

PAIN

Self-Focused Reasons for Having Sex: Associations Between Sexual Goals and Women's Pain and Sexual and Psychological Well-being for Couples Coping With Provoked Vestibulodynia



Serena Corsini-Munt, PhD,^a Sophie Bergeron, PhD,^b and Natalie O. Rosen, PhD^{c,d}

ABSTRACT

Background: For couples coping with provoked vestibulodynia (PVD), interpersonal sexual goals are associated with sexual and psychological functioning as well as women's pain during intercourse, however, self-focused sexual goals (eg, having sex for personal pleasure, having sex to avoid feeling bad about oneself) have not been studied in this clinical population.

Aim: The purpose of this study was to examine the associations between self-focused approach and avoidance sexual goals and women's pain during intercourse and sexual satisfaction and depressive symptoms for both women and their partners.

Methods: Women diagnosed with PVD ($N = 69$) and their partners completed measures of self-focused sexual goals, sexual satisfaction, and depressive symptoms. Women also reported on pain experienced during sexual intercourse.

Outcomes: Outcomes included the Global Measure of Sexual Satisfaction, the Beck Depression Inventory-II, and a Numerical Rating Scale of pain during sexual intercourse.

Results: When women reported higher self-focused approach sexual goals, they also reported lower pain intensity. Women's higher self-focused avoidance sexual goals were associated with their own higher depressive symptoms, whereas men's higher self-focused approach goals were associated with their own higher depressive symptoms. When controlling for frequency of sexual intercourse, there were no significant associations between women or partners' sexual goals and sexual satisfaction.

Clinical Implications: Within a clinical context where many interpersonal pressures for sex exist, interventions should target self-focused sexual goals alongside interpersonal sexual goals to improve pain and psychological adjustment.

Strengths & Limitations: This is the first study to examine self-focused sexual goals among women with PVD and their partners. This study is cross-sectional, and the direction of associations cannot be inferred. Couples were in mixed-sex relationships, and results may not generalize to same-sex couples.

Conclusion: Findings suggest that self-focused goals are relevant to the psychological adjustment of women with PVD and their male partners and for women's pain. **Corsini-Munt S, Bergeron S, Rosen NO. Self-Focused Reasons for Having Sex: Associations Between Sexual Goals and Women's Pain and Sexual and Psychological Well-being for Couples Coping With Provoked Vestibulodynia. J Sex Med 2020;17:975–984.**

Copyright © 2020, International Society for Sexual Medicine. Published by Elsevier Inc. All rights reserved.

Key Words: Provoked Vestibulodynia; Vulvodynia; Sexual Satisfaction; Depression; Sexual Goals; Sexual Motivation

Received June 28, 2019. Accepted January 17, 2020.

^aSchool of Psychology, University of Ottawa, Ottawa, ON, Canada;

^bDepartment of Psychology, University of Montreal, Montreal, QC, Canada;

^cDepartment of Psychology & Neuroscience, Dalhousie University, Halifax, NS, Canada;

^dDepartments of Psychology & Neuroscience and Obstetrics & Gynaecology, Dalhousie University, Halifax, NS, Canada

Copyright © 2020, International Society for Sexual Medicine. Published by Elsevier Inc. All rights reserved.

<https://doi.org/10.1016/j.jsxm.2020.01.017>

INTRODUCTION

Vulvodynia, a vulvovaginal pain condition affecting women and their sexual partners, has an estimated prevalence of 8%.¹ Provoked vestibulodynia (PVD) is characterized by acute and recurrent pain localized in the vulvar vestibule and is the most prevalent form of vulvodynia.² Despite the absence of a precise etiology, the development and maintenance of PVD is associated with multiple biological (eg, pelvic-floor muscle dysfunction and gene polymorphisms that influence pain regulation),

psychological (eg, antecedent depression and anxiety) and interpersonal factors (eg, physical and sexual abuse).³ Women with PVD report decreased sexual functioning, sexual satisfaction, and more negative affect than women without this pain.^{4,5} The male partners of women with PVD also experience consequences to their psychological well-being, sexual functioning, and sexual satisfaction.^{6,7} Despite the pain and its negative impact on sexual functioning (eg, decreased sexual desire and arousal) and sexual satisfaction, more than 80% of affected women continue to attempt intercourse on a regular basis.⁸ Such findings suggest that women with PVD and their partners are drawing on diverse sexual goals (ie, reasons for having sex).

An early conceptualization of sexual motivation only considered the individuals' level of sexual arousal and their ability to become aroused as what contributed to sexual behavior.⁹ Later conceptualizations applied an approach-avoidance framework to understanding incentive and aversive factors that contribute to an individual's motivation for pursuing sex.^{10,11} Most recently, sexual motivation has been conceptualized as a maintaining factor for pain experienced during sexual activity for women with PVD.¹² In fact, there is consistent evidence that goals can differentially influence pain and psychological adjustment among those coping with chronic pain,^{13,14} including painful intercourse.^{15,16} In addition, goals that drive pursuit of painful behavior are important to understand because excessive persistence with painful intercourse may exacerbate the pain via nociceptor sensitization and aberrant nerve proliferation and by promoting maladaptive pain cognitions and affect such as catastrophizing.¹⁷ To date, among couples with PVD, sexual goals have been examined using an approach-avoidance framework. As per behavioral activation/inhibition theory, independent behavior systems are conceptualized as approach behaviors that are meant to attain or regulate positive emotions versus avoidance behaviors that are meant to prevent aversive outcomes and regulate negative emotions.¹⁰ Applied to sexuality, interpersonal approach goals relate to attaining positive outcomes, such as having sex to feel closer to one's partner, whereas avoidance goals refer to avoiding negative outcomes, such as preventing a partner's disappointment.¹¹ Consistent with this theory¹⁸ and the dual control model of sexual response,¹⁹ pursuing sexual approach goals may have an activating effect, making the individual more likely to attend to positive cognitions and affect states (eg, focusing on thoughts relating to their own pleasure). In contrast, the pursuit of avoidance sexual goals may contribute to inhibition and subsequent focus on more negative thoughts, emotions, and sexual cues (eg, focusing on anxious thoughts relating to sexual performance). Sexual goals, by directing one's attention to positive or negative stimuli, may exert an effect on physical experiences, such as pain. For example, among nonclinical samples, providing a non-pain-related approach goal of a monetary reward was associated with reduced attention to pain and a subsequent reduction in pain intensity.²⁰

Sexual goals have emerged as contributing to the adjustment of couples coping with PVD.^{15,21,22} Interpersonal sexual goals (ie, goals related to the partner such as pursuing sex for intimacy or to avoid partners' disappointment) have been the primary focus of studies in the context of PVD thus far.^{15,16,22} A controlled study has demonstrated that women with PVD, compared with those without, report lower approach and higher avoidance interpersonal sexual goals.²² In cross-sectional and daily experience studies conducted among women with PVD and their partners, higher interpersonal approach and avoidance sexual goals were respectively associated with higher and lower sexual and relationship satisfaction. In addition, higher avoidance goals were associated with women's higher pain intensity and greater attention to negative sexual cues and lower sexual functioning for both partners.²¹

In addition to interpersonal sexual goals, young women with pain also list self-focused reasons stemming from negative affect (eg, resignation, sacrifice, guilt) as contributing to why they have sex despite their pain.²³ Self-focused sexual goals relate to the self rather than the partner or the relationship (eg, having sex for one's own pleasure, to feel better about oneself or to avoid feeling a negative emotion). There is initial evidence to suggest that self-focused sexual goals differ among women experiencing pain during sexual intercourse compared with women without pain. Specifically, women with self-reported pain during intercourse endorse more self-focused sexual goals relating to duty/pressure and report lower sexual autonomy than pain-free controls.¹⁵ Even though self-focused goals relate to personal reasons for having sex, sex is shared between both partners. Therefore, similar to interpersonal sexual goals, individuals' self-focused sexual goals may be associated with their partner's sexual and psychological wellbeing, as well as their own. Understanding the specific patterns of self-focused sexual goals for couples with PVD may help to further refine targets for intervention, and strategies for how sexual goals work can help women with PVD and their partners reduce their pain.

Self-focused sexual goals have been previously applied to sexuality in nonclinical samples.^{24–26} Higher endorsement of self-directed sexual goals was significantly associated with higher sexual functioning in a community sample of individuals, including increased sexual satisfaction and decreased pain during sexual activity.²⁴ Finally, in a dyadic daily diary study conducted with newlywed heterosexual couples, men and women's self-focused sexual approach goals were associated with their own higher sexual satisfaction.²⁶ However, previous research did not distinguish between approach and avoidance self-focused goals; thus, there is little to no indication of how self-focused avoidance sexual goals may be associated with sexual and psychological well-being. Given that the pain experienced in PVD contributes to feelings of isolation and personal distress for each member of the couple,^{6,27} both partners may endorse sexual goals that are self-focused in nature to either counteract negative emotion states

(eg, an avoidance sexual goal such as having sex to avoid feeling guilty) or to promote feeling more positively (eg, an approach sexual goal such as having sex to feel better about oneself).

AIMS

This study aimed to examine the associations between self-focused approach and avoidance sexual goals and women's pain during intercourse and sexual satisfaction and depressive symptoms for women and their partners. We hypothesized that women and partners' self-focused approach sexual goals would be associated with lower pain for women and both partners' higher sexual satisfaction and lower depressive symptoms. In contrast, we hypothesized that women and partners' self-focused avoidance sexual goals would be associated with higher pain for women and both partners' lower sexual satisfaction and higher depressive symptoms.

METHODS

Participants

Women with PVD and their partners ($N = 127$) were recruited in 2 Canadian cities (sites A and B) between 2012 and 2013. Women's eligibility was assessed using a structured telephone interview conducted by a trained research assistant. Women and their partners were included if the following inclusion criteria were met: (i) pain experienced during intercourse caused subjective distress, occurred during at least 80% of intercourse attempts, and was present for 4 months or longer; (ii) pain was limited to intercourse/other activities that contribute to pressure on the vulvar vestibule; (iii) pain during the diagnostic examination or structured interview was rated at a minimum of 4 on a self-report scale ranging from 0 (no pain at all) to 10 (worst pain imaginable); (iv) married, co-habiting, or in a committed monogamous relationship with a partner for 5 months or longer; (v) sexually active at the time of data collection; (vi) aged between 18 and 45 years to recruit a premenopausal sample, given the hormonal influences associated with pain experienced during perimenopause or postmenopause; and (vii) fluent in English or French. Exclusion criteria included the presence of one of the following: (i) major medical and/or psychiatric illness, (ii) active infection, (iii) vaginismus or persistent involuntary spasm or contraction of the musculature of the outer third of the vagina that interferes or prevents sexual intercourse,²⁸ (iv) dermatologic lesion, (v) pregnancy, and (vi) perimenopause or postmenopause symptoms such as irregular or absent menstrual cycle. Partners of women with PVD were recruited based on women meeting the inclusion criteria. Exclusion criteria for partners were (i) a major medical and/or psychiatric illness and (ii) an age less than 18 years. Of the 127 interested women with PVD, 58 were ineligible: 34 because partners withdrew or women were not partnered at data collection, 5 women withdrew their interest, 7

were unreachable after initial contact, 2 did not complete study measures, and 6 were ineligible for other reasons (eg, pregnancy, pain below cutoff, not sexually active). The final sample size consisted of 69 couples ($n = 69$ women with PVD; 69 male partners). Recruitment sources for the final sample included physician and psychologist referrals (30; 43.4%); community, hospital, college, and university posters and bulletin boards and word of mouth (16; 23.2%); online and print ads (22; 31.9%); and unknown (1; 1.5%).

Symptoms consistent with PVD were assessed via a semi-structured telephone interview for all women. For a portion of women, diagnosis was also confirmed by a gynecological examination (55; 79.7%), which included the well-validated "cotton swab test."² The remaining women's PVD symptoms were confirmed via the structured interview only (14; 20.3%). Self-reported symptoms of vulvar pain have demonstrated reliable prediction with a diagnosis from a gynecological examination.²⁹ The study was open to same-sex and mixed-sex couples, but all recruited couples in this sample were in mixed-sex relationships.

Procedure

The data for the present study were obtained from questionnaires couples completed while participating in 2 larger cross-sectional studies that were conducted at sites A and B. Data from the larger studies have been published^{30–34} but did not examine self-focused approach and avoidance sexual goals. At site A, eligible couples (37; 54%) were invited to the laboratory where they provided informed consent and completed questionnaires using Opinio on laboratory computers. Opinio is a survey software tool, allowing for survey completion.³⁵ All site B participants (32; 46%) completed their questionnaires using pen and paper at home, with the questionnaires returned to researchers via post. Participants who received their questionnaires by post were contacted by telephone 2 weeks later as a reminder to return the questionnaires, and they were subsequently contacted every 2 weeks with reminders up to 6 times. Site B participants had previously provided informed consent when completing a first set of questionnaires as part of their participation in the larger research study. All participants (each member of the couple) provided written informed consent and demographics information and completed standardized questionnaires assessing their self-focused approach and avoidance sexual goals, sexual satisfaction, and depressive symptoms. Women with PVD reported on their pain during sexual intercourse. Couples received financial compensation (\$20.00) as part of their participation in the larger studies, as well as information and a list of resources about PVD. Both studies were approved by institutional review boards at each site. Data sets and syntax for all analyses were uploaded to Open Science Framework (https://osf.io/fzte9/?view_only=cf66ec65395f410bb6c81a417ca55fa7).

Measures

Demographics

Participants reported on their age and education level. Women with PVD reported on the couple's shared income, relationship status, relationship duration, and their own pain duration.

Self-Focused Approach and Avoidance Sexual Goals

Self-focused sexual goals were assessed using 10 items from a sexual goal measure adapted from Cooper et al¹⁰ and Impett et al.¹¹ Participants rated the importance of self-focused approach (eg, "to pursue my own sexual pleasure") and self-focused avoidance (eg, "to avoid feeling bad about myself") sexual goals that contribute in general to their decision to engage in sex with their partner. All items were rated on a 7-point scale (1 = not at all important; 7 = extremely important). Scores were represented as mean scores, and higher scores indicated higher self-focused approach and avoidance goals for engaging in sex. Adaptations refer to language adaptations from the original items. For example, while the original measure by Cooper et al¹⁰ included an item about having sex because it "feels good," Impett et al¹¹ adapted the item to read, "to pursue my own sexual pleasure". Further adaptation included adding the item "To have an orgasm," given that pursuing sexual pleasure and orgasm is not always concurrent goals or experiences.

Given that these self-focused items have not previously been used separately from the interpersonal sexual goals included in the original measure¹⁰ and subsequent adaptation,¹¹ we conducted an exploratory factor analysis with our sample following the best practices for factor analysis in sexuality research.³⁶ This exploratory factor analysis also served to confirm that items were grouped as approach and avoidance. All analyses were conducted in SPSS, and parallel analysis used syntax developed by O'Connor.³⁷ We used promax (ie, oblique) rotation to achieve simple structure and estimate correlations between common factors. Common factors were extracted using maximum likelihood estimation. Sakaluk and Short³⁶ recommend retaining factors based on eigenvalues generated from real data that are larger than the randomly generated eigenvalues. Therefore, we conducted a parallel analysis using nested-model comparisons. The parallel analysis revealed that a factor solution with 2 common factors explained more of the variance in the scale items. The 2-factor solution demonstrated an acceptable model fit ($\chi^2(26) = 85.748, P < .0001$, root mean square error of approximation = 0.128). Of the 10 items, 6 items were initially conceptualized as approach and 4 items as avoidance. The 2-factor solution was largely consistent with the conceptualization of items as either approach or avoidance; however, one item interpreted as an avoidance item loaded with the approach items (ie, "To prevent feeling sexually frustrated). Therefore, this item was included in the approach subscale, and conceptually, this makes sense as an approach goal in terms of seeking sexual gratification. In addition, another item cross-loaded with both factors (ie, "To feel sexually desirable";

$r = 0.50$ and 0.40) and was therefore removed. Promax rotation and parallel analysis were repeated with the remaining 9 items and resulted in a 2-factor model, which demonstrated acceptable fit ($\chi^2(19) = 76.225, P < .0001$, root mean square error of approximation = 0.148). The final approach and avoidance subscales contained 7 and 2 items, respectively. Approach and avoidance sexual goals were not correlated ($r = 0.09$). The Cronbach's alpha for self-focused approach sexual goals was $\alpha = 0.82$ for women and $\alpha = 0.73$ for men, and it was $\alpha = 0.72$ for women and $\alpha = 0.77$ for men for avoidance sexual goals.

Pain

Women's pain intensity during sexual intercourse was assessed using a Numerical Rating Scale ranging from 0 to 10, where 0 is no pain at all, and 10 is the worst pain ever. Women were asked to rate their average level of pain in the last 6 months. This method for measuring pain has demonstrated significant positive correlation with other pain intensity measures,³⁸ as well as other pain ratings among women with PVD.³⁹

Sexual Satisfaction

Women and male partners' sexual satisfaction was assessed using the Global Measure of Sexual Satisfaction, a well-validated measure.⁴⁰ The Global Measure of Sexual Satisfaction consists of 5 bipolar items that participants rate using a 7-point scale, with items assessing the quality of their sexual experience (eg, good-bad, valuable-worthless, pleasant-unpleasant). Higher scores indicate greater satisfaction, and total scores can range from 5 to 35. For this sample, Cronbach's alpha was $\alpha = 0.93$ for women and $\alpha = 0.93$ for partners.

Depressive Symptoms

Depressive symptoms were assessed with the Beck Depression Inventory II,⁴¹ which is well-validated among populations with chronic pain.⁴² The Beck Depression Inventory II comprises 21 items outlining depression symptoms. Total scores range from 0 to 63, and higher scores indicate the greater presence of depressive symptoms. Cronbach's alpha for women was $\alpha = 0.93$ and $\alpha = 0.93$ for partners in this sample.

Data Analysis

Analyses were guided by the Actor Partner Interdependence Model. Data were analyzed using multilevel modeling mixed models in SPSS, version 24.0,⁴³ in which partners' data were nested within couples.⁴⁴ All models included women and male partners' self-focused approach and avoidance sexual goals as the independent variables. Each outcome variable was considered in a separate model. Associations were assessed between women's and partners' self-focused approach and avoidance sexual goals and their own outcomes (ie, actor effects) and their partners' outcomes (ie, partner effects). Significant partner effects refer to the association between an individual's sexual goals and his/her

Table 1. Descriptive statistics of the sample demographics and key variables for women with PVD and their partners ($N = 69$ couples)

Characteristics	Site A ($n = 37$)		Site B ($n = 32$)	
	Women	Partners	Women	Partners
Age (y), mean (SD)	26.96 (5.19)	29.49 (6.74)	28.91 (5.43)	31.14 (7.65)
Education (y), mean (SD)	16.32 (3.17)	16.05 (3.76)	16.41 (3.17)	15.70 (4.14)
Combined annual income, n				
\$0–19,999	4	–	5	–
\$20,000–39,999	9	–	5	–
\$40,000–59,999	7	–	3	–
\$60,000–79,999	8	–	6	–
\$80,000–99,999	4	–	6	–
> \$100,000	5	–	5	–
Did not disclose	0	–	2	–
Duration of pain (y), mean (SD)	4.78 (3.74)	–	4.03 (2.99)	–
Relationship duration (y), mean (SD)	4.92 (3.18)	–	6.20 (3.11)	–
Frequency of sexual intercourse in last month, mean (SD)	0.86 (2.25)	–	4.20 (4.04)	–
Relationship type, n				
Married	16	–	4	–
Cohabiting (not married)	21	–	18	–
Relationship (not cohabitating)	0	–	9	–
Relationship (unspecified)	0	–	1	–
Independent variables, mean (SD)				
Approach sexual goals	4.19 (1.47)	5.22 (1.17)	4.07 (1.20)	4.61 (1.11)
Avoidance sexual goals	4.11 (1.92)	2.99 (1.90)	3.02 (1.72)	2.06 (1.25)
Dependent variables, mean (range), SD				
Pain during intercourse (NRS 0-10)	7.19 (1.83)	–	4.64 (2.41)	–
Sexual satisfaction (GMSEX)	19.03 (8.80)	23.62 (7.56)	26.69 (5.41)	26.5 (6.97)
Depressive symptoms (BDI)	18 (10.80)	8.70 (6.12)	9.81 (10.18)	6.00 (10.85)

BDI = Beck Depression Inventory-II; GMSEX = Global Measure of Sexual Satisfaction; NRS = Numerical Rating Scale; PVD = provoked vestibulodynia.

partner's outcomes, controlling for the person's own sexual goals. For women's pain intensity, a linear regression analysis was conducted using both partners' self-focused approach and avoidance goals as independent variables and women's pain intensity as the outcome variable. Post hoc power analysis was conducted using the Actor Partner Interdependence Model Power App (<https://robert-ackerman.shinyapps.io/APIMPowerR/>) with a correlation between actor and partner variables of 0.3, which indicated a high-moderate power of 0.86 to detect actor effects and a low-moderate power of 0.45 to detect partner effects. The potential influence of demographic variables and recruitment site was examined. A multivariate analysis of variance was used to compare couples recruited from each site on all study variables, and correlations between demographics and study variables were conducted to determine relevant covariates.

RESULTS

Demographics

Demographic characteristics of the 69 couples and mean scores for study variables are presented in Table 1. Women ($M = 4.11$, $SD = 1.92$) and men ($M = 2.99$, $SD = 1.90$) at site A reported

higher self-focused avoidance sexual goals than women ($M = 3.02$, $SD = 1.72$) and men ($M = 2.06$, $SD = 1.25$) at site B (women $F(1, 67) = 6.13$, $P < .05$; men $F(1, 67) = 5.50$, $P < .05$). Men ($M = 5.22$, $SD = 1.17$) at site A reported higher self-focused approach sexual goals than men ($M = 4.61$, $SD = 1.11$) at site B ($F(1, 67) = 4.92$, $P < .05$). Women at site A also reported greater pain during sexual intercourse ($M_A = 7.19$, $SD_A = 1.83$; $M_B = 4.64$, $SD_B = 2.41$; $F(1,67) = 24.83$, $P < .001$), depressive symptoms ($M_A = 18.00$, $SD_A = 10.80$; $M_B = 9.82$, $SD_B = 10.18$; $F(1,67) = 10.40$, $P < .005$), and lower sexual satisfaction ($M_A = 19.03$, $SD_A = 8.80$; $M_B = 26.69$, $SD_B = 5.41$; $F(1,67) = 18.25$, $P < .001$). Therefore, a research site was included as a covariate in all analyses.

Age, relationship length, pain duration, and frequency of sexual intercourse were examined as potential covariates. Frequency of intercourse was the only variable that correlated >0.30 with any dependent variable (women's sexual satisfaction; $r = 0.39$, $P < .005$). Therefore, we included frequency of sexual intercourse as a covariate in analyses involving sexual satisfaction. Table 2 displays correlations between women and men's self-focused approach and avoidance sexual goals and all outcome variables.

Table 2. Correlations between self-focused sexual goals and outcome variables for women with PVD and their partners

Variables	1	2	3	4	5	6	7	8	9
1. Women's approach goals	-	-.018	.149	-.095	-.247*	.219	.237	-.134	-.106
2. Women's avoidance goals		-	-.053	.080	.193	-.213	-.200	.401**	.012
3. Men's approach goals			-	.457**	.267*	-.064	-.051	.069	.317**
4. Men's avoidance goals				-	.332**	-.240*	-.103	.119	.135
5. Women's pain (NRS)					-	-.490**	-.364**	.415**	.334**
6. Women's sexual satisfaction (GMSEX)						-	.526**	-.336**	-.183
7. Men's sexual satisfaction (GMSEX)							-	-.389**	-.248*
8. Women's depressive symptoms (BDI)								-	.314**
9. Men's depressive symptoms (BDI)									-

BDI = Beck Depression Inventory-II; GMSEX = Global Measure of Sexual Satisfaction; NRS = Numerical Rating Scale; PVD = provoked vestibulodynia.
* $P < .05$, ** $P < .01$.

Associations Between Self-Focused Approach and Avoidance Sexual Goals and Women's Pain During Sexual Intercourse

Table 3 shows the actor and partner effects for each outcome. When women reported greater self-focused approach goals, they reported lower pain intensity during sexual intercourse. The model was significant ($F(5,62) = 9.05$, $P < .01$), with an R^2 of 0.42. There were no significant associations with pain for women's self-focused avoidance sexual goals or partners' self-focused approach and avoidance goals.

Associations Between Self-Focused Approach and Avoidance Sexual Goals and Sexual Satisfaction, and Depressive Symptoms

When women reported higher self-focused approach goals, their partners reported higher sexual satisfaction ($b = 1.39$, standard error: 0.68, $P < .05$); however, this association was no longer significant when controlling for frequency of sexual intercourse. When women reported higher self-focused avoidance sexual goals, they reported more depressive symptoms. Contrary to expectations, when men reported higher self-focused approach sexual goals, they reported greater depressive symptoms. There were no significant associations between men's sexual avoidance goals and their own outcomes or between men's self-focused sexual goals and women's outcomes.

DISCUSSION

This study examined the associations between self-focused approach and avoidance sexual goals and sexual satisfaction and depressive symptoms for women with PVD and their partners, as well as women's pain during sexual intercourse. Prior research among couples with PVD has exclusively focused on interpersonal sexual goals,^{16,22,45} and neglected self-focused sexual goals despite evidence that these reasons are also endorsed by affected women.^{23,46}

When women reported having sex to fulfill more self-focused sexual approach goals, they also reported sex to be less painful. When endorsing higher approach goals, women with PVD may report lower pain because these goals allow them to attend more

to positive sexual cues such as pleasurable sensations, rather than the pain itself. This finding is consistent with prior research establishing attention to sexual cues as a mechanism by which interpersonal sexual goals are linked to pain in women with PVD.²¹ Focusing on the personal benefits of sexual activity may also enhance women's sexual desire and arousal and reduce pain-related cognitions (eg, catastrophizing)—factors known to affect pain intensity in PVD.⁴⁷ Furthermore, the pursuit of sexual pleasure and the subsequent experience of pleasurable sensations could act as physical counter-stimulation to the pain. In an functional magnetic resonance imaging study of a small sample of healthy women and men ($n = 5$), attention to counter-stimulation (ie, vibration) was associated with pain relief from a noxious thermal stimulus.⁴⁸ Women's self-focused approach sexual goals were also associated with men's higher sexual satisfaction, although this effect was no longer significant after controlling for sexual frequency. Considering how often couples with PVD engage in sexual intercourse is relevant, given that those engaging in more sexual activity may be doing so because they are already more satisfied.

As hypothesized, women's higher self-focused avoidance sexual goals—having sex to avoid feeling guilty or bad about oneself—were associated with their own greater depressive symptoms. Given that women with PVD consistently report pain-related negative feelings about themselves, such as shame, isolation, inadequacy, and questioning their womanhood,⁴⁹ their continued focus on avoiding these negative emotions as a reason for having sex with their partner may actually contribute to maintaining attention to, and ruminating about pain, leading to greater depressive symptoms. Indeed, avoidance motivation is linked with limiting positive experiences and increased negative information processing, which in turn contributes to increased depression.⁵⁰ It is also possible that women with PVD who are feeling more depressed may be more likely to rely on self-focused avoidance goals aimed at eliminating their negative affect states. This association is largely consistent with that in the previous research that has linked higher anxiety with higher endorsement of personal avoidance goals and depression with endorsement of fewer approach goals.⁵¹ As per approach-avoidance theory, the Behavioral Approach Systems are more sensitive to positive

Table 3. Associations between self-focused sexual goals and outcome variables

Outcome	Women's approach sexual goals		Women's avoidance sexual goals		Partner's approach sexual goals		Partners' avoidance sexual goals	
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>
Women's sexual satisfaction	1.34 (0.70)	1.92	-0.42 (0.50)	-0.85	0.55 (0.92)	0.59	-0.55 (0.63)	-0.88
Partners' sexual satisfaction	1.17 (0.70)	1.68	-0.70 (0.50)	-1.39	-0.01 (0.94)	-0.01	-0.11 (0.62)	-0.19
Women's depressive symptoms	-1.25 (0.93)	-1.34	2.10 (0.68)	3.07**	0.51 (1.21)	0.42	-0.08 (0.83)	-0.10
Partners' depressive symptoms	-1.09 (0.79)	-1.37	0.05 (0.58)	0.09	2.58 (1.02)	2.51*	-0.33 (0.71)	-0.47
Women's pain intensity	-0.51 (0.18)	-2.78**	0.12 (0.13)	0.94	0.32 (0.24)	1.37	0.17 (0.16)	1.05

b = unstandardized estimates; SE = standard error.

P* < .05, *P* < .01.

Degrees of freedom range from 55.21 to 62.00.

Bolded values indicate significant effects.

stimuli, and Behavioral Inhibition Systems are more sensitive to indications of punishment or negative stimuli.¹⁸ Daily-diary research has demonstrated that on days when women with PVD reported more depressive symptoms, they also reported higher pain during intercourse.⁵² This link between depression and pain among women with PVD may further explain women's tendency to focus on aversive stimuli, thus activating the Behavioral Inhibition System¹⁸ and contributing to increased use of avoidance goals.

Contrary to our hypotheses and approach-avoidance theory,⁵⁰ when men reported having sex for more self-focused approach goals, they reported more depressive symptoms. This unexpected finding may be the consequence of men pursuing sex for self-focused reasons in the context of women's pain. Despite the potential for approach sexual goals to draw an individual's focus to positive sexual cues,²¹ this mechanism may be thwarted by witnessing the woman's pain when the approach sexual goals are for self-focused reasons without consideration of the other (ie, not interpersonally or relationally focused). Qualitative findings suggest that partners report emotional distress and guilt related to perceived pressuring for sex⁵³; self-focused sexual goals in the face of women's pain experience may exacerbate this distress. Given the cross-sectional nature of the data, the reverse direction may also be true: men who experience greater depressive symptoms may be more likely to endorse self-focused approach sexual goals because men (compared with women) are more likely to use sex to alleviate negative affect.⁵⁴ Seeking positive feelings through sex when feeling depressed may not be beneficial for male partners' psychological and sexual well-being in the context of PVD. For example, on days of sexual activity, when male partners of women with PVD were more depressed, they were also more sexually distressed.⁵² Future longitudinal research designs would allow us to determine the temporal order of these associations for both women affected by PVD and their partners.

After controlling for the frequency of sexual activity, we found no evidence of partner effects (ie, the effect of an individual's self-focused sexual goals on their partner's outcomes). The lack of partners' effects may relate to the low-moderate power available in the present study, given its smaller sample size. Previous

studies examining approach-avoidant sexual motivation among couples with PVD have demonstrated partner effects.^{16,21} However, because the sexual goals considered in this study were self-focused in nature, it appears that these goals may be more relevant for an individual's personal well-being rather than their partner's psychological and sexual well-being.

The main limitation of this study is its cross-sectional design, limiting causal conclusions. There were also significant differences in the study variables between the 2 recruitment sites, suggesting that participants from site A may have been more distressed. While the recruitment site was included as a covariate in the analyses to control for these observed differences, there may have been other differences that were not considered between the 2 groups. For example, site B participants' previous participation in a study for couples affected by PVD likely provided exposure to information resources to seek treatment for PVD, which may have reduced their distress compared with participants at site A. Furthermore, participants at site A completed measures on laboratory computers, and this different method of data collection may have contributed to the observed differences between sites. An additional limitation relates to how our exploratory factor analysis yielded a self-focused avoidance factor with only 2 items related to managing negative affect. 2 items for a factor may contribute to instability,⁵⁵ and it is likely that these 2 items are not a comprehensive representation of the self-focused avoidance factor. Future research should include a broader consideration of avoidance reasons for sex to enhance understanding of an individual's desire to avoid personal negative sexual consequences (eg, having sex to avoid feeling "broken" because of one's sexual difficulty) and capture avoidance of more nuanced negative emotions and cognitions (eg, having sex to avoid shame associated with one's sexual difficulty, to avoid feelings of anger, to avoid feeling insecure).⁴⁹ The present sample was composed of only individuals in mixed-sex relationships, which limits the generalizability of the findings to sex- and gender-diverse couples.⁵⁶ This study focused on sexually active women experiencing PVD only, to the exclusion of other types of vulvar pain, including vaginismus. Therefore, the results may not readily generalize to women and couples affected by other

forms of vulvar pain and those who are not sexually active. PVD is defined independently of vaginismus as the most prevalent form of vulvodynia (ie, idiopathic vulvar pain),⁵⁷ and despite certain overlap in presentation and experience which can challenge differential diagnosis between PVD and vaginismus,⁵⁸ vaginismus has been distinguished by significant differences in fear and vaginal muscle tension.⁵⁹ Hence, it is possible that sexual motivations might differ in women with PVD who present with higher levels of fear of pain and muscle tension (ie, vaginismus). Finally, there is a portion of the sample from site B that did not undergo a gynecological examination to diagnose PVD. Therefore, while these women are experiencing similarly described pain to those diagnosed by a physician and self-reported symptoms strongly correlate with a diagnosis,^{2,29} it is possible that their clinical profile may differ from women with a diagnosis of PVD. Despite these limitations, the findings of this study highlight the potential clinical utility of understanding women and men's self-focused sexual goals in relation to pain and psychological well-being in the context of PVD.

CONCLUSIONS

Given that psychological interventions represent one of the most empirically supported treatment options for women and couples with PVD,^{3,60,61} findings may cue clinicians to the importance of exploring self-focused sexual goals alongside interpersonal sexual goals. In a clinical context, where partnered women with PVD express concerns over having lost a part of the relationship and themselves and fears over losing their partner,^{53,62} many of their sexual goals risk being other- or relationship-focused, to the potential exclusion of their own needs. Fostering self-focused sexual goals may be helpful in directing women's attention away from the interference of pain to the relationship and toward potential benefits of sexual activity for the self. Mindfulness-based interventions for PVD⁶³ can promote self-awareness of cognitions, emotions and bodily sensations, and may help cultivate self-focused sexual goals. Cognitive-behavioral couple-based approaches that target both partners' experiences in addition to targeting the pain⁶¹ may be helpful in helping couples navigate the balance between their own personal sexual goals and interpersonal sexual goals. Future research using longitudinal designs could investigate the prospective contribution of self-focused versus interpersonal sexual goals to pain and well-being of couples coping with PVD.

ACKNOWLEDGMENTS

This research was supported by operating grants from the Canadian Institutes of Health Research (CIHR) awarded to the second and third author, and a post-doctoral fellowship from the Social Sciences and Humanities Research Council (SSHRC) awarded to the first author. The authors would like to thank Mylène Desrosiers, Alexandra Anderson, and Gillian Boudreau for their assistance, as well as the many couples who participated in this research

Corresponding Author: Serena Corsini-Munt, PhD, School of Psychology, University of Ottawa, 136 Jean Jacques Lussier Private, Ottawa, Ontario, Canada, K1N 6N5. Tel: 613-562-5800; Fax: 613-562-5169; E-mail: serena.corsini-munt@uottawa.ca or serena.corsini-munt@uottawa.ca.

Conflict of Interest: The authors report no conflicts of interest.

Funding: This study was supported by the Canadian Institutes of Health Research (CIHR) (Reference # MOP69063; project title: Dyadic predictors of pain and related sexual impairment in women with vulvodynia: A prospective investigation).

STATEMENT OF AUTHORSHIP

Category 1

(a) Conception and Design

Serena Corsini-Munt; Natalie O. Rosen

(b) Acquisition of Data

Serena Corsini-Munt; Sophie Bergeron; Natalie O. Rosen

(c) Analysis and Interpretation of Data

Serena Corsini-Munt; Sophie Bergeron; Natalie O. Rosen

Category 2

(a) Drafting the Article

Serena Corsini-Munt

(b) Revising It for Intellectual Content

Serena Corsini-Munt; Sophie Bergeron; Natalie O. Rosen

Category 3

(a) Final Approval of the Completed Article

Serena Corsini-Munt; Sophie Bergeron; Natalie O. Rosen

REFERENCES

1. Harlow BL, Kunitz CG, Nguyen RH, et al. Prevalence of symptoms consistent with a diagnosis of vulvodynia: population-based estimates from 2 geographic regions. *Am J Obstet Gynecol* 2014;210:e1-e8.
2. Bergeron S, Binik YM, Khalifé S, et al. Vulvar vestibulitis syndrome: Reliability of diagnosis and evaluation of current diagnostic criteria. *Obstet Gynecol* 2001;98:45-51.
3. Bergeron S, Corsini-Munt S, Aerts L, et al. Female Sexual Pain Disorders: a Review of the Literature on Etiology and Treatment. *Curr Sex Health Rep* 2015;7:159-169.
4. Sutton KS, Pukall CF, Chamberlain S. Pain, Psychosocial, Sexual, and Psychophysical Characteristics of Women with Primary vs. Secondary Provoked Vestibulodynia. *J Sex Med* 2009;6:205-214.
5. Brauer M, ter Kuile MM, Laan E, et al. Cognitive-affective correlates and predictors of superficial dyspareunia. *J Sex Marital Ther* 2009;35:1-24.
6. Smith KB, Pukall CF. Sexual function, relationship adjustment, and the relational impact of pain in male partners of women with provoked vulvar pain. *J Sex Med* 2014;11:1283-1293.
7. Rosen NO, Santos-Iglesias P, Byers ES. Understanding the Sexual Satisfaction of Women With Provoked Vestibulodynia

- and Their Partners: Comparison With Matched Controls. *J Sex Marital Ther* 2017;43:747-759.
8. Reed BD, Harlow SD, Sen A, et al. Prevalence and demographic characteristics of vulvodynia in a population-based sample. *Am J Obstet Gynecol* 2012;206:170-e1-179.
 9. Whalen RE. Sexual motivation. *Psychol Rev* 1966;73:151-163.
 10. Cooper ML, Shapiro C, Powers S. Motivations for sex and risky sexual behavior among adolescents and young adults: A functional perspective. *J Pers Soc Psychol* 1998;75:1528-1558.
 11. Impett EA, Peplau LA, Gable SL. Approach and avoidance sexual motives: Implications for personal and interpersonal well-being. *Personal Relationships* 2005;12:465-482.
 12. Dewitte M, Van Lankveld J, Crombez G. Understanding sexual pain: A cognitive-motivational account. *Pain* 2011;152:251-253.
 13. Massey EK, Garnefski N, Gebhardt WA. Goal frustration, coping and well-being in the context of adolescent headache: a self-regulation approach. *Eur J Pain* 2009;13:977-984.
 14. Karsdorp PA, Vlaeyen JW. Goals matter: Both achievement and pain-avoidance goals are associated with pain severity and disability in patients with low back and upper extremity pain. *Pain* 2011;152:1382-1390.
 15. Brauer M, Lakeman M, van Lunsen R, et al. Predictors of task-persistent and fear-avoiding behaviors in women with sexual pain disorders. *J Sex Med* 2014;11:3051-3063.
 16. Rosen NO, Dewitte M, Merwin K, et al. Interpersonal goals and well-being in couples coping with Genito-Pelvic Pain. *Arch Sex Behav* 2017;46:2007-2019.
 17. Pukall CF. Primary and secondary provoked vestibulodynia: a review of overlapping and distinct factors. *Sex Med Rev* 2016;4:36-44.
 18. Gray J. *The Psychology of Fear and Stress*. 2nd ed. New York: Cambridge; 1987.
 19. Bancroft J, Graham CA, Janssen E, et al. The dual control model: Current status and future directions. *J Sex Res* 2009;46:121-142.
 20. Van Damme S, Van Ryckeghem DM, Wyffels F, et al. No pain no gain? Pursuing a competing goal inhibits avoidance behavior. *Pain* 2012;153:800-804.
 21. Rosen NO, Muise A, Impett EA, et al. Sexual cues mediate the daily associations between interpersonal goals, pain, and well-being in couples coping with vulvodynia. *Ann Behav Med* 2018;52:216-227.
 22. Dube JP, Bergeron S, Muise A, et al. A Comparison of approach and avoidance sexual goals in couples with vulvodynia and community controls. *J Sex Med* 2017;14:1412-1420.
 23. Elmerstig E, Wijma B, Bertero C. Why do young women continue to have sexual intercourse despite pain? *J Adolesc Health* 2008;43:357-363.
 24. Gravel EE, Pelletier LG, Reissing ED. "Doing it" for the right reasons: Validation of a measurement of intrinsic motivation, extrinsic motivation, and amotivation for sexual relationships. *Pers Individ Dif* 2016;92:164-173.
 25. Brunell AB, Webster GD. Self-determination and sexual experience in dating relationships. *Pers Soc Psychol Bull* 2013;39:970-987.
 26. Jodouin JF, Bergeron S, Desjardins F, et al. Sexual Behavior Mediates the Relationship Between Sexual Approach Motives and Sexual Outcomes: A Dyadic Daily Diary Study. *Arch Sex Behav* 2019;48:831-842.
 27. Nguyen RH, Ecklund AM, Maclehose RF, et al. Co-morbid pain conditions and feelings of invalidation and isolation among women with vulvodynia. *Psychol Health Med* 2012;17:589-598.
 28. Spoelstra SK, Weijmar Schultz WCM, Reissing ED, et al. The distinct impact of voluntary and autonomic pelvic floor muscles on genito-pelvic pain/penetration disorder. *Sex Relation Ther* 2019;34:462-472.
 29. Reed BD, Haefner HK, Harlow SD, et al. Reliability and validity of self-reported symptoms for predicting vulvodynia. *Obstet Gynecol* 2006;108:906-913.
 30. Bois K, Bergeron S, Rosen NO, et al. Sexual and relationship intimacy among women with provoked vestibulodynia and their partners: associations with sexual satisfaction, sexual function and pain self-efficacy. *J Sex Med* 2013;10:2024-2035.
 31. Lemieux A, Bergeron S, Steben M, et al. Do romantic partners' responses to entry dyspareunia affect women's experiences of pain? The roles of catastrophizing and self-efficacy. *J Sex Med* 2013;10:2274-2284.
 32. Boerner KE, Rosen NO. Acceptance of vulvovaginal pain in women with provoked vestibulodynia and their partners: associations with pain, psychological, and sexual adjustment. *J Sex Med* 2015;12:1450-1462.
 33. Rosen NO, Bergeron S, Sadikaj G, et al. Relationship satisfaction moderates the associations between male partner responses and depression in women with vulvodynia: a dyadic daily experience study. *Pain* 2014;155:1374-1383.
 34. Rosen NO, Bergeron S, Leclerc B, et al. Woman and partner-perceived partner responses predict pain and sexual satisfaction in provoked vestibulodynia (PVD) couples. *J Sex Med* 2010;7:3715-3724.
 35. ObjectPlanet, Inc. *Opinio*. 1998-2019. Available at: <http://www.objectplanet.com>.
 36. Sakaluk JK, Short SD. A methodological review of exploratory factor analysis in sexuality research: used practices, best practices, and data analysis resources. *J Sex Res* 2017;54:1-9.
 37. O'Connor BP. SPSS and SAS programs for determining the number of components using parallel analysis and velicer's MAP test. *Behav Res Methods Instrum Comput* 2000;32:396-402.
 38. Jensen MP, Karoly P. Self-report scale and procedures for assessing pain in adults. In: Turk DC, Melzack R, eds. *Handbook of pain assessment*. New York: The Guilford Press; 2001. p. 15-34.
 39. Desrochers G, Bergeron S, Khalifé S, et al. Fear avoidance and self-efficacy in relation to pain and sexual impairment in women with provoked vestibulodynia. *The Clin J Pain* 2009;25:520-527.

40. Lawrence K, Byers SE. Interpersonal Exchange model of Sexual Satisfaction Questionnaire. In: Davis CM, Yuber NL, Bauman R, et al., eds. *Handbook of sexuality-related measures*. Thousand Oaks: Sage; 1998.
41. Beck AT, Steer RA, Brown GK. *BDI-II, Beck Depression Inventory: Manual*. 2nd ed. Boston, MA: Harcourt, Brace, and Company; 1996.
42. Turner JA, Romano JM. Self-reported screening measures for depression in chronic pain patients. *J Clin Psychol* 1984; **40**:909-913.
43. IBM, Corp. *IBM SPSS Statistics for Windows*. 21.0 edn. Armonk, NY: IBM Corp.; Released; 2012.
44. Kenny DA, Kashy DA, Cook WL. *Dyadic data analysis*. New York, NY: The Guilford Press; 2006.
45. Rosen NO, Muise A, Bergeron S, et al. Approach and avoidance sexual goals in couples with provoked vestibulodynia: Associations with sexual, relational, and psychological well-being. *J Sex Med* 2015; **12**:1781-1790.
46. Elmerstig E, Wijma B, Swahnberg K. Prioritizing the partner's enjoyment: A population-based study on young Swedish women with experience of pain during vaginal intercourse. *J Psychosom Obstet Gynaecol* 2013; **34**:82-90.
47. Desrochers G, Bergeron S, Landry T, et al. Do psychosexual factors play a role in the etiology of provoked vestibulodynia? A critical review. *J Sex Marital Ther* 2008; **34**:198-226.
48. Longe SE, Wise R, Bantick S, et al. Counter-stimulatory effects on pain perception and processing are significantly altered by attention: an fMRI study. *Neuroreport* 2001; **12**:2021-2025.
49. Shallcross R, Dickson JM, Nunns D, et al. Women's Experiences of Vulvodynia: An Interpretative Phenomenological Analysis of the Journey Toward Diagnosis. *Arch Sex Behav* 2019; **48**:961-974.
50. Trew JL. Exploring the roles of approach and avoidance in depression: an integrative model. *Clin Psychol Rev* 2011; **31**:1156-1168.
51. Dickson J, MacLeod A. Brief Report Anxiety, depression and approach and avoidance goals. *Cogn Emot* 2004; **18**:423-430.
52. Paquet M, Rosen NO, Steben M, et al. Daily anxiety and depressive symptoms in couples coping with vulvodynia: associations with women's pain, women's sexual function, and both partners' sexual distress. *J Pain* 2018; **19**:552-561.
53. Sheppard C, Hallam-Jones R, Wylie K. Why have you both come? Emotional, relationship, sexual and social issues raised by heterosexual couples seeking sexual therapy (in women referred to a sexual difficulties clinic with a history of vulvar pain). *Sex Relation Ther* 2008; **23**:217-226.
54. Hill CA, Preston LK. Individual differences in the experience of sexual motivation: Theory and measurement of dispositional sexual motives. *J Sex Res* 1996; **33**:27-45.
55. Costello AB, Osborne JW. Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. *Pract Assess Res Eval* 2005; **10**.
56. Blair KL, Pukall CF, Smith KB, et al. Differential Associations of Communication and Love in Heterosexual, Lesbian, and Bisexual Women's Perceptions and Experiences of Chronic Vulvar and Pelvic Pain. *J Sex Marital Ther* 2015; **41**:498-524.
57. Bornstein J, Goldstein AT, Stockdale CK. Consensus vulvar terminology committee of the International Society for the Study of Vulvovaginal Disease, International Society for the Study of Women's Sexual Health (ISSWSH), International Pelvic Pain Society (IPPS). *J Sex Med* 2016; **13**:607-612.
58. Reissing E, Binik YM, Khalifé S, et al. Vaginal spasm, pain, and behavior: An empirical investigation of the diagnosis of vaginismus. *Arch Sex Behav* 2004; **33**:5-17.
59. Lahaie MA, Amsel R, Khalifé S, et al. Can fear, pain, and muscle tension discriminate vaginismus from dyspareunia/provoked vestibulodynia? Implications for the new DSM-5 diagnosis of genito-pelvic pain/penetration disorder. *Arch Sex Behav* 2015; **44**:1537-1550.
60. Bergeron S, Khalife S, Glazer HI, et al. Surgical and behavioral treatments for vestibulodynia: two-and-one-half year follow-up and predictors of outcome. *Obstet Gynecol* 2008; **111**:159-166.
61. Corsini-Munt S, Bergeron S, Rosen NO, et al. Feasibility and preliminary effectiveness of a novel cognitive-behavioral couple therapy for provoked vestibulodynia: a pilot study. *J Sex Med* 2014; **11**:2515-2527.
62. Ayling K, Ussher JM. "If sex hurts, am I still a woman?" the subjective experience of vulvodynia in heterosexual women. *Arch Sex Behav* 2008; **37**:294-304.
63. Brotto LA, Bergeron S, Zdaniuk B, et al. A comparison of mindfulness-based cognitive therapy vs cognitive behavioral therapy for the treatment of provoked vestibulodynia in a Hospital clinic setting. *J Sex Med* 2019; **16**:909-923.