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Associations Between Penetration Cognitions, Genital Pain, and Sexual Well-being in Women With Provoked Vestibulodynia

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ABSTRACT

Introduction: Provoked vestibulodynia (PVD) is a common vulvovaginal pain condition that negatively impacts women's psychological and sexual well-being. Controlled studies have found that women with PVD report greater negative and less positive cognitions about penetration; however, associations between these types of cognitions and women's pain and sexual well-being remain unknown. Further, researchers have yet to examine how interpersonal variables such as sexual communication may impact the association between women's penetration cognitions and PVD outcomes.

Aim: We examined associations between vaginal penetration cognitions and sexual satisfaction, sexual function, and pain in women with PVD, as well as the moderating role of sexual communication.

Methods: Seventy-seven women (M age = 28.32, SD = 6.19) diagnosed with PVD completed the catastrophic and pain cognitions and positive cognitions subscales of the Vaginal Penetration Cognition Questionnaire, as well as the Dyadic Sexual Communication Scale. Participants also completed measures of sexual satisfaction, sexual function, and pain.

Main Outcome Measures: Dependent measures were the (i) Global Measure of Sexual Satisfaction Scale; (ii) Female Sexual Function Index; and (iii) Present Pain Intensity scale of the McGill Pain Questionnaire, with reference to pain during vaginal intercourse.

Results: Women's lower catastrophic and pain cognitions, higher positive cognitions, and higher sexual communication were each uniquely associated with higher sexual satisfaction and sexual function. Lower catastrophic and pain cognitions also were associated with women's lower pain. For women who reported higher sexual communication, as positive cognitions increased, there was a significantly greater decrease in pain intensity during intercourse compared to women who reported lower levels of sexual communication.

Conclusion: Findings may inform cognitive-behavioral interventions aimed at improving the pain and sexual well-being of women with PVD. Targeting the couple's sexual communication and women's penetration cognitions may improve women's sexual adjustment and reduce pain.

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Key Words: Provoked Vestibulodynia; Vulvodynia; Penetration Cognitions; Sexual Communication; Sexual Satisfaction; Sexual Functioning

INTRODUCTION

Provoked vestibulodynia (PVD), a recurrent vulvovaginal pain condition, has a prevalence of 8% to 12% in the general population and is elicited by pressure to the vulvar vestibule during sexual and nonsexual activities.[1,2] Women with PVD experience disruptions to all aspects of their sexual functioning, as well as lower sexual satisfaction compared to women without this condition.[3–5] Research substantiates a multifactorial etiology[2] encompassing biological mechanisms,[6,7] as well as psychological and interpersonal risk factors. The importance of pain-related cognitions has

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been established in chronic pain,[8,9] sexual dysfunction,[10,11] and PVD.[12,13] However, there is a significant gap in knowledge regarding the role of penetration-specific cognitions.

According to the empirically supported cognitive-behavioral model applied to painful intercourse,[12,14] maladaptive thoughts give rise to a negative emotional reaction, perpetuating avoidance of sexual activity, which in turn elicits increased pain and reduced sexual functioning and satisfaction. Compared to controls, women with PVD report greater catastrophizing, fear of pain, and pain-hypervigilance.[4,13,15,16] These variables are associated with more pain and disability in chronic pain populations,[17–19] whereas heightened pain catastrophizing, negative pain attributions, and fear of pain have been linked to greater intercourse pain, impaired sexual functioning, and lower sexual satisfaction in women with PVD.[20–24] In contrast, a higher frequency of positive sexual cognitions is associated with higher sexual satisfaction in nonclinical samples.[25] In line with the cognitive-behavioral model, positive cognitions may reduce anxiety and counter maladaptive coping strategies (eg, avoidance) by encouraging more approach-oriented coping, reducing women's pain and sexual impairment. Positive cognitions may also assist women in shifting their attention away from their vulvovaginal pain and toward the pleasurable and satisfying aspects of the sexual experience, thus improving pain and sexual well-being.[26]

Thus, prior research substantiates the importance of general cognitions in PVD but has neglected the role of penetration-specific cognitions. Women with PVD are frequently avoidant of sexual activities, including intercourse, presumably due to the pain or fear of pain.[27] However, more than 80% of women with PVD continue to attempt intercourse regularly,[28] likely with the goal of maintaining intimacy or avoiding conflict in their relationships.[29] Therefore, how women think about penetration may affect their pain and sexual adjustment. The Vaginal Penetration Cognition Questionnaire (VPCQ) has been developed to assess women's intercourse-specific cognitions.[30] The current study examined 2 subscales of the VPCQ: (1) catastrophic and pain cognitions regarding future penetration attempts and anticipatory pain (eg, "penetration surely will not succeed") and (2) positive cognitions about vaginal penetration (eg, "penetration is a moment of intimacy with my partner").[30] Catastrophizing is considered to be one of the most robust psychological predictors of chronic pain intensity,[31] including in PVD.[12] Catastrophizing and pain penetration cognitions are distinct from general pain catastrophizing in that they extend beyond the domain of pain to also include thoughts related to the interpersonal sexual experience such as intimacy and pleasure. Women diagnosed with sexual pain disorders report significantly higher catastrophic and pain cognitions and lower positive cognitions about penetration compared to women without these disorders.[30,32] To our knowledge, researchers have yet to explore the associations between catastrophic and pain penetration cognitions and positive penetration cognitions and pain during intercourse, sexual satisfaction, and sexual functioning in women with PVD.

The pain of PVD is typically elicited during partnered sexual activities, highlighting the interpersonal nature of this condition. Biopsychosocial models of pain communication have underscored the role of communication in moderating the effect of intraindividual characteristics (e.g. cognitions) on patient pain and disability.[33] Dyadic sexual communication is the discussion of sexual matters between members of a couple.[34] Women with PVD report poorer dyadic sexual communication compared to women without this condition,[16] and greater dyadic sexual communication has been linked to better sexual functioning.[35] Women who report better sexual communication may be more likely to adapt their sexual activities to account for the pain, which could result in less or nonpainful sexual behaviors that are presumably more enjoyable.[36] In this way, greater sexual communication could bolster the beneficial impact of positive penetration cognitions and provide evidence against catastrophic and pain cognitions, resulting in lower pain and sexual impairments. In contrast, poorer sexual communication may reinforce catastrophic and pain cognitions about penetration because there is little opportunity to adapt the sexual relationship to reduce pain and improve sexual functioning.

AIMS

The present study examined the associations between vaginal penetration cognitions and sexual satisfaction, sexual function, and pain intensity in women with PVD, as well as the moderating role of sexual communication. It was hypothesized that women reporting more catastrophic and pain penetration cognitions would experience lower sexual satisfaction and sexual functioning, and higher pain intensity, whereas women reporting greater positive penetration cognitions would report higher sexual satisfaction and sexual functioning, and lower pain intensity. It was also predicted that poorer dyadic sexual communication would strengthen the associations between higher catastrophic and pain cognitions and poorer sexual and pain outcomes, whereas greater dyadic sexual communication would strengthen the associations between positive cognitions and improved sexual and pain outcomes.

METHODS

Participants

Participants were required to meet the following inclusion criteria: (i) painful intercourse during at least 75% of intercourse attempts in the past 6 months; (ii) pain limited to intercourse and other activities that involve pressure to the vestibule; (iii) vestibular pain in 1 or more locations during the standardized gynecological examination; (iv) in a romantic relationship and cohabitating with partner for at least 6 months; and (v) ability to speak and read in English. Women were ineligible if they met the following exclusion criteria: (i) unprovoked vulvar pain; and (ii) presence of one of (a) active

infection or dermatologic lesion (self-reported or diagnosed by the study gynecologist); (b) vaginismus (as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision); (c) pregnancy; and (d) age less than 18 years old or greater than 45 years. See Figure 1 for a flowchart of participant recruitment.

Procedure

Data for the present study were collected as part of a larger cross-sectional survey of couples coping with PVD. We have previously published 1 paper from this data set focusing on independent variables that are distinct from the present study.[26] Participants were recruited during their clinic visits to collaborating gynecologists and also through advertisements. Interested women participated in a brief telephone or in-person screening interview to confirm initial eligibility, and all participants underwent a standardized gynecological examination[37] conducted by the study gynecologist to confirm a diagnosis of PVD. Eligible women then attended a one-time session in the laboratory, in which they signed a consent form and completed questionnaires online. Women were compensated $20 for their participation and received a list of references for local health professionals who specialize in vulvovaginal pain. This study was approved by our institution's research ethics review board.

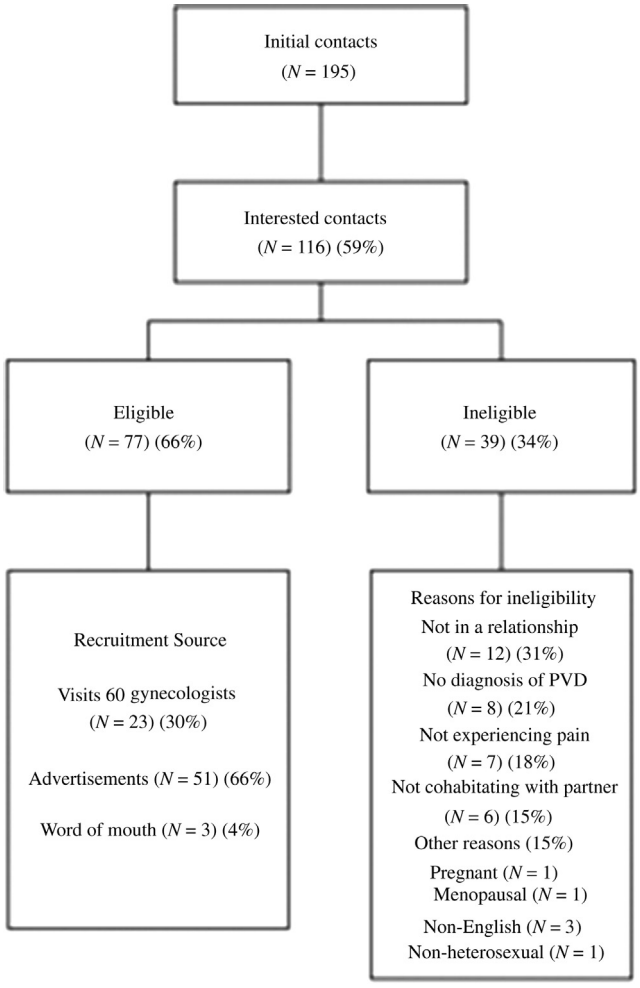

Figure 1. Flow of participants through each stage of recruitment in the current study.

Measures

Demographics

Sample characteristics were collected, including age, level of education, household annual income, relationship status, relationship duration, and pain duration.

Penetration Cognitions

Women's cognitions about vaginal penetration were measured using the Vaginal Penetration Cognition Questionnaire (VPCQ).[30] The catastrophic and pain cognitions (eg, "penetration surely will not succeed") and positive cognitions (eg, "penetration is a moment of intimacy with my partner") subscales of the VPCQ were used. Participants described their thoughts regarding vaginal penetration using five 7-point Likert scales (eg, 0 = *not at all applicable* to 6 = *very strongly applicable*). Scores on each subscale range from 0 to 30 with higher scores indicating higher cognitions. One item was removed from the catastrophic and pain penetration cognition subscale (eg, "I am afraid of cramping up during penetration") to improve the internal consistency of the measure from .66 to .76. The deleted item was not representative of the PVD experience[38] and from a statistical standpoint, the item did not load onto the respective subscale. Cronbach alpha was .76 for both subscales.

Sexual Communication

Women's perception of sexual communication within their relationship was measured using the Dyadic Sexual Communication scale (DSC).[39] The DSC is a 13-item measure (eg, "My partner rarely responds when I want to talk about our sex life"), in which women rated how they perceive the discussion of sexual matters with their partners on a 6-point Likert scale (eg, 1 = disagree strongly to 6 = agree strongly). Scores range from 13 to 78, with higher scores indicating higher sexual communication. Cronbach alpha for this sample was .79.

Main Outcome Measures

Sexual Satisfaction

The Global Measure of Sexual Satisfaction scale (GMSEX)[40] was used to assess women's global evaluation of the positive and negative aspects of their sexual relationship. Women described their overall sexual relationship with their partner on five 7-point bipolar scales (eg, 1 = unsatisfying to 7 = satisfying). Scores range from 5 to 35, with higher scores indicating higher sexual satisfaction. Cronbach alpha for this sample was .92.

Sexual Functioning

Women's sexual functioning was measured with the Female Sexual Function Index (FSFI).[41] The FSFI consists of 19 items assessing 6 domains of global sexual functioning: desire, arousal, lubrication, orgasm, satisfaction, and pain. Each item was rated on a 5-point Likert scale (eg, 1 = almost never or never to 5 = almost always or always), in which women were asked to report their sexual feelings and responses over the past 4 weeks. Items for each domain are summed and scaled, resulting in a maximum domain score of 6. The FSFI total score is the sum of the 6 domain totals and has a range of 2 to 36, with lower scores indicating greater sexual dysfunction. The FSFI has a validated cut-off score of $\leq$ 26.0 for diagnosing female sexual dysfunction.[42] Cronbach alpha for this sample was .94.

Pain During Intercourse

Women's pain during intercourse was assessed using the 6-point Present Pain Intensity (PPI) scale of the McGill-Melzack Pain Questionnaire (MPQ).[43] Participants were asked to rate the average intensity of their pain during intercourse within the last 6 months using the 6-point PPI scale (eg, 0 = no pain, 5 = excruciating). The PPI correlates significantly with the Pain Rating Index (PRI) of the MPQ across a number of chronic pain conditions.[43]

Analyses

Expectation maximization (EM) was used to replace missing data only in cases when less than 10% of a scale or subscale was omitted. Using this technique, missing values are imputed iteratively, and a degree of random error is injected to reflect uncertainty of iteration.[44] Correlations were conducted to identify potential significant covariates in the demographics. A hierarchical regression analysis was conducted for each of the dependent variables. Independent variables were entered at Step 1 of the regression and then at Step 2, all 2-way interactions between cognitions and the moderator of sexual communication were entered. To reduce multicollinearity,[45] all independent and moderator variables were mean centered before the calculation of the interaction terms. Simple slopes analyses were conducted to facilitate interpretation of significant interactions. Regression lines were plotted for one standard deviation above and below the mean for independent and moderator variables.[45,46]

RESULTS

Demographics and Zero-Order Correlations

Table 1 displays the descriptive statistics for sociodemographics, means, and standard deviations for all study variables. No sociodemographic variables were correlated with the outcomes at $r = .30$ or greater.[47] The DSC scale was added after 14 participants had already completed the survey; however, there were no significant differences between women who completed the DSC (n = 63) and those who did not (n = 14) on any of the study variables. Table 2 presents the intercorrelations among the study variables.

Table 1. Descriptive Statistics of Sample Sociodemographics (N = 77)

	M (range) or n	*SD* or %
Age (y)	28.32 (18–44)	6.19
Relationship length (y)	6.37 (.58–20)	5.04
Duration of pain (y)	6.16 (.5–19)	4.59
Education duration (y)	16.13 (11–22)	2.67
Relationship status		
Married	33	42.9%
Cohabitating	44	57.1%
Couples' annual income		
$0–19,999	7	9.10%
$20,000–39,000	16	20.78%
$40,000–59,000	12	15.58%
$60,000–79,000	19	24.68%
$80,000–99,000	11	14.29%
$100,000 and over	12	15.58%
Independent variables (VPCQ)		
*Positive penetration cognitions	13.6 (0–28)	6.73
Catastrophic and pain penetration cognitions	12.03 (0–24)	6.59
Moderator variable		
†Sexual communication (DSC)	60.21 (38–78)	10.64
Dependent variables		
Sexual satisfaction (GMSEX)	21.44 (5–35)	7.49
‡Sexual function (FSFI)	19.61 (6.70–34.30)	6.31
§Intercourse pain intensity (PPI)	3.31 (2–5)	.77

VPCQ = Vaginal Penetration Cognition Questionnaire; DSC = Dyadic Sexual Communication Scale; GMSEX = Global Measure of Sexual Satisfaction; FSFI = Female Sexual Function Index; PPI = present pain intensity on scale of 0–5.
*n = 75 for this questionnaire.
†n = 63 for this questionnaire.
‡n = 74 for this questionnaire.
§n = 76 for this questionnaire.

Predictors of Sexual Satisfaction

Consistent with our hypotheses and as depicted in Table 3, women's lower catastrophic and pain penetration cognitions ($\beta = -.24$, $P = .01$, $sr^2 = .05$) and women's higher positive penetration cognitions ($\beta = .48$, $P < .001$, $sr^2 = .22$) were associated with higher sexual satisfaction. Furthermore, higher sexual communication was associated with women's higher sexual satisfaction ($\beta = .38$, $P < .01$, $sr^2 = .14$). The overall model at Step 2 was significant [$F(3,56) = 11.82$, $P < .01$] and accounted for 56% of the variability in women's sexual satisfaction. There were no significant interaction effects between women's penetration cognitions and sexual communication on women's sexual satisfaction.

Table 2. Correlations Between Women's Penetration Cognitions, Sexual Communication, Sexual Satisfaction, Sexual Function, and Pain Intensity

Variable	N	1	2	3	4	5	6
1. Catastrophic and pain cognitions (VPCQ)	77	1					
2. Positive cognitions (VPCQ)	77	−.23*	1				
3. Sexual communication (DSC)	63	−.08	.16	1			
4. Sexual satisfaction (GMSEX)	77	−.31†	.51†	.48†	1		
5. Sexual function (FSFI)	74	−.26*	.54†	.44†	.70†	1	
6. Pain intensity (PPI)	77	.39†	−.25*	.20	−.14	−.09	1

VPCQ = Vaginal Penetration Cognition Questionnaire; DSC = Dyadic Sexual Communication Scale; GMSEX = Global Measure of Sexual Satisfaction; FSFI = Female Sexual Function Index; PPI = present pain intensity on scale of 0–5.
*$P < .05$.
†$P < .01$.

Predictors of Sexual Function

Based on recommendations regarding use of the measure of sexual functioning,[48] 3 women were excluded from analyses for sexual functioning due to lack of sexual activity within the past 4 weeks. In line with our hypotheses and as shown in Table 3, lower catastrophic and pain penetration cognitions ($\beta = -.22$, $P = .02$, $sr^2 = .05$) and higher positive penetration cognitions ($\beta = .55$, $P < .01$, $sr^2 = .29$) were associated with higher sexual function. In addition, higher sexual communication ($\beta = .32$, $P < .01$, $sr^2 = .10$) was associated with women's higher sexual function. The overall model at Step 2 was significant [$F(3,53) = 12.82$, $P < .01$] and accounted for 60% of the variability in women's sexual function. There were no significant interactions between women's penetration cognitions and sexual communication on sexual functioning.

Predictors of Intercourse Pain Intensity

As indicated in Table 3 and consistent with our hypotheses, higher catastrophic and pain penetration cognitions were associated with greater intercourse pain intensity ($\beta = .33$, $P = .01$, $sr^2 = .10$). There was no association between positive penetration cognitions and women's self-reported pain intensity during intercourse. Unexpectedly, higher sexual communication was associated with women's higher intercourse pain intensity ($\beta = .26$, $P = .03$, $sr^2 = .07$). The overall model at Step 2 was significant [$F(6,56) = 4.00$, $P < .01$], accounting for 30% of the variability in women's intercourse pain intensity. The above-mentioned main effects were qualified by a significant positive penetration cognition by sexual communication interaction ($\beta = -.29$, $P = .02$, $sr^2 = .08$) (Figure 2). For women who reported higher levels of sexual communication in the

Table 3. Hierarchical Regression Analyses of Penetration Cognitions, Sexual Communication, Sexual Satisfaction, Sexual Function, and Pain Intensity

	Sexual satisfaction			Sexual function			Pain intensity		
	B	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Step 1									
Catastrophic and pain cognitions	−1.11	.43	−.24*	−.90	.36	−.22*	.15	.05	.33†
Positive cognitions	2.72	.52	.48†	2.70	.44	.55†	−.12	.06	−.23
Sexual communication	.28	.07	.38†	.20	.06	.32†	.02	.01	.26*
Step 2									
Catastrophic / pain cognitions × Sexual communication	−.07	.05	−.15	−.01	.04	−.02	$6.73e^{-4}$	.01	.02
Positive cognitions × Sexual communication	−.02	.04	−.05	.01	.04	.02	−.01	.01	−.29*
Catastrophic / pain cognitions × Positive cognitions	.08	.38	.02	.64	.34	.18	−.01	.05	−.01

Note: Sexual satisfaction $R^2 = .54$ for Step 1; $\Delta R^2 = .02$ for Step 2; sexual function $R^2 = .56$ for Step 1; $\Delta R^2 = .03$ for Step 2; pain intensity $R^2 = .22$ for Step 1; $\Delta R^2 = .08$ for Step 2.
Penetration cognitions = Vaginal Penetration Cognition Questionnaire; sexual communication = Dyadic Sexual Communication Scale; sexual satisfaction = Global Measure of Sexual Satisfaction; sexual function = Female Sexual Function Index; pain intensity = Present pain intensity on scale of 0–5.
*$P < .05$.
†$P < .01$.

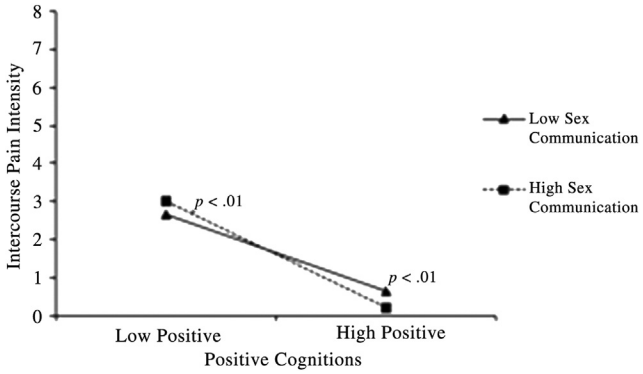

Figure 2. Two-way interaction between positive penetration cognitions and sexual communication, for the outcome of intercourse pain intensity.

relationship, as positive cognitions increased, there was a significantly greater decrease in pain intensity during intercourse [$b = -1.04$, $t(59) = -2.82$, $P < .01$] compared to women who reported lower levels of sexual communication [$b = -.76$, $t(59) = -2.92$, $P = .01$].[45,46]

DISCUSSION

The present study examined the associations between vaginal penetration cognitions, sexual satisfaction, sexual function, and pain intensity in women with PVD, as well as the moderating role of sexual communication. Findings highlight the importance of considering vaginal penetration cognitions and sexual communication together in the experiences of women with PVD.

Higher catastrophic and pain penetration cognitions were associated with lower sexual satisfaction and sexual function. This finding extends the research linking pain catastrophizing to disability in other chronic pain conditions[18,19,49] and to sexual well-being in women suffering from genital pain[12,23,24] by highlighting the role of cognitions specific to intercourse. In accordance with the Fear-Avoidance Model, catastrophic cognitions about penetration may develop from a painful sexual experience, giving rise to anxiety and perpetuating avoidance of sexual intercourse.[9] Indeed, intercourse avoidance has been found to partially mediate the relationship between pain-related cognitions and pain and sexual satisfaction in women with PVD.[50] The items reflecting catastrophic and pain penetration cognitions relate to thoughts about the feasibility of penetration and the woman's pain self-efficacy. Women experiencing painful intercourse are avoidant of sexual cues[51] and hypervigilant to cues of pain.[4] Therefore, negative penetration cognitions may redirect the woman's attention away from potential positive aspects of sexual activity (eg, partnered intimacy) and toward her vulvovaginal pain, interfering with her sexual desire, arousal, and satisfaction.

Positive penetration cognitions were uniquely associated with higher sexual satisfaction and sexual functioning in women with PVD. Positive intercourse-related thoughts may counter maladaptive coping strategies (ie, avoidance) and negative interpretations of the pain experience (ie, fear of pain and pain hypervigilance), promoting the belief that a woman can cope with her pain (ie, improving her pain self-efficacy). Recent research has shown that improvements in pain self-efficacy are associated with less intercourse avoidance, as well as greater sexual satisfaction and sexual functioning among women with PVD.[12,50] It is also possible that women with higher positive penetration cognitions are less fearful of the pain and penetration. This may increase their motivation to engage in any sexual activity, including that which is less or nonpainful, thereby enhancing their overall sexual satisfaction and functioning. A recent study showed that women with PVD who engage in sexual activity to pursue positive outcomes such as intimacy with their partner also reported greater sexual satisfaction and functioning.[29]

Consistent with findings in nonclinical samples[34,52–54] and in PVD,[35] higher sexual communication was associated with higher sexual satisfaction and sexual functioning. Openly discussing sexual matters may promote greater flexibility in the sexual scripts of couples coping with PVD. This may encourage couples to explore varied sexual activities that do not involve penile-vaginal penetration, thus reducing the perceived negative effects of vulvovaginal pain on their sexual experience.[53,55] Communicating sexual concerns and fears to one's partner also may relieve some of the distress caused by the uncertainty about a partner's sexual expectations.[56] Previous studies have found that better dyadic sexual communication is associated with lower levels of sexual distress in women with self-reported vulvovaginal pain.[35]

Unexpectedly, sexual communication did not moderate the relationship between women's penetration cognitions and their sexual well-being. Sexual communication may promote adaptive coping behaviors, such as engaging in pain-free, nonpenetrative sexual activities. Consequently, sexual communication may not strengthen cognitions that are specific to penetration, but rather foster positive cognitions in general with regard to pleasurable sexual activities. Indeed, nonpenetrative sexual activities have been found to be a better predictor of sexual satisfaction over and above intercourse behavior in women who experience genital pain.[5]

Expanding on studies examining the impact of general pain catastrophizing in chronic pain[9] and in PVD,[12,57] catastrophic and pain cognitions specific to penetration were uniquely associated with intercourse pain intensity in the current sample. Catastrophic thoughts about penetration may be linked to pain intensity by drawing attention to the pain experience.[57] Indeed, women experiencing painful intercourse are hypervigilant to cues of pain,[4] whereas attention bias to painful stimuli has been found to predict pain intensity.[58]

For women who reported higher positive penetration cognitions, communicating openly about sexual matters with

one's partner was associated with lower pain during intercourse, compared to when sexual communication was lower. Consistent with intimacy models of chronic pain,[36,59] higher sexual communication may foster intimacy, thereby enhancing the woman's desire for intercourse and promoting positive penetration cognitions. Pursuing positive experiences to promote relational intimacy (ie, higher approach motives) predicts sexual desire in daily sexual interactions among nonclinical samples[60] and is associated with higher sexual and relationship satisfaction in women with PVD.[29] Dyadic sexual communication also may involve pain-related discussion, and the impact of sexual communication may be further influenced by how the partner responds to the pain. For women who report higher positive penetration cognitions, pain-related discussion may be more likely to evoke facilitative partner responses that promote adaptive coping (eg, expressions of love and encouragement), which have been linked to lower pain in women with PVD.[26]

The present study is correlational and no causal conclusions can be drawn. It may be that women who experience lower pain intensity during intercourse have higher positive penetration cognitions, and this relationship also might be influenced by whether PVD is primary or secondary. This study included a relatively small sample of young women in stable, heterosexual relationships; therefore, findings may not generalize to all women with PVD, women in same-sex relationships, or to other subtypes of genitopelvic pain, including vaginismus. Women with vaginismus are characterized by heightened avoidance and more negative penetration cognitions compared to women with dyspareunia.[30,32,61] Finally, interpretations of the results were primarily within a cognitive-behavioral therapy (CBT) framework.

CONCLUSIONS

Findings from this study suggest that clinicians focus on reducing catastrophic and pain penetration cognitions and on bolstering positive penetration cognitions and sexual communication. Results also highlight the potential benefits of including the partner in psychosocial treatments for PVD and call for the development of couples' interventions that examine the efficacy of targeting women's penetration cognitions and couples' sexual communication. In particular, it may be valuable to incorporate the restructuring of maladaptive penetration-specific cognitions into CBT treatments and also to expand the focus to positive thoughts about penetration. Researchers have recently documented promising results regarding the efficacy of cognitive-behavioral couples therapy for PVD, positing that dyadic factors (including sexual communication) may be contributing to positive sexual interactions and associated outcomes.[62] The results of the current study support this assertion, such that enhancing sexual communication may contribute to improved pain outcomes for women with PVD, particularly when positive penetration cognitions have been established.

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