

PAIN

It Takes Two: Sexual Communication Patterns and the Sexual and Relational Adjustment of Couples Coping With Provoked Vestibulodynia



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ABSTRACT

Introduction: Provoked vestibulodynia (PVD) is a prevalent vulvovaginal pain condition that is associated with sexual and relational consequences for women and their partners. Greater perceived quality of sexual communication has been associated with women's lower pain during intercourse and with couples' better sexual and relational well-being. Whether couples' collaborative (eg, expressing feelings or problem solving) and negative (eg, withdrawing or criticizing) sexual communication patterns (SCPs) are differentially associated with couples' adjustment to PVD is unknown.

Aim: To examine associations between collaborative and negative SCPs and women's pain and the sexual and relationship adjustment of women with PVD and their partners.

Methods: Women diagnosed with PVD (N = 87) and their partners completed the Sexual Communication Patterns Questionnaire and measurements of pain (women only), sexual functioning, sexual satisfaction, sexual distress, and relationship satisfaction.

Main Outcome Measures: (i) Numerical rating scale of pain during intercourse, (ii) Female Sexual Function Index and International Index of Erectile Function, (iii) Global Measure of Sexual Satisfaction, (iv) Female Sexual Distress Scale—Revised, and (v) Couple Satisfaction Index.

Results: When women reported greater collaborative SCP, they also reported higher sexual and relationship satisfaction. When women reported greater negative SCP, they reported less relationship satisfaction and had partners who reported greater sexual distress. When partners reported greater collaborative SCP, they also reported higher relationship satisfaction and had female partners who were less sexually distressed. When partners reported higher negative SCP, they also reported less relationship satisfaction. There were no associations between SCP and women's or partners' sexual functioning or women's pain.

Conclusion: Collaborative SCP may benefit couples' sexual and relational well-being, whereas negative SCP may impede sexual and relational adjustment to PVD. Findings provide preliminary support for the need to assess and target collaborative and negative SCPs in psychological interventions for couples affected by PVD.

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Key Words: Sexual Communication; Communication Patterns; Provoked Vestibulodynia; Couples; Vulvodynia; Pain

INTRODUCTION

Provoked vestibulodynia (PVD)—a subtype of vulvodynia in which women experience pain when pressure is applied to the vulvar vestibule—is a prevalent vulvovaginal pain condition affecting 7% to 12% of women in the general population.^{1,2} Recent formulations have supported a biopsychosocial conceptualization of the etiology and maintenance of PVD.³ Although the pain can be elicited in non-sexual contexts (eg, gynecologic examinations), for most women, partnered sexual activity

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(eg, vaginal penetration) is the most functionally impairing context in which PVD is triggered, pointing to the inherently interpersonal nature of this pain. Controlled studies have indicated that PVD has consequences for affected women and their partners, including decreased sexual functioning and satisfaction and increased sexual distress.^{4–6} Moreover, affected couples experience decreased relationship satisfaction or distress over the perceived impact of PVD on the relationship^{6–8} (but also see Smith and Pukall⁵).

Because sexual dysfunctions are typically experienced within the context of relationships, Dewitte⁹ proposed that it is necessary to evaluate individual and relational factors that influence couples' sexual relationships. Increasingly, studies of couples coping with PVD have highlighted the range of interpersonal factors, including positive and negative aspects of couple interactions, that facilitate or interfere with couples' overall adjustment.⁷ For example, facilitative partner responses to pain (ie, encouraging adaptive coping) have been linked to women's lower pain and couples' more favorable sexual outcomes, whereas solicitous (eg, expressing sympathy) and negative (eg, expressing hostility) responses have been associated with poorer outcomes.^{10,11} "Sexual communication patterns" (SCPs) are another relevant relational factor that can improve couples' adjustment to PVD but have received little empirical attention. The present study investigated associations between couples' collaborative and negative SCPs and women's pain and couples' sexual and relational adjustment to PVD.

Open sexual communication is positively related to sexual function and sexual and relationship satisfaction.^{12–14} Nonetheless, sexual topics are rated as one of the most difficult topics for couples to discuss¹⁵ and might be more challenging in the presence of a sexual dysfunction. Indeed, controlled and uncontrolled studies have shown that women and partners affected by vulvovaginal pain report poor quality and inhibited sexual communication.^{4,6,16} An empirically supported theory of sexual communication suggests that it could contribute to more favorable sexual outcomes by facilitating couples' practice of mutually satisfying sexual behaviors ("instrumental pathway") and by promoting intimacy between partners ("expressive pathway").^{12,17} In PVD, sexual communication through these two pathways also might encourage modified pain coping, such as generating greater emotional responsiveness between partners about PVD¹⁸ or decreasing the focus on penetrative sexual activities that trigger pain. Recently, two dyadic studies in samples with vulvovaginal pain found that when women reported greater dyadic sexual communication, they also reported better sexual functioning and satisfaction, lower sexual distress, and higher relationship satisfaction. When male partners reported greater dyadic sexual communication, they also reported better sexual functioning and sexual satisfaction and had female partners who were more sexually satisfied and reported less pain during intercourse.^{19,20}

Prior research on sexual communication in couples affected by PVD has focused on their subjective evaluations of the quality of

their sexual communication.^{4,6,19,20} However, little is known about what the conversations sound like when women and partners discuss the problems that inevitably arise in their sexual relationship (eg, the behaviors or reactions of each partner). Empirically supported theories of marital communication indicate that how couples engage with each other about relationship problems (ie, their communication patterns) are related to their relationship outcomes.^{21–25} In particular, communication patterns involving collaborative engagement between partners (eg, openly discussing problems, expressing understanding, exploring compromises) predict beneficial relationship and sexual outcomes in community samples and in couples coping with breast or prostate cancer.^{21–23} In contrast, communication patterns reflecting negative engagement or a lack of engagement between partners (eg, expressed anger, making demands, withdrawal, criticism, defensiveness) are associated with poorer relationship outcomes,^{23–25} although this is not always the case.²⁴

Although researchers have recognized that communication patterns can play an important role in couples' sexual relationships,⁹ to our knowledge, communication patterns have not been previously examined in couples coping with a sexual dysfunction such as PVD. Examining SCPs in couples coping with PVD could help identify whether the ways couples engage in conversations about their sexual problems facilitate or hinder their adjustment to PVD.

AIMS

Using a dyadic, cross-sectional design, we examined associations between women's and partners' perceptions of their collaborative and negative SCPs and women's pain intensity and both partners' sexual functioning, sexual satisfaction, sexual distress, and relationship satisfaction. We hypothesized that women's and partners' higher collaborative SCP and lower negative SCP would be associated with women's lower pain intensity and the individuals' own and their partners' better sexual functioning, sexual satisfaction, and relationship satisfaction and lower sexual distress.

METHODS

Participants

Eighty-seven women with PVD and their partners participated in this study. Couples were recruited from April 2014 through April 2016 to participate in a two-city treatment study. Eligible couples were at least 18 years of age, were in a committed monogamous relationship for at least 6 months, were cohabiting or had at least four in-person contacts a week, and had attempted vaginal penetration with one another at least once per month for the past 3 months (the latter being a necessary criterion for the treatment study²⁶ in which pain during intercourse is the primary outcome measurement). In addition, the following inclusion criteria were applied for women experiencing pain: younger than 45 years (due to vulvar changes that occur in the perimenopausal period)²⁷; minimum pain duration of 1 year on 80% of penetration attempts; pain triggered when pressure

was applied to the vulvar vestibule (eg, intercourse, tampon insertion); and a diagnosis of PVD from a collaborating gynecologist using a standardized cotton swab test (ie, women's self-reported pain upon randomized palpation, using a cotton swab, of the vulvar vestibule at 3, 6, and 9 o'clock).²⁸ Exclusion criteria were presence of an active vaginal infection or dermatologic condition; currently pregnant or planning a pregnancy; currently receiving treatment for PVD; and a diagnosis of a major medical or psychiatric illness.

Two hundred seventy-nine women were screened for eligibility through the following recruitment sources: local ($n = 112$; 40.1%) or online ($n = 53$; 19.0%) advertisements, health care provider referrals ($n = 16$; 5.7%), collaborating gynecologists ($n = 31$; 11.1%), prior participation in our research studies ($n = 52$; 18.6%), and other or unknown sources ($n = 15$; 5.4%). One hundred eighty-six women (66.7%) were ineligible for the following reasons: partner was ineligible or not interested ($n = 20$; 10.8%); did not meet PVD or pain criteria ($n = 47$; 25.3%); ineligible relationship status ($n = 53$; 28.5%); ineligible age ($n = 22$; 11.8%); pursuing PVD treatment ($n = 28$; 15.1%); pregnant, planning a pregnancy, or recently gave birth ($n = 10$; 5.3%); and other reasons ($n = 6$; 3.2%). Six women were no longer interested in participating after being screened. Six women (6.9% of final sample) did not attend their gynecologic examination appointment but were included in this study given the excellent reliability and validity of self-reported symptoms for predicting vulvodynia diagnoses.²⁹ Of the final sample of 87 couples, 62% were from study site 1 and 38% were from study site 2.

Procedure

Each institution's research ethics boards approved the larger treatment study. All study procedures were consistent between the two study sites. Interested participants were screened for eligibility over the phone and were asked to confirm their partners' interest in the study. Couples attended an appointment with a research assistant where they provided their informed consent, took part in a brief structured interview to collect sociodemographic information, and completed online self-report measurements on separate computers. This appointment constituted the baseline assessment before couples were enrolled in the treatment study. Couples were compensated \$30 for their time. Women attended a gynecologic assessment with a collaborating gynecologist to confirm the diagnosis of PVD.

Measurements

Sexual Communication Patterns

The 22-item Sexual Communication Patterns Questionnaire (S-CPQ) was used to measure participants' self-reported patterns of sexual communication. The S-CPQ was adapted from the 35-item Communication Patterns Questionnaire,³⁰ which measures communication patterns concerning relationship conflicts. A subset of items from the original measure that were deemed

relevant for sexual communication in a PVD sample was selected for the S-CPQ. The S-CPQ assesses participants' perceptions of how they and their partner communicate about problems affecting their sexual relationship. Participants rate the likelihood of using each communication pattern on a nine-point Likert-type scale ("very unlikely" to "very likely"). We validated the factor structure of the S-CPQ in an independent online sample of sexually active men and women in relationships (K.M. Rancourt, N.O. Rosen, unpublished data, 2016). Exploratory factor analysis showed a two-factor structure; these factors were labeled "collaborative" and "negative" SCPs. The collaborative SCP subscale consisted of eight items representing collaboration between members of the couple in their discussion or resolution of the sexual problem (eg, the two members express their feelings to each other). The negative SCP subscale consisted of 14 items representing the expression of high negative affect by at least one member of the couple (eg, the two members blame, criticize, or accuse each other). The collaborative and negative subscales demonstrated excellent internal consistency in the validation sample ($\alpha = 0.89$ and 0.93 , respectively). Total summed subscale scores range from 8 to 72 for the collaborative SCP subscale and from 14 to 126 for the negative SCP subscale, with higher scores indicating greater likelihood of using these SCPs. The internal consistency for each subscale in the present sample and internal consistencies of all outcome measures are presented [Table 1](#).

Main Outcome Measures

Pain

Women with PVD rated their average pain intensity during intercourse over the past 6 months using a 0 (no pain) to 10 (worst pain ever) numerical rating scale. The numerical rating scale is a recommended scale for assessing clinical pain intensity and has demonstrated convergent validity with other clinical self-report measurements of pain.³¹

Sexual Function

The Female Sexual Function Index (FSFI)³² is a well-validated 19-item measure that evaluates women's sexual functioning during the past 4 weeks according to six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. FSFI total scores range from 2 to 36, with higher scores signifying better sexual function. The International Index of Erectile Function (IIEF)³³ is a well-validated 15-item measure that evaluates men's sexual functioning during the past 4 weeks according to five domains: erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. Summed total scores range from 5 to 75, with higher scores indicating better sexual function. Only women and men who were sexually active within the preceding 4 weeks were included in analyses using the FSFI and IIEF.³⁴

Sexual Satisfaction

The Global Measure of Sexual Satisfaction³⁵ is a well-validated measure that assesses individuals' subjective evaluation of the

Table 1. Scores on predictor and outcome measurements for women with PVD and their partners (N = 87 couples)

Variable	Mean	SD	Range		α
			Minimum	Maximum	
Collaborative sexual communication patterns					
Women	47.59	10.52	14.00	72.00	0.77
Partners	47.60	10.14	17.00	72.00	0.77
Negative sexual communication patterns					
Women	40.01	10.52	14.00	83.00	0.85
Partners	41.23	17.43	14.00	84.00	0.87
Women's pain intensity	6.64	1.80	1.40	10.00	—
Sexual functioning					
Women with PVD (FSFI)*	19.18	5.33	6.60	28.40	0.90
Female partners (FSFI) [†]	29.30	2.19	29.30	32.40	—
Male partners (IIEF) [‡]	59.47	7.24	43.00	73.00	0.77
Sexual satisfaction					
Women [§]	21.93	6.73	6.00	35.00	0.90
Partners [§]	25.16	6.52	11.00	35.00	0.89
Sexual distress					
Women [§]	33.31	9.84	4.00	51.00	0.90
Partners	16.99	10.32	0.00	48.00	0.93
Relationship satisfaction					
Women	125.33	21.42	61.00	160.00	0.96
Partners	124.18	23.89	49.00	159.00	0.97

FSFI = Female Sexual Function Index; IIEF = International Index of Erectile Function; PVD = provoked vestibulodynia.

*n = 78.

[†]n = 2 (because of the sample size, Cronbach α was not calculated for female partners' FSFI scores).

[‡]n = 70.

[§]n = 86.

positive and negative qualities of their sexual relationship.³⁶ The Global Measure of Sexual Satisfaction consists of five items rated on a seven-point Likert scale, where the scale anchors represent bipolar adjectives (eg, good-bad, satisfying-unsatisfying). Summed total scores range from 5 to 35, with higher scores representing greater sexual satisfaction.

Sexual Distress

The Female Sexual Distress Scale—Revised (FSDS-R)³⁷ was used to assess participants' subjective distress associated with their sexual functioning. This measure was originally developed for women; however, because all items are not sex specific, researchers have adapted this measure to assess women's and men's sexual distress.³⁸ The FSDS-R consists of 13-items measured on a five-point scale from 0 (never) to 4 (always). Total summed scores range from 0 to 48, with higher scores indicating greater sexual distress. The FSDS-R is well-validated in women with sexual dysfunction³⁷ and demonstrates good internal consistency in romantic partners affected by vulvodynia.³⁸

Relationship Satisfaction

The 32-item Couples Satisfaction Index³⁹ was used to measure participants' relationship satisfaction. Summed total scores range from 0 to 161, with higher scores representing higher

satisfaction. The Couples Satisfaction Index demonstrates strong psychometric properties relative to other established measures of relationship satisfaction.³⁹

Data Analytic Strategy

Because of the small amount of missing data (<2.50% at the item level) and that data were missing completely at random (Little MCAR test; $\chi^2_{893} = 0.00$; $P = 1.00$),⁴⁰ expectation maximization was used to impute missing data at the item level⁴¹ for all measures except the FSFI and IIEF. Differences in sociodemographic, predictor, and outcome variables between study sites were examined using multivariate analysis of variance for continuous variables and χ^2 tests for categorical variables. Intercorrelations among study variables and continuous socio-demographic variables were examined using Pearson correlations. Multilevel modeling guided by the actor-partner interdependence model (APIM) was used to examine the dyadic effects of women's and partners' collaborative and negative SCPs on outcome variables for women and partners. Couple data were represented within a two-level model, where individuals' data (level 1) were nested within dyads (level 2). This data structure accounts for the non-independence of dyadic data.⁴² By applying the APIM, it is possible to examine "actor effects" (ie, the effect of participants' own SCP on their own outcomes while controlling for the partner's SCP) and "partner effects" (ie, the effect

of participants' partners' SCP on participants' own outcomes while controlling for their own SCP). Four separate APIMs were modeled for each outcome variable, with women's and partners' collaborative and negative SCPs entered as predictor variables. Predictors were grand-mean centered before conducting the analyses.⁴² Intraclass correlation coefficients were calculated to estimate the degree of correlation in collaborative and negative SCPs within couples; intraclass correlation coefficients represent the proportion of total variance that can be explained at the between-couple level vs the within-couple level.⁴² Given measurement differences for sexual function (FSFI vs IIEF), sexual functioning scores were standardized (using z-scores) to allow for an APIM to be modeled on sexual functioning. All analyses were conducted in SPSS 22.0 (IBM Corp, Armonk, NY, USA).

RESULTS

Sample Characteristics and Bivariate Correlations

Descriptive statistics for the sociodemographic characteristics and predictor and outcome variables of this sample are presented in Tables 1 and 2. There was a significant multivariate main effect of study site on women's (Wilks $\lambda = 0.76$; $F_{7,70} = 3.13$; $P < .01$) and partners' (Wilks $\lambda = 0.82$; $F_{6,65} = 2.39$; $P < .05$) outcome variables; hence, we controlled for study site in all primary analyses. Women's and partners' age were significantly correlated with their own and their partners' relationship and sexual satisfaction ($r = -0.21$ to -0.27 ; $P < .05$). Therefore, we conducted APIMs including age as a covariate in the models for sexual and relationship satisfaction. For relationship satisfaction, the pattern and significance of the results remained the same as the model controlling only for site. As such, the most parsimonious model is reported for relationship satisfaction, while the model for sexual satisfaction included both site and age as covariates. The distribution of scores on negative SCP was positively skewed; therefore, we also conducted the APIM analyses after applying a transformation to this variable. After the transformation, the pattern and significance of the results for all APIMs remained the same, with the exception of one effect (after a square-root transformation of the negative SCP subscale, the significance of the partner effect for women's greater negative SCP on partners' higher sexual distress was reduced to a trend; $P = .057$); thus, the non-transformed data are presented for simplification of reporting and interpretation.

Table 3 lists the correlations among predictor and outcome variables. Women's and partners' SCPs were not significantly correlated with women's pain intensity; therefore, no further analyses were conducted with women's pain. Not presented in Table 3 is the finding that women's collaborative SCP was moderately, negatively correlated with their own negative SCP ($r = -0.27$; $P < .05$) and weakly, negatively correlated with partners' negative SCP ($r = -0.19$; $P = .07$). A similar pattern was found between partners' collaborative SCP and their own negative SCP ($r = -0.33$; $P < .01$) and women's negative SCP ($r = -0.13$; $P = .23$). In this sample, 76% of the variance in

Table 2. Descriptive characteristics for sample (N = 87 couples)

Characteristic	Mean (range) or n	SD or %
Age (y)		
Women	27.47 (19–44)	6.29
Partners	29.63 (19–56)	7.71
Partners' sex		
Male	85	97.7
Female	2	2.3
Education (y)		
Women	16.91 (11–22)	6.29
Partners	16.41 (10–24)	3.02
Culture		
Women*		
English Canadian	26	30.2
French Canadian	37	43.0
Other [†]	23	26.7
Partners		
English Canadian	31	35.6
French Canadian	30	34.5
Other [†]	26	29.9
Couples' annual income*		
\$0–19,999	12	14.0
\$20,000–39,999	19	22.0
\$40,000–59,999	12	14.0
\$60,000–79,999	14	16.3
\$80,000–99,999	9	10.5
>\$100,000	20	23.3
Couples' relationship status		
Married	27	31.0
Common law	20	23.0
Living together, not married	23	26.4
Not living together	17	23.0
Couples' relationship length (mo)	67.37 (6–252)	52.71
Women's pain duration (mo)	81.02 (7–312)	64.63

*n = 86.

[†]Includes Asian, Latin American, African, European, Middle Eastern, and Caribbean.

collaborative SCP and 65% of the variance in negative SCP were due to within-couple factors (intraclass correlation coefficients = 0.24 and 0.35, respectively), indicating a higher degree of variability in reports of SCP within than between couples.

Associations Between SCP and Sexual and Relationship Outcomes

Table 4 presents the actor and partner effects for the APIMs conducted with each independent outcome variable while controlling for study site. There were no significant effects of women's or partners' collaborative and negative SCPs on women's or partners' sexual functioning. For sexual satisfaction, after controlling for age (in addition to study site), analyses showed that when women reported greater collaborative SCP, they also reported higher sexual satisfaction; a similar effect was seen for partners, although it did not reach statistical significance ($P < .07$). Individuals' collaborative SCP was not significantly

Table 3. Correlations among predictor and outcome variables in women with provoked vestibulodynia and Partners (N = 87)

Measurement	1	2	3	4	5	6	7
1. Pain intensity	—*	—	—	—	—	—	—
2. Sexual functioning [†]	−0.272 [§]	0.314*	0.577	−0.426	0.283 [§]	0.145	−0.212
3. Sexual satisfaction [†]	−0.020	0.695	0.474*	−0.611	0.502	0.299	−0.277
4. Sexual distress [†]	0.276 [§]	−0.440	−0.441	0.328*	−0.392	−0.193	0.337
5. Relationship satisfaction	0.035	0.296	0.359	−0.141	0.411*	0.553	−0.538
6. Collaborative SCP	0.026	0.193	0.322	−0.156	0.443	0.241* [§]	−0.328
7. Negative SCP	0.119	−0.138	−0.193	0.255 [§]	−0.400	−0.270 [§]	0.355*

SCP = sexual communication pattern.

*Values on the diagonal represent between-partner correlations. Values above the diagonal represent within-person correlations for partners, and values below the diagonal represent within-person correlations for women with provoked vestibulodynia. Correlations for sexual functioning were conducted using standardized scores (ie, z-scores).

[†]n = 2 female partners; n = 72 male partners.

[‡]n = 86.

[§]p < .05; ^{||}p < .01.

associated with their partners' sexual satisfaction, and individuals' negative SCP was not associated with their own, or their partners', sexual satisfaction. For sexual distress, when partners reported higher collaborative SCP, women reported significantly lower sexual distress. In addition, when women reported greater

negative SCP, partners reported significantly higher sexual distress. There were no significant effects of women's collaborative SCP on their own or partners' sexual distress, women's negative SCP on their own sexual distress, and partners' negative SCP on their own or women's sexual distress.

Table 4. Associations between collaborative and negative SCPs and outcome variables*

Predictor variable	Outcome variables							
	Model 1: sexual functioning [†]		Model 2: sexual satisfaction [†]		Model 3: sexual distress		Model 4: relationship satisfaction	
	Women	Partners	Women	Partners	Women	Partners	Women	Partners
Study site	0.19		−0.04		−3.70		6.35	
b SE	0.19		1.20		1.66		3.17	
t	0.98		−0.04		−2.23 [§]		2.01 [§]	
r	0.12		0.00		0.24		0.22	
Women's collaborative SCP	0.01	0.02	0.15	0.01	−0.02	0.02	0.67	0.22
b SE	0.01	0.01	0.07	0.07	0.10	0.10	0.20	0.19
t	1.13	1.30	2.08 [§]	0.21	−0.18	0.19	3.39	1.12
r	0.14	0.16	0.23	0.02	0.02	0.02	0.35	0.12
Women's negative SCP	−0.00	−0.01	−0.03	−0.05	0.01	0.13	−0.30	−0.06
b SE	0.01	0.01	0.04	0.04	0.06	0.06	0.12	0.12
t	−0.41	−1.61	−0.67	−1.29	1.74	1.99 [§]	−2.46 [§]	−0.50
r	0.05	0.20	0.08	0.14	0.19	0.22	0.26	0.06
Partners' collaborative SCP	−0.00	0.00	0.05	0.13	−0.24	−0.11	0.09	0.97
b SE	0.01	0.01	0.07	0.07	0.11	0.11	0.21	0.20
t	−0.10	0.65	0.73	1.87	−2.22 [§]	−0.97	0.43	4.77
r	0.01	0.08	0.08	0.21	0.24	0.11	0.05	0.47
Partners' negative SCP	−0.01	−0.00	−0.03	−0.05	0.01	0.12	−0.16	−0.47
b SE	0.01	0.01	0.05	0.04	0.07	0.07	0.13	0.12
t	−1.13	−0.57	−0.70	−1.06	0.17	1.72	−1.28	−3.80
r	0.15	0.07	0.08	0.12	0.02	0.19	0.14	0.38

b = unstandardized estimate; r = approximate effect size; SCP = sexual communication pattern; SE = standard error.

*Approximate effect sizes were calculated using the formula: $r = \sqrt{(t^2 / (t^2 + df))}$ (see Rosenthal and Rosnow⁴³ and Overall and Hammond⁴⁴). Degrees of freedom range from 63.08 to 105.38.

[†]n = 82.

[‡]Controlling for women's and partners' age.

[§]p < .05; ^{||}p < .01.

For relationship satisfaction, when women and partners reported greater collaborative SCP, they also reported significantly higher relationship satisfaction. In contrast, when women and partners reported greater negative SCP, they also reported significantly lower relationship satisfaction. We were unable to demonstrate significant effects of individuals' collaborative or negative SCP on their partners' relationship satisfaction.

DISCUSSION

This study examined the dyadic associations between women's and partners' collaborative and negative SCPs and their sexual and relational adjustment to PVD. Results suggested that when problems arose in the sexual relationship, collaborative SCPs (eg, expressing feelings, problem solving) were generally associated with beneficial effects for couples' sexual and relational adjustment to PVD, whereas negative SCPs (eg, one or both partners criticizing, defending, or withdrawing) were associated with unfavorable outcomes. The findings are consistent with the existing literature in couples' coping with vulvovaginal pain, which found that a higher perceived quality of dyadic sexual communication was associated with better sexual and relational adjustment.^{19,20}

When women with PVD perceived that they and their partners engaged in greater collaborative communication about sexual problems, they also reported higher sexual satisfaction; this effect was not statistically significant for partners when controlling for study site and age. Moreover, when women and partners reported greater collaborative and lower negative SCPs, they also reported higher relationship satisfaction. Applying current models of sexual communication,¹² when women perceive greater collaborative SCP, then this may reflect couples' attempts to address the sexual restrictions they face as a result of the pain—for example, by shifting focus away from painful sexual activities and toward pleasurable ones (ie, the instrumental pathway), thereby contributing to women's greater sexual satisfaction.¹² In addition, the two partners' relationship satisfaction may be enhanced by engendering a sense of efficacy that they are coping with a significant relational stressor together as a couple.⁴⁵ Through the expressive pathway, when women and partners perceive more collaborative SCP, it may facilitate the development of intimacy and cohesion through increased emotional disclosure and validation.^{12,17} In prior studies of couples in which one person had chronic pain or vulvodinia, greater emotional disclosure and empathic response were associated with the two partners' greater sexual and relationship satisfaction.^{38,46,47}

Conversely, extending the instrumental and expressive pathways to negative SCP, couples' perceived patterns of expressed negativity (eg, withdrawing, criticizing, or defending) may contribute to individuals' lower relationship satisfaction by interfering with their ability to effectively address a source of strain on the relationship (ie, PVD) or by contributing to a

climate of low relational intimacy and increasing polarization. Thus, negative approaches to sexual communication on the part of either partner may convey a lack of empathy about the toll that PVD or related sexual problems can take on the relationship. Non-empathic responding has been associated with lower relationship satisfaction in individuals affected by chronic pain and their partners.⁴⁷ Similar findings have been noted in a community sample of couples discussing sexual problems, where observed negative communication behaviors (eg, blame) were related to women's lower relationship satisfaction.⁴⁸

When partners reported higher collaborative SCP, women reported lower sexual distress (psychological distress over one's own sexual functioning³⁷). Women with PVD are the "identified patient" when presenting for treatment and report feeling guilt and shame over the impact of PVD on their sexual relationships.⁸ When partners report that they communicate collaboratively about sexual problems, this perception may reflect partners' greater engagement in a shared effort to cope with the PVD⁴⁹ and could increase their ability to empathically respond to women's experiences of PVD.^{38,47} In this way, partners' reported collaborative approaches to sexual communication may lessen women's sexual distress. Conversely, when women reported more negative SCP, their partners reported greater sexual distress. Qualitative research has found that partners' distress in the context of PVD frequently takes the form of confusion, guilt, rejection, or resentment.⁴⁵ Thus, when women perceive a high degree of expressed negativity in their sexual communication, this may interfere with women's capacity to understand and validate their partners' experience of PVD, including its impact on partners' sexuality, thereby leading to partners' greater sexual distress.

SCPs, as reported by women with PVD and their partners, were unrelated to women's pain intensity during intercourse and sexual functioning for the two members of the couple. Individuals' evaluations of communication processes might be more strongly related to subjective interpersonal outcomes (eg, satisfaction and distress) than to intrapersonal measures of pain or sexual functioning. This interpretation is consistent with other studies of couples affected by PVD^{46,50} (but also see Rancourt et al¹⁹ and Pazmany et al²⁰). It might be premature to draw conclusions about the associations between sexual communication and pain and sexual functioning, particularly given the cross-sectional designs used in prior research.

Overall, some preliminary patterns emerged in the results. In this sample, individuals' perceptions of SCP related more to their own subjective evaluation of the positive and negative aspects of their sexual and romantic relationships and to their partners' experience of distress in the sexual relationship. These findings were unexpected given that satisfaction and distress are typically subjective experiences that are moderately to highly negatively correlated.^{38,51} Investigating possible differential mechanisms underlying the associations between SCPs and women's and partners' sexual and relational outcomes might shed light on these results.

The limitations of a cross-sectional design must be noted, particularly when studying associations among interrelated variables (eg, distress and communication⁵²). For example, sexual distress also may influence the ways that couples engage in and/or perceive their sexual communication. In addition, characteristics of this sample might limit the generalizability of our findings. Couples in this study attempted to engage in penetrative sex at least once per month in the preceding 3 months; thus, these results might not be representative of couples who are unable or unwilling to attempt penetrative sex. In addition, only two participating couples were in same-sex relationships, which limits our ability to draw conclusions about these associations in same-sex relationships. Moreover, although we controlled for study site in our analyses, there might have been differences in the types and severity of couples that presented for this study between the two sites (eg, geographic and sociocultural differences). Women's and partners' reports of SCP were only weakly to moderately correlated, underscoring the need for diverse methodologies (eg, observational designs) for studying relationship processes, such as SCPs. Because self-report measurements can be biased by the subjective experiences of each member of the couple (eg, emotions such as guilt), multimethod approaches would allow researchers and clinicians to better understand the contributions of observed and perceived sexual communication dynamics on couples' adjustment to PVD.

CONCLUSION

Collaborative SCPs are associated with couples' greater sexual and relationship well-being, whereas negative SCPs are associated with poorer outcomes. These findings offer preliminary evidence that psychological interventions for couples with PVD could benefit from enhancing collaborative and decreasing negative approaches to sexual communication. Couple interventions rooted in the broader couple therapy literature aim to decrease negative approaches to conflict and increase collaborative approaches.⁵³ Recent advances in couple therapy for PVD have found that couples view communication training as a crucial part of the therapy,⁵⁴ although it remains to be tested whether interventions aimed at decreasing negative and increasing collaborative communication, specifically as it relates to sex, will result in couples' greater treatment gains.

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