

Dyadic Sexual Communication in Pre-Menopausal Women with Self-Reported Dyspareunia and Their Partners: Associations with Sexual Function, Sexual Distress and Dyadic Adjustment

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ABSTRACT

Introduction. While there is increasing interest in studying aspects of communication processes in sex research, the association between dyadic sexual communication and relationship and sexuality outcomes has not yet been examined in pre-menopausal women with dyspareunia.

Aim. To examine the associations between dyadic sexual communication and pain, sexual distress, sexual function and dyadic adjustment in women with self-reported dyspareunia and their male partners.

Methods. Pre-menopausal women ($n = 38$; M age = 24.92, $SD = 6.12$) with self-reported dyspareunia from a community sample and their partners ($n = 38$; M age = 26.71, $SD = 6.59$) completed an online survey. The Actor-Partner Interdependence Model was used in order to investigate both actor and partner effects.

Main Outcome Measures. Both members of the couple completed: (i) the Dyadic Sexual Communication Scale and (ii) the Dyadic Adjustment Scale; women also completed (iii) the Female Sexual Function Index, (iv) the Female Sexual Distress Scale, and (v) a Visual Analogue Scale on pain during intercourse; and men also completed (vi) the International Index of Erectile Functioning.

Results. Controlling for relationship duration, women's better dyadic sexual communication was significantly associated with their higher levels of sexual function ($P = 0.028$), lower levels of sexual distress ($P = 0.003$) and higher levels of dyadic adjustment ($P = 0.005$), but not with their pain or men's sexual function or dyadic adjustment. Controlling for relationship duration, men's better dyadic sexual communication was associated with their higher levels of dyadic adjustment ($P = 0.027$) but not with their sexual function, nor with women's sexual function or dyadic adjustment.

Conclusions. These findings contribute to the theoretical knowledge on interaction processes in couples with dyspareunia and suggest that it may be important to enhance open and direct communication about sexual matters in couples with dyspareunia. **Pazmany E, Bergeron S, Verhaeghe J, Van Oudenhove L, and Enzlin P. Dyadic sexual communication in pre-menopausal women with self-reported dyspareunia and their partners: Associations with sexual function, sexual distress and dyadic adjustment. J Sex Med 2015;12:516–528.**

Key Words. Couples; Dyadic Sexual Communication; Dyspareunia; Pain; Partners; Sexual Distress; Sexual Functioning

Introduction

Dyspareunia, or pain during sexual intercourse, is a prevalent condition that affects 5.3 to 19% of pre-menopausal women [1,2]. Recently, dyspareunia is subsumed under Genito-Pelvic Pain/Penetration Disorder (GPPPD) in the Diagnostic and Statistical Manual of Mental Disorders, Fifth edition (DSM-5) [3]. In comparison to pain-free controls and scale norms, women with dyspareunia not only report significant pain, but overall sexuality-related problems such as lower sexual desire [4,5], subjective sexual arousal [5,6] and vaginal lubrication [7,8]. They also report reduced sexual satisfaction [9] and more sexual distress [7,10,11]. Additionally, qualitative studies have shown that they fear losing their partner because of the negative impact of the pain on their general relationship, including sexuality [12,13]. Given that women with dyspareunia show intact physiological sexual arousal in a laboratory setting [14], for most, in a sexual context the pain occurs primarily during partnered sexual activity as they report a lack of sexual problems during masturbation [7]. The recent cross-sectional and daily diary findings show that partner responses and relationship factors may modulate the experience of pain and its associated sexual sequelae [15–17]. However, no research has examined how couple communication, in particular relating to sexuality, might play a role in these outcomes.

Quantitative studies show that women with vulvovaginal pain report feeling uncomfortable discussing sex with their partner [18] and that, in comparison to pain-free control women, those with dyspareunia report worse dyadic sexual communication [19]. Moreover, greater sexual intimacy, which is defined as self—and partner disclosure about sexuality and partner responsiveness and empathy during and following sexual interactions, is associated with greater sexual satisfaction and function in women with dyspareunia [20]. Likewise, lower sexual assertiveness in women with dyspareunia has been associated with lower levels of sexual function and satisfaction [21]. Also, dyspareunia couples in which both partners are low in ambivalence over emotional expression, or the extent to which a person is comfortable with the way he or she expresses emotions, independently of the level of expressiveness, report better sexual function, sexual satisfaction and dyadic adjustment than couples higher in ambivalence. Further in this study, women's lower ambivalence over emotional expression was asso-

ciated with reduced pain intensity [22]. The psychosocial and relational functioning of male partners of women with dyspareunia has been examined in only a handful of studies [7,19,23]. The male partners of women with dyspareunia report similar levels of dyadic adjustment but reduced sexual satisfaction in comparison to norm scores and controls [19,24], in addition to more sexual difficulties than partners of pain-free controls [19,24].

Taken together, findings to date suggest that factors relating to poorer communication processes in dyspareunia couples may be associated with more sexual dysfunction and sexual dissatisfaction in afflicted women. Since male partners report increased sexual difficulties and higher levels of sexual dissatisfaction, they too might be affected by relationship factors. Indeed, a recent dyadic daily diary study has shown that negative and solicitous partner responses to pain may worsen sexual function and satisfaction in partners of women with dyspareunia [17]. However, no study to date has examined how sexual communication specifically may be associated with pain and sexual distress in women with dyspareunia, as well as with sexual function and dyadic adjustment in both members of the couple.

A dyadic approach is increasingly being adopted in chronic pain and chronic illness research. It has been noted that partners may share similar stressors, such that they will refer to “our” illness or pain rather than to “your/mine” illness or pain, pool resources, and actively engage in joint coping efforts [25]. In such dyadic-level theories, the focus is on the couple as the unit of investigation and on studying the coping mechanisms of both patient and partner, which may be challenged and activated to preserve, restore or improve the overall functioning and well-being of the individual, the relationship and the wider social context [26,27]. Several dyadic-level theories stress the role of communication processes in restoring a person's adjustment and enhancing relationship quality. In the Relationship Resilience Model [28], in which strategies that might strengthen or maintain the relationship are summed up, it is suggested that openness or discussing and disclosing information about the relationship with one's partner is one of the mechanisms that might contribute to promoting resilience within the relationship. Other dyadic-level theories, such as the Interpersonal Process Model of Intimacy and the Intimacy Theory [29] suggest that greater intimacy—which is described as a process whereby a person shares

personal feelings, beliefs and information to another and, as a result of the other person's reaction, feels understood, validated and cared for—would lead to closer relationships. Lastly, the Behavioral Marital Theory [30], applies behavioral principles such as reinforcement and punishment to marital interactions and interventions based on this theory attempt to increase the ratio of positive interactions over negative interactions. A positive communication pattern is thought to lead to mutual constructive communication, which is found to be associated with greater couple satisfaction [31]. In sum, different dyadic-level theories indicate that open and constructive communication with an intimate partner is related to relationship satisfaction and may enhance better coping with pain and illness. Thus, better dyadic sexual communication is related to higher levels of relationship and sexual satisfaction as well as intimacy. Further, sexual satisfaction is in turn related to sexual functioning. Therefore, it could be hypothesized that better sexual communication in couples with dyspareunia might contribute to improve sexual functioning and dyadic adjustment of both partners. In addition, better sexual communication might reduce women's sexual distress as well.

While interpersonal sexual communication is referring to the discussion of sexual topics [32], dyadic sexual communication is specifically referring to the discussion of sexual topics between intimate partners [33]. In line with dyadic conceptualizations, findings from couple and communication research consistently show that sexual communication within a couple is positively related to both women and men's relationship satisfaction and sexual satisfaction [32,34–37]. More specifically, individuals who self-disclose more about their sexual likes and dislikes to their partner report less sexual concerns, less sexual difficulties, greater sexual well-being and better dyadic adjustment [34,35].

In summary, there is growing evidence that dyspareunia couples' communication processes are associated with their sexuality outcomes [20,21], that partner responses are associated with pain [16] and that poorer communication is associated with poorer dyadic adjustment in couples experiencing chronic pain or illness [25,26]. Poorer sexual communication is also associated with more impaired sexual functioning, more sexual concerns and poorer dyadic adjustment in sexually healthy couples, in both women and their partners [34–36]. Therefore, examining dyadic sexual communication in women with dyspareunia and their

male partners might provide important information about the role of communication processes in their experience of dyspareunia and its associated impact on their dyadic adjustment and sexual function, as well as in women's pain and sexual distress.

Aims

The aim of the present study was to examine the associations between dyadic sexual communication, pain and sexual distress in premenopausal women with dyspareunia, as well as to explore dyadic sexual communication, sexual function and dyadic adjustment in both members of the couple in a community-dwelling sample. In order to take into account the interdependency of couple data, we used a multilevel regression analysis, i.e., the Actor Partner Interdependence Model (APIM) [38] which allows for the simultaneous examination of both women's and male partners' perspectives on their dyadic sexual communication. We hypothesized that women's poorer dyadic sexual communication would be associated with increased pain, sexual distress, impaired sexual functioning and lower levels of dyadic adjustment. Further, we hypothesized that male partners' poorer dyadic sexual communication would be associated with his more impaired sexual functioning and lower levels of dyadic adjustment. We also aimed to examine whether poorer dyadic sexual communication in one partner would be associated with more impaired sexual functioning and lower levels of dyadic adjustment in the other partner. Due to the scarcity of the literature on this topic, the partner analyses were explorative as they were not guided by specific hypotheses about the association between one partner's dyadic sexual communication and the other partner's sexual functioning and dyadic adjustment.

Methods

Participants

Participants were recruited by means of brief announcements in newspapers, women's magazines and websites. Announcements indicated that our research group was searching for women who experience pain during intercourse, to participate in an online survey. The URL of a secure and confidential university's server was presented in the announcements. On that website, apart from specific information about selection criteria, it was mentioned that participants could receive a film

ticket after completing the whole questionnaire. The inclusion criteria were: (i) to be a woman; (ii) to experience pain before, during and/or after sexual activity; and (iii) to be currently involved in an exclusive sexual relationship of any length. Women registered as someone with dyspareunia based on the following description on the website: “This questionnaire is for women who usually/ almost always/always experience pain during intercourse with their current partner and who are concerned about it.” This implies that participants did not need to have a formal clinical diagnosis of dyspareunia but that the study relied on self-reported dyspareunia. Further, no specific exclusion criteria were described. After completing the whole survey, women were asked to invite their partner to complete an online survey which would take 45 minutes to complete and for which their partner could also receive a film ticket as compensation for their participation.

While 423 women with self-reported dyspareunia registered for participation in the online survey, only 38 couples with self-reported dyspareunia and their male partners could be included in this study (see Figure 1). Women who submitted an incomplete or blank questionnaire were excluded. As the focus of this study is on premenopausal women with dyspareunia, all likely

postmenopausal women, i.e., women ≥ 45 years and women reporting that they had no or an irregular menstrual cycle due to menopause, were excluded as well. More specifically, six postmenopausal women of which two were not sexually active, two reported life-long vaginismus, one reported a history of breast cancer, and one was just menopausal, were thus excluded from the analyses. Other reasons for exclusion were: women reporting not having had pain during intercourse during the last 4 weeks, women reporting not having had sexual intercourse, and women who’s partner did not participate in this study. No significant differences were found on any of the dependent variables between the sample of all eligible women and the sample of women included in the present analyses. Further, the sample of partnered women included in the study was compared to the sample of women who’s partner did not agree to participate. No statistically significant differences were found between the two groups on any of the dependent variables, indicating that our smaller coupled data sample was representative of the sample of all eligible women. Based on simple scatterplots, no outliers were detected. However, in the final sample, both a female and a male participant from the same couple, reported extreme lower levels of sexual functioning. Since these low

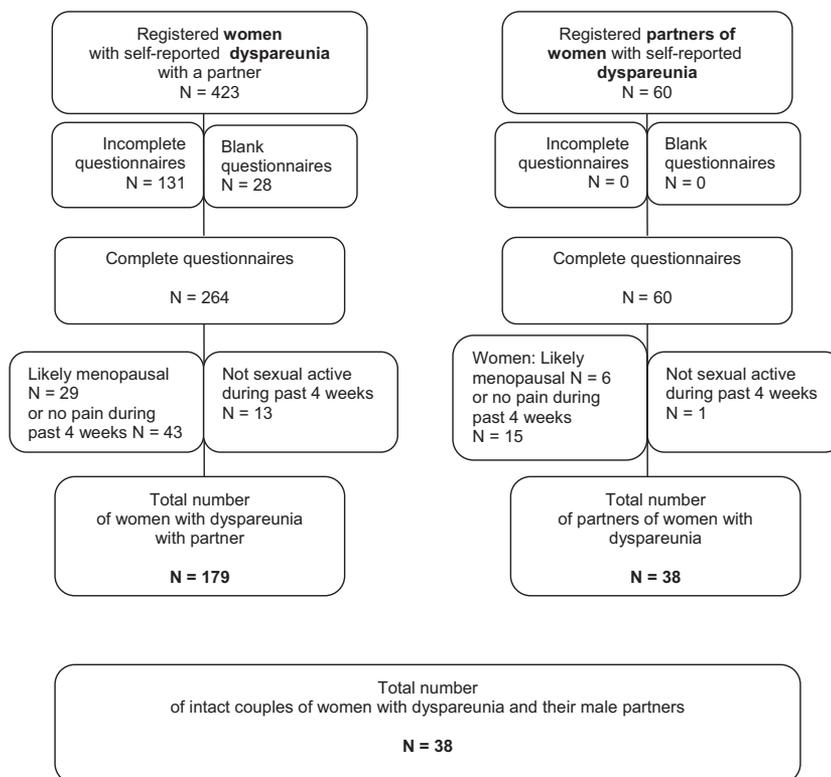


Figure 1 Flow chart participants

scores were consistent within the couple and other variables were in line with the group, this lower score is considered as a reflection of the chronicity of their pain problem. Therefore, this couple was not excluded.

Procedure

After registering, women and their male partners each received an email with a unique code giving them access to their personal online questionnaire. Before starting the questionnaire, an electronic informed consent that contained information about confidentiality and anonymity of their participation was provided. When participants accepted the terms and conditions, and when male partners filled out the unique code of their female partner, they were redirected to the start page of their copy of the questionnaire. When they did not accept and agree, they were not able to enter the survey. Participants who began to fill out the survey, but did not complete the full questionnaire within four weeks received one system-generated reminder to do so. The online survey was open to participants between December 2010 and May 2011. After completing the online survey, participants received a system-generated email to thank them for their participation and were asked whether they would like to receive a film ticket (value: €6) as reward. The present study was submitted for approval to the ethics committee of the Faculty of Medicine of the University of Leuven, but the committee decided that the study was exempted from need for approval.

Measures

Descriptive Variables

Participants completed one question about sexual activity and several socio-demographic questions such as age, place of birth, religion, education, occupation, cohabiting status and relationship duration. Women with dyspareunia completed questions about the pain duration as well.

Dyadic Sexual Communication

Sexual communication within the relationship was measured by a translated version of the original Dyadic Sexual Communication (DSC) scale [33]. The translation into Dutch was done by the authors according to the formal rules of the method of forward and backward translation [39]. The DSC consists of 13 items to measure a participant's perceptions of discussing sexual matters with their intimate partner. (e.g., "Talking about sex is a satisfying experience for both of us"). Each

item is rated on a 6-point Likert-type scale ranging from 1 (strongly disagree) to 6 (strongly agree) and scores are summed up for a total sum score ranging from 13 to 78. Higher scores indicate better quality of sexual communication. The original DSC has shown adequate psychometric properties, including good internal consistency (Cronbach's $\alpha = 0.81$ total sample, 0.83 cohabiting couples), adequate test-retest reliability (Cronbach's $\alpha = 0.89$) as well as good discriminant validity between people with and without sexual problems ($P = 0.0001$) [33]. In the present study, Cronbach's alphas were 0.91 and 0.91 for women and partners respectively.

Main Outcome Measures

Women

Pain. Pain intensity was assessed at two different pain locations, "at the entrance of the vagina" and "in the vagina, during insertion of the penis." For each location, a Visual Analogue Scale (VAS) was presented. The VAS measures pain intensity by means of a horizontal line ranging from 0 (no pain) to 10 (worst pain ever). In the present study, the mean of the two VAS-scores reported on at two pain locations was used as outcome measure. The VAS has been shown to have excellent validity and reliability in studies with pain populations [40].

Female Sexual Distress. The Dutch version of the Female Sexual Distress Scale (FSDS) was added to assess participant's sexual distress [41–43]. This scale consists of 12 items to which participants responded on a 5-point Likert-type scale ranging from never (0) to always (4). Higher scores indicate more sexual distress [42]. The FSDS has shown to be valid and reliable [42]. The internal consistency of the FSDS in the present sample was excellent (Cronbach's $\alpha = 0.95$).

Sexual Functioning. Female sexual functioning was measured using the Dutch version of the Female Sexual Functioning Index (FSFI) [42,44]. The FSFI is a 19-item self-report measure with six subscales (Desire, Arousal, Lubrication, Orgasm, Satisfaction, Pain) and each subscale includes at least one frequency item and one or more additional items. In the present study, the total sum score of five subscales of FSFI, i.e., Desire, Arousal, Lubrication, Orgasm and Satisfaction, was used as outcome measure. Higher scores indicate better sexual functioning [42–44]. The FSFI has demonstrated excellent psychometric proper-

ties [45] and the internal consistency in the present sample was excellent (Cronbach's $\alpha = 0.94$). In the current study, the Pain subscale was not included.

Male Partners

Sexual Functioning. Sexual functioning in male partners was measured by the Dutch version of the International Index of Erectile Functioning (IIEF) [46,47]. The Dutch version of the IIEF has been used in several published studies, but until now, no reports of its psychometric properties have been published. The original IIEF has shown excellent validity and reliability [46]. The IIEF is a 15-item self-report measure with five subscales (Erectile function, Orgasmic function, Sexual Desire, Intercourse Satisfaction, Overall Satisfaction) and each subscale includes at least one frequency item and one or more additional items. In the present study, the total sum score of all subscales of IIEF was used as outcome measure. Higher scores indicate better sexual functioning. The IIEF has demonstrated excellent psychometric properties [46,47] and the internal consistency in the present sample was excellent (Cronbach's $\alpha = 0.93$).

Women and Their Male Partners

Dyadic Adjustment. The quality of the relationship was measured by the Dutch version of the Dyadic Adjustment Scale (DAS), which consists of 32 items [48,49]. The Dutch version of the DAS has been used in several published studies, but until now, no reports of its psychometric properties have been published. The original DAS has shown adequate validity and reliability [48]. Higher scores indicate a better quality of the relationship. Scores below the scale's mean of 100 indicate lower relationship quality. This questionnaire is frequently used in studies and has demonstrated excellent validity and reliability [48]. In the current sample, Cronbach's alphas were 0.74 and 0.90 respectively for women and partners.

Statistical Analysis

Statistical analyses were performed using both SPSS (version 21.0; Chicago, Inc, IL) and SAS (version 9.2 of the SAS System for Windows, SAS Institute Inc., NC, USA). Percentages or mean and standard deviations were used to describe the characteristics of the sample. Pearson correlations were used to examine associations between variables. Because pain and sexual distress were only measured in women, two linear regression models were built with pain and sexual distress as the dependent variables and dyadic sexual communication as the

independent variable. To examine the associations between dyadic sexual communication, sexual functioning and dyadic adjustment, the Actor-Partner Interdependence Model (APIM) framework [38] was used, in order to take into account the interdependency of the couple data. To handle the correlation between the outcome scores of women with dyspareunia and their partners, a mixed model with couple as random effect was used. Given substantial differences in variability, the residual variance was allowed to differ between males and female participants. Since three parameters are used to model the covariance structure, the resulting model is equivalent to a classical bivariate linear model, therefore, 1:10 ratio (1 variable per 10 participants) was adopted [50]. Two separate models were used with sexual functioning and dyadic adjustment as dependent variables, respectively. Dyadic sexual communication served as independent variable in both analyses and actor and partner effects were calculated. The actor effect refers to the association between the individual's independent variable and his or her own outcome, while the partner effect refers to the association between an individual's independent variable and his or her partner's outcome. Since for sexual functioning a different questionnaire was used for women and men, scores were first standardized (see adjusted scores in Table 2). Note that as a result the mean value is equal for women and men. Relationship duration was added in the first step of all models because this demographic variable was significantly correlated with female sexual functioning ($r = -0.52$), female sexual distress ($r = 0.37$) and dyadic adjustment in women ($r = -0.48$) and men ($r = -0.38$) (see Table 3). Given the significant correlation between cohabiting and relationship duration ($r = 0.52$), and between pain duration and relationship duration ($r = 0.55$) (see Table 3), in addition to taking into account the sample size, only relationship duration (>3 years vs. <3 years) was included as a covariate in all models. The level of significance was set at $P < 0.05$.

Results

Study Sample

Mean age of women in this sample was 24.92 years and mean age of male partners was 26.71 years. Most couples reported a relationship duration of one to three (34.21%) and five to ten years (31.58%) (see Table 1). Most women (76.3%) reported having pain for at least one year. Most women (84.2%) reported experiencing pain in the

Table 1 Descriptive variables of women with dyspareunia and their male partners

Variable	Women with dyspareunia N = 38	Male partners N = 38
Age	24.92 ± 6.12	26.71 ± 6.59
Born in Belgium	92.1% (35)	94.6% (35)
Catholic	92.1% (35)	81.6% (31)
Education: >Bachelor-degree	57.9% (22)	50.0% (19)
Occupation: Student	47.4% (18)	26.3% (10)
Occupation: Working	47.4% (18)	68.4% (26)
Cohabiting	57.9% (22)	
Relationship duration (6 categories)		
<6 months	7.89% (3)	
6–12 months	5.26% (2)	
1–3 year	34.21% (13)	
3–5 year	15.79% (6)	
5–10 year	31.58% (12)	
>10 year	5.26% (2)	
Relationship duration (2 categories)		
0–3 year	47.37% (18)	
>3 year	52.63% (20)	
Pain duration		
<6 months	10.5% (4)	
6–12 months	13.2% (5)	
1–5 year	47.4% (18)	
5–10 year	26.3% (10)	
>10 year	2.6% (1)	

Values are % (N) or mean ± SD

vagina, during insertion of the penis. In this sample, the mean pain intensity measured with a VAS was 5.59 at the entrance of the vagina and 7.13 during insertion of the penis. Means and standard deviations concerning the dependent and independent variables are presented in Table 2.

Correlations between Dyadic Sexual Communication, Sexual Functioning, Sexual Distress and Dyadic Adjustment

Correlations between dyadic sexual communication, pain, sexual distress, sexual functioning and dyadic adjustment are presented in Table 3.

Most variables were significantly correlated with each other and these correlations were of moderate to strong magnitude [50]. Pain intensity was not significantly associated with women's dyadic sexual communication and men's dyadic sexual communication (see Table 3). Therefore, pain intensity was not examined as a dependent variable in subsequent analyses.

The Association between Dyadic Sexual Communication and Sexual Distress

One multiple linear regression model was built in order to examine the association between dyadic

Table 2 Means and standard deviations of the dependent and independent variables

Variable	Women with dyspareunia N = 38	Range	Male partners N = 38	Range
Dyadic sexual communication (DSC)	62.50 ± 12.84	25–78	63.84 ± 11.84	27–78
Dyadic adjustment (DAS)	116.82 ± 8.81	101–140	119.18 ± 12.67	96–142
Sexual functioning (FSFI/IIEF)	22.13 ± 5.90 (z = 0)		54.95 ± 14.10 (z = -0)	-3.5–1.1(*)
Sexual functioning (FSFI) without pain	20.0 ± 5.51 (z = 0)	-2.1–1.5(*)	/	
Female Sexual Distress (FSDS)	22.82 ± 11.75	1–40	/	
Pain (mean two pain locations)	6.81 ± 2.02	2–10	/	

*Range of the standardized scores

DSC = Dyadic Sexual Communication Scale; DAS = Dyadic Adjustment Scale; FSFI = Female Sexual Functioning Scale; IIEF = International Index of Erectile Functioning; FSDS = Female Sexual Distress Scale

Table 3 Pearson correlations between dependent and independent variables in women with dyspareunia (n = 38) and their male partners (n = 38)

	DAS women	DAS men	DSC women	DSC men	FSFI without pain	IIEF	FSDS	Pain
DAS women	1	0.55**	0.54**	0.23	0.41**	0.19	-0.36*	0.05
DAS men	—	1	0.54**	0.58**	0.30*	0.03	-0.24	-0.05
DSC women	—	—	1	0.62**	0.56**	0.21	-0.62**	0.17
DSC men	—	—	—	1	0.42**	0.16	-0.34**	-0.09
FSFI without pain subscale (women)	—	—	—	—	1	0.45**	-0.65**	-0.15
IIEF (men)	—	—	—	—	—	1	-0.31*	-0.11
FSDS (women)	—	—	—	—	—	—	1	0.09
Pain (mean two pain locations)	—	—	—	—	—	—	—	1

*P < 0.05, **P < 0.01

DSC = Dyadic Sexual Communication Scale; DAS = Dyadic Adjustment Scale; FSFI = Female Sexual Functioning Scale; IIEF = International Index of Erectile Functioning; FSDS = Female Sexual Distress Scale

Table 4 Hierarchical linear regression analyses in women with dyspareunia (n = 38) and their male partners (n = 38) with sexual distress as the dependent variable and dyadic sexual communication as independent variable

Dependent variable	Stand β	P
<i>Female sexual distress</i>		
<i>Step 1</i>		
Adjusted R ² = 0.18, df = 2, P = 0.013		
Relationship duration	0.35	0.04
Dyadic sexual communication—perceived by the partner	-0.21	0.20
<i>Step 2</i>		
Adjusted R ² = 0.35, df = 3, P < 0.001		
Relationship duration	0.18	0.26
Dyadic sexual communication—perceived by the partner	0.09	0.59
Dyadic Sexual Communication—perceived by the women	-0.59	0.003

sexual communication and female sexual distress (Table 4). Independent variables were entered in two steps. Relationship duration and male partners' dyadic sexual communication were entered in the first step as controls, because relationship duration was significantly correlated with sexual distress ($r = 0.43$) and couples' communication reports are interdependent [36]. Women's dyadic sexual communication was entered in the second and final step.

The final model explained 35% of the variance and revealed that women's dyadic sexual communication ($\beta = -0.59, P = 0.003$) accounted for 17% of the variance in their own sexual distress, independent of male partners' report of dyadic sexual communication.

The Association between Dyadic Sexual Communication and Sexual Functioning and Dyadic Adjustment

The APIM-analyses with regard to sexual functioning revealed an actor effect, whereby women's better dyadic sexual communication was significantly associated with their higher levels of sexual functioning ($\beta = 0.03, P = 0.028$).¹ In contrast, no actor effect was observed in men with regard to their sexual functioning ($\beta = 0.002, P = 0.91$). No partner effects were observed in women

¹Strict evidence for this association disappears when removing one couple with outlying observations for sexual functioning: $\beta = 0.027, t(35) = 1.71, P = 0.097$. Nevertheless, the direction of the association and the beta-value remains comparable, suggesting that this non-significant finding is due to larger standard error because of low sample size.

Table 5 Actor–Partner Interdependence Modeling with dyadic sexual communication as independent variable and sexual functioning and dyadic adjustment as dependent variables, respectively

	β (*)	Standard Error (*)	t	df	P
Sexual Functioning					
Relationship duration	-0.38	0.27	-1.38	35	0.18
Gender effect (**)	-0.012	0.16	-0.07	35	0.94
Actor effect on women	0.03	0.014	2.29	35	0.028
Actor effect on male partners	0.002	0.017	0.12	35	0.91
Partner effect on women	0.008	0.014	0.62	35	0.54
Partner effect on male partners	0.007	0.017	0.44	35	0.66
Dyadic Adjustment					
Relationship duration	-5.02	2.49	-2.02	35	0.05
Gender effect	1.88	1.49	1.27	35	0.21
Actor effect on women	0.36	0.12	3.03	35	0.005
Actor effect on male partners	0.40	0.17	2.31	35	0.027
Partner effect on women	-0.16	0.12	-1.32	35	0.20
Partner effect on male partners	0.20	0.17	1.21	35	0.23

*Note: β -values and Standard Error are dependent on the possible range of the scale
 Because sexual functioning was standardized, a difference of 10 points on the dyadic sexual communication scale results in a difference of 0.3 times the Standard Deviation of sexual functioning
 **Because sexual functioning was standardized, it was expected to find no gender effect

($\beta = 0.009, P = 0.54$) or men ($\beta = 0.007, P = 0.66$) (see Table 5 and Figure 2).

With regard to dyadic adjustment, two actor effects were found: in both women ($\beta = 0.36, P = 0.005$) and men ($\beta = 0.40, P = 0.027$), better dyadic sexual communication was associated with one's reporting higher levels of dyadic adjustment. However, no partner effects were found in women

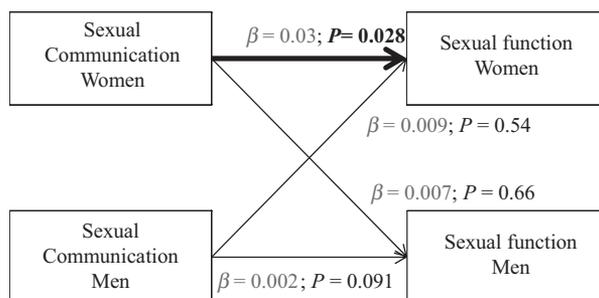


Figure 2 The association between sexual communication and sexual function in women with self-reported dyspareunia and their partners

Note: β -values are dependent on the possible range of the scale. Because sexual functioning was standardized, a difference of 10 points on the dyadic sexual communication scale results in a difference of 0.3 times the standard deviation of sexual functioning.

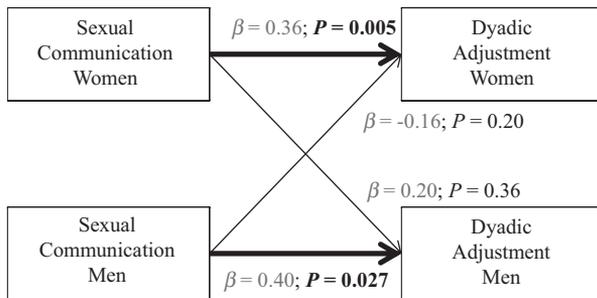


Figure 3 The association between sexual communication and dyadic adjustment in women with self-reported dyspareunia and their partners

($\beta = -0.16$, $P = 0.20$) or men ($\beta = 0.20$, $P = 0.23$) (see Table 5 and Figure 3).

Discussion

Using a community sample of pre-menopausal women with self-reported dyspareunia and their male partners, the present study examined the associations between dyadic sexual communication, and pain and sexual distress in women as well as sexual function and dyadic adjustment in both members of the couple. Findings showed that women's better dyadic sexual communication was associated with their own lower sexual distress and higher sexual function, but not with their pain intensity or men's sexual function and dyadic adjustment. Men's dyadic sexual communication was not associated with their own sexual function or their partner's sexual function and dyadic adjustment. However, both women and male partners' better dyadic sexual communication was associated with their own higher dyadic adjustment.

First, the present study revealed that women with dyspareunia who reported better dyadic sexual communication experienced less sexual distress. This finding corroborates results from a population-based study, showing that relationship factors are associated with female sexual distress [51]. Specifically, in an Australian sample of sexually active women with and without sexual dysfunctions, better communication of sexual needs was associated with less sexual distress [51]. This finding is also consistent with dyadic-level theories formulated in the context of chronic pain and illness, stating that better communication is a constructive coping mechanism which is associated with a person's greater well-being [29–31]. For example, the Interpersonal Process Model of Intimacy states that greater intimacy or sharing of

personal feelings, beliefs and information, leads to closer relationships, which in turn facilitate emotional regulation leading to reduced personal distress [29]. Thus applied to the context of sexuality and more specifically dyspareunia, it seems that individuals who have a sexual problem but share their sexual feelings and attitudes, likes and dislikes, are more likely to succeed in preserving, restoring or improving their sexual well-being and minimize sexual distress. Given the present study is cross-sectional, we cannot rule out the possibility that individuals who experience more sexual distress may view the topic of sexuality as more sensitive, which might hinder them from talking about it with their partner.

Further, findings indicate that women's better dyadic sexual communication was associated with their better sexual functioning. This is in line with recent results showing that women with dyspareunia's higher sexual intimacy and sexual assertiveness are associated with better sexual functioning [20,21]. It also corroborates findings from both young dating women [37] and women in long term relationships [35] showing that poor dyadic sexual communication is associated with more impaired sexual functioning. This might be explained by the fact that poorer dyadic sexual communication may lead to poorer understanding of sexual likes and dislikes between partners, resulting in a less than optimal sexual script. Difficulties in sexual communication create situations in which the sexual preferences or desires of one partner are not known by the other. The couple runs the risk that perceptions are based on one's own assumptions and sexual stereotypes about men and women in general [32]. Women with dyspareunia report significantly poorer dyadic sexual communication than pain-free control women [19] and continue to engage in painful sexual activity [12,13,52]. Given this and given that dyspareunia results in impaired sexual desire and arousal [5,6], a lack of adequate sexual communication could lead to a worsening of an already impaired sexual function.

It was striking that male partners' dyadic sexual communication was not associated with their own sexual function. This was somewhat unexpected since communication research suggests that sexual communication is interdependent among partners [36]. A possible explanation for this gender difference might be that in this study, only couples confronted with a sexual dysfunction were included. In line with our findings, it has been shown that in women who report sexual dysfunctions, lower levels of intimacy—such as sexual

communication—are related to more sexual dysfunction, whereas in men who report sexual dysfunctions, lower levels of intimacy are not associated with more sexual dysfunction [53]. Also, in long-term committed relationships, the association between sexual self-disclosure and sexual problems has been found to be stronger in women than in men [35]. One explanation might be that women, both with and without dyspareunia, place more importance on relationship aspects such as intimacy or sexual communication in relation to sexual functioning than men. Finally, the overall lack of clinical sexual dysfunction in the men in this sample might explain the divergent finding between women with dyspareunia and their partners as well.

Additionally, this study showed that both women with dyspareunia and their male partners who reported better dyadic sexual communication also reported better dyadic adjustment. This finding is in line with recent results from studies focusing on dyspareunia couples, showing that those who report low ambivalence over emotional expression or who talk more easily about personal topics such as sexuality, report better dyadic adjustment [22]. It also confirms findings from the chronic pain, communication and relationship literatures showing that better communication in general and better sexual communication in particular are associated with better dyadic adjustment in both women and men [25,26,32,34,54]. Indeed, as proposed by several dyadic-level theories, communication can serve as a strategy to strengthen the relationship, as a way to build intimacy and/or to enhance positive interactions between partners [28–30]. It is likely that in the context of an ongoing problem with penetration or pain during sexual activity, open communication about a personal, painful and sensitive topic, encompassing feelings of inadequacy in both partners, protects the relationship of couples confronted with dyspareunia from the potential negative effects of the pain. It might also be that couples who feel more uncertain about the relationship or couples who perceive their relationship as less satisfying are less prone to engage in constructive communication and end up in a “mutual avoidance” or “conspiracy of silence.” Nevertheless, based on these findings, and in line with findings from the chronic pain and illness literatures, the experience of persisting dyspareunia in the couple can be seen as an opportunity for them to enhance their relationship and create a more intimate bond [26].

In this study, no association was found between women’s dyadic sexual communication and pain intensity. Since specific partner responses to pain such as solicitous and negative responses (both reported by women and self-reported by partners) are associated with women’s pain intensity [16,55], it seems that dyadic sexual communication is a distinct construct from partner responses. Contrary to partner responses to pain, dyadic sexual communication is not focused on pain in particular, but on sexuality in general terms. This may be an explanation why dyadic sexual communication has no or little impact on the experience of pain. Lastly, partners’ dyadic sexual communication was not associated with women’s sexual function and dyadic adjustment. Taking into account the significant correlation between women’s sexual function and men’s dyadic sexual communication ($r = 0.42$), it might be that our sample was too small to observe a partner—effect. So far, women’s own perception seems to be more important to their sexual function and dyadic adjustment. The lack of partner effects in this study is in line with findings from a previous study using a larger non-clinical sample that showed no association between partners’ sexual self-disclosure and women’s sexual function [35]. It is also corroborated with recent studies in dyspareunia samples which found no significant association between partner-reported solicitous responses and women’s sexual satisfaction [55] and between partners’ sexual intimacy and women’s sexual satisfaction and sexual function [20].

The present study contributes to the theoretical knowledge on interaction processes between women with dyspareunia and their male partners by investigating both gender differences and partner effects. Indeed, this study sheds light on the differential importance of sexual communication in these women and their partners with regard to sexual functioning. In terms of clinical contributions, findings suggest that it may be beneficial to focus on enhancing sexual communication in couples with dyspareunia in order to improve women’s sexual distress and function, and ameliorate these couples’ relationship quality.

Some limitations of the present study need to be mentioned. First, although we initially reached many women with self-reported dyspareunia, the response of partners was rather low, resulting in a smaller sample size than desired. This may have led to lower statistical power, however, replication of the findings in a larger sample is needed. The small sample necessitated us to use “relationship

duration” dichotomously which was not optimal. This study only included women who have sex with men who reported to have had sexual contact during the past four weeks, therefore, it is not possible to generalize the findings to women who have sex with women and to those couples who avoid sexual activity altogether. The cross-sectional design does not allow us to make causal inferences about associations between the variables. The open access character of the online questionnaire could have biased our study sample toward higher educated, middle class women with Internet access. However, an analysis of the characteristics of the sample has shown that we were able to recruit young, sexually active premenopausal women with self-reported dyspareunia who clearly reported sexual impairment and sexual distress [7,10,56,57]. In addition, the pain characteristics they described were similar to those reported in previous studies that included clinical samples [23,58,59]. Because in the present study women were not included based on a gynecological examination and couples were excluded when they reported to have had no partnered sexual activity, it is not possible to know what type of dyspareunia they were experiencing and how the findings relate to couples who avoid sexual contact. Based on these limitations, our findings about the contribution of dyadic sexual communication to sexual functioning, sexual distress and dyadic adjustment may not be generalized to the average woman with dyspareunia who seeks help from a health care professional, i.e., a gynecologist or sex therapist.

In terms of clinical implications, findings are consistent with a recent body of research on relationship factors and dyspareunia, showing that dyadic processes are associated with patient outcomes [20,22,60]. This would suggest that the current focus on the individual management of dyspareunia may need to be broadened to either include the partner when possible, and/or to focus on how to communicate about sexuality in a relationship, in cases where a partner cannot be involved. Findings also support the recent changes to the DSM-5 classification of GPPPD by emphasizing the multidimensional facets of these conditions.

Conclusion

In this study, dyadic sexual communication in pre-menopausal women with self-reported dyspareunia and their partners was examined. Results

indicate that women’s better dyadic sexual communication was associated with their own better dyadic adjustment, better sexual functioning and lower levels of sexual distress. Further, male partners’ better dyadic sexual communication was associated with their own better dyadic adjustment, but not with their sexual functioning. These findings support recommendations to include the partner in the treatment of dyspareunia and to foster open and direct dyadic communication about sexuality in the treatment of these couples.

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