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An Attachment Perspective on Partner Responses to Genito-pelvic Pain and Their Associations with Relationship and Sexual Outcomes

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ABSTRACT

Although facilitative and negative partner responses are known to impact couples' adaptation to provoked vestibulodynia (PVD), a chronic genito-pelvic pain condition, it is still unknown what leads individuals to adopt or perceive such adaptative or detrimental behaviors. Attachment influences sexual and relationship adjustment, emotional reactivity and perceived support in romantic relationships, and as such could be associated with partner responses. This study aimed at examining the mediating role of facilitative and negative partner responses in the associations between attachment and relationship and sexual adjustment in 125 couples coping with PVD. Couples completed self-report questionnaires on attachment, partner responses, sexual satisfaction and distress, and relationship satisfaction. Results indicated that partners' attachment avoidance was negatively associated with facilitative partner-reported responses, which in turn was associated with partners' sexual and relationship satisfaction. Attachment anxiety in women and partners was associated with greater women-perceived negative partner responses, which in turn was associated with women's and partners' greater sexual distress and lower sexual satisfaction, and women's lower relationship satisfaction. Partners' greater attachment anxiety was also associated with greater partner-reported facilitative responses, which was associated with partners' lower and women's greater relationship satisfaction. Assessing attachment orientations may help clinicians better understand couples' dyadic coping.

Introduction

Provoked vestibulodynia (PVD) is an idiopathic vulvo-vaginal pain condition affecting approximately 7 to 12% of premenopausal women (Harlow et al., 2014; Harlow & Stewart, 2003). It is characterized by a persistent pressure-provoked pain at the entrance of the vagina often described as a cutting or burning sensation (Bornstein et al., 2016). Given the principal activity with which PVD interferes is sexuality, this pain condition affects both women and their partners. Sexual impairment and distress are often the main reasons for couples to seek treatment (Donaldson & Meana, 2011). For instance, women with PVD report lower sexual satisfaction, poorer sexual function, greater psychological distress and impairments in their relationship functioning, while partners also report lower sexual satisfaction, poorer sexual function, and greater depressive symptoms (see Bergeron et al., 2015 for a review).

In their interpersonal emotion regulation model of women's sexual dysfunction, Rosen and Bergeron (2019) suggested that distal (e.g., attachment, childhood interpersonal trauma, catastrophizing) and proximal (e.g., partner responses, sexual motives) factors may affect both partners' emotional regulation strategies, which in turn may influence

the couples' adjustment to PVD. An important and well documented proximal factor in this model is partner responses to painful intercourse. Dyadic cross-sectional and daily diary studies show that facilitative partner responses (e.g., kissing, expressing that intercourse is pleasurable), either perceived by women with PVD or self-reported by their romantic partners, are associated with lower pain intensity, greater sexual function, and greater relationship and sexual satisfaction in women (Rosen et al., 2012; Rosen, Bergeron et al., 2015; Rosen, Bergeron, Sadikaj, Glowacka, Delisle et al., 2014; Rosen, Muise et al., 2015). Conversely, negative partner responses (e.g., expressing anger, ignoring pain signals), as self-reported by partners or as perceived by women with PVD, are associated with women's greater pain intensity, poorer relationship satisfaction, poorer sexual satisfaction, greater depressive symptoms, and both partners' greater anxiety and poorer sexual function (Rosen et al., 2013; Rosen, Bergeron et al., 2015; Rosen, Bergeron, Sadikaj, Glowacka, Baxter et al., 2014; Rosen, Bergeron, Sadikaj, Glowacka, Delisle et al., 2014; Rosen, Muise et al., 2015).

Although the positive impact of facilitative partner responses and the detrimental effect of negative partner responses on both partners' sexual, relational and psychological adjustment to PVD

are well documented, only one study to date has examined their antecedents (Davis et al., 2015). Current couple treatments for PVD target partner responses and aim to change partners' maladaptive behavioral and affective reactions to pain manifestations that may cause greater distress, greater pain or encourage avoidance of sexual activities (Bergeron et al., 2017; Corsini-Munt et al., 2014). However, it is unclear why partners display facilitative or negative responses. Also, as perception of support is only moderately related to received support (Haber et al., 2007), further investigation as to why and if women hold a biased perception of partner responses is needed. This gap in our understanding of partner responses limits our ability to address these responses appropriately in treatments for couples, as underlying causes for these behaviors are yet unknown and their identification may provide multiple points to target in couples' therapy. In keeping with the interpersonal emotion regulation model of women's sexual dysfunction (Rosen & Bergeron, 2019), a distal factor that may be related to partner responses is attachment. Attachment has been identified as a central factor in romantic relationships and sexual functioning in adulthood, both from theoretical and empirical perspectives (Li & Chan, 2012; Mikulincer & Shaver, 2016; Stefanou & McCabe, 2012). Different attachment needs influence the way individuals seek security and comfort in contexts of threat, such as in the occurrence of pain, by shaping the interpersonal interactions aimed at upholding a sense of security (Bowlby, 1969). Attachment is known to impact couples' overall relationship and sexual adjustment (Mikulincer & Shaver, 2016), but has also been demonstrated to affect chronic pain adjustment in both individuals and couples (Meredith et al., 2008; Romeo et al., 2017). Therefore, the present study's goal was to examine the dyadic associations between attachment, partner responses to pain, and couples' sexual and relationship adjustment to PVD.

Attachment in Adulthood

Attachment develops during childhood through the sensitivity and consistency of care provided by primary caregivers and tends to transpose to adult relationships (Ainsworth et al., 2015; Bowlby, 1973). In the context of romantic relationships, the romantic partner becomes the primary attachment figure to which one turns to for comfort in times of sickness, fear or distress (Hazan & Shaver, 1987). Attachment in adulthood is conceptualized in two continuous dimensions, namely attachment anxiety (or abandonment anxiety) and attachment avoidance (or avoidance of intimacy). Secure attachment represents low fears of intimacy and abandonment (Bartholomew & Horowitz, 1991; Bowlby, 1969). Individuals with higher levels of attachment anxiety tend to hold a negative view of themselves as being unimportant or unworthy of love and proper care. This orientation leads them to exert hyperactivation strategies to maintain the attachment bond, such as seeking intimate and physical proximity as a means of reassurance, staying hypervigilant to cues of rejection, and having excessive emotional reactions when distressed (Cassidy & Kobak, 1988). Individuals with higher levels of attachment avoidance tend to hold a negative view of others as being unresponsive or disappointing, leading them to avoid intimacy and emotional proximity (Bowlby, 1973,

1988). This orientation results in deactivating strategies in order to obviate the attachment bond, such as denying one's attachment needs, avoiding dependency in close relationships, displaying a self-reliant attitude, and dismissing threatening and attachment-related cues or thoughts (Cassidy & Kobak, 1988).

As demonstrated in many empirical studies, attachment insecurity (i.e. higher levels of attachment avoidance and/or attachment anxiety) and its associated strategies may lead individuals to experience their relationships, and also their sex lives, as being less satisfying, more stressful and more frustrating, as the attachment bond is either superficial or unfulfilling (Beck et al., 2013; Brassard et al., 2015; Butzer & Campbell, 2008; Collins et al., 2011; Li & Chan, 2012; Mikulincer et al., 2002; Stefanou & McCabe, 2012). In the context of PVD, the interpersonal emotion regulation model of women's sexual dysfunction stipulates that attachment insecurity may lead to couples' poorer relational, sexual and psychological adjustment, whereby individuals with greater attachment avoidance or anxiety may respectively minimize or exaggerate the threatening aspect of genito-pelvic pain (Rosen & Bergeron, 2019). Indeed, there is evidence showing that attachment insecurity is linked to poorer sexual adjustment in couples affected by PVD, whereby attachment anxiety and avoidance have been associated with greater pain intensity (Charbonneau-Lefebvre et al., 2019; Granot et al., 2010), lower sexual function in women, and lower sexual satisfaction in both women and partners (Leclerc et al., 2015). However, no studies to date have examined attachment's associations with PVD couples' relationship satisfaction or subjective sexual distress.

Attachment and Caretaking Tendencies

Attachment theory suggests that attachment insecurity may lead individuals to exert maladaptive interpersonal responses when distressed (Cassidy & Kobak, 1988). However, no studies to date have examined the associations between attachment dimensions and partner responses in couples coping with pain during intercourse. In fact, distress expression or support seeking in one partner should lead to the normative activation of empathy, support-providing and caretaking tendencies in the other (Collins et al., 2011), but evidence shows that caretaking tendencies and empathic responding tend to be disrupted in insecurely attached individuals (Collins et al., 2011; Joireman et al., 2002; Millings & Walsh, 2009; Péloquin, Brassard et al., 2014; Shaver et al., 2019).

Individuals with higher levels of attachment anxiety may get overwhelmed by their partners' distress, as a result of hyperactivating attachment-related strategies, and experience despair, powerlessness and anger, leading them to be emotionally unavailable or overly intrusive in their attempts to offer support (Mikulincer & Shaver, 2005). In contrast, individuals with higher levels of attachment avoidance may minimize their partners' distress or resent and pity their partner for being needy, concordant with greater deactivating attachment-related strategies, which prevents them from responding in a sensitive and adaptive way (Mikulincer & Shaver, 2005).

These attachment-related responses to distress may also be relevant to understand partner responses to pain in PVD couples. In fact, individuals with greater attachment insecurity tend to exert maladaptive emotion regulation strategies that generally result in greater interpersonal difficulties (Wei et al., 2005) and higher conflict in couples (Pietromonaco et al., 2004). Individuals with higher levels of attachment anxiety or avoidance may become frustrated or despaired when confronted with their partners' pain-related distress, therefore expressing more negative partner responses. They may also have difficulty becoming empathic and displaying adaptive reassuring responses, namely facilitative responses, in such contexts. Indeed, a study involving 130 married couples showed that attachment insecurity, particularly attachment anxiety, was associated with greater personal distress when couples were confronted with contextual stressors, which in turn led to poorer support provision toward their partner (Reizer et al., 2012). As a greater frequency of negative responses and a lower frequency of facilitative responses may impinge the couples' intimacy and emotional connection, couples may in turn experience their sexuality, and their romantic relationship, as being distressing, unpleasant, and unsatisfying (Rosen et al., 2012; Payne et al., 2005; Rosen & Bergeron, 2019).

Attachment and Perception of Support

Women's attachment insecurity might also be associated with their own perception of their partners' responses, and in turn the couples' sexual and relationship adjustment. In fact, hyperactivating strategies of individuals with higher levels of attachment anxiety involve hypervigilance and a lower threshold to signs of rejection and unavailability (Fraley et al., 2006; Mikulincer & Shaver, 2005). In contrast, individuals with higher levels of attachment avoidance may dismiss attachment-related cues and attribute hostile (negative) responses to their partner as a means to distance themselves. These attachment-related strategies may cause women with PVD to perceive greater negative partner responses and fewer facilitative responses from their partners. In fact, the association between attachment insecurity and lower perception of support and responsiveness from a romantic partner is well documented, including in women with PVD (Bosisio et al., 2019; Collins & Feeney, 2004b; Collins et al., 2011). An observational study in PVD couples found that higher attachment anxiety in either women or their male partners was associated with lower perceived caring, acceptance and understanding from one's partner during a discussion about PVD (Bosisio et al., 2019). Interestingly, this effect went above and beyond the effect of care, acceptance and understanding as rated by an external observer, suggesting that attachment might impact individuals' perception of support, rather than support as objectively observed.

Attachment and Partner Responses

Although an interaction between proximal and distal factors has been proposed by Rosen and Bergeron (2019), no studies to date have examined the associations between attachment and partner responses to pain in PVD couples. However, two

studies have examined these associations among chronic pain and cancer pain sufferers. Results indicated that greater attachment anxiety was associated with greater perception of negative partner responses (Forsythe et al., 2012; Gauthier et al., 2012). Nonetheless, these studies assessed only the patients' perception of partner responses rather than both perceived (individual with chronic pain) and reported (by partners) partner responses, and neglected to examine adaptive, facilitative partner responses. Considering that sexuality contributes to the maintenance of the attachment bond (Birnbaum & Reis, 2019), it appears particularly relevant to use a dyadic perspective when examining the association between attachment and partner responses among couples in whom sexuality is impaired by a chronic genito-pelvic pain condition. Also, many have emphasized the importance of examining chronic pain conditions using a dyadic perspective (Cano et al., 2018; Leonard et al., 2006; Pence et al., 2006; Rosen & Bergeron, 2019). This is especially true when studying attachment (Mikail et al., 1994; Romeo et al., 2017), as pain influences, and is influenced, by both partners' coping strategies and pain-related behaviors, and ultimately is associated with both individuals' adaptation to pain. Attachment insecurity also interferes with proper caregiving, such as offering reassurance and a "safe haven" for a distressed partner (Collins et al., 2011). Therefore, attachment insecurity might then be negatively associated with more adaptive interpersonal coping strategies, such as using facilitative responses, although this has never been examined in PVD couples, nor in other chronic pain couples. Examining facilitative partner responses in this context might provide a broader view of the impact of attachment insecurity and of partner responses on couples' adjustment to PVD. Studying both facilitative and negative partner responses may also allow us to orient clinical interventions toward not only detrimental interactions, but also more adaptive behaviors, by either encouraging supportive behaviors from more insecure partners or by enhancing the perception of actual support that may be filtered out due to greater attachment insecurity in women. Finally, although individuals with greater attachment insecurity experience chronic pain as more distressing (Meredith et al., 2008), no study to date has examined the associations between attachment or partner responses and sexual distress.

Study Aims and Hypotheses

The present study extends previous investigations by 1) examining attachment as a possible predictor of both negative and facilitative partner responses, 2) using a dyadic perspective to examine both partners' attachment as well as women-perceived and partner-reported responses, and 3) examining the mediating role of partner responses in the association between attachment and sexual distress, sexual satisfaction and relationship satisfaction of couples coping with PVD. Specifically, it was expected that (a) greater attachment avoidance and/or anxiety in women would be associated with their greater perception of negative responses and lower perception of facilitative responses and this would in turn be related to greater sexual distress and poorer sexual and relationship satisfaction in both

women and partners. Concordantly, (b) greater attachment avoidance and/or anxiety in partners would be associated with their greater self-reported negative and lower self-reported facilitative responses, which would in turn be linked to greater sexual distress and poorer sexual and relationship satisfaction in both partners. As no studies to date have examined the partner effects between attachment dimensions and negative and facilitative partner responses in couples, these were examined in an exploratory manner. However, as partner effects have been previously reported in studies examining partner responses, sexual outcomes and relationship outcomes in PVD couples (Rosen et al., 2010; Rosen, Muise et al., 2015), positive partner effects for facilitative partner responses and negative partner effects for negative partner responses were expected in the current sample.

Method

Participants

Participants were 122 mixed and three same-sex couples seeking treatment for PVD ($n = 125$). They were recruited through gynecological and medical clinics and through online advertising on social media. The present study was part of a multicentre randomized clinical trial on the treatment of PVD (Corsini-Munt et al., 2014). Only data from the baseline measures i.e., prior to randomization, were used in the present study. Inclusion criteria for couples were the following: (1) subjectively distressing vulvovaginal pain occurring in at least 80% of intercourse attempts and lasting for at least 6 months, (2) pain triggered exclusively during activities exerting pressure to the vulvar vestibule (e.g., intercourse, tampon insertion), (3) moderate to severe pain located at the entrance of the vagina, subjectively rated as 4 out of 10 during the cotton-swab test performed by a gynecologist, (4) being married or cohabitating for at least 6 months, or having at least 4 in-person contacts per week, and (5) being sexually active at least once per month, for the past three months. Exclusion criteria were: (1) lack of clear evidence that vulvar pain is linked to intercourse or pressure applied to the vulvar vestibule, (2) presence of one of the following: active vulvo-vaginal infection, deep dyspareunia, diagnosed vaginismus, dermatologic lesion, pregnancy, menopause or pre-menopausal symptoms, (3) taking part in another form of treatment for PVD, (4) being under 18 years of age, or (5) women being over 45 years old, to avoid confounding factors due to potential perimenopausal hormonal changes (Graziottin & Gambini, 2017). Of the 141 couples who met eligibility criteria at phone screening, 7 (5%) withdrew from the study before completing baseline measures, and 9 women (6.4%) were excluded based on gynecological examination indicating that they did not have PVD. Therefore, the final sample included 125 couples in which women had received a formal PVD diagnosis by a physician using the cotton-swab test.

Procedure

Interested participants were contacted and screened for eligibility by phone. Eligible couples were then invited for an in-person orientation session where they provided informed consent, took

part in a structured interview on sociodemographic variables and pain history, and completed baseline questionnaires. Women with PVD symptoms were then given an appointment with a gynecologist for an assessment of PVD symptomatology. PVD diagnosis was determined using the cotton-swab test, which is a standardized and validated method in which pressure is applied at the entrance of the vulvar vestibule using a cotton swab while women rate their pain intensity from 0 to 10 (Bergeron et al., 2001; Goldstein et al., 2016). Women who received a formal PVD diagnosis and their partners were enrolled in the treatment study. Ineligible couples were given a list of vulvar pain specialists in their geographical area. Couples received 30 USD financial compensation for the completion of baseline questionnaires relevant to the current study. The study was approved by the Center Hospitalier Universitaire de Montréal (CHUM)'s (13.156) and the IWK Health Center's (1,014,930) Institutional Review Boards.

Measures

Attachment

Attachment anxiety and avoidance were measured by using continuous scores, as recommended by Mikulincer and Shaver (2016), using the Experiences in Close Relationships – Short Form (Wei et al., 2007). Each subscale includes six items such as “I worry that romantic partners won't care about me as much as I care about them” (attachment anxiety) and “I try to avoid getting too close to my partner” (attachment avoidance). Participants rated their general feelings regarding their romantic relationships on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater attachment anxiety or avoidance. This instrument has shown good psychometric properties, with alpha coefficients and test-retest correlations of, respectively, .86 and .82 for attachment anxiety and .88 and .89 for attachment avoidance (Wei et al., 2007). In the current sample, ordinal correlation alphas for women were 0.76 and 0.79 for attachment anxiety and avoidance, respectively, and 0.75 and 0.79 for their romantic partners.

Facilitative Partner Responses

The facilitative subscale of the Spouse Response Inventory (Schwartz et al., 2005) was used to assess facilitative partner responses and was previously adapted to women with PVD and their partners (Rosen, Bergeron, Sadikaj, Glowacka, Baxter et al., 2014). Six items on a scale of 1 (never) to 6 (very frequently) allowed women to report the frequency at which they perceived facilitating responses (e.g., “hugs and/or kisses me”) from their partners (women-perceived facilitative responses) and allowed partners to report the frequency at which they gave facilitating responses (e.g., “express happiness that she is engaging in sexual activities”); partner-reported facilitative responses). Higher scores indicated greater frequency of partner facilitative responses to pain. Cronbach alphas in past studies ranged from .87 to .88 in PVD samples (McNicoll et al., 2016; Rosen et al., 2012) and were .90 for women and .86 for partners in the current sample.

Negative Partner Responses

The negative subscale of the West Haven-Yale Multidimensional Pain Inventory (Kerns et al., 1985) was used to assess negative

partner responses to pain. Items assess the frequency of either woman-perceived negative response (“my partner expresses anger at me”) or partner-reported negative responses (“I ignore her”) on a scale of 1 (never) to 6 (very frequently). Higher scores indicate greater frequency of negative partner responses. The instructions were previously adapted for women with PVD and their partners to fit the context of PVD and have shown good psychometric properties in PVD samples, with Cronbach’s alphas varying between .72 and .84 (Rosen et al., 2013; Rosen, Muise et al., 2015). In the current sample, Cronbach’s alphas were .84 for women and .78 for partners.

Sexual Distress

The Female Sexual Distress Scale-Revised is composed of 13 items measuring the frequency at which one experiences sexuality-related distress on a scale of 0 (never) to 4 (always) in the past 30 days. Although developed to measure female sexual distress, this measure has been validated in male samples (Santos-Iglesias et al., 2018). Items include being “frustrated by your sexual problems” or “worried about sex”, where a higher score indicates greater sexual distress. Test-retest correlations ranging from .80 to .92 and internal consistency of $\alpha = .93$ were found in the original validation study (Derogatis et al., 2002). In the present sample, Cronbach’s alphas were .92 for women and .91 for partners.

Sexual Satisfaction

The Global Measure of Sexual Satisfaction (GMSEX) is an instrument including five bi-polar dimensions of sexual satisfaction to which individuals indicate whether their sexuality is good or bad, pleasant or unpleasant, negative or positive, satisfying or unsatisfying, and valuable or worthless, on a 7-point Likert scale. Total scores range from 5 to 35, where a higher score indicates higher levels of sexual satisfaction. Mark et al. (2014) found the GMSEX to be the most satisfactory and well validated measure amongst four instruments assessing sexual satisfaction, presenting an alpha of .90 and a test-retest correlation of .84 (Lawrance & Byers, 2010).

Cronbach’s alphas in the current sample were .91 for women and .87 for partners.

Relationship Satisfaction

The Couple Satisfaction Index (CSI-32; (Funk & Rogge, 2007) is a 32-item scale measuring satisfaction with current relationship. Scores to items such as “I still feel a strong connection with my partner” and “How well does your partner meet your needs?” vary from 0 to 161, where a higher score indicates greater relationship satisfaction. This measure boasts good psychometric properties, with the validation study showing a standardized Cronbach’s alpha of .98 (Funk & Rogge, 2007), and with Cronbach’s alphas of .97 for both women and partners in the present study.

Statistical Analysis

The Statistical Package for the Social Sciences (SPSS V. 25.0, SPSS, Inc, Chicago, IL) was used to run descriptive and correlational analyses to describe sample characteristics and associations between study variables. Mean differences between women and partners’ study variables were examined using paired sample *t*-tests.

Mediation models were then tested in Mplus (Muthén & Muthén, 1998–2015) using path analysis to examine if women-perceived and partner-reported facilitative and negative responses mediated the associations between women’s and partners’ attachment dimensions and sexual distress, sexual satisfaction and relationship satisfaction, respectively. In order to follow current recommendations regarding statistical power (Kenny et al., 2006b; Wolf et al., 2013), the hypotheses were tested in six different models, separated according to partner responses and outcomes (facilitative partner responses: models 1a to 3a; negative partner responses: models 1b to 3b) Figure 1. Main analyses were run following the Actor-Partner Interdependence Model (APIM; Kenny et al., 2006a). This model accounts for the interdependence between partners and allows for the examination of the effect of one’s independent variable on one’s own outcome variables (actor

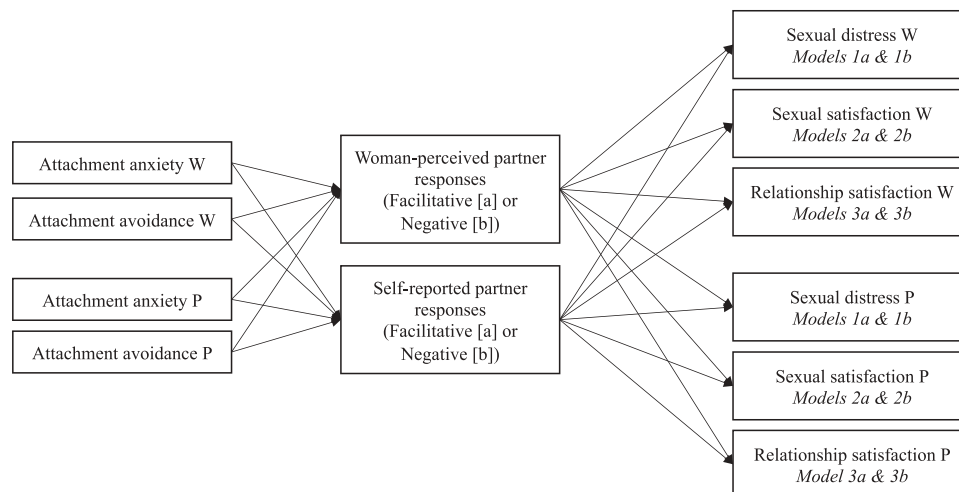


Figure 1. Summary of models examining partner responses as mediators of the associations between attachment dimensions and study outcomes. W = women with PVD. P = partners of women with PVD.

effect), but also on the partner's outcome variables (partner effect). The significance of indirect effects was determined by computing a 95% confidence interval around the estimates using 20,000 bootstrapping samples.

Model fits were judged satisfactory when they met recommended guidelines: a non-significant chi-square value, a comparative fit index (CFI) value of .90 or higher, a root-mean-square error of approximation (RMSEA) and a standardized root-mean-square residual (SRMR) below .08 (Hooper et al., 2008; Kline, 2011; McDonald & Ho, 2002). Covariances between variables that were expected to be related were added and are explained in greater detail in the Results section. Mediation models were tested in Mplus version 8.3 with the maximum likelihood parameter estimates with robust standard errors (MLR). The full information maximum likelihood method (FIML) was used to treat missing data (Muthén & Muthén, 1998–2015).

Results

Sample Characteristics

Independent samples *t*-tests revealed no significant differences on sociodemographic (age, education, couple's annual income, duration of the relationship, pain duration) and study variables (perceived and reported facilitative and negative partner responses, relationship and sexual satisfaction, and sexual distress) between participants included in the present study ($n = 125$) and those that were excluded because they did not meet inclusion criteria ($n = 16$). Sociodemographic characteristics of the sample are presented in Table 1.

Descriptive Analysis

Means and standard deviations for women's and partners' attachment dimensions, facilitative and negative partner responses, sexual distress and satisfaction, and relationship satisfaction are presented in Table 2. Paired sample *t*-tests indicated that women reported greater attachment anxiety, $t(123) = 3.43$, $p = .001$, greater sexual distress, $t(122) = 13.45$, $p < .001$, and poorer sexual satisfaction, $t(121) = -4.69$, $p < .001$, than their partners. No other significant differences were found between women and partners on attachment

Table 1. Sociodemographic characteristics of the sample ($N = 125$ couples).

Characteristics	Women		Partners	
	<i>M</i> or %	<i>SD</i> or <i>n</i>	<i>M</i> or %	<i>SD</i> or <i>n</i>
Age (years)	27.17	6.27	29.05	7.60
Cultural background				
French Canadian	40.8	51	32.0	40
English Canadian	33.6	42	40.0	50
Other	25.8	32	28.0	35
Education (years)	17.12	2.24	16.23	2.71
Couple annual income [CAD\$]				
\$0 – 19,999	20.0	25	---	---
\$20,000– 39,999	20.8	26	---	---
\$40,000– 59,999	12.8	16	---	---
> \$60,000	45.6	57	---	---
Did not disclose	0.8	1	---	---
Relationship duration (years)	5.42	4.16	---	---
Current relationship status				
Married	26.4	33	---	---
Cohabiting, not married	51.2	64	---	---
Not living together	22.4	28	---	---
Pain duration (years)	6.49	5.26	---	---

avoidance, facilitative and negative responses, and relationship satisfaction.

Zero-Order Correlations

Correlational analyses were conducted between sociodemographic variables and study outcomes to identify potential confounding variables. Significant correlations were found between partners' sexual satisfaction and women's and partners' age ($W: r = -.22$, $p = .01$; $P: r = -.21$, $p = .02$) and between partners' relationship satisfaction and their own age ($r = -.17$, $p = .05$). Relationship duration was significantly associated with partners' sexual distress ($r = .28$, $p < .01$), women's sexual satisfaction ($r = .31$, $p < .01$), partners' sexual satisfaction ($r = .29$, $p < .01$), and partner-reported facilitative responses ($r = -.19$, $p = .04$). Women's pain intensity was also significantly correlated with their own sexual distress ($r = .29$, $p < .01$) and with partners' sexual satisfaction ($r = -.23$, $p = .01$). No other significant correlations were observed between sociodemographic variables and study variables, including negative partner responses. Relationship duration and pain intensity were controlled for in models including sexual distress and sexual satisfaction, and partners' age was controlled for in models including relationship satisfaction. Correlations between study variables are reported in Table 2.

Table 2. Means, standard deviations, and correlations for attachment dimensions, partner responses and outcome variables for women and their partners.

	<i>M</i> (<i>SD</i>)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. W anxiety	3.51 (1.20)	---												
2. W avoidance	2.01 (0.86)	.12	---											
3. P anxiety	3.02 (1.07)	.05	.12	---										
4. P avoidance	2.11 (0.88)	.21*	.14	.34**	---									
5. W facilitative	4.82 (1.25)	-.16	-.12	-.15	-.15	---								
6. P facilitative	4.90 (1.02)	-.07	-.11	-.04	-.23**	.11	---							
7. W negative	1.62 (0.91)	.20*	.18*	.20*	.01	-.18*	-.04	---						
8. P negative	1.52 (0.69)	.03	-.01	.27**	.13	-.14	-.16	.54**	---					
9. W sexual distress	30.67 (9.52)	.16	.13	.14	.05	-.08	-.03	.32**	.10	---				
10. P sexual distress	16.63 (9.68)	.03	-.04	.35**	.21*	-.04	-.07	.29**	.33**	.28**	---			
11. W sexual sat	22.02 (6.81)	.12	-.22*	-.04	.05	.24*	-.03	-.37**	-.15	-.46**	-.30**	---		
12. P sexual sat	24.94 (6.33)	.04	-.03	-.23*	-.18*	.06	.16	-.36**	-.31**	-.28**	-.69**	.44**	---	
13. W relationship sat	128.95 (22.58)	-.17	-.43**	-.19*	-.19*	.56**	.04	-.32**	-.07	-.16	-.01	.38**	.11	---
14. P relationship sat	127.08 (23.04)	-.22*	-.09	-.33**	-.64**	.19*	.30**	-.26**	-.31**	-.09	-.46**	.18	.49**	.30**

W = Women. P = Partners. Facilitative = Facilitative responses (women-perceived or partner-reported, accordingly). Negative = Negative responses (women-perceived or partner-reported, accordingly). Sat = Satisfaction. * = $p < .05$. ** = $p < .01$

Indirect Dyadic Associations between Attachment Dimensions in Both Partners and Study Outcomes via Facilitative Partner Responses

Results of bootstrapping analyses, as reported in Table 3, showed only one significant indirect effect while examining the associations between attachment dimensions, women-perceived and partner-reported facilitative responses and study outcomes, namely sexual distress, sexual satisfaction and relationship satisfaction. While controlling for pain intensity and relationship duration, there was a significant indirect effect of partners' greater attachment avoidance on partners' own lower sexual satisfaction through its association with lower partner-reported facilitative responses (Online supplementary Figure 1a). Fit indices for this model were satisfactory: $\chi^2(7) = 2.82$, $p = .90$; RMSEA = .00, 90% CI [.00, .05]; CFI = 1.00; SRMR = .02.

Similarly, while controlling for partners' age, there was a significant indirect effect of partners' greater attachment avoidance on partners' own lower relationship satisfaction through its association with lower partner-reported facilitative responses (Online supplementary Figure 2a). Fit indices for this model were satisfactory: $\chi^2(4) = 2.06$, $p = .72$; RMSEA = .00, 90% CI [.00, .10]; CFI = 1.00; SRMR = .02.

Finally, the model including sexual distress (Online supplementary Figure 3a) as an outcome provided no significant results, although fit indices were satisfactory for this model; $\chi^2(7) = 2.83$, $p = .90$; RMSEA = .00, 90% CI [.00, .05]; CFI = 1.00; SRMR = .02.

The percentage of explained variance can be found in Table 4 for models including facilitative partner responses as a mediator.

Indirect Dyadic Associations between Attachment Dimensions in Both Partners and Study Outcomes via Negative Partner Responses

Results for mediation analysis including negative partner responses as a mediator can be found in Table 4. In a first model including sexual distress (Online supplementary Figure 1b), while controlling for relationship duration and pain intensity, bootstrap analyses showed a significant indirect effect of women's and partners' greater attachment anxiety on women's and their partner's greater sexual distress through its association with greater woman-perceived negative responses. A significant path was also found between women's greater attachment avoidance and their own greater sexual distress through its association with greater women-perceived negative responses.

Similar results were found in a second set of analyses including sexual satisfaction as an outcome (Online supplementary Figure 2b). While controlling for relationship duration and pain intensity, significant indirect associations through greater women-perceived negative partner responses were found between women's and partners' greater attachment anxiety and both women's and partners' lower sexual satisfaction.

A final model including relationship satisfaction as an outcome (Online supplementary Figure 3b) showed that, while controlling

Table 3. Explained variance and indirect associations between attachment and outcome variables through facilitative partner responses.

Indirect effect via:	W-perceived facilitative responses	P-reported facilitative responses
	<i>b</i> [95% CI]	<i>b</i> [95% CI]
Model 1a: Sexual distress		
W anxiety → W sexual distress	.03 [-.13,.34]	<.01 [-.13,.26]
W avoidance → W sexual distress	.02 [-.12,.44]	.06 [-.15,.66]
P anxiety → W sexual distress	.02 [-.12,.33]	-.02 [-.45,.11]
P avoidance → W sexual distress	.02 [-.13,.45]	.14 [-.41,.79]
W anxiety → P sexual distress	-.03 [-.29,.16]	<.01 [-.10,.24]
W avoidance → P sexual distress	-.02 [-.44,.13]	.07 [-.10,.66]
P anxiety → P sexual distress	-.02 [-.32,.13]	-.03 [-.37,.09]
P avoidance → P sexual distress	-.02 [-.44,.14]	.16 [-.21,.78]
Model 2a: Sexual satisfaction		
W anxiety → W sexual satisfaction	-.19 [-.59, <.01]	<.01 [-.07,.13]
W avoidance → W sexual satisfaction	-.15 [-.75,.11]	.02 [-.08,.36]
P anxiety → W sexual satisfaction	-.17 [-.57,.07]	-.01 [-.23,.06]
P avoidance → W sexual satisfaction	-.14 [-.77,.18]	.06 [-.20,.49]
W anxiety → P sexual satisfaction	>-.01 [-.21,.10]	-.01 [-.25,.14]
W avoidance → P sexual satisfaction	>-.01 [-.26,.11]	-.12 [-.58,.10]
P anxiety → P sexual satisfaction	>-.01 [-.21,.10]	.05 [-.16,.32]
P avoidance → P sexual satisfaction	>-.01 [-.26,.12]	-.28 [-.80, -.03]
Model 3a: Relationship satisfaction		
W anxiety → W relationship satisfaction	-1.23 [-3.05,.12]	.04 [-.20,.60]
W avoidance → W relationship satisfaction	-1.01 [-4.56,.89]	.14 [-.20, 1.45]
P anxiety → W relationship satisfaction	-1.17 [-3.15,.55]	-.08 [-.93,.19]
P avoidance → W relationship satisfaction	-.92 [-4.33, 1.25]	.44 [-.33, 1.92]
W anxiety → P relationship satisfaction	-.17 [-.87,.11]	-.07 [-.72,.45]
W avoidance → P relationship satisfaction	-.14 [-1.09,.15]	-.29 [-1.73,.37]
P anxiety → P relationship satisfaction	-.16 [-.97,.12]	.17 [-.39, 1.20]
P avoidance → P relationship satisfaction	-.13 [-1.33,.17]	-.90 [-2.74, -.06]
	% of explained variance	
W-perceived facilitative responses	5.8	
P-reported facilitative responses	9.1	
W sexual distress	14.0	
P sexual distress	25.2	
W sexual satisfaction	24.0	
P sexual satisfaction	23.6	
W relationship satisfaction	46.3	
P relationship satisfaction	47.4	

Significant effects are bold faced. W = Women. P = Partners.

Table 4. Explained variance and indirect associations between attachment and outcome variables through negative partner responses.

Indirect effect via:	W-perceived negative responses	P-reported negative responses
	<i>b</i> [95% CI]	<i>b</i> [95% CI]
Model 1b: Sexual distress		
W anxiety → W sexual distress	.53 [1.11, 1.28]	-.02 [-.44,.15]
W avoidance → W sexual distress	.45 [<.01, 1.37]	.07 [-.13,.67]
P anxiety → W sexual distress	.55 [1.11, 1.31]	-.26 [-1.12,.22]
P avoidance → W sexual distress	-.37 [-1.17,.11]	-.05 [-.74,.14]
W anxiety → P sexual distress	.27 [1.01,.72]	.03 [-.16,.40]
W avoidance → P sexual distress	.23 [-.01,.79]	-.08 [-.64,.12]
P anxiety → P sexual distress	.28 [<.01,.80]	.33 [-.05,.96]
P avoidance → P sexual distress	-.19 [-.72,.05]	.07 [-.17,.69]
Model 2b: Sexual satisfaction		
W anxiety → W sexual satisfaction	-.47 [-.98, -.10]	<.01 [-.08,.19]
W avoidance → W sexual satisfaction	-.41 [-1.04,.03]	-.02 [-.30,.08]
P anxiety → W sexual satisfaction	-.50 [-1.04, -.12]	.08 [-.17,.57]
P avoidance → W sexual satisfaction	.34 [-.13,.92]	.02 [-.09,.36]
W anxiety → P sexual satisfaction	-.34 [-.84, -.05]	-.01 [-.20,.08]
W avoidance → P sexual satisfaction	-.29 [-.85, <.01]	.03 [-.06,.32]
P anxiety → P sexual satisfaction	-.36 [-.87, -.06]	-.13 [-.51,.15]
P avoidance → P sexual satisfaction	.24 [-.05,.76]	-.03 [-.33,.08]
Model 3b: Relationship satisfaction		
W anxiety → W relationship satisfaction	-1.14 [-2.87, -.15]	.03 [-.40,.67]
W avoidance → W relationship satisfaction	-1.16 [-3.10, -.04]	-.14 [-1.07,.31]
P anxiety → W relationship satisfaction	-1.42 [-3.34, -.32]	.72 [<.01, 2.05]
P avoidance → W relationship satisfaction	1.00 [-.17, 2.99]	0.13 [-.39, 1.30]
W anxiety → P relationship satisfaction	-.57 [-1.8, <.01]	-.03 [-.67,.53]
W avoidance → P relationship satisfaction	-.58 [-2.03,.01]	.16 [-.45, 1.17]
P anxiety → P relationship satisfaction	-.71 [-2.04, -.01]	-.80 [-2.12, -.06]
P avoidance → P relationship satisfaction	.51 [-.07, 1.86]	-.14 [-1.21,.55]
	% of explained variance	
W-perceived negative responses	12.9	
P-reported negative responses	8.9	
W sexual distress	19.2	
P sexual distress	30.5	
W sexual satisfaction	28.8	
P sexual satisfaction	30.9	
W relationship satisfaction	28.4	
P relationship satisfaction	50.6	

Significant effects are bold faced. W = Women. P = Partners.

for partners' age, women's greater attachment anxiety and greater attachment avoidance was associated with greater women-perceived negative responses, which in turn was associated with their own lower relationship satisfaction. Partners' greater attachment anxiety was significantly associated with greater women-perceived negative responses, which in turn was linked to both women's and partners' lower relationship satisfaction. Interestingly, partner's greater attachment anxiety was also associated with greater partner-reported negative responses, which in turn was associated with greater relationship satisfaction in women, and with lower relationship satisfaction in partners. Fit indices for all models were satisfactory: $\chi^2(2-7) = 0.23$ to 2.87 , $p = .57$ to $.90$; RMSEA = $.00$, 90% CI [$.00$, $.05$ to $.08$]; CFI = 1.00 ; SRMR = $< .00$ to $.02$. The percentage of variance explained can be found in Table 4 for models including negative partner responses as a mediator.

Discussion

The present study examined attachment's associations with facilitative and negative partner responses, and in turn with couples' sexual distress as well as sexual and relationship satisfaction. Results indicated that when partners reported greater attachment avoidance, they reported engaging in facilitative responses less frequently, which in turn was associated with their own lower sexual and relationship satisfaction. When women or their partners reported greater attachment

anxiety, women perceived higher negative partner responses, which was in turn linked to women's and partners' greater sexual distress and lower sexual and relationship satisfaction. Partners who reported greater attachment anxiety also reported greater negative responses, which was linked to their own poorer relationship satisfaction, and surprisingly, to their female partners' greater relationship satisfaction. Finally, greater attachment avoidance in women was also associated with them perceiving greater negative responses from their partner, which was linked to women's greater sexual distress and poorer relationship satisfaction. The present study provides evidence concerning the interaction between distal and proximal factors, namely attachment and partner responses, as proposed in the interpersonal emotion regulation model of women's sexual dysfunction (Rosen & Bergeron, 2019). It also highlights the contribution of attachment as a key variable in individuals', but also couples', adjustment to PVD via the understanding of its association with partner responses.

Mediating Role of Facilitative Partner Responses

Concordant with our hypothesis, we found a significant mediation of lower partner-reported facilitative responses in the association between partners' higher attachment avoidance and their own lower sexual and relationship satisfaction. This finding suggests that romantic partners of women with

PVD who have greater fears of intimacy report facilitative responses less frequently, which in turn is associated with their lower sexual and relationship satisfaction. This result is consistent with the current literature on adult attachment, which suggests that individuals with higher levels of attachment avoidance tend to avoid interpersonal contexts that could increase emotional proximity (Collins & Feeney, 2004a) and use distancing strategies to minimize threat-related cues, such as PVD-related pain during intercourse (Rosen & Bergeron, 2019). This may in turn be detrimental to their sexual and relationship satisfaction (Butzer & Campbell, 2008). This effect was not found for sexual distress. This could be explained by the fact that although sexual relationships are more likely to be devoid of emotional intimacy and connection in more avoidantly attached individuals (Birnbaum & Reis, 2019), resulting in less satisfying sexual encounters, the lack of emotional connection during intercourse might not be distressing for them (Butzer & Campbell, 2008; Stefanou & McCabe, 2012).

Facilitative partner responses did not mediate any effects of partners' attachment anxiety, indicating that anxiously attached individuals might not differ from securely attached individuals in terms of facilitative responding. Indeed, this result suggests that, as opposed to individuals with greater attachment avoidance who tend to withdraw when confronted with threat-related cues, more anxiously attached partners try to maintain the attachment bond by engaging in caregiving behaviors and empathic responding. This result is supported by some studies finding that men with greater attachment anxiety express empathic concern toward their female partner (Péloquin et al., 2011) and that individuals with greater attachment anxiety do engage in caregiving behaviors, but do so in a distressed and excessive manner (Shaver et al., 2019). In fact, one study found that although excessive caregiving was more frequently reported by more anxiously attached individuals, it did not impact their own or their partners' sexual satisfaction (Péloquin, Brassard et al., 2014).

Furthermore, no significant association was found between attachment dimensions and outcomes concerning women's perception of their partners' facilitative responses. This may indicate that women with greater attachment insecurity, although more vigilant to overt signs of rejection or relational threat, confirming either their "unlovability" or their beliefs about others' unavailability, might not significantly differ from more securely attached women and still manage to acknowledge signs of support accurately. In fact, an experimental study examining the association between attachment and the interpretations of unambiguous supportive written notes vs. ambiguous supportive written notes from one's partner found that, when rating a message that was unequivocally supportive, insecure individuals did not differ from secure individuals (Collins & Feeney, 2004b). Women with PVD who have a more insecure attachment style might still accurately track facilitating responses, as they are overt and unambiguous demonstrations of support. However, as facilitative partner responses were only poorly correlated between women and partners, this matter should be examined more thoroughly in future studies. Studies including observational methodologies should examine other potential explanatory

mechanisms to better understand how supportive behaviors favor adaptation in couples coping with PVD.

Mediating Role of Negative Partner Responses

As hypothesized, women's and partners' greater attachment anxiety was associated with greater women-perceived negative responses, which in turn was associated with women's and partners' greater sexual distress and lower sexual satisfaction and with women's lower relationship satisfaction. These results are consistent with current literature suggesting that individuals with greater attachment anxiety may be hypervigilant to signs of rejection from their partners and have a lower threshold concerning what is perceived as a sign of rejection (Cassidy & Kobak, 1988). Also, individuals with greater fear of abandonment seek to fulfill attachment-related needs such as reassurance and emotional proximity through sexual interactions and may express frustration and anger when they find themselves deprived from such intimacy due to the occurrence of PVD-related pain (Birnbaum & Reis, 2019). Therefore, greater attachment anxiety may lead both partners to express more negative affectivity when confronted with genito-pelvic pain and women to stay hypervigilant to such hostile responses. This pattern, in turn, may be detrimental to the couple's relationship and sexual adjustment (Birnbaum & Reis, 2019).

Women's attachment avoidance was also associated with their greater perception of negative partner responses, which in turn was associated with their greater sexual distress and lower relationship satisfaction. This result is inconsistent with previous studies examining attachment and perceived partner responses in individuals with chronic pain, where only attachment anxiety was significantly associated with perceived negative partner responses (Forsythe et al., 2012; Gauthier et al., 2012). However, it is consistent with theoretical work on attachment that suggests that women with greater attachment avoidance may perceive greater negative partner responses, as they may hold a biased perception toward stimuli confirming their internal working models whereby others are disappointing and unavailable to offer support (Mikulincer & Shaver, 2016). These results regarding attachment anxiety and avoidance are in line with those of other cross-sectional studies revealing that attachment insecurity was associated with lower perceived and self-reported supportiveness and higher hostile interactions during conflicts. This in turn was linked to lower relationship and sexual satisfaction (Godbout et al., 2009; Karantzas et al., 2014; Kohn et al., 2012; Péloquin, Brassard et al., 2014; Saavedra et al., 2010), which might also be the case in PVD couples.

Partners' attachment avoidance was unrelated to either women-perceived or partner-reported negative partner responses. This result is consistent with findings suggesting that deactivation strategies may be used in individuals with greater attachment avoidance, which can lead them to avoid showing any signs of affectivity, as this demonstrates emotional attachment (Mikulincer & Shaver, 2003). Although more avoidantly attached partners might experience greater emotional arousal when confronted with PVD, they may not behaviorally differ from more securely attached partners when it comes to negative partner responses, as they might refrain

from showing anger or hostility in order to maintain an emotional distance from their female counterpart.

Interestingly, in the model including relationship satisfaction as an outcome, attachment anxiety in partners was associated with greater partner-reported negative responses, which in turn was associated with partners' poorer relationship satisfaction, but women with PVD's greater relationship satisfaction. Partners with greater attachment anxiety may hold a retrospective bias as to their perception of their responses, where negative responses to PVD can be more easily remembered as they have elicited greater distress due to their potentially damaging effect on the relationship. More anxious individuals also tend to appraise conflicts as more threatening and are prone to catastrophize and ruminate, which could explain why partners reporting higher levels of attachment anxiety report higher levels of negative partner responses (Mikulincer & Shaver, 2011). In fact, studies examining attributional styles show that although individuals who report higher levels of attachment anxiety tend to react in a hostile or punishing way while confronted with a negative relational event, they also tend to seek reassurance and to believe they should be blamed or that they deserve what is happening (Collins et al., 2006). This may have a paradoxical effect, as although partners with greater attachment anxiety report more negative responses to pain during sex, they may also hold a greater fear that their negative responses have negatively impacted their relationship and invest more efforts into fixing the relationship due to their perceived failure. This could in turn lead their female counterparts to perceive such proximity seeking and efforts in relationship building to the point where they experience their relationship as more satisfying. This effect may be specific to relationship satisfaction, rather than for sexual variables, as it may reflect a series of everyday interactions rather than an immediate consequence of negative responses during intercourse. However, as this finding was surprising and runs against our hypothesis, it should be interpreted with caution and be replicated by future studies.

Taken together, results show that negative partner responses as perceived by women with PVD appear to be most related to attachment insecurity and more strongly associated with couples' relationship and sexual outcomes than partner-reported negative responses. This result is concordant with current literature suggesting that it is the perception of support, as opposed to the received support itself, that has a stronger influence on an individual's overall well-being (Haber et al., 2007; Lakey & Orehek, 2011; Uchino, 2009). In line with this finding, other studies on partner responses to PVD have shown that, beyond the impact of partner responses as self-reported by partners, it was women's perception of facilitative and negative partner responses that was associated with sexual and relationship adjustment (Rosen, Muise et al., 2015). This may indicate that current psychological treatments for PVD should not only focus on changing partners' responses, but also on women's perception of their partners' behaviors.

Strengths and Limitations

The present study sheds light on the interaction between proximal (partner responses) and distal (attachment) factors

affecting couples' adjustment to PVD and had a number of strengths. First, the dyadic perspective of this study's design allowed for a better understanding of the relational processes underlying PVD, whereby both partners' attachment orientation may affect the couple's interactions surrounding PVD, which in turn is associated with better or poorer relationship and sexual adjustment. This study is to our knowledge the first to examine attachment in relation to partner responses while using the significant others' perspective on their own reactive behavior to chronic pain or sexuality. Second, this study examined not only the links between attachment and negative reactivity to the experience of pain, but also caretaking tendencies and adaptive responding in such contexts. However, results must be interpreted carefully, accounting for this study's limitations. The use of retrospective and self-report measures may introduce social desirability and recall biases. Also, couples taking part in this study were seeking treatment, including couples therapy, and might represent a more distressed subsample of couples coping with PVD. Additionally, causality cannot be inferred due to the use of a cross-sectional design. Future studies should replicate the current findings using a longitudinal study design where temporal precedence can be established. Finally, although this study aimed at being inclusive of sexual and gender minorities, the current sample comprised only three same-sex couples which limits the conclusions that can be drawn about possible gender and/or orientation differences in the present findings.

Clinical and Theoretical Implications

Although a handful of studies have examined caregiving and partner support in relation to attachment and sexual satisfaction in the general population (Péloquin, Bigras et al., 2014; Péloquin, Brassard et al., 2014), this study is, to the best of the authors' knowledge, the first to examine these variables in a clinical sample of individuals with sexual dysfunction. Theoretically, the present findings lend support to the interpersonal emotion regulation model of women's sexual dysfunction (Rosen & Bergeron, 2019) and suggest that proximal factors such as partner responses may mediate the relation between distal factors and couples' adjustment to PVD. More research is needed to examine the role of emotion regulation in these associations; future studies should include other types of partner responses, such as solicitousness.

From a clinical standpoint, this study shows that attachment insecurity, especially greater attachment anxiety, has implications for couples' adaptation to PVD. As proposed by Hazan and Shaver (1987), one's romantic partner becomes the main source of comfort and support during adulthood and this study demonstrates just how attachment is related to the couples' adaptation when distressed and faced with a relational stressor – genito-pelvic pain. Furthermore, negative partner responses appear to be a more consistent mediator of the association between attachment dimensions and relationship and sexual outcomes than facilitative partner responses. Indeed, greater negative partner responses may be more strongly associated with attachment insecurity due to their higher relationship threat value (Pietromonaco et al.,

2004). Lower facilitative responses, although not adaptive, may be less alarming to insecure individuals and therefore may be less likely to impinge the couple's adaptation to PVD. Treatments targeting attachment insecurities and representations, such as emotion focused therapy (Johnson, 2012), might be useful in helping couples express their pain-related fears and engage in more adaptive interpersonal coping. Although preliminary research has demonstrated that a targeted cognitive-behavioral couple therapy for PVD is effective (Bergeron et al., 2019; Corsini-Munt et al., 2014), future studies should consider integrating an attachment perspective to the treatment of PVD, as attachment insecurity, both in women and in romantic partners, may contribute to the maintenance of genito-pelvic pain (Meredith et al., 2008; Romeo et al., 2017), including PVD (Charbonneau-Lefebvre et al., 2019; Rosen & Bergeron, 2019).

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Data availability statement

The data that support the findings of this study are available from the corresponding author, Veronique Charbonneau-Lefebvre, upon reasonable request.

Disclosure statement

The authors declare that they have no conflict of interest.

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References

- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (2015). *Patterns of attachment: A psychological study of the strange situation*. Psychology Press.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, 61(2), 226–244. <https://doi.org/10.1037/0022-3514.61.2.226>
- Beck, L. A., Pietromonaco, P. R., DeBuse, C. J., Powers, S. I., & Sayer, A. G. (2013). Spouses' attachment pairings predict neuroendocrine, behavioral, and psychological responses to marital conflict. *Journal of Personality and Social Psychology*, 105(3), 388–424. <https://doi.org/10.1037/a0033056>
- Bergeron, S., Binik, Y. M., Khalifé, S., Pagidas, K., & Glazer, H. I. (2001). Vulvar vestibulitis syndrome: Reliability of diagnosis and evaluation of current diagnostic criteria. *Obstetrics & Gynecology*, 98(1), 45–51. [https://doi.org/10.1016/S0029-7844\(01\)01389-8](https://doi.org/10.1016/S0029-7844(01)01389-8)
- Bergeron, S., Corsini-Munt, S., Aerts, L., Rancourt, K., & Rosen, N. O. (2015). Female sexual pain disorders: A review of the literature on etiology and treatment. *Current Sexual Health Reports*, 7(3), 159–169. <https://doi.org/10.1007/s11930-015-0053-y>
- Bergeron, S., Rosen, N. O., & Corsini-Munt, S. (2017). Painful sex. In S. B. Levine, C. B. Risen, & S. E. Althof (Eds.), *Handbook of clinical sexuality for mental health professionals* (pp. 71–85). Routledge.
- Bergeron, S., Vaillancourt-Morel, M.-P., McDuff, P., Corsini-Munt, S., Mayrand, M.-H., Delisle, I., & Rosen, N. O. (2019, October). *A randomized clinical trial comparing cognitive-behavioural couple therapy and topical lidocaine for women with genito-pelvic pain and their partners*. Oral presentation at the meeting of the Canadian sex research forum, Victoria, BC.
- Birnbaum, G. E., & Reis, H. T. (2019). Evolved to be connected: The dynamics of attachment and sex over the course of romantic relationships. *Current Opinion in Psychology*, 25, 11–15. <https://doi.org/10.1016/j.copsyc.2018.02.005>
- Bornstein, J., Goldstein, A. T., Stockdale, C. K., Bergeron, S., Pukall, C., Zolnoun, D., Coady, D., Bornstein, J., Goldstein, A., Zolnoun, D., Bachmann, G. A., Bissonnette, I., Bergeron, S., Starke, N. B., Burrows, L., Coady, D., Dellon, A. L., Farmer, M., Foster, D., Fox, S., & Mate, P. (2016). ISSVD, ISSWSH, and IPPS consensus terminology and classification of persistent vulvar pain and vulvodynia. *The Journal of Sexual Medicine*, 13(4), 607–612. <https://doi.org/10.1016/j.jsxm.2016.02.167>
- Bosio, M., Pâquet, M., Bois, K., Rosen, N. O., & Bergeron, S. (2019). Are depressive symptoms and attachment styles associated with observed and perceived partner responsiveness in couples coping with genito-pelvic pain? *Journal of Sex Research*, 57(4), 534–544. <https://doi.org/10.1080/00224499.2019.1610691>
- Bowlby, J. (1969). *Attachment and loss: Volume I: Attachment*. Basic Books.
- Bowlby, J. (1973). *Attachment and loss: Volume II: Separation, anxiety and anger*. Basic Books.
- Bowlby, J. (1988). *A secure base*. Basic Books.
- Brassard, A., Dupuy, E., Bergeron, S., & Shaver, P. R. (2015). Attachment insecurities and women's sexual function and satisfaction: The mediating roles of sexual self-esteem, sexual anxiety, and sexual assertiveness. *Journal of Sex Research*, 52(1), 110–119. <https://doi.org/10.1080/00224499.2013.838744>
- Butzer, B., & Campbell, L. (2008). Adult attachment, sexual satisfaction, and relationship satisfaction: A study of married couples. *Personal Relationships*, 15(1), 141–154. <https://doi.org/10.1111/j.1475-6811.2007.00189.x>
- Cano, A., Corley, A. M., Clark, S. M., & Martinez, S. C. (2018). A couple-based psychological treatment for chronic pain and relationship distress. *Cognitive and Behavioral Practice*, 25(1), 119–134. <https://doi.org/10.1016/j.cbpra.2017.02.003>
- Cassidy, J., & Kobak, R. R. (1988). Avoidance and its relation to other defensive processes. In J. Belsky & T. Nezworski (Eds.), *Clinical implications of attachment* (pp. 300–323). Lawrence Erlbaum Associates Publishers.
- Charbonneau-Lefebvre, V., Vaillancourt-Morel, M.-P., Brassard, A., Steben, M., & Bergeron, S. (2019). Self-efficacy mediates the attachment-pain association in couples with vulvodynia: A prospective study. *The Journal of Sexual Medicine*, 16(11), 1803–1813. <https://doi.org/10.1016/j.jsxm.2019.08.012>
- Collins, N. L., & Feeney, B. C. (2004a). An attachment theory perspective on closeness and intimacy. In D. J. Mashek & A. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 163–187). Lawrence Erlbaum Associates Publishers.
- Collins, N. L., & Feeney, B. C. (2004b). Working models of attachment shape perceptions of social support: Evidence from experimental and observational studies. *Journal of Personality and Social Psychology*, 87(3), 363–383. <https://doi.org/10.1037/0022-3514.87.3.363>

- Collins, N. L., Ford, M. B., & Feeney, B. C. (2011). An attachment-theory perspective on social support in close relationships. In L. M. Horowitz & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 209–231). Wiley & Sons Inc.
- Collins, N. L., Ford, M. B., Guichard, A. C., & Allard, L. M. (2006). Working models of attachment and attribution processes in intimate relationships. *Personality and Social Psychology Bulletin*, 32(2), 201–219. <https://doi.org/10.1177/0146167205280907>
- Corsini-Munt, S., Bergeron, S., Rosen, N. O., Mayrand, M. H., & Delisle, I. (2014). Feasibility and preliminary effectiveness of a novel cognitive-behavioral couple therapy for provoked vestibulodynia: A pilot study. *The Journal of Sexual Medicine*, 11(10), 2515–2527. <https://doi.org/10.1111/jsm.12646>
- Corsini-Munt, S., Bergeron, S., Rosen, N. O., Steben, M., Mayrand, M.-H., Delisle, I., McDuff, P., Aerts, L., & Santerre-Baillargeon, M. (2014). A comparison of cognitive-behavioral couple therapy and lidocaine in the treatment of provoked vestibulodynia: Study protocol for a randomized clinical trial. *Trials*, 15(1), 506–516. <https://doi.org/10.1186/1745-6215-15-506>
- Davis, S. N., Bergeron, S., Sadikaj, G., Corsini-Munt, S., & Steben, M. (2015). Partner behavioral responses to pain mediate the relationship between partner pain cognitions and pain outcomes in women with provoked vestibulodynia. *The Journal of Pain*, 16(6), 549–557. <https://doi.org/10.1016/j.jpain.2015.03.002>
- Derogatis, L. R., Rosen, R., Leiblum, S., Burnett, A., & Heiman, J. (2002). The female sexual distress scale (FSDS): Initial validation of a standardized scale for assessment of sexually related personal distress in women. *Journal of Sex & Marital Therapy*, 28(4), 317–330. <https://doi.org/10.1080/00926230290001448>
- Donaldson, R. L., & Meana, M. (2011). Early dyspareunia experience in young women: Confusion, consequences, and help-seeking barriers. *The Journal of Sexual Medicine*, 8(3), 814–823. <https://doi.org/10.1111/j.1743-6109.2010.02150.x>
- Forsythe, L. P., Romano, J. M., Jensen, M. P., & Thorn, B. E. (2012). Attachment style is associated with perceived spouse responses and pain-related outcomes. *Rehabilitation Psychology*, 57(4), 290–300. <https://doi.org/10.1037/a0030083>
- Fraleigh, C. R., Niedenthal, P. M., Marks, M., Brumbaugh, C., & Vicary, A. (2006). Adult attachment and the perception of emotional expressions: Probing the hyperactivating strategies underlying anxious attachment. *Journal of Personality*, 74(4), 1163–1190. <https://doi.org/10.1111/j.1467-6494.2006.00406.x>
- Funk, J. L., & Rogge, R. D. (2007). Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of Family Psychology*, 21(4), 572–583. <https://doi.org/10.1037/0893-3200.21.4.572>
- Gauthier, L. R., Rodin, G., Zimmermann, C., Warr, D., Librach, S. L., Moore, M., Shepherd, F. A., & Gagliese, L. (2012). The communal coping model and cancer pain: The roles of catastrophizing and attachment style. *The Journal of Pain*, 13(12), 1258–1268. <https://doi.org/10.1016/j.jpain.2012.10.001>
- Godbout, N., Dutton, D. G., Lussier, Y., & Sabourin, S. (2009). Early exposure to violence, domestic violence, attachment representations, and marital adjustment. *Personal Relationships*, 16(3), 365–384. <https://doi.org/10.1111/j.1475-6811.2009.01228.x>
- Goldstein, A. T., Pukall, C. F., Brown, C., Bergeron, S., Stein, A., & Kellogg-Spadt, S. (2016). Vulvodynia: Assessment and treatment. *The Journal of Sexual Medicine*, 13(4), 572–590. <https://doi.org/10.1016/j.jsxm.2016.01.020>
- Granot, M., Zisman-Illani, Y., Ram, E., Goldstick, O., & Yovell, Y. (2010). Characteristics of attachment style in women with dyspareunia. *Journal of Sex & Marital Therapy*, 37(1), 1–16. <https://doi.org/10.1080/0092623X.2011.533563>
- Graziottin, A., & Gambini, D. (2017). Evaluation of genito-pelvic pain/penetration disorder. In W. W. IsHak (Ed.), *The textbook of clinical sexual medicine* (pp. 289–304). Springer International Publishing.
- Haber, M. G., Cohen, J. L., Lucas, T., & Baltes, B. B. (2007). The relationship between self-reported received and perceived social support: A meta-analytic review. *American Journal of Community Psychology*, 39(1–2), 133–144. <https://doi.org/10.1007/s10464-007-9100-9>
- Harlow, B. L., Kunitz, C. G., Nguyen, R. H. N., Rydell, S. A., Turner, R. M., & MacLehose, R. F. (2014). Prevalence of symptoms consistent with a diagnosis of vulvodynia: Population-based estimates from 2 geographic regions. *American Journal of Obstetrics and Gynecology*, 210(1), 40.e41–40.e48. <https://doi.org/10.1016/j.ajog.2013.09.033>
- Harlow, B. L., & Stewart, E. G. (2003). A population-based assessment of chronic unexplained vulvar pain: Have we underestimated the prevalence of vulvodynia? *Journal of the American Medical Women's Association*, 58(2), 82–88.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52(3), 511–524. <https://doi.org/10.1037/0022-3514.52.3.511>
- Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modeling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53–60. <https://doi.org/10.21427/D7CF7R>
- Johnson, S. M. (2012). *The practice of emotionally focused couple therapy: Creating connection*. Routledge.
- Joireman, J. A., Needham, T. L., & Cummings, A.-L. (2002). Relationships between dimensions of attachment and empathy. *North American Journal of Psychology*, 3(3), 63–80.
- Karantzas, G. C., Feeney, J. A., Goncalves, C. V., & McCabe, M. P. (2014). Towards an integrative attachment-based model of relationship functioning. *British Journal of Psychology*, 105(3), 413–434. <https://doi.org/10.1111/bjop.12047>
- Kenny, D., Kashy, D., & Cook, W. (2006a). *Dyadic data analysis*. Guilford Press.
- Kenny, D., Kashy, D., & Cook, W. (2006b). The measure of non-independence. In D. A. Kenny, D. Kashy, & W. Cook (Eds.), *Dyadic data analysis* (pp. 25–52). Guilford Press.
- Kerns, R. D., Turk, D. C., & Rudy, T. E. (1985). The West Haven-Yale multidimensional pain inventory (WHYMPI). *Pain*, 23(4), 345–356. [https://doi.org/10.1016/0304-3959\(85\)90004-1](https://doi.org/10.1016/0304-3959(85)90004-1)
- Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). Guilford Press.
- Kohn, J. L., Rholes, S. W., Simpson, J. A., Martin, A. M., III, Tran, S., & Wilson, C. L. (2012). Changes in marital satisfaction across the transition to parenthood: The role of adult attachment orientations. *Personality and Social Psychology Bulletin*, 38(11), 1506–1522. <https://doi.org/10.1177/0146167212454548>
- Lakey, B., & Orehek, E. (2011). Relational regulation theory: A new approach to explain the link between perceived social support and mental health. *Psychological Review*, 118(3), 482–495. <https://doi.org/10.1037/a0023477>
- Lawrance, K., & Byers, S. E. (2010). Interpersonal Exchange Model of Sexual Satisfaction Questionnaire. In C. M. Davis, W. L. Yarber, & R. Bauserman (Eds.), *Handbook of sexuality-related measures* (2nd ed., pp. 514–519). Sage.
- Leclerc, B., Bergeron, S., Brassard, A., Bélanger, C., Steben, M., & Lambert, B. (2015). Attachment, sexual assertiveness, and sexual outcomes in women with provoked vestibulodynia and their partners: A mediation model. *Archives of Sexual Behavior*, 44(6), 1561–1572. <https://doi.org/10.1007/s10508-014-0295-1>
- Leonard, M. T., Cano, A., & Johansen, A. B. (2006). Chronic pain in a couples context: A review and integration of theoretical models and empirical evidence. *The Journal of Pain*, 7(6), 377–390. <https://doi.org/10.1016/j.jpain.2006.01.442>
- Li, T., & Chan, D. K. S. (2012). How anxious and avoidant attachment affect romantic relationship quality differently: A meta-analytic review. *European Journal of Social Psychology*, 42(4), 406–419. <https://doi.org/10.1002/ejsp.1842>
- Mark, K. P., Herbenick, D., Fortenberry, J. D., Sanders, S., & Reece, M. (2014). A psychometric comparison of three scales and a single-item measure to assess sexual satisfaction. *Journal of Sex Research*, 51(2), 159–169. <https://doi.org/10.1080/00224499.2013.816261>
- McDonald, R. P., & Ho, M.-H. R. (2002). Principles and practice in reporting structural equation analyses. *Psychological Methods*, 7(1), 64–82. <https://doi.org/10.1037/1082-989X.7.1.64>
- McNicoll, G., Corsini-Munt, S., Rosen, N. O., McDuff, P., & Bergeron, S. (2016). Sexual assertiveness mediates the associations between partner facilitative responses and sexual outcomes in women with provoked

- vestibulodynia. *Journal of Sex & Marital Therapy*, 43(7), 663–677. <https://doi.org/10.1080/0092623X.2016.1230806>
- Meredith, P., Ownsworth, T., & Strong, J. (2008). A review of the evidence linking adult attachment theory and chronic pain: Presenting a conceptual model. *Clinical Psychology Review*, 28(3), 407–429. <https://doi.org/10.1016/j.cpr.2007.07.009>
- Mikail, S. F., Henderson, P. R., & Tasca, G. A. (1994). An interpersonally based model of chronic pain: An application of attachment theory. *Clinical Psychology Review*, 14(1), 1–16. [https://doi.org/10.1016/0272-7358\(94\)90045-0](https://doi.org/10.1016/0272-7358(94)90045-0)
- Mikulincer, M., Florian, V., Cowan, P. A., & Cowan, C. P. (2002). Attachment security in couple relationships: A systemic model and its implications for family dynamics. *Family Process*, 41(3), 405–434. <https://doi.org/10.1111/j.1545-5300.2002.41309.x>
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 35, pp. 53–152). Elsevier Academic Press.
- Mikulincer, M., & Shaver, P. R. (2005). Attachment theory and emotions in close relationships: Exploring the attachment-related dynamics of emotional reactions to relational events. *Personal Relationships*, 12(2), 149–168. <https://doi.org/10.1111/j.1350-4126.2005.00108.x>
- Mikulincer, M., & Shaver, P. R. (2011). Adult attachment and caregiving: Individual differences in providing a safe haven and secure base to others. In S. L. Brown, R. M. Brown, & L. A. Penner (Eds.), *Moving beyond self-interest: Perspectives from evolutionary biology, neuroscience, and the social sciences* (pp. 39–52). Oxford University Press.
- Mikulincer, M., & Shaver, P. R. (2016). *Attachment in adulthood: Structure, dynamics, and change* (2nd ed.). Guilford Press.
- Millings, A., & Walsh, J. (2009). A dyadic exploration of attachment and caregiving in long-term couples. *Personal Relationships*, 16(3), 437–453. <https://doi.org/10.1111/j.1475-6811.2009.01232.x>
- Muthén, L. K., & Muthén, B. O. (1998–2015). *Mplus user's guide* (7th ed.). Muthén & Muthén.
- Payne, K. A., Binik, Y. M., Amsel, R., & Khalifé, S. (2005). When sex hurts, anxiety and fear orient attention towards pain. *European Journal of Pain*, 9(4), 427–436. <https://doi.org/10.1016/j.ejpain.2004.10.003>
- Péloquin, K., Bigras, N., Brassard, A., & Godbout, N. (2014). Perceiving that one's partner is supportive moderates the associations among attachment insecurity and psychosexual variables. *The Canadian Journal of Human Sexuality*, 23(3), 178–188. <https://doi.org/10.3138/cjhs.2443>
- Péloquin, K., Brassard, A., Lafontaine, M.-F., & Shaver, P. R. (2014). Sexuality examined through the lens of attachment theory: Attachment, caregiving, and sexual satisfaction. *Journal of Sex Research*, 51(5), 561–576. <https://doi.org/10.1080/00224499.2012.757281>
- Péloquin, K., Lafontaine, M.-F., & Brassard, A. (2011). A dyadic approach to the study of romantic attachment, dyadic empathy, and psychological partner aggression. *Journal of Social and Personal Relationships*, 28(7), 915–942. <https://doi.org/10.1177/0265407510397988>
- Pence, L., Cano, A., Thorn, B., & Ward, L. C. (2006). Perceived spouse responses to pain: The level of agreement in couple dyads and the role of catastrophizing, marital satisfaction, and depression. *Journal of Behavioral Medicine*, 29(6), 511–522. <https://doi.org/10.1007/s10865-006-9073-4>
- Pietromonaco, P. R., Greenwood, D., & Barrett, L. F. (2004). Conflict in adult close relationships: An attachment perspective. In W. S. Rholes & J. A. Simpson (Eds.), *Adult attachment: New directions and emerging issues* (pp. 267–299). Guilford Press.
- Reizer, A., Ein-Dor, T., & Possick, C. (2012). Living at risk: Dyadic examination of the links among environmental stress, attachment orientations and marital support provision. *Journal of Social and Personal Relationships*, 29(5), 694–712. <https://doi.org/10.1177/0265407512443449>
- Romeo, A., Tesio, V., Castelnovo, G., & Castelli, L. (2017). Attachment style and chronic pain: Toward an interpersonal model of pain. *Frontiers in Psychology*, 8(284), 1–6. <https://doi.org/10.3389/fpsyg.2017.00284>
- Rosen, N. O., & Bergeron, S. (2019). Genito-pelvic pain through a dyadic lens: Moving toward an interpersonal emotion regulation model of women's sexual dysfunction. *Journal of Sex Research*, 56(4–5), 440–461. <https://doi.org/10.1080/00224499.2018.1513987>
- Rosen, N. O., Bergeron, S., Glowacka, M., Delisle, I., & Baxter, M. L. (2012). Harmful or helpful: Perceived solicitous and facilitative partner responses are differentially associated with pain and sexual satisfaction in women with provoked vestibulodynia. *The Journal of Sexual Medicine*, 9(9), 2351–2360. <https://doi.org/10.1111/j.1743-6109.2012.02851.x>
- Rosen, N. O., Bergeron, S., Lambert, B., & Steben, M. (2013). Provoked vestibulodynia: Mediators of the associations between partner responses, pain, and sexual satisfaction. *Archives of Sexual Behavior*, 42(1), 129–141. <https://doi.org/10.1007/s10508-012-9905-y>
- Rosen, N. O., Bergeron, S., Leclerc, B., Lambert, B., & Steben, M. (2010). Woman and partner-perceived partner responses predict pain and sexual satisfaction in provoked vestibulodynia (PVD) couples. *The Journal of Sexual Medicine*, 7(11), 3715–3724. <https://doi.org/10.1111/j.1743-6109.2010.01957.x>
- Rosen, N. O., Bergeron, S., Sadikaj, G., & Delisle, I. (2015). Daily associations among male partner responses, pain during intercourse, and anxiety in women with vulvodynia and their partners. *The Journal of Pain*, 16(12), 1312–1320. <https://doi.org/10.1016/j.jpain.2015.09.003>
- Rosen, N. O., Bergeron, S., Sadikaj, G., Glowacka, M., Baxter, M.-L., & Delisle, I. (2014). Relationship satisfaction moderates the associations between male partner responses and depression in women with vulvodynia: A dyadic daily experience study. *Pain*, 155(7), 1374–1383. <https://doi.org/10.1016/j.pain.2014.04.017>
- Rosen, N. O., Bergeron, S., Sadikaj, G., Glowacka, M., Delisle, I., & Baxter, M.-L. (2014). Impact of male partner responses on sexual function in women with vulvodynia and their partners: A dyadic daily experience study. *Health Psychology*, 33(8), 823–831. <https://doi.org/10.1037/a0034550>
- Rosen, N. O., Muise, A., Bergeron, S., Delisle, I., & Baxter, M. L. (2015). Daily associations between partner responses and sexual and relationship satisfaction in couples coping with provoked vestibulodynia. *The Journal of Sexual Medicine*, 12(4), 1028–1039. <https://doi.org/10.1111/jsm.12840>
- Saavedra, M. C., Chapman, K. E., & Rogge, R. D. (2010). Clarifying links between attachment and relationship quality: Hostile conflict and mindfulness as moderators. *Journal of Family Psychology*, 24(4), 380–390. <https://doi.org/10.1037/a0019872>
- Santos-Iglesias, P., Mohamed, B., Danko, A., & Walker, L. M. (2018). Psychometric validation of the Female Sexual Distress Scale in male samples. *Archives of Sexual Behavior*, 47(6), 1733–1743. <https://doi.org/10.1007/s10508-018-1146-2>
- Schwartz, L., Jensen, M. P., & Romano, J. M. (2005). The development and psychometric evaluation of an instrument to assess spouse responses to pain and well behavior in patients with chronic pain: The Spouse Response Inventory. *The Journal of Pain*, 6(4), 243–252. <https://doi.org/10.1016/j.jpain.2004.12.010>
- Shaver, P. R., Mikulincer, M., & Cassidy, J. (2019). Attachment, caregiving in couple relationships, and prosocial behavior in the wider world. *Current Opinion in Psychology*, 25, 16–20. <https://doi.org/10.1016/j.copsyc.2018.02.009>
- Stefanou, C., & McCabe, M. P. (2012). Adult attachment and sexual functioning: A review of past research. *The Journal of Sexual Medicine*, 9(10), 2499–2507. <https://doi.org/10.1111/j.1743-6109.2012.02843.x>
- Uchino, B. N. (2009). Understanding the links between social support and physical health: A life-span perspective with emphasis on the separability of perceived and received support. *Perspectives on Psychological Science*, 4(3), 236–255. <https://doi.org/10.1111/j.1745-6924.2009.01122.x>
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationships Scale (ECR)-Short Form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, 88(2), 187–204. <https://doi.org/10.1080/00223890701268041>
- Wei, M., Vogel, D. L., Ku, T.-Y., & Zakalik, R. A. (2005). Adult attachment, affect regulation, negative mood, and interpersonal problems: The mediating roles of emotional reactivity and emotional cutoff. *Journal of Counseling Psychology*, 52(1), 14–24. <https://doi.org/10.1037/0022-0167.52.1.14>
- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement*, 73(6), 913–934. <https://doi.org/10.1177/0013164413495237>