ORIGINAL RESEARCH—PAIN

Sexual Communication, Dyadic Adjustment, and Psychosexual Well-Being in Premenopausal Women with Self-Reported Dyspareunia and Their Partners: A Controlled Study

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DOI: 10.1111/jsm.12518

ABSTRACT

Introduction. Although research that takes into account partner and relationship factors in dyspareunia is slowly emerging, little is known about how these couples communicate about their sexuality. Additionally, partner psychosexual adjustment has not been examined in a controlled fashion.

Aim. This study aimed to compare dyadic sexual communication, dyadic adjustment, psychological adjustment, and sexual well-being of women with self-reported dyspareunia and their partners with those of pain-free control women and their partners.

Methods. Premenopausal women (n = 38; mean [*M*] age = 24.92) with self-reported dyspareunia, their partners (n = 38; *M* age = 26.71), as well as pain-free control women (n = 44; *M* age = 25.86) and their partners (n = 44; *M* age = 27.95) completed an online survey measuring dyadic sexual communication, dyadic adjustment, anxiety, depression, sexual functioning, and sexual distress.

Main Outcome Measures. Assessments of women and men's (i) dyadic sexual communication; (ii) dyadic adjustment; (iii) anxiety; (iv) depression; (v) sexual functioning; and (vi) women's sexual distress were the main outcome measures.

Results. Compared with pain-free controls, women with dyspareunia reported significantly poorer dyadic sexual communication, a difference not found between partners of women with dyspareunia and control partners. Compared with partners of control women, those of women with dyspareunia reported significantly more impaired sexual functioning. No differences in dyadic adjustment were found between women with dyspareunia and pain-free control women, or between their respective partners. Finally, compared with control women, those with dyspareunia reported significantly more impaired psychological and sexual well-being.

Conclusions. Findings suggest that dyspareunia impacts not only the psychosexual adjustment of affected women but also that of their partners. It seems relevant to include both members of the couple in future research and treatment for dyspareunia. **Pazmany E, Bergeron S, Verhaeghe J, Van Oudenhove L, and Enzlin P. Sexual communication, dyadic adjustment, and psychosexual well-being in premenopausal women with self-reported dyspareunia and their partners: A controlled study. J Sex Med 2014;11:1786–1797.**

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

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Introduction

Dyspareunia, or pain during intercourse, now classified as "genito-pelvic pain/penetration disorder" in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition [1], is reported by 5.3–19% of premenopausal women [2,3]. Several controlled studies indicate that women with dyspareunia show impaired psychological and sexual functioning. Specifically, these women report more anxiety [4–6], while findings concerning the association with depression have been mixed [7–10]. They also report reduced sexual satisfaction [11], more sexual distress [4,12,13], difficulties with sexual desire [14,15], subjective sexual arousal [15,16], and inadequate vaginal lubrication [12,17]. The fact that these difficulties typically occur in a partnered situation raises questions about the role of the partner and the relationship in the experience of dyspareunia. Although research involving the partner and taking into account relationship factors is emerging, no study has compared psychological and sexual adjustment of partners of women with dyspareunia with that of partners of asymptomatic controls.

To date, most research focusing on relationship factors has been restricted to dyadic adjustment and has yielded conflicting evidence [11,18,19]. While in controlled quantitative studies it was found that the quality of the relationship, as perceived by the women, is comparable with that of controls or within the normal range [12,15,20,21], in qualitative studies women report both a positive and negative impact of dyspareunia on the relationship [22–25]. Two uncontrolled studies incorporated partners' reports of dyadic adjustment and showed that their scores were within norms of the general population [12,21]. Studies that focused on partner psychosexual characteristics yielded inconsistent findings. Two studies found that in terms of their psychological adjustment, partners of women with dyspareunia scored within age-related norms [12,21], while another study found that they reported more depressive symptoms when compared with norm scores [10]. Further, it was found that these partners reported no sexual dysfunctions during partnered sexual activity or during masturbation [12]. This lack of sexual dysfunctions in partners of women with dyspareunia is somewhat unexpected, in light of the Dual Control Model of sexuality [26,27]. According to this theory, sexual responses are the result of an interaction between sexual excitatory and sexual inhibitory processes, and the inhibition of sexual responses in men can be adaptive when sexual activity is perceived as potentially dangerous or disadvantageous [26,27]. Based on this model, one might expect that more male partners of women with dyspareunia would report an impaired sexual response in comparison with partners of pain-free controls. However, their generally young age may contribute to their healthy sexual function. Finally, although partners' sexual functioning has been found to be within the normal range, one study showed that they nonetheless reported more sexual dissatisfaction than norms [21].

Overall, these studies suggest that the dyadic, sexual, and psychological functioning of partners of women with dyspareunia is generally good, with some data pointing toward more depressive symptoms and reduced sexual satisfaction. Recent work examining partner responses suggests that some male partners exhibit negative reactions to the pain, such as hostility and anger [28,29]. Along the same lines, a qualitative study showed that women with dyspareunia report partner reactions of anger and frustration [24]. In addition, studies from the pain literature showed that partners of individuals with other types of chronic pain report more elevated levels of depressive symptoms [30], and therefore it was recommended to include partners in future research. Extending past dyspareunia research by including a control group of partners of pain-free women would shed light on the psychosexual and relational functioning of these men, who are intimately involved in the experience of pain and may also suffer from its negative consequences.

Recent studies on women with dyspareunia have begun to focus on pain-related partner characteristics such as catastrophizing and self-efficacy [31,32] and affective variables such as attachment and intimacy [33,34], showing that these play a role in modulating the experience of pain and associated sexual problems. Most of these factors involve communication about sexuality between both members of the couple. To date, however, no study has investigated sexual communication in couples confronted with dyspareunia. This is striking given evidence from qualitative research about the potentially conflictual and distressing nature of the pain in these relationships [22,23]. In addition, data from chronic pain and cancer couples show that their fear of harming the partner may limit communication about the health problem [30,35,36].

Dyadic sexual communication refers to the discussion of sexual topics with one's intimate partner

[37]. Findings from couples research have consistently shown that sexual communication is positively related to relationship satisfaction in general and to sexual satisfaction in particular [38–43]. More specifically, individuals who self-disclose more about their sexual preferences to their partner report less sexual dysfunctions, fewer sexual concerns, greater sexual well-being, and better dyadic adjustment [38,40–42,44]. Lack of open sexual communication is also related to a less than optimal mutually pleasurable sexual script, as well as to relational uncertainty [40]. Individuals who perceive relational uncertainty are less explicit and direct in their communication with their intimate partners in an effort to protect and maintain the relationship and prevent threats [40].

This kind of relational uncertainty was found in qualitative studies of dyspareunia, in which participants reported a fear of losing their partner because they felt inadequate as a woman and as a sexual partner [22,24]. They continued to engage in painful intercourse in an attempt to please their partner and to protect their relationship [22,24]. In this context, discussing their sexual likes and dislikes might expose women with dyspareunia to rejection, discomfort, and embarrassment. The same holds true for their partners. Another recent quantitative study showed that lower sexual assertiveness, i.e., the ability to communicate openly about sexual matters with one's partner, was associated with lower levels of sexual satisfaction and sexual function in women with dyspareunia [34]. Thus, women with dyspareunia may be vulnerable to avoiding sexual communication.

One published study investigated dyadic sexual communication in women with vulvar pain. This uncontrolled study of 59 women, who were all involved in a relationship and diagnosed with vulvovaginal pain disorders or chronic dermatologic vulvovaginal conditions, included one single question about sexual communication. It was found that more than one out of three women (36%, n = 21) reported that the pain had a worsening impact on how comfortable they felt discussing sexual matters with their partner [45]. These preliminary findings need to be replicated in a controlled fashion, using a validated measure of sexual communication.

In summary, research on women with dyspareunia has consistently shown that they report more psychological and sexual impairments than pain-free controls, while findings about depression have been unclear. Studies on the psychological and sexual adjustment of their male counterparts are scarce, uncontrolled, and have used global measures and yielded inconsistent results. Finally, preliminary evidence about sexual communication in this population suggests that it may be poorer. Thus, there is a need for controlled studies of women with dyspareunia and their partners, examining their relationship and psychological and sexual well-being using validated measures.

Aims

The aim of the present study was to extend past research by comparing dyadic sexual communication, dyadic adjustment, and psychological and sexual well-being of women with dyspareunia from a community sample and their male partners with that of pain-free control women and their partners. We hypothesized that compared with pain-free control couples, women with dyspareunia and their male partners would report poorer dyadic sexual communication, but equivalent dyadic adjustment. We further hypothesized that the scores on anxiety, depression, and sexual functioning in partners of women with dyspareunia would be comparable with those of partners of pain-free control women. Finally, we hypothesized that women with dyspareunia would report higher levels of anxiety, more sexual dysfunction, and more sexual distress in comparison with pain-free control women, whereas no hypothesis about depression was formulated because of inconsistencies in previous research.

Methods

Participants

Participants were recruited by means of brief announcements in newspapers, women's magazines, and websites. Announcements indicated that our research group was seeking women who experience pain during intercourse, and women who do not, to participate in an online survey. The URL of the website was presented in the announcements. Apart from specific information on selection criteria, the website indicated that participants could receive a film ticket after completing the whole questionnaire. The inclusion criteria were (i) to be a woman; (ii) to be currently involved in an exclusive sexual relationship of any length; (iiia) pain-free control women had to experience currently and usually no pain at all during sexual intercourse. This group of women registered based on the following description on the website: "This question-

naire is for women who currently (and usually) experience no pain during intercourse with their current partner. This questionnaire applies also for women who earlier in the past have ever experienced pain during intercourse but (usually) no longer." Or (iiib) Women with dyspareunia had to experience usually, almost always, or always pain during and/or after sexual intercourse. This group registered 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 the study relied on self-reported dyspareunia and that participants did not have a formal clinical diagnosis of dyspareunia. Further, no specific exclusion criteria were described. After completing the whole survey, participants were provided information about the fact that we were also searching for male partners to complete a subsequent and related online survey. All women who participated in the online survey on dyspareunia were asked to invite their partner to complete an online survey that would take 45 minutes and for which they would receive a film ticket as compensation for their participation.

In total, 644 women (423 women with dyspareunia and 221 pain-free controls) registered for participation in an online survey focusing on different dimensions of dyspareunia, with 446 women (264 women with dyspareunia and 182 pain-free controls) completing the whole questionnaire. Of those, 116 participants (72 women with dyspareunia and 44 pain-free controls) were excluded because they were likely menopausal (women ≥45 years old and women reporting that they had no or an irregular menstrual cycle due to menopause) and/or they did not belong to a "pure" pain or "pure" control group (i.e., participants who registered as "a woman with dyspareunia" but who reported to have had no pain during intercourse during the last 4 weeks, and participants who registered as "a woman without dyspareunia" but who reported to have had pain during the last 4 weeks). Additionally, 16 women (13 women with dyspareunia and 3 pain-free control women) were excluded because they reported to have had no sexual contact during the past 4 weeks. In total, 314 premenopausal women (179 women with dyspareunia or 42% of the total number of registered women with dyspareunia and 135 pain-free controls or 61% of the total number of registered pain-free controls) and their male partners were potentially eligible to participate in this study focusing on "relationship" factors in dyspareunia. In total, 82 male partners (26.11% of the eligible couples) could be included in the analyses. More specifically, 38% or 12.10% of the eligible couples were couples with dyspareunia and 44% or 14.01% of the eligible couples were pain-free control couples. 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 with the sample of women whose 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.

Procedure

After registering, women and their male partners each received an e-mail 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 as mentioned in the informed consent and when male partners had filled out the unique code of their female partner, they were forwarded to the start page of the questionnaire. When they did not accept and agree, they were not able to enter the survey. Because completing the questionnaire could take up to 2 hours for women and 45 minutes for partners, participants were able to save their answers and to log in again at a later time. Participants who began to fill out the survey and did not finish the full questionnaire within 4 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 e-mail with the following message: "Thank you for participating in this study. We want to reward you for your time and therefore we would like to send you a film ticket (value: €6) to your home-address. If you want to receive this film ticket, please reply to this e-mail with your home-address enclosed." The present study was submitted for approval to the medical ethics committee of the University Hospitals, but the committee decided that the study was exempted from need for approval.

Measures

Descriptive Variables

Participants completed socio-demographic questions and one question about sexual activity. Women with dyspareunia completed questions about their pain history. A visual analog scale (VAS), ranging from 0 ("no pain at all") to 10 ("worst pain ever"), was used to measure their pain intensity on different locations, i.e., at the entrance of the vagina, during insertion of the penis in the vagina, during deep penetration, and after penetration.

Main Outcome Measures

Women and Their Male Partners

Dyadic Sexual Communication

Sexual communication within the relationship was measured by a translated version of the original Dyadic Sexual Communication (DSC) scale [37]. The translation into Dutch was done using the method of forward and backward translation. The DSC consists of 13 items to measure participant's perceptions of discussing sexual matters with their intimate partner. Six items are formulated positively and seven negatively, as illustrated with the following items: "Talking about sex is a satisfying experience for both of us" and "My partner rarely responds when I want to talk about our sex life." Each item is rated on a six-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 a better quality of sexual communication. The original DSC has shown to be adequately valid and reliable [46]. In the present study, Cronbach's alphas were 0.91 and 0.88 for women and partners, respectively.

Dyadic Adjustment

Relationship quality was measured using the Dutch version of the Dyadic Adjustment Scale, which consists of 32 items [47,48]. Higher scores indicate better relationship quality. Based on population-based norms, the mean score of this questionnaire is 100. Scores under the mean are considered as indicating lower relationship quality. This questionnaire is the current golden standard for measuring dyadic adjustment and has excellent validity and reliability [47]. In the current sample, Cronbach's alphas were 0.86 and 0.87, respectively, for women and partners.

Anxiety

Trait anxiety (i.e., a stable tendency to respond anxiously to a variety of situations or stressors) was measured by the Dutch version of the State-Trait Anxiety Inventory-Trait (STAI) [49,50]. The reliability and validity of the STAI have been well established [50]. This questionnaire consists of 20 items ranging from 0 (low intensity) to 3 (high intensity). Total scores range from 0 to 60 and lower scores are an indication of better psychological functioning or less anxiety. In the current sample, Cronbach's alphas were 0.95 and 0.93, respectively, for women and partners.

Depression

Presence and severity of depressive symptoms were assessed using the Dutch version of the Beck Depression Inventory-II [51,52]. This questionnaire consists of 21 items each ranging from 0 to 3. Total scores range from 0 to 63 with higher scores indicating more (severe) depressive symptoms. A score of ≥17 is used as the cutoff for clinical depression. This questionnaire has shown good reliability and validity [51], also in chronic pain populations [53]. In the current sample, Cronbach's alphas were 0.91 and 0.76, respectively, for women and partners.

Women

Female Sexual Functioning

Sexual functioning in women was measured using the Dutch version of the Female Sexual Functioning Index (FSFI) [54,55]. The FSFI is a 19-item self-report measure with six subscales (desire, arousal, lubrication, orgasm, satisfaction, and pain), and each subscale includes at least one frequency item and one or more additional items. Higher scores indicate better sexual functioning whereas a score of ≤26.5 is considered as the cutoff for a clinical sexual dysfunction [54–56]. The FSFI has demonstrated excellent psychometric properties [57], and the internal consistency in the present sample was excellent (Cronbach's $\alpha = 0.94$).

Female Sexual Distress

The Dutch version of the Female Sexual Distress Scale (FSDS) was added to assess female participant's sexual distress [54,56,58]. This scale consists of 12 items to which participants respond on a five-point Likert-type scale ranging from 0 (never) to 4 (always). Higher scores indicate more sexual

Table 1 Demographic variables: comparison of dyspareunia and pain-free control couples

Variable	Women with dyspareunia n = 38	Pain-free control women n = 44	*P* value	Partners of women with dyspareunia n = 38	Partners of control women n = 44	*P* value
Age	24.92 ± 6.12	25.86 ± 6.72	0.51	26.71 ± 6.59	27.95 ± 6.82	0.41
Born in Belgium	92.1%	90.7%	0.82	94.6%	88.6%	0.34
Catholic	92.1%	79.5%	0.11	81.6%	81.8%	0.98
Education >Bachelor's degree	57.9%	75.0%	0.10	50.0%	63.6%	0.21
Occupation: student	47.4%	47.7%	0.97	26.3%	34.1%	0.45
Occupation: working	47.4%	47.7%	0.97	68.4%	63.6%	0.65
Cohabiting	57.9%	52.3%	0.61	/	/	
Relationship duration			0.46			/
<1 year	13.2%	13.6%		/	/	
1–5 years	50.0%	47.8%		/	/	
>5 years	36.8%	38.6%		/	/	

Values are % or mean ± standard deviation
Student's *t*-test or chi-square test

distress [54]. The FSDS has shown to be valid and reliable [54]. The internal consistency of the FSDS in the present sample was excellent (Cronbach's $\alpha = 0.97$).

Male Partners

Male Sexual Functioning

Sexual functioning in male partners was measured by the Dutch version of the International Index of Erectile Functioning (IIEF) [59,60]. The IIEF is a 15-item self-report measure with five subscales (erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction), each including at least one frequency item and one or more additional items. Higher scores indicate better sexual functioning, and a score of ≤25 on the subscale erectile function is considered as a cutoff for erectile dysfunction [59,60]. The IIEF has demonstrated excellent psychometric properties [59], and the internal consistency in the present sample was excellent (Cronbach's $\alpha = 0.92$).

Statistical Analysis

Statistical analyses were performed using SPSS (version 21.0; SPSS, Inc., Chicago, IL, USA). Student's *t*-tests, multivariate analysis of variance (MANOVA), and separate univariate analyses of variance (ANOVAS), followed by post hoc comparisons using Bonferroni corrections to calculate differences between groups. Effect sizes were estimated with eta squared (η^2). Chi-square tests (χ^2) were used to measure associations between categorical variables.

Results

Study Sample

Socio-demographic variables of dyspareunia and control couples are shown in Table 1. On average, participants were in their mid to late twenties, born in Belgium, were Catholic, working or studying, and highly educated. More than half of the couples were cohabiting, and most couples had been in a relationship for 1 year or longer. No significant socio-demographic differences were found between women with dyspareunia and control women, or between their respective partners.

Pain characteristics of women with dyspareunia can be found in Table 2. Most women reported pain during insertion of the penis in the vagina (84.2%) and at the entrance of the vagina (44.7%). The mean pain intensity during sexual intercourse, measured on a VAS from 0 to 10, was 5.59 ± 2.24

Table 2 Pain characteristics of women with dyspareunia (n = 38)

Variable	% or Mean ± SD	n
Pain duration		
<6 months	10.5%	4
6–12 months	13.2%	5
1–5 years	47.4%	18
5–10 years	26.3%	10
>10 years	2.6%	1
Pain intensity		
At the entrance of the vagina	44.7% (5.59 ± 2.24)	17
In the vagina, during insertion of the penis	84.2% (7.13 ± 1.96)	32
In the vagina, during deep penetration	35.9% (6.86 ± 2.41)	14
After penetration	43.6% (5.71 ± 2.34)	17

n = number; SD = standard deviation

Table 3 Dyadic sexual communication, dyadic adjustment, and psychosexual well-being in women with and without dyspareunia and their respective partners

Variable	Women with dyspareunia n = 38	Pain-free control women n = 44	*P* value	Partners of women with dyspareunia n = 38	Partners of pain-free control women n = 44	*P* value
Dyadic sexual communication (DSC)	62.50 ± 12.84	69.07 ± 9.34	**0.009**	63.84 ± 11.84	67.32 ± 8.53	0.128
Dyadic adjustment (DAS)	116.82 ± 8.81	118.86 ± 13.93	0.437	119.18 ± 12.67	118.95 ± 11.94	0.933
Anxiety (STAI-Trait)	46.26 ± 10.94	38.32 ± 12.47	**0.003**	33.74 ± 10.40	32.50 ± 7.53	0.535
Depression (BDI)	10.95 ± 9.25	6.91 ± 8.00	**0.037**	4.39 ± 3.62	3.00 ± 3.25	0.070
Sexual functioning (FSFI/IIEF)	22.13 ± 5.90	30.00 ± 2.67	**<0.001**	54.95 ± 14.10	63.45 ± 4.63	**<0.001**
Subscale desire/sexual desire	3.24 ± 1.28	3.87 ± 0.73	**0.009**	5.89 ± 1.59	6.14 ± 1.34	0.457
Subscale arousal	4.04 ± 1.39	5.16 ± 0.61	**<0.001**	/	/	
Subscale lubrication/erectile functioning	4.53 ± 1.42	5.72 ± 0.45	**<0.001**	25.11 ± 6.75	27.86 ± 2.40	**0.013**
Subscale orgasm/orgasmic function	4.03 ± 1.82	4.72 ± 1.32	0.058	9.29 ± 1.74	9.80 ± 0.73	0.082
Subscale intercourse satisfaction	/	/		9.45 ± 4.92	13.11 ± 1.59	**<0.001**
Subscale satisfaction/overall satisfaction	4.15 ± 1.13	5.09 ± 1.03	**<0.001**	5.21 ± 1.95	6.55 ± 1.17	**<0.001**
Subscale pain	2.14 ± 1.16	5.44 ± 0.68	**<0.001**	/	/	
Female sexual distress (FSDS)	22.82 ± 11.75	8.02 ± 9.00	**<0.001**	/	/	

Bold stands for statistical significant difference
Values are mean ± standard deviation
BDI = Beck Depression Inventory; DAS = Dyadic Adjustment Scale; DSC = Dyadic Sexual Communication Scale; FSDS = Female Sexual Distress Scale; FSFI = Female Sexual Functioning Index; IIEF = International Index of Erectile Functioning; STAI Trait = State-Trait Anxiety Inventory-Trait

at the entrance of the vagina, 7.13 ± 1.96 during insertion of the penis in the vagina, 6.86 ± 2.41 during deep penetration, and 5.71 ± 2.34 after penetration.

Dyadic Sexual Communication, Dyadic Adjustment, Psychological Adjustment, and Sexual Well-Being

The mean scores on dyadic sexual communication, dyadic adjustment, anxiety, depression, sexual function, and female sexual distress are summarized in Table 3. Two MANOVAS were conducted for women and their male partners, respectively, using the sum scores of the variables dyadic sexual communication, dyadic adjustment, trait anxiety, depression, sexual functioning, and sexual distress. A first MANOVA indicated a group main effect on these relationship, psychological, and sexual variables for women with dyspareunia and pain-free controls, $F(6,75) = 16.03$, $P < 0.001$. Subsequent separate univariate ANOVAS showed that compared with control women, women with dyspareunia reported poorer dyadic sexual communication, $F(1,81) = 7.15$, $P = 0.009$, $\eta^2 = 0.08$, higher levels of trait anxiety, $F(1,81) = 9.27$, $P = 0.003$, $\eta^2 = 0.10$, and higher levels of depression, $F(1,81) = 4.49$, $P = 0.037$, $\eta^2 = 0.05$. Women with dyspareunia also reported significantly worse overall sexual functioning, $F(1,81) = 63.35$, $P < 0.001$, $\eta^2 = 0.44$ and more sexual distress, $F(1,81) = 41.57$, $P < 0.001$, $\eta^2 = 0.34$. Dyadic adjustment was not significantly different between women with dyspareunia and pain-free controls. A second MANOVA indicated a group main effect on these relationship, psychological, and sexual variables for partners of women with dyspareunia and partners of pain-free controls, $F(5,76) = 3.40$, $P = 0.008$. Subsequent separate univariate ANOVAS revealed that compared with partners of pain-free controls, partners of women with dyspareunia reported significantly worse overall sexual functioning, $F(1,81) = 14.27$, $P < 0.001$, $\eta^2 = 0.15$. Dyadic sexual communication, dyadic adjustment, anxiety, and depression were not significantly different between partners of women with dyspareunia and partners of pain-free controls.

In order to identify which subscales of male sexual functioning were significantly different, an additional MANOVA was performed in male partners, using the sum scores of the subscales erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction. This MANOVA comparing partners of women with dyspareunia and partners of pain-free controls indicated a group main effect on these subscales, $F(5,76) = 6.05$, $P < 0.001$. Subsequent separate univariate ANOVAS revealed that compared with partners of pain-free controls, partners of women with dyspareunia reported significantly worse erectile functioning, $F(1,81) = 6.42$, $P = 0.013$, $\eta^2 = 0.07$, poorer intercourse satisfaction, $F(1,81) = 21.80$, $P < 0.001$, $\eta^2 = 0.21$, and poorer overall satisfaction, $F(1,81) = 14.60$, $P < 0.001$, $\eta^2 = 0.15$. Sexual desire and orgasmic functioning were not significantly different between partners of women with dyspareunia and partners of pain-free controls.

Discussion

The present controlled study examined dyadic sexual communication, dyadic adjustment, as well as psychological and sexual well-being in dyspareunia and pain-free couples. Results showed that dyadic sexual communication was poorer in women with dyspareunia than in pain-free control women, whereas no differences were found in dyadic sexual communication between partners of women with dyspareunia and partners of pain-free controls. However, partners of women with dyspareunia reported more impaired sexual functioning compared with partners of pain-free controls. Finally, results corroborated previous findings from clinical populations concerning higher levels of trait anxiety and depressive symptomatology, more sexual dysfunction, and higher levels of sexual distress in women with dyspareunia in the present sample of women from the community.

As hypothesized, women with dyspareunia reported significantly poorer dyadic sexual communication compared with pain-free control women. This is in line with results from another study in which one out of three women with vulvovaginal disorders reported that the pain made them feel more uncomfortable discussing sexuality with their partner [45]. It could be that women with dyspareunia avoid discussing sexuality out of fear of losing their partner [24]. Women with dyspareunia report feeling uncertain about their relationship [40], and disclosing private and intimate personal information—such as sexual likes and dislikes—might expose them to potential rejection, abandonment, discomfort, and embarrassment. This finding is in line with studies that have shown that uncertainty about the relationship and fear of intimacy were associated with lower levels of sexual communication [40,44]. It might also be true that women who experience dyspareunia are not willing to share their sexual pain experience and/or communicate about sexuality with their partner in order not to upset him or her. This would be in line with results from the chronic pain and cancer literature indicating that both patients and partners feel limited in terms of communication and might choose to engage in a "conspiracy of silence" or mutual avoidance of discussing problems in order not to harm or to protect their partner [30,35,36]. Finally, although the difference in sexual communication was statistically significant (with medium effect size), the clinical relevance of this difference is not yet clear given the lack of clinical cutoff criterion.

The finding that dyadic sexual communication in partners of women with dyspareunia was not significantly different from that of partners of pain-free control women was not expected. It may be that Theiss' [40] sample, in which sexual communication between women and their partners was positively and significantly associated, consisted of healthy couples without sexual dysfunctions. Because women in general are more attuned to the quality of their relationship and spend more time thinking about the interpersonal aspects of their relationship than men [36], it is conceivable that women with dyspareunia are more sensitive to sexual communication than their male partners and more focused on sexuality-related concerns, especially given that they experience pain during intercourse. However, because the pain is experienced by the women, it might be that the problem is assumed by both members of the couple to belong to the woman exclusively, instead of being shared by both partners. Women might need more reassurance to compensate for their feelings of guilt and embarrassment [23,24], while partners of women with dyspareunia would not differ from other men in terms of their style of sexual communication. Replication of these findings in a larger sample is necessary.

In line with our hypothesis, results indicated that partners of women with dyspareunia reported comparable levels of depressive symptoms than partners of pain-free control women. This finding is in line with those from two other studies that did not show more elevated depressive symptomatology in partners of women with dyspareunia [12,21]. Although methodology and sampling differed, as the current study was the first to include partners of pain-free control women instead of making comparisons to norm scores, comparable results emerged. This finding is nevertheless in contrast with those from the pain literature, whereby partners of pain patients report more depressive symptoms than partners of pain-free controls [61,62], This may be due to the fact that persistent musculoskeletal pain may impact partners on a daily basis, whereas, although distressing, dyspareunia is a discrete pain problem that does not always interfere with daily activities.

Partners of women with dyspareunia reported significantly more sexual impairment compared with control partners. Specifically, they reported

more overall sexual dissatisfaction, intercourse dissatisfaction, and erectile dysfunction. The findings concerning lower overall and intercourse satisfaction are in line with those of another study in which partners of women with dyspareunia also reported more sexual dissatisfaction and a significantly lower frequency of penile–vaginal intercourse [21]. However, until now, no other study found a statistical significant difference concerning sexual dysfunction in partners of women with dyspareunia. This divergence might be explained by differences in methodology and sampling as other studies only used scale norms [12,21]. Nevertheless, findings are in line with those from a controlled study of male patients with chronic prostatitis/chronic pelvic pain and their female partners [62], whereby the female partners reported more sexual pain than control women. Further, sexual (dys)functioning of these patients and their partners was significantly correlated [62]. In line with the Dual Control Model [26,27], preoccupation with women's pain during intercourse could alter partners' sexual experience by inhibiting arousal and sexual satisfaction.

In comparison with pain-free controls, women with dyspareunia also had more overall sexual impairment, higher levels of sexual distress, higher levels of trait anxiety, and more depressive symptomatology. Although findings concerning depression have been inconsistent to date, our results are in line with the documented association between depressive symptomatology and sexual dysfunctions [63]. The current findings, based on a sample of women from the community, replicate and extend those from clinical samples. They confirm that dyspareunia, similarly to other chronic pain conditions, may have a negative impact on overall psychological and sexual functioning [4,6,12,14,19].

Finally, as expected, no significant differences between the groups emerged on dyadic adjustment. Previous research has repeatedly shown that dyadic adjustment, measured by a standardized questionnaire, did not discriminate women with dyspareunia and their partners from norms scores [11,18]. As suggested in qualitative research in women and couples with dyspareunia, the experience of pain may have a negative or a positive impact on certain aspects of the relationship [22–24]. Some women reported feeling very close to their partner, described their relationship as a strong emotional bond, and reported that their partner was "totally understanding and supportive" [22,23]. Other women reported feeling emotionally distant and reported their partner to be impatient, angry, and frustrated [24]. It might be that using a questionnaire to measure global dyadic adjustment is not sensitive enough to capture these nuances. Variables such as attachment style and emotional intimacy may prove more useful in terms of generating new knowledge concerning couples grappling with dyspareunia. Future research should focus on more specific aspects of the relationship such as communication processes to get a better understanding of the differential impact of dyspareunia on the relational functioning of couples.

Certain limitations of this study should be recognized. First, the data were collected using an online survey methodology and thus rely on self-reported dyspareunia rather than on a formal diagnosis. Second, the response rate of partners was low: only 26.11% of eligible partners completed the measures and therefore, a smaller sample of eligible couples was analyzed. Third, the cross-sectional nature of these data does not allow us to make conclusions in terms of causal or even temporal associations. Further, the open access of the online questionnaires could have resulted in a biased sample consisting of higher educated, middle-class women and their partners with Internet access. Therefore, questions could be raised about the representativeness of the sample. However, analyses revealed no significant differences between the smaller sample and the larger sample of women, indicating that our smaller sample was a representative subsample of the larger sample of all eligible women. Further, the data concerning pain location and intensity, age, as well as psychological and sexual functioning, are suggestive of the fact that we were able to obtain a distinct sample of young, premenopausal women with dyspareunia and a group of pain-free control women and their partners that enabled us to make the necessary comparisons.

This study has a number of strengths. First, it included a control group of partners, which represents a significant methodological improvement over previous work in this area. This study also included a specific relational variable—dyadic sexual communication—thereby moving away from global constructs and paving the way toward a more fine-grained examination of relationship dynamics in women presenting with sexual health complaints. Apart from its methodological strengths, the present study revealed that partners of women with dyspareunia seem to be negatively affected by their female partner's experience of

pain and that these couples exhibit poor sexual communication. These novel findings suggest that clinicians should make extra efforts to involve partners of women with dyspareunia in the treatment process.

Conclusion

This study examined dyadic sexual communication, dyadic adjustment, psychological adjustment, and sexual well-being in couples with dyspareunia and pain-free control couples. Results showed that dyadic sexual communication is poorer in women with dyspareunia than in pain-free controls and replicated previous findings concerning impaired psychological and sexual well-being in these women. Further, partners of women with dyspareunia reported more impaired sexual functioning than control partners. These findings highlight the importance of including the partner in the treatment of women with dyspareunia by focusing on enhancing sexual communication to improve the psychological and sexual health of both members of the couple.

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

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