emotion*, 39, 359–373. <https://doi.org/10.1007/s11031-014-9455-9>
- Herbenick, D., Mullinax, M., & Mark, K. (2014). Sexual desire discrepancy as a feature, not a bug, of long-term relationships: Women's self-reported strategies for modulating sexual desire. *Journal of Sexual Medicine*, 11(9), 2196–2206. <https://doi.org/10.1111/jsm.12625>
- Hurlbert, D. F., & Apt, C. (1994). Female sexual desire, response, and behavior. *Behavior Modification*, 18, 488–504. <https://doi.org/10.1177/01454455940184006>
- Impett, E., Strachman, A., Finkel, E., & Gable, S. (2008). Maintaining sexual desire in intimate relationships: The importance of approach goals. *Journal of Personality and Social Psychology*, 94, 808–823.
- Kasser, T., & Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In P. Schmuck & K. M. Sheldon (Eds.), *Life goals and well-being: Toward a positive psychology of human striving* (pp. 116–131). Hogrefe & Huber Publishers.
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. Guilford Press.
- Kim, J. J., Muise, A., Barranti, M., Mark, K. P., Rosen, N. O., Harasymchuk, C., & Impett, E. (2021). Are couples more satisfied when they match in sexual desire? New insights from response surface analyses. *Social Psychological and Personality Science*, 12(4), 487–496. <https://doi.org/10.1177/1948550620926770>
- Knee, C. R., Lonsbary, C., Canevello, A., & Patrick, H. (2005). Self-determination and conflict in romantic relationships. *Journal of Personality and Social Psychology*, 89(6), 997–1009. <https://doi.org/10.1037/0022-3514.89.6.997>
- Knee, C. R., Patrick, H., Vietor, N. A., Nanayakkara, A., & Neighbors, C. (2002). Self-determination as growth motivation in romantic relationships. *Personality and Social Psychology Bulletin*, 28(5), 609–619. <https://doi.org/10.1177/0146167202288005>
- Lawrence, K. A., & Byers, E. S. (1995). Sexual satisfaction in long-term heterosexual relationships: The Interpersonal Exchange Model of Sexual Satisfaction. *Personal Relationships*, 2, 267–285. <https://doi.org/10.1111/j.1475-6811.1995.tb00092.x>
- Mark, K. P. (2012). The relative impact of individual sexual desire and couple desire discrepancy on satisfaction in heterosexual couples. *Sexual and Relationship Therapy*, 27, 133–146. <https://doi.org/10.1080/14681994.2012.678825>
- Mark, K. P. (2015). Sexual desire discrepancy. *Current Sexual Health Reports*, 7, 198–202. <https://doi.org/10.1007/s11930-015-0057-7>
- Mark, K. P., & Lasslo, J. A. (2018). Maintaining sexual desire in long-term relationships: A systematic review and conceptual model. *Journal of Sex Research*, 55(4–5), 563–581. <https://doi.org/10.1080/00224499.2018.1437592>
- Mark, K. P., & Murray, S. H. (2012). Gender differences in desire discrepancy as a predictor of sexual and relationship satisfaction in a college sample of heterosexual romantic relationships. *Journal of Sex and Marital Therapy*, 38, 198–215. <https://doi.org/10.1080/0092623X.2011.606877>
- McCabe, M. P., & Cobain, M. J. (1998). The impact of individual and relationship factors on sexual dysfunction among males and

- females. *Sexual and Marital Therapy*, 13(2), 131–143. <https://doi.org/10.1080/02674659808406554>
- McCabe, M. P., & Connaughton, C. (2014). Psychosocial factors associated with male sexual difficulties. *Journal of Sex Research*, 51(1), 31–42. <https://doi.org/10.1080/00224499.2013.789820>
- Meston, C., & Buss, D. (2007). Why humans have sex. *Archives of Sexual Behavior*, 36, 477–507.
- Muise, A., Bergeron, S., Impett, E., Delisle, I., & Rosen, N. (2018). Communal motivation in couples coping with vulvodynia: Sexual distress mediates associations with pain, depression, and anxiety. *Journal of Psychosomatic Research*, 106, 34–40. <https://doi.org/10.1016/j.jpsychores.2018.01.006>
- Muise, A., Boudreau, G., & Rosen, N. (2017). Seeking connection versus avoiding disappointment: An experimental manipulation of approach and avoidance sexual goals and the implications for desire and satisfaction. *Journal of Sex Research*, 54(3), 296–307.
- Muise, A., Impett, E., & Desmarais, S. (2013a). Getting it on versus getting it over with: Sexual motivation, desire, and satisfaction in intimate bonds. *Personality and Social Psychology Bulletin*, 39(10), 1320–1332. <https://doi.org/10.1177/0146167213490963>
- Muise, A., Impett, E., Kogan, A., & Desmarais, S. (2013b). Keeping the spark alive: Being motivated to meet a partner's sexual needs sustains sexual desire in long-term romantic relationships. *Social Psychology and Personality Science*, 4(3), 267–273.
- Muise, A., Schimmack, U., & Impett, E. A. (2016). Sexual frequency predicts greater well-being, but more is not always better. *Social Psychological and Personality Science*, 7(4), 295–302. <https://doi.org/10.1177/1948550615616462>
- Murray, S. H. (2018). Heterosexual men's sexual desire: Supported by, or deviating from, traditional masculinity norms and sexual scripts? *Sex Roles*, 78, 130–141. <https://doi.org/10.1007/s11199-017-0766-7>
- Murray, S. H. (2019). *Not always in the mood: The new science of men, sex, and relationships*. Rowman & Littlefield Publishers.
- Murray, S. H., Milhausen, R. R., Graham, C. A., & Kuczynski, L. (2017). A qualitative exploration of factors that affect sexual desire among men aged 30 to 65 in long-term relationships. *Journal of Sex Research*, 54(3), 319–330. <https://doi.org/10.1080/00224499.2016.1168352>
- Parish, M., & Hahn, S. (2016). Hypoactive sexual desire disorder: A review of epidemiology, biopsychology, diagnosis, and treatment. *Sexual Medicine Reviews*, 4(2), 103–120. <https://doi.org/10.1016/j.sxmr.2015.11.009>
- Paterson, L. Q. P., Handy, A. B., & Brotto, L. A. (2017). A pilot study of eight-session mindfulness-based cognitive therapy adapted for women's sexual interest/arousal disorder. *Journal of Sex Research*, 54, 850–861. <https://doi.org/10.1080/00224499.2016.1208800>
- Reis, H. T., & Shaver, P. (1988). Intimacy as an interpersonal process. In S. Duck (Ed.), *Handbook of personal relationships* (pp. 367–389). Wiley.
- Rosen, N. O., Bailey, K., & Muise, A. (2018). Degree and direction of sexual desire discrepancy are linked to sexual and relationship satisfaction in couples transitioning to parenthood. *Journal of Sex Research*, 55(2), 214–225. <https://doi.org/10.1080/00224499.2017.1321732>
- Rosen, N. O., & Bergeron, S. (2019). Genito-pelvic pain through a dyadic lens: Moving toward an interpersonal emotion regulation model of women's sexual dysfunction. *Journal of Sex Research*, 56(4–5), 440–461. <https://doi.org/10.1080/00224499.2018.1513987>
- Rosen, N. O., Dubé, J. P., Corsini-Munt, S., & Muise, A. (2019). Partners experience consequences, too: A comparison of the sexual, relational, and psychological adjustment of women with sexual interest/arousal disorder and their partners to control couples. *Journal of Sexual Medicine*, 16(1), 83–95. <https://doi.org/10.1016/j.jsxm.2018.10.018>
- Rosen, N. O., Muise, A., Bergeron, S., Impett, E., & Boudreau, G. (2015). Approach and avoidance goals in couples with provoked vestibulodynia: Associations with sexual, relational, and psychological wellbeing. *Journal of Sexual Medicine*, 12, 1781–1790. <https://doi.org/10.1111/jsm.12948>
- Ryan, R., & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Ryan, R., & Deci, E. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In N. Weinstein (Ed.), *Human motivation and interpersonal relationships: Theory, research, and applications* (pp. 53–73). Springer. [https://doi.org/10.1007/978-94-017-8542-6\\_3](https://doi.org/10.1007/978-94-017-8542-6_3)
- Ryan, R., & Deci, E. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Publishing.
- Sanchez, D. T., Moss-Racusin, C. A., Phelan, J. E., & Crocker, J. (2011). Relationship contingency and sexual motivation in women: Implications for sexual satisfaction. *Archives of Sexual Behavior*, 40, 99–110. <https://doi.org/10.1007/s10508-009-9593-4>
- Santos-Iglesias, P., Mohamed, B., Danko, A., & Walker, L. M. (2018). Psychometric validation of the female sexual distress scale in male samples. *Archives of Sexual Behavior*, 47, 1733–1743. <https://doi.org/10.1007/s10508-018-1146-2>
- Sarin, S., Amsel, R., & Binik, Y. M. (2016). A streetcar named “derousal”? A psychophysiological examination of the desire-arousal distinction in sexual functional and dysfunctional women. *Journal of Sex Research*, 53, 711–729. <https://doi.org/10.1080/00224499.2015.1052360>
- Segraves, K. B., & Segraves, R. T. (1991). Hypoactive sexual desire disorder: Prevalence and comorbidity in 906 subjects. *Journal of Sex & Marital Therapy*, 17(1), 55–58. <https://doi.org/10.1080/00926239108405469>
- Shifren, J. L., Monz, B. U., Russo, P. A., Segreti, A., & Johannes, C. B. (2008). Sexual problems and distress in United States women. *Obstetrics & Gynecology*, 112(5), 970–978. <https://doi.org/10.1097/AOG.0b013e3181898cdb>
- Shoikhedbrod, A., Rosen, N. O., Corsini-Munt, S., Harasymchuk, C., Impett, E. A., & Muise, A. (2023). Being responsive and self-determined when it comes to sex: How and why sexual motivation is associated with satisfaction and desire in romantic relationships. *Journal of Sex Research*, 60, 1113–1125. <https://doi.org/10.1080/00224499.2022.2130132>
- Smith, K. B., & Pukall, C. F. (2014). Sexual function, relationship adjustment, and the relational impact of pain in male partners of women with provoked vulvar pain. *Journal of Sexual Medicine*, 11(5), 1283–1293. <https://doi.org/10.1111/jsm.12484>
- Sprecher, S. (2002). Sexual satisfaction in premarital relationships: Associations with satisfaction, love, commitment, and stability. *Journal of Sex Research*, 39(3), 190–196. <https://doi.org/10.1080/00224490209552141>
- van Lankveld, J., Jacobs, N., Thewissen, V., Dewitte, M., & Verboon, P. (2018). The associations of intimacy and sexuality in daily life: Temporal dynamics and gender effects within romantic relationships. *Journal of Social and Personal Relationships*, 35(4), 557–576. <https://doi.org/10.1177/0265407517743076>
- Wang, G. A., Corsini-Munt, S., Dubé, J. P., McClung, E., & Rosen, N. O. (2023). Regulate and communicate: Associations between emotion regulation and sexual communication among men with hypoactive sexual desire disorder and their partners. *Journal of Sex Research*, 60(3), 325–335. <https://doi.org/10.1080/00224499.2022.2092588>
- Wild, T. C., Enzle, M. E., Nix, G., & Deci, E. L. (1997). Perceiving others as intrinsically or extrinsically motivated: Effects on

expectancy formation and task engagement. *Personality and Social Psychology Bulletin*, 23(8), 837–848. <https://doi.org/10.1177/0146167297238005>

Wood, J., Desmarais, S., Burleigh, T., & Milhausen, R. (2018). Reasons for sex and relational outcomes in consensually non-monogamous and monogamous relationships: A self-determination theory approach. *Journal of Social and Personal Relationships*, 35(4), 632–654. <https://doi.org/10.1177/0265407517743082>

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.